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The Philippine Craftsman

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The object of all education is to make a good citizen, and * the first duty of a good citizen is to earn his own living.

Herman Schneider,
Education for Industrial Workers.

1917: Bureau of Printing, Manila, P. I.

The Philippine Craftsman

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THE COMMERCIALIZATION OF INDUSTRIAL WORK.

By HUGO H. MILLER.

Act No. 2629 of the Philippine Legislature, passed February 4, 1916, recognizes and makes effective the commercial objects of industrial instruction by empowering the Bureau of Education not only to merchandise the product of schools but also to organize industrial centers where handicrafts may be followed by the people under the guidance of the Bureau. From June, 1916, to January 1, 1917, 130 centers in 18 provinces with 2,266 workers were organized. To dispose of the product of these centers in addition to the output of 4,000 schools with 600,000 pupils, the General Sales Department was established. The Industrial division of the Bureau as now organized may be compared to a factory which, instead of being centralized in one plant, is scattered over a territory of 127,000 square miles. Its problems, therefore, both resemble and differ from those of a factory.

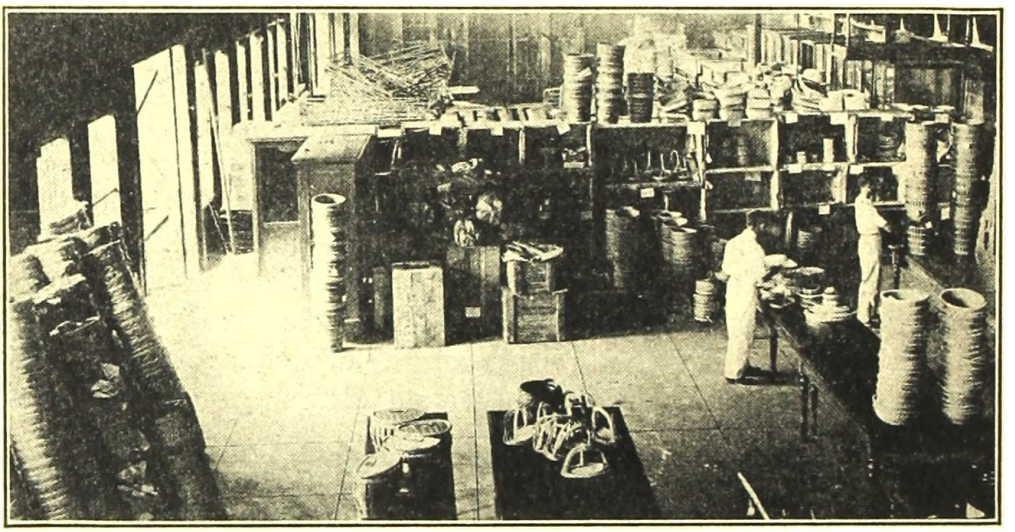
When the commercialization of industrial work was undertaken, the greatest difficulty was encountered in the standardization of courses and designs. All work was therefore classified into 28 courses. Three groups of designs were defined: Division, of which there are now about 140; PHILIPPINE CRAFTSMAN, of which there are 19; and Bureau of Education, of which there are 646. Before the work of standardization was begun there were probably 5,000 different designs for basketry, lace, crochet, mats, and miscellaneous products; now there are only about 800. In embroidery there has been an increase, for the field was not in a position to obtain good designs. For this year there were 266 embroidery designs from which 5,052 perforations were made and sent into the field.

All art products are largely dependent for salability on their novelty, and industrial articles must meet this condition. Consequently the General Office encourages experiments which will develop original ideas, especially in basketry, and it provides for the submittal of products for criticism and approval. For

lace and embroidery, means are provided for informing the field of changes in fashions.

In all industrial work the necessity for sometimes changing the nature of the product and always for directing what shall be made, must be considered. Just now the Bureau is devoting its attention to the introduction of new embroidering such as mosaic, Italian cut, and filet drawn work. It is not particularly interested in extending the work in lingerie because this is already well established in the Islands. The new work is being fostered so that if the demand for Philippine underclothing be curtailed, the workers can turn their skill to account in another direction.

In its capacity as intermediary between the producer, and the



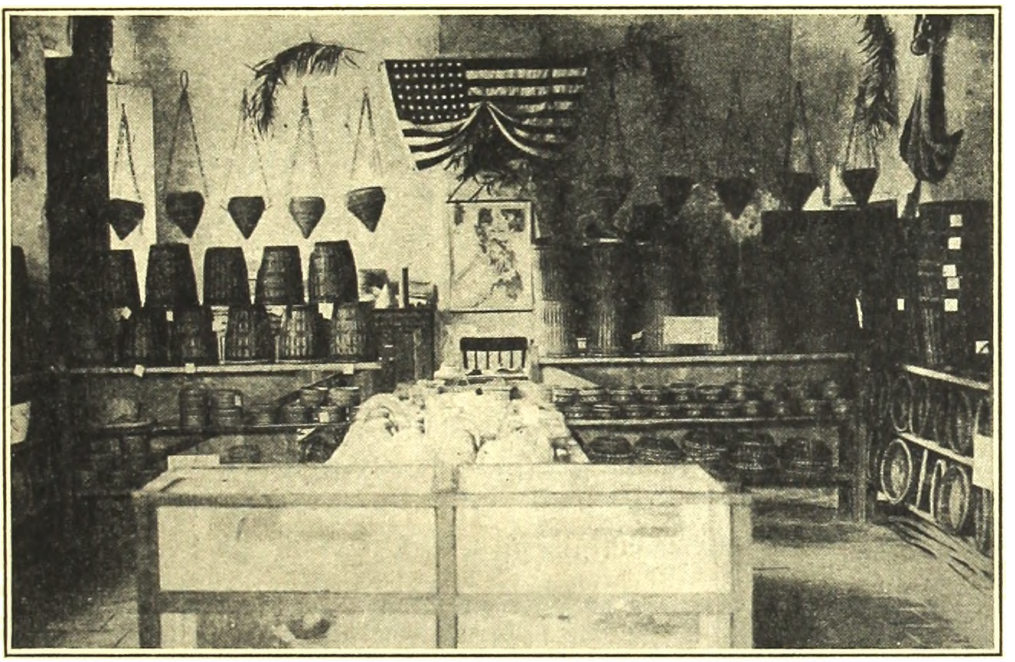
The wholesale storeroom of the Bureau of Education, Manila.

wholesale merchants and exporters, the Bureau is not always in an enviable position. The merchants may desire valenciennes lace, while the industrial centers prefer to turn out cluny or torchon. The household workers may wish to do French embroidery, while the exporters, on account of fashion in the United States, insist on mosaic work. The schools may want to make ribbed baskets, while the dealers call for coiled abacá baskets which are more difficult to produce and for which there is a lack of dyes. These differences are adjusted in various ways.

When the demand for valenciennes lace arose, no one was familiar with its production. Several teachers were therefore brought into the General Office, and, when they had worked out a number of designs, they were made special instructors. Samples of lace were supplied where required, and the schools were given the first orders as experiments. The question of make-up

for boudoir and baby pillows was solved by furnishing models from the industrial museum. Mosaic work was experimented with in the General Office until the quickest way of making it was determined, and then the field was offered a 20 per cent raise in prices in order to encourage its production. Since bamboo is the only material available in many localities, basketry designs such as B. E. 1036 and the jardinière baskets were evolved. These are very different from the Japanese product and therefore appeal to exporters.

When a merchant brought to Manila a large order for Italian



Photograph by Ward D. Gregg.

A provincial salesroom, Batangas.

cutwork, no commercial people would accept it as their workers did not understand this kind of embroidery. The Bureau of Education took the order and was able to fill it promptly because Italian cutwork motifs had already been included in the embroidery sampler in the schools. Mosaic work offered a serious problem. The technique was found to be more difficult than had been anticipated. The field turned out a varied product before the General Office finally determined on a uniform method of work and issued a technical bulletin and samples. Also, special teachers were brought into the General Office, instructed, and then sent out with orders to various provinces. Commercial filet drawn work was easily introduced, as it is much akin to the Philippine calado and a form of it has long been known here.

But the Philippine method of doing such work is difficult, and the product is not so acceptable as the more simple filet drawn work which resembles real filet lace. A technical bulletin which will probably set the field aright is now being prepared on the subject. At the same time, in the Division of Sorsogon a new interpretation has been placed on the work, and this will probably be even more acceptable for some designs other than regular filet. As soon as Sorsogon has worked this matter out definitely a teacher will probably be brought to the General Office to demonstrate the new method.

The coir-mat industry was started by a teacher in Occidental Negros about five years ago. Since the fiber was cleaned in school it was not thoroughly retted, and mats were like boards rather than like brushes. Commercial mats were studied at the Panama-Pacific International Exposition. It was determined that the fiber must be better cleaned, that the mats must be made in standard sizes, that less material should be woven in, and that changes should be made in the technique of production. This information was sent to the field in the form of a revised technical bulletin. Two traveling industrial teachers demonstrated the new methods at the Teachers' Vacation Assembly, at several normal institutes, and in the schools in various provinces. Up to this time a single pupil has completed all the steps in the production of a mat from the preparation of material to the trimming of the finished article. This procedure is not economical, as the coir must be retted in water for many months. To make successful competition with the product of India possible, the expense of preparing the fiber must be reduced to a mere fraction of the price of the finished article. This can be done by centralizing the fiber production. The field is now being advised that either outside labor must be secured to prepare the coir, or the retting and the production of rope from which mats are made should be given over to the younger pupils, the weaving being left to those in the higher grades.

New ideas in industrial production are given effect in various ways. Models are extremely desirable, but it is difficult to make the number required for so many different provinces as the General Office has only a limited number of artisans at its disposal. Technical bulletins receive more attention in the field than formerly, and they are kept up to date by frequent substitution of revised numbers. The most effective means of getting new ideas into the field is through the work of traveling industrial teachers. Hereafter, the General Office will have 37 of these. Most of them will be given charge of household cen-

ters in particular provinces. They will travel from center to center, take with them material to be embroidered, explain new methods, criticize and correct, and return finished goods to the division offices. From time to time they will be called to the General Office for instruction in new ideas.

The Teachers' Vacation Assembly and the normal institutes also furnish a very direct means of getting new ideas into the field. Their effectiveness was shown in the introduction of lupis work. It was found that in coiled basketry the finer stem products were not salable, but that lupis basketry was in

Broom-making center at Mabatang, Abucay, Bataan.

good demand. Designs, mostly for trays of lupis, were evolved, and these were taught in the Teachers' Vacation Assembly and in normal institutes. Within six months there was a considerable output of the articles desired.

A very important method of bettering the industrial product is that of making direct comment, both adverse and favorable, on articles shipped to the General Sales Department. Every lot of goods is carefully inspected and notes are made concerning it. Each invoice sheet on which any comment is required is returned with a signed letter. A competent American woman gives embroidery and lace almost her entire attention. Basketry and general weaving are inspected by qualified Filipino teachers and by the chief of the division. It is meant to make sugges-

tions in no peevish or curt manner but in a spirit of careful explanation and encouragement, references being made to all good points.

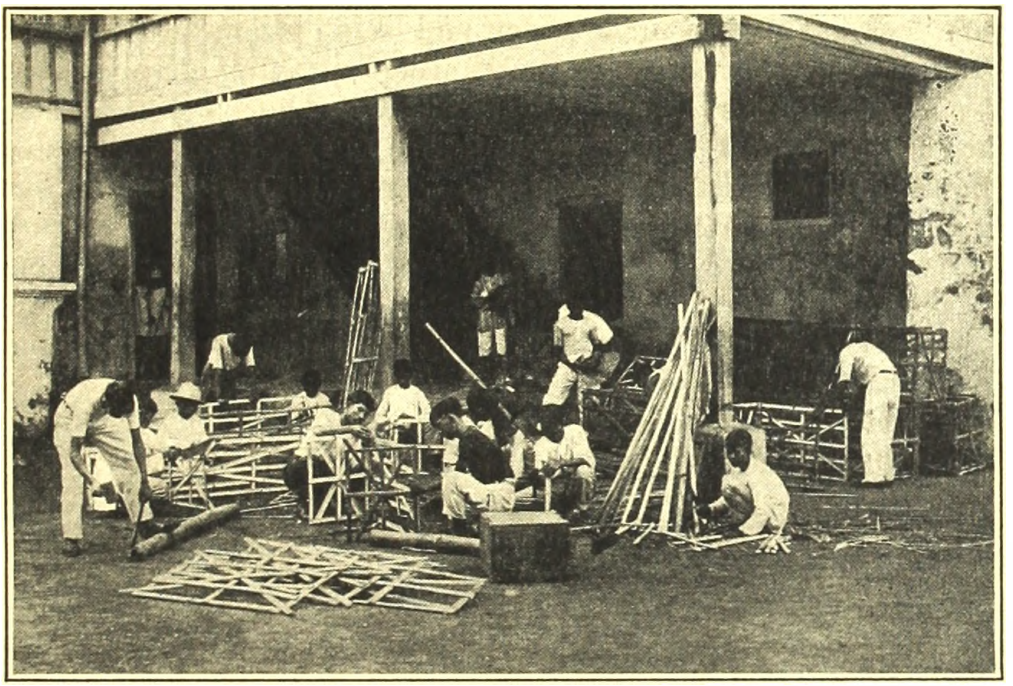
In the matter of methods, the activities of the Bureau consist in making suggestions and in supplying materials and devices. Embroidery and lace materials, especially cloth and thread, are furnished through the General Office at much lower prices than those at which they could be secured from merchants. Moreover, a uniform supply of materials is necessary in order to standardize the product. Bureau of Education lace is now standard because it is made according to printed patterns. Each pattern calls for the same brand and count of thread and this is to be obtained only through the General Office. The Bureau was able to secure a supply of dyes, but, while it sells these to the field, the best results are obtained by having material dyed in the General Office. Uniform colors are more likely to be obtained, there is less wastage of material, and consequently the cost is lower.

Up to this time the general policy has been to supply work as requested by the field and to secure the stamped goods from local Manila exporters. These dealers assured the Bureau that they could be depended upon for a constant supply; but at one time they were unable to furnish the necessary goods during a period of several weeks. It therefore became necessary for the Bureau to purchase a quantity of material and to prepare its own stamped goods. The policy is to secure orders which will keep the field busy without depending on local Manila dealers to furnish goods; also, to have on hand stocks of materials which can be quickly stamped and sent out to be embroidered when the opportunity for sale of the product seems especially favorable. Orders from Manila merchants will be taken care of in so far as the dealers are able to supply stamped materials. Up to this time it has been usual to furnish perforated patterns and cloth to the field, but from now on the stamping will be done in the General Office. It is felt that more uniform results will be secured and that there will be a great saving in material when having experts do the work.

The best examples of labor saving devices supplied are those for loom weaving. Here the Bureau has introduced the flying shuttle and the lifter attachment, through the use of which much time is saved, wider cloth is woven, and the weaving of more intricate designs is made possible.

Several general policies have been evolved with respect to merchants. In the first place, orders are accepted from Manila

dealers only. Moreover, Act No. 2629 forbids competition, and the whole system provides for turning household centers over to merchants, when once the work is well organized. But there is no place other than the Bureau where a stranger coming to the Islands to set himself up in handicraft business can easily obtain definite information. Consequently an exception is made in the case of such persons, and small sample orders are taken for experimental purposes only, and with the understanding that the Bureau considers itself under no obligations to accept large orders from such parties. The Bureau takes orders from



Photograph by Ward D. Gregg.

A class fabricating bamboo crates for the shipment of industrial articles, Batangas Primary School.

any responsible Manila merchant. However, no delivery date is ever guaranteed, and all orders are filled consecutively as received and confirmed. Also a deposit is demanded of each purchaser to cover any loss which might occur on account of bad faith. No preferences are given, but when dealers support the Bureau in introducing new work such as valenciennes lace and commercial doormats, it is customary to let them purchase the entire output for perhaps a year. In general, the demands of merchants must be made to suit the special abilities of Philippine workers; and if any product does not move rapidly, it must, of course, be modified or discontinued. By Act No. 2629 the General Sales Department is allowed to purchase and carry in

stock goods not exceeding ₱30,000 in value. This amount is not likely to be reached in the present state of the market, as the goods move as soon as they are received.

The taking of orders is placed in charge of the employees directly responsible for the different designs. The orders are classified and tabulated by the order and invoice clerk who keeps a tracer for each class of article and design, showing the orders received from merchants and the deliveries which have been made for outward orders from provinces. He keeps the same kind of a tracer by design, number and province for deliveries to the General Sales Department. This makes it easy to determine the amount of orders which can be accepted from firms, and the the number of articles for which orders must be obtained so as to dispose of the product of the field. The stock-card clerk keeps a record of all receipts and of all sales, thus determining both the stock on hand and his own property responsibility. The cashier and the bookkeeper have general control of these employees and they also have direct charge of accounts received and of disbursements. It is a problem to keep the records of the many transactions simplified but the system as explained has thus far proved satisfactory.

The value of the orders received and delivered during the period August 9 to December 31, 1916, is as follows:

	Orders received.	Deliveries made.
Basketry	₱26,089.49	₱13,342.87
Embroidery	41,825.29	7,609.46
Lace	61,724.22	1,972.43
Crochet	6,991.02	542.43
Coir mats	3,723.40	.....
Miscellaneous	1,261.60	194.69
	140,609.02	23,661.88

The plan of standardization has worked well. Merchants can now order articles knowing exactly what will be delivered to them, even though the product comes from widely separated parts of the Philippines. The wholesale display rooms are maintained as a place where orders can be accepted from samples. Here, too, perforated patterns and blue prints are made, cloth is stamped for orders received, and raw materials are sent to the field.

As often as possible the General Sales Department secures definite delivery dates from the field. This procedure is believed advisable because the chief criticism of Philippine handicraft industries by merchants is that deliveries are not satisfactory. Promised goods are furnished late or not at all. That they must in all cases be ready at the time specified is a point which should

be strongly driven home to all workers in the Islands. Unreliability with respect to this matter will retard the development of handicraft work.

The greatest difference of opinion between merchants and the field arises with respect to prices, and the question of prices is the most difficult of all for the General Office to solve. It is possible approximately to estimate plain scallops by the yard, calado by the square inch, lace by length and width, crochet per ball of thread consumed, and baskets according to size and fineness of material; but all of these are unsatisfactory standards. The only practical way to determine values is by comparing an article in question with a similar object, the labor value of which is known, setting a tentative price, and then having the article made in the field.

A try-out made in the General Office to determine labor value is not satisfactory. This is because there is a tendency to spend too much time in needlessly fine work and labor near Manila receives a higher wage than it does in the provinces. Besides, price does not depend entirely upon labor expended. Oftentimes workers will execute designs which they like cheaper than those which do not appeal to them. Sheer materials are preferred; and certain forms of embroidery with which the producers are conversant are much more cheaply furnished than work in the newer stitches.

The General Office made a very interesting experiment with Italian cutwork. An order for about ₱3,000 worth to be done on small pieces of cloth, was accepted for completion at a price to be set by the field. Tentative offers were made by the merchant placing the order. Except in case of one or two designs, the prices submitted by several provinces agreed not only among themselves but with those set by the merchant. When mosaic work was first undertaken the Bureau underbid the correct prices by at least 50 per cent as the work looked very simple. The complaints received from the field were so great that the prices had to be raised 50 per cent on one occasion and 20 per cent on another.

For a staple article such as wastebasket design No. 1036, the question of price determines salability. On an order for such baskets the field demanded a peso, and the merchants refused to pay more than a peso, thus leaving no margin of profit for the General Office. The problem was solved by having the field crate the baskets so that they might be exported in the original package, and by reducing the price to the field to 95 centavos. Stools of design No. 766, were quoted to firms at prices originally

set by the provinces, and large orders were taken. After some of these had been filled it was found that the prices were too low and the provinces refused further orders. In this case the Bureau informed exporters that the orders would be canceled unless the price was raised from ₱0.80 to ₱1.20. The merchants paid ₱1.20.

The prices on cluny and torchon lace seem fairly satisfactory to the field and probably will not be changed. They were checked in the United States by securing quotations from a number of importing firms. Valenciennes laces were priced from the data given by one firm only and seem too low, so the Bureau has sent samples to various firms with the request that bids be made. In this way the proper figures will probably be arrived at as there is competition for such goods. Lingerie is a staple Philippine export embroidery line, and it is usually easy to set prices on nightgowns and underclothes by comparing designs and materials. The General Office has made mistakes with respect to prices. In those cases the field has coöperated by taking up the work, it being felt that the chief aim of industrial instruction in schools is educational, and that the financial return to the student worker is not of so much importance as it is to the household worker. But in such cases reorders have always been taken at higher prices.

Many delicate situations arise from the circumstances in which the General Sales Department is placed. Its position with reference to the Filipino people is one of trust. This fact requires the greatest candor toward both merchants and the field. The Bureau has attempted to forestall any criticism by explaining carefully to the field the bases for all prices, the availability of different kinds of work, and the causes for rejections or for reductions in prices.

In 1916, the Bureau of Education issued its first price list in technical bulletins 40–A and B. Economically the issuance of such a list is unsound, because it becomes necessary to give the same quotation for an article no matter what the wages in the different localities are. For instance, in some localities in the Philippines the daily wage is 30 centavos, while elsewhere for the same work it is as high as 80 centavos. Nevertheless, there is no other way in which so large an output from such diverse sources can be handled with justice to all. The prices for the most part represent an adjustment between what the field demanded and what the merchants offered. It will be necessary to revise the list whenever experience shows that particular articles are rated too high or too low.

Yet candor does not always seem to be appreciated by dealers and by the buying public. Often merchants have threatened to take matters to the Bureau of Insular Affairs in order to secure special favors, and retail purchasers have hinted at superior authority in order to secure a reduction of standard retail prices. Such cases illustrate the necessity for keeping the books and price lists of the General Sales Department in such shape that all comers may inspect them.

Policies with respect to retail sales are not so important as those with respect to wholesale transactions, since purchasers see the articles and can take or leave them. One policy, however, is adhered to: In the retail store no competition is offered to local merchants. To the wholesale profit of 10 per cent another profit is added. On wastebaskets this runs as low as 20 per cent, and on fancy lines it is sometimes as high as 100 per cent, the average being 40 per cent. Articles for which regular orders are not received and those which do not correspond to Bureau designs and for which, therefore, orders can not be taken by sample, are disposed of at the retail salesroom. Great care is taken to indicate damaged goods, and these are sold at reduced prices on the last two days of each month. The tags are stamped with the word "damaged" and are marked with both the regular and bargain prices. In this way the retail store keeps the general public in touch with what the Bureau is doing, supplies a local demand, and provides a means of merchandising otherwise unsalable articles.

There are several reasons why the General Sales Department should not show a profit. In the first place there must be no competition with established household industrial systems. The sales department is supposed to go into new territory, establish industries, and commercialize small extant handicrafts. If the extension of household industries were possible at a profit, commercial houses would take it up, and Government activity would not be necessary. The Bureau must look to an expansion not only in the amount of product but also in variety. In order to encourage new workers, rejections and reductions in price on account of defective workmanship must be few. At the same time care must be taken to see that the quality of all work is kept high, so that the product remains creditable. There must also be a very close inspection of all goods in order that the worker may be informed of necessary changes. Such matters tend to make overhead charges great in proportion to the product handled. The Legislature has taken cognizance of this and has provided that all expenses such as those for personnel, rent, and

supplies shall be met from the regular appropriation of the Bureau. This provides for little more assistance than was formerly used in administering school industrial instruction alone, but it has thus far proved fairly satisfactory. The only index to the financial success of the General Sales Department is therefore the difference between its gross purchases and its gross sales plus the inventory.

For provincial industrial departments the intent of the law is different. The general administration by division superintendents and industrial supervisors, and other overhead expenses, are not charged against them; but it is expected that profits will pay for such additional expenditures as clerks and transportation. Hence, as a matter of policy, the profits made on handicraft products merchandised through the General Sales Department should be turned toward the provincial industrial departments rather than to the Insular Government. At the present time the wholesale gains of the General Sales Department average about 10 per cent. It would be feasible to divert this profit to the provincial industrial departments. All losses to the General Sales Department could be met from the retail profits unless there were unprecedented losses due to the purchase of goods subsequently found unsalable. The General Office does not in any way concern itself with the rate of profit made by provincial industrial departments. It states the wholesale selling prices of various articles and the minimum retail prices that may be charged; but the percentages of these prices which shall go to the departments is a matter which is left entirely to division superintendents.

The formation of the General Sales Department with subsidiary provincial departments all dovetailing into the regular organization of the Bureau, affords an opportunity for trying out a new method of administering handicraft industries. The old system in the Philippines is one in which brokers or "cabecillas" are used, each being responsible for the orders and goods entrusted to him, and each controlling a group of workers. It is usual for the merchants to finance their brokers and for these to make advances to the workers. This practice of paying for labor before it is performed is extremely bad from every viewpoint, moral, economic, and commercial. Philippine workers must learn to live on their present incomes and not to borrow. If merchants were not to finance brokers and workers, the amount of capital required would be greatly reduced and the overhead charge for interest would not be made against the product. The Bureau of Education therefore refuses to make any advances, but it sees to it that workers are paid promptly upon

the completion of articles. The provincial industrial departments have sufficient capital to tide over the period between payment to workers and reimbursement from the General Office.

Under the old system, there were sometimes as many as six middlemen standing between a Manila dealer and the workers, the latter receiving only half the amount paid for the article by the dealer. The plan inaugurated by the Bureau of Education provides two intermediary agencies: provincial industrial departments and leaders of centers under whom the workers are directly employed. These leaders are reimbursed by commission, and specially paid traveling instructors act in a general supervisory capacity. The new system eliminates independent brokers who are likely to exploit the workers, substituting paid employees and assistants whose business it is to see that workers receive full pay for each article fabricated. It also insures closer supervision and thus secures greater uniformity and higher quality in the product.

In Circular No. 56 of the U. S. Department of Agriculture, the reasons why a one-crop system of farming is unsafe, are stated as follows:

First. Because the system depends upon market and crop conditions of the one crop alone. Failure of crop or failure of market alike bring disaster.

Second. Because it does not provide for the maintenance of soil fertility.

Third. Because it fails to provide for a sufficient live-stock industry to consume the waste products of the farm and make its waste lands productive.

Fourth. Because it does not provide for a system of farm management under which labor, animals and tools may be used to the fullest advantage.

Fifth. Because it brings return in cash but once a year instead of turning the money over more than once a year.

Sixth. Because it does not produce the necessary foods to supply the people upon the farm and keep them in health and strength.

Seventh. It limits knowledge, narrows citizenship, and does not foster home building, but does encourage commercial farming.

The remedy for these evils is diversification.

INDUSTRIAL ACTIVITIES IN BULACAN PROVINCE.

By R. L. Barron, Division Superintendent of Schools, Bulacan.

The people of Bulacan are energetic and the products of their industry are sought in adjacent provinces and in Manila. In the principal towns there are large markets where fruits, vegetables, handicraft articles, live stock, dry goods, groceries, and farming implements are sold. Traders from Tarlac, Pangasinan, Union, Laguna, and Tayabas, attend the Calumpit market. Besides fishing and farming and such minor occupations as the making of pottery, mats, and plain baskets, a variety of industries are pursued in the province.

One of the oldest of these is ironworking. The ore is obtained from the historic mines at Angat and San Miguel, and the method of smelting is the same as it was a hundred and thirty years ago. The entire output of metal is manufactured into plowshares and bolos, the value of which amounts to ₱75,000 annually. The ore is said to be 75 per cent pure, but lack of capital and transportation facilities have prevented extensive development of the deposits.

Fish culture is engaged in by those who own lands that are flooded at high tide. Ponds are formed by throwing up dikes to a level slightly above high-tide mark. A water-tight gate which may be opened or closed at will, connects with tidewater. The areas vary from a fraction of a hectare to 130 hectares.

During the months of April and May, ponds are stocked with very small minnows taken mostly from Balayan and Batangas bays. These cost from ₱2 to ₱4 per thousand. They sell at five centavos each when six months old and at 15 centavos when one year old. Restocking must be done each season, as the fish do not spawn in these waters. The fish feed upon a kind of moss that grows abundantly in the ponds.

Land suitable for this industry costs about ₱200 per hectare, and the work of preparing the pond sometimes costs as much as ₱500 or ₱600 per hectare. The assessed value of fishponds per hectare is as follows: First class, ₱900; second class, ₱750; third class, ₱550; fourth class, ₱400. The average income per hectare for a first-class pond is ₱100; for one of the second class, ₱50; and for one of the third or fourth class, ₱30 to ₱40 a year. The business gives employment to 2,500 persons and the value of the product is about ₱600,000 a year.

The distillation of alcohol from nipa is important, though owing

to the heavy tax on the product, the business is not so profitable as in previous years. Several distilleries have been closed, the nipa plantations being converted into fishponds.

At Meycauayan the making of leather has been carried on successfully for 50 years. Green hides come through Manila dealers from all parts of the Islands. The yearly product of the factories amounts to about ₱73,000.

Rattan chairs are manufactured in Bocaue, Baliuag, and San Miguel. The raw material is imported from Nueva Ecija, Laguna, and Manila. The product is sold to Manila merchants at prices ranging from ₱18 to ₱50 per dozen. The yearly sales are estimated at ₱75,000.

There are in Baliuag six centers, which produce ₱27,000 worth of slippers yearly. Bocaue and Meycauayan make the common clogs with leather uppers.

Hat weaving was formerly confined to Baliuag but during the past ten years, it has been extended to Pulilan and Quingua. Two kinds of hats are produced: One is of bamboo and the other is of buntal or fiber of the buri petiole. The bamboo is prepared locally, costing almost nothing and the average price of the hat is ₱1.50. Buntal is imported from Tayabas at a cost of 90 centavos for the material used in each hat. The average selling price of the hats is ₱5. Skilled weavers make as high as 80 centavos per day. The product can be bought in Baliuag at any time, but on Wednesdays from 5 to 8 p. m. a special market is held. The value of the total yearly output of hats from Bulacan is estimated at no no less than ₱500,000.

Since early Spanish times, the weaving of piña and sinamay from pineapple and abaca fibers has been carried on in the municipalities of Hagonoy and Bulacan. The industry is not so extensive now as formerly. The approximate income from this source at present is ₱150,000 a year. The prepared piña and abacá fiber is bought from, and the manufactured cloth is sold to, Manila merchants. The ordinary native hand loom is used. Weavers earn 25 centavos a day.

The weaving of silk on hand looms has been carried on in the municipalities of Baliuag and San Rafael for more than sixty years. Although the industry is somewhat depressed at present, it is estimated that 230,000 meters of silk and jusi are produced annually. This is sold to local and export merchants at ₱1.30 per meter. The silk yarn is purchased from Manila merchants who import it from China and Japan. The weavers receive a daily wage of 40 centavos.

Embroidery is the latest industry in the province to be placed

on a commercial basis. The work is being extended rapidly by the Bureau of Education, and by commercial firms. Centers are established by bringing together groups of workers and placing them in charge of competent women. The Bureau through division offices, places orders amounting to from ₱50 to ₱100, with the leaders. When an order is finished it is carefully inspected; if accepted, the division superintendent, issues a check in full payment, first deducting the cost of material that has been furnished by the Bureau.

Checks are drawn on the branch of The Philippine National Bank at Malolos and are payable on presentation at the bank or at the office of any municipal treasurer in the province. The fund from which they are paid is advanced to the division superintendent by the treasurer on the authority of the provincial board. When a shipment of finished articles is made to the General Sales Department of the Bureau, a check in payment is returned and is placed to the credit of the fund. The operating expenses are slight and may be offset by deducting even a fraction of 1 per cent from the price of the work. The province does not desire to make a direct profit from the household centers. Commercial firms usually advance, with an order, funds equal to half the value of the finished work; the leader in turn advances to the workers part payment on each garment, or a daily payment is made.

Practically all of the leaders of the 22 centers organized to work on orders for the Bureau of Education are graduates of the School of Household Industries. These centers have from 15 to 30 workers each, the total membership being about 450. This number does not include a great many intermediate school girls who work on Saturdays. Altogether there are a thousand or more women and girls engaged in commercial embroidery, with an average income of 50 centavos per day of 10 hours. A few men and boys do this work, also. One center is composed entirely of men, and they turn out some of the very best work.

The workers do not come from poor families alone. In the town of Hagonoy embroidering is done in practically every home. The attention of girls who have been taught embroidery in the schools in former years is being successfully directed to this occupation. Those who have completed the primary course do simple commercial embroidering while graduates from the intermediate course are prepared to do high-grade work or to become leaders of centers. It is believed that this will soon become the most important of the minor industries in the province as it offers an opportunity for anyone to earn a living.

BREAD MAKING.

By Mrs. NETTIE S. JOHNSON, Teacher of Domestic Science, Tacloban, Leyte.

Primitive man learned that food prepared from cereals is of greater value in sustaining life and giving strength than any other single food except milk. That he attained great skill in the art of making bread is evidenced by the finding of loaves, much like those of the present day, in the ruins of ancient cities. From time immemorial, bread has constituted the staple starchy food of the world.

Almost every nation, influenced by the variety of grain which it can grow, and the means at hand for preparing it for food, produces a characteristic loaf. The types of bread range from the simple cake made by grinding the grain between stones, mixing the meal into a paste with water and baking it in the ashes of the camp fire, to the loaf of flaky white yeast bread made from patent flour and baked in a modern oven.

All kinds of bread, if properly prepared and given the right care after they are baked, are wholesome, and variety in diet may easily be secured by making frequent changes in this staple article of food.

Any cereal may be ground into flour and made into unleavened bread; but a grain to be used for raised bread must contain gluten, a substance which, when wet, becomes tough and elastic and enables dough to retain the gas formed in it. Gluten is a constituent of wheat and rye, but it is lacking in most of the common grains. Other grains are often mixed with those having gluten in order that they may be used in making leavened bread. As wheat contains more gluten than any other grain, the flour made from it is of better quality and is more widely used than that made from other grains.

Due to the conditions under which the grain is grown and to the different processes of milling, the flour manufactured from wheat is of various grades. Its character is largely determined by the relative proportion of the two chief constituents of the grain, gluten and starch.

Much of the flour on the market sold under various trade names is a blend made by mixing several varieties of wheat, previous to the milling process, for the purpose of giving the flour the desired qualities.

The successful cook can easily determine the characteristics of the various grades of flour and select the kind best adapted to her purpose.

Bread flour is made from hard spring wheat which is rich in gluten and contains a minimum amount of starch. It is white

Measuring.

Domestic-science kitchen, Leyte High School.

or a delicate cream color and has a sweet nutty flavor. It is granular to the touch, will not cake when grasped in the hand, readily passes through the sieve, and absorbs a relatively large amount of moisture.

Pastry flour is made from soft winter wheat and contains a large proportion of starch. It has a delicate sweet taste, is

soft and oily to the touch, and when grasped will retain the impress of the hand. It passes through the sieve less readily and absorbs less moisture than bread flour and gives a tender, delicate texture to articles made from it. Pastry, cakes, and other mixtures raised with baking powder, are of better quality when made from pastry flour.

In the Philippines where the consumption of bread is rapidly increasing, bread making becomes a fascinating study. At pres-

Kneading bread.

ent no small portion of the bread consumed is made of low-grade or deteriorated flour. The bakers often work in quarters which can not be considered models of cleanliness, and display their finished products in places open to dust and flies. Large quantities of bread are distributed by agents who carry it through the streets in dirty uncovered baskets. The unsold pieces, after having been handled innumerable times by prospective customers, are returned to the bakers to be reheated and again offered for sale.

When bread making in the average Filipino home is contemplated, some very serious obstacles present themselves. Fuel

is often scarce and expensive. Proper cooking utensils and an oven are not included in the household equipment. Short-sighted provincial merchants put prohibitive prices on necessary cooking utensils and on flour, which must be imported. The inadequate storage facilities of the average home necessitate the buying of food supplies in very small quantities and the articles

Bread just taken from the oven.

required in bread making are often not at hand when needed. Accurate recipes adapted to the use of common materials are not widely known, and the results obtained by the inexperienced cook are too uncertain to warrant the use of expensive materials. New possibilities for the equipment and supplies in common use are easily overlooked.

It is the purpose of school instruction in cooking to overcome some of the difficulties mentioned. A great variety of quick breads made from rice, wheat flour, corn meal or from a com-

bination of any of them, are inexpensive, require little fuel for baking, and can readily be prepared with the equipment found in the average home. Even small girls take great interest in making them and with a little training secure good results.

The common rice cake, "bibinca," when properly prepared and baked without being smoked, is wholesome and palatable. The popular rice muffin, "poto," which is steamed over the deep frying pan or "carajay," when eaten with shredded coconut as is customary, furnishes an excellent substitute for the bread and butter enjoyed by children of other countries. Making these or similar foods common to the locality should be a part of the work of the school cooking class.

Such foods as corn bread, corn rolls, muffins, biscuits, cinnamon rolls, bread sticks, and Parker House rolls, can be successfully baked in a clay oven, or in the ordinary carajay by using an improvised cover made from a petroleum can. That these breads are popular is shown by the steadily increasing demand for them in the school kitchens where they are made.

The proper method of procedure in preparing the flour for quick breads is to sift it before it is measured, and to use a spoon in dipping it into the measuring cup.

In this climate baking powder has a tendency to cake in the tins, and it is well to put the contents of a newly opened can through the sifter before measuring from it.

The flour, baking powder, and other dry ingredients should be thoroughly sifted together. Cutting the shortening, lard, butter, or Crisco into the flour, and mixing the liquid and dry ingredients with a spoon, produce better results than hand mixing. Kneading is fatal to baking powder dough. Quick work in mixing, soft dough, light handling, and a hot oven for baking, are essential to the successful making of quick breads.

With the recipes given, the pupils in the Leyte High School secure uniformly good results. The manner in which they are written is different from that found in the ordinary cookbook for the reason that the common abbreviated style is not always understood by those in domestic science classes, and is not conducive to correct grammatical expression. The arrangement is made with a view to economy of time and labor, and the full directions are given in each recipe to obviate doubts in the mind of the pupil as to the proper method of procedure.

With these recipes the common teacup, and the teaspoon and tablespoon of standard size are used as measures. All measurements are made level unless otherwise stated. Butter, lard, and Crisco may be used interchangeably, and water or coconut

milk may be substituted for milk, but the best results have been obtained with the use of the ingredients mentioned. In diluting evaporated milk, one part milk and two parts water are taken; with condensed milk, two teaspoonfuls are used to one cupful of water.

Making a bread cooler.

Poto.—Wash 1 liter of rice; pour over it three cupfuls of water; soak it for a short time and grind it. Into the ground rice put ¾ cupful of coconut milk.

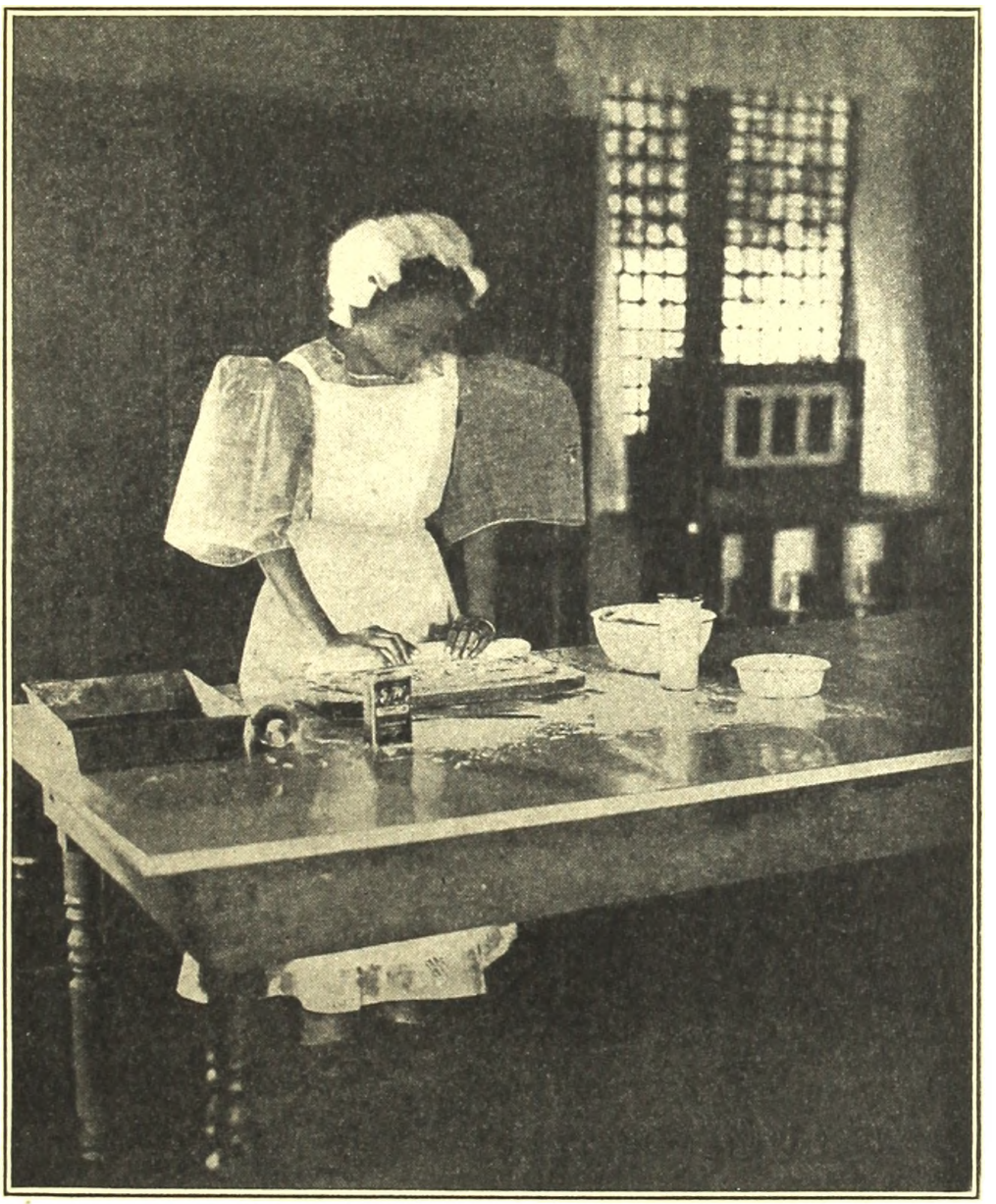
Mix 6 level teaspoonfuls of baking powder with 1½ cupfuls of sugar and stir it into the rice.

Fill small cups nearly full of the mixture and cook in a steamer over boiling water.

When well done, set the cups in cold water for a few minutes, after which the muffins can be easily removed from the cups.

Serve with shredded coconut.

Bibinca.—Wash 1 liter of rice; pour over it 4 cupfuls of water; soak for a short time and grind it. To the ground rice add ½ cupful of tuba.



Preparing the dough for cinnamon rolls.

Dissolve 1½ cupfuls of native sugar in 1¾ cupfuls of coconut milk, and cook to a thick syrup. Cool the syrup slightly and pour it into the rice mixture.

Let the mixture stand until it is light, about 3 hours, and bake in the customary bibinca tins.

Hot cakes.—Into the sifter put 1 cupful of sifted flour, 3 teaspoonfuls of baking powder, ½ teaspoonful of salt and 1 teaspoonful of sugar. Sift the ingredients 4 times.

To 1 tablespoonful of evaporated milk add ½ cupful of water. Stir into the diluted milk 1 well beaten egg.

Stir the milk and egg into the flour, add 1 teaspoonful of butter and beat vigorously.

Bake on a hot well greased griddle, turning the cakes but once. Serve immediately.

Corn griddle cakes.—Into the sifter put 2 cupfuls of cornmeal, 1 cupful of sifted flour, 1 teaspoonful of salt, 1 tablespoonful of sugar, and 4 teaspoonfuls of baking powder. Sift 4 times.

Beat 1 egg until light and add it to 2 cupfuls of diluted milk.

Stir the milk and egg into the meal, add 1 tablespoonful of melted butter and beat vigorously.

Bake on a hot well greased griddle, turning the cakes but once. Serve immediately.

Rice griddle cakes.—Into the sifter put 2 cupfuls of sifted flour, 1 teaspoonful of sugar, ½ teaspoonful of salt and 3 teaspoonfuls of baking powder. Sift 4 times.

To 1½ cupfuls of diluted milk add 1 well beaten egg and 2 cupfuls of cold boiled rice. Stir the liquid into the dry ingredients and beat vigorously. The batter should be thin.

Bake in thin cakes on a hot well greased griddle, turning the cakes but once. Serve immediately.

Rice muffins.—Into the sifter put 2½ cupfuls of sifted flour, 6 teaspoonfuls of baking powder, and ½ teaspoonful of salt. Sift 4 times.

To 1½ cupfuls of milk add 1 well beaten egg and 1 cupful of cold boiled rice.

Stir the liquid into the dry ingredients and add 2 tablespoonfuls of melted Crisco. Beat vigorously.

Bake in muffin pans in a quick oven. This recipe makes 9 muffins in deep-cupped tins about 7 centimeters in diameter.

Muffins.—Into the sifter put 2 cupfuls of sifted flour, 8 teaspoonfuls of baking powder and ½ teaspoonful of salt. Sift 4 times.

Beat ½ cupful of Crisco and ¼ cupful of sugar to a cream. Add to it 1 well beaten egg.

Add the flour and ¾ cupful of milk alternately to the sugar mixture, and beat vigorously.

Bake in muffin pans in a quick oven. This recipe makes 9 muffins.

Corn muffins.—Into the sifter put 2 cupfuls of sifted flour, 6 teaspoonfuls of baking powder, ¾ cupful of cornmeal and 1 teaspoonful of salt. Sift 4 times.

Cream 3 tablespoonfuls of Crisco with ¼ cupful of white sugar, and add to the mixture 2 well beaten eggs.

Dilute ½ cupful of condensed milk with ½ cupful of cold water.

Add the flour and the milk alternately to the sugar mixture and beat vigorously.

Bake in hot, greased muffin pans in a quick oven. This recipe makes 9 muffins.

Cooking classes find it easy to dispose of their wares.

Drop biscuit.—Into the sifter put 4 cupfuls of sifted flour, 6 teaspoonfuls of baking powder and 1 teaspoonful of salt. Sift 4 times.

Stir into the flour 1½ cupfuls of undiluted evaporated milk. Drop the stiff batter by spoonfuls into a greased pan and bake in a quick oven.

Baking powder biscuits.—Into the sifter put 2 cupfuls of sifted flour, 4 teaspoonfuls of baking powder and ½ teaspoonful of salt. Sift 4 times.

Cut into the flour 2 tablespoonfuls of Crisco.

Add enough milk, about ¾ cupful, to the flour to make a soft dough, mixing it with a spoon.

Pour the dough onto a well-floured board, and add enough flour to roll. Roll out lightly to a thickness of a little more than 1 centimeter.

Cut into small discs, place in a greased pan and bake in a quick oven.

Quick Parker House rolls.—Into the sifter put 2 cupfuls of sifted flour, 4 teaspoonfuls of baking powder and ½ teaspoonful of salt. Sift 4 times.

Cut into the flour 2 tablespoonfuls of Crisco.

Add enough milk, about ¾ cupful, to the flour to make a soft dough and mix it with a spoon.

Pour the dough onto a well-floured board, and add enough flour to roll. Roll out lightly to a thickness of a trifle more than 1 centimeter. Cut into discs about 7 centimeters in diameter (a milk can makes a cutter of the desired size), brush with butter one half of the surface of each disc, and fold the other half over it. Put into a greased pan and bake in a hot oven.

Freshly roasted peanuts ground into butter and seasoned with salt may be used to brush the discs instead of butter.

Bread sticks.—Into the sifter put 2 cupfuls of sifted flour, 4 teaspoonfuls of baking powder, and ½ teaspoonful of salt. Sift 4 times.

Cut into the flour 2 tablespoonfuls of Crisco. Add enough milk, about ¾ cupful, to the flour to make a soft dough, mixing it with a spoon.

Pour the dough onto a well-floured board, and add enough flour to roll. Roll out lightly to a thickness of about 1.25 centimeters.

Brush the surface lightly with butter, sprinkle lightly with sugar, and cut into sticks about 2.5 centimeters wide and 10 centimeters long. Place in a greased pan and bake in a quick oven.

Cinnamon roll.—Into the sifter put 2 cupfuls of sifted flour, 4 teaspoonfuls of baking powder, and ½ teaspoonful of salt. Sift 4 times.

Cut into the flour 2 tablespoonfuls of Crisco.

Add enough milk, about ¾ cupful, to the flour to make a soft dough and mix it with a spoon.

Pour the dough onto a well-floured board, and add enough flour to roll. Roll out lightly to a thickness of a little more than a centimeter. Brush the surface with butter, sprinkle with sugar and cinnamon, roll up like a jelly roll, and cut into slices about 2.5 centimeter thick. Place, cut side down, into a greased pan, and bake in a quick oven.

Scones.—To ½ cupful of undiluted evaporated milk add 1 well beaten egg.

Into the sifter put 2 cupfuls of sifted flour, 6 teaspoonfuls of baking powder and ½ teaspoonful of salt. Sift 4 times.

Cut into the flour ¼ cupful of Crisco.

Add the milk and egg to the flour, mixing it to a soft dough with a spoon.

Pour the dough onto a well-floured board, and add enough flour to roll. Roll out lightly to a thickness of about 1.25 centimeters. Cut into desired shapes, preferably diamond, put into a greased pan and bake in a quick oven.

Corn-meal rolls.—Put 2 tablespoonfuls of condensed milk into a cup and add enough water to half fill the cup.

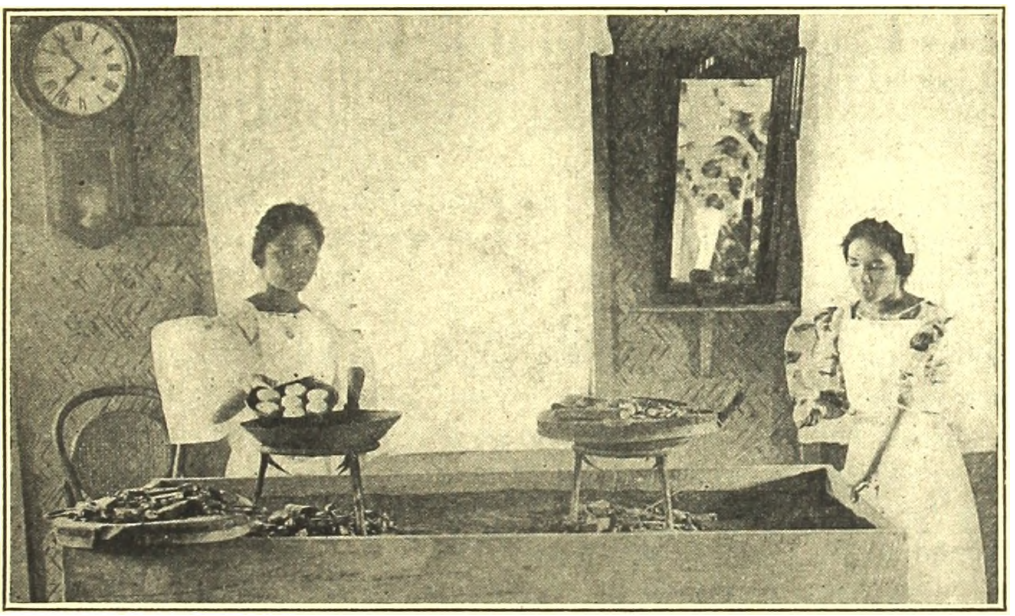
To the diluted milk add 1 well beaten egg.

Into the sifter put 1¼ cupfuls of sifted flour, ¾ cupful of corn meal, 6 teaspoonfuls of baking powder and ½ teaspoonful of salt. Sift 4 times.

Cut 2 tablespoonfuls of Crisco into the flour mixture.

Stir the liquid into the dry ingredients, mixing them to a soft dough with a spoon. Pour the dough onto a well floured board, and add enough flour to roll. Roll out lightly to a thickness of a little more than a centimeter. Cut into discs about 7 centimeters in diameter, brush with butter one half of the surface of each disc, and fold the other half over it. Put into a greased pan and bake in a hot oven.

Lessons on the making of yeast bread are less readily incorporated into the program of a school cooking class than are those on quick breads, because of the time required for the completion of the process; but plans may be devised whereby



Making fried cakes in a "cauale" on a native stove.

pupils may receive instruction in this important branch of cookery.

The ingredients which enter into the composition of a loaf of bread are few and of the simplest type, yet the changes through which the materials must pass in the process of making it are most perplexing to the inexperienced cook. Proficiency in the art of breadmaking can be attained only by actual practice.

Although individual opinions vary somewhat as to the properties of good bread, it is generally conceded that bread of high quality has a crisp, light-brown crust which softens in a short time after the removal of the bread from the oven, and a light elastic crumb of uniform texture. It is of a creamy white color, has a sweet pleasant flavor and an agreeable odor.

While quality in ingredients is essential to the production of good bread, the texture and flavor of the loaf depend quite as much on its preparation as on the materials of which it is made. On general principles, and to avoid the introduction of harmful bacteria into the dough, scrupulous cleanliness in every detail of the process is highly imperative. Cognizance must be taken of the facts that the life activities of the yeast plant are suspended at low temperature and that the subjection of the plant to a temperature of high degree is fatal. The thorough mixing of yeast with the flour and water is important. Oxygen promotes the growth of the yeast plant but exposure of the bread mixture at any stage to drafts is detrimental. The kneading should therefore be done in a warm place free from currents of air, yet in such a manner that all parts of the dough will be exposed to the air.

Some of the causes of heavy, soggy bread are poor flour, bad yeast, insufficient rising, awkward handling, and underbaking. Large holes in bread may be attributed to lack of kneading, too long fermentation, too moist dough, or an overheated oven during the first stage of baking.

The heat required for baking bread depends upon the size and shape of the loaf and the number of loaves to be baked at one time. To insure evenness and quickness in baking, the width of the loaf should not exceed ten centimeters. The temperature of the oven should be higher for small loaves, rolls, and biscuits, than for large loaves. A large number of loaves placed in an oven at the same time will somewhat reduce the temperature of the oven, and due allowance should be made therefor. The heat is right for loaves, if a piece of white paper laid on the floor of the oven turns a light yellow in about four minutes. For biscuits and rolls, the paper should scorch to a deep yellow or a light brown. Ordinarily loaves weighing about half a kilogram will bake in about one hour, while the time required for rolls and biscuits ranges from twenty to thirty minutes.

Upon removal from the oven, bread should be cooled quickly. A good method is to place it on a wire cooler so that all sides are exposed to the air.

In a moist tropical climate, bread keeps well in a covered box with sides made of fine wire screen. Bread should never be wrapped in a cloth. Only as many loaves as can be consumed in two or three days should be baked at one time.

Good bread may be made by using potato yeast as a leavening

agent. Directions for making one kind of this yeast and for using it, are given in the paragraphs which follow.

Potato yeast.—Cook 2 white potatoes of medium size in 2½ cupfuls of water. Take the potatoes from the water, mash them very fine and return them to the water in which they were boiled, which should be about two cupfuls. While the potatoes are cooking, boil one level tablespoonful of hops (they may be purchased from grocery firms in Manila) in a generous cupful of water and strain the water. Add 1 cupful of the hop water to the potatoes, and stir into the mixture 2 level teaspoonfuls of salt and 2 level tablespoonfuls of sugar.

Put the mixture into a jar, cover it, and let it stand until the potatoes rise to the top, which will be in about two days. The yeast is then ready for use.

Bread recipe.—In the evening boil 2 potatoes of medium size in 4½ cupfuls of water. Take the potatoes from the water, mash them fine, and return them to the potato water which should be about 4 cupfuls.

To the potato water add 2 level teaspoonfuls of salt and 4 level tablespoonfuls of sugar. When the mixture is lukewarm add the potato yeast. Cover it and set it aside until morning when it should be light and foamy.

In the morning put 4 level tablespoonfuls of sugar and 4 level tablespoonfuls of lard into a large mixing bowl, and pour over the ingredients 2 cupfuls of boiling water. When the liquid has cooled to lukewarm, stir the potato yeast into it, reserving about 1½ cupfuls for a start for the next baking. Stir into the liquid enough sifted flour to make a stiff sponge and beat it vigorously. Cover the sponge and set it in a warm place. When it is light, which should be in about one hour, stir into it enough sifted flour to knead.

Knead the dough for about twenty minutes, return it to the mixing bowl and set it in a warm place to rise. When it has doubled in size, which should be in about one hour, mold into loaves, rolls, or biscuits, and put into greased pans. Cover, and set it aside to rise. When the dough has again doubled in size, put it into a well regulated oven and bake it.

Recipe for bread raised with tuba.—Into a mixing bowl put 1 level tablespoonful of lard, ½ level tablespoonful of sugar, and 1 level teaspoonful of salt. Over these ingredients pour 2 cupfuls of boiling water. When the liquid is lukewarm add ½ cupful of tuba (linogo) which has been strained through several thicknesses of thin cloth.

Stir into the liquid enough sifted flour to make a stiff sponge, and beat it vigorously. Cover the sponge and set it aside until it becomes light. When it is light and full of bubbles stir into it enough flour to knead.

Knead the dough for fifteen or twenty minutes, return it to the mixing bowl, and set it in a warm place to rise. When it has doubled in size, shape it into loaves or rolls as desired, put it into greased pans and set it aside to rise. When the loaves have risen to about twice their original size put them into the oven to bake.

Cinnamon rolls.—To about 1 liter of bread sponge, made by either of the above recipes, add 1 well-beaten egg, 2 level teaspoonfuls of sugar, and 2 level teaspoonfuls of butter. Stir into the sponge enough sifted flour to knead.

Knead the dough for ten or fifteen minutes, put it into a mixing bowl, and set it in a warm place to rise. When it has doubled in size, pour it out on a well-floured board, roll it to a thickness of about 1 centimeter, spread it with butter, sprinkle it with sugar and dust it with powdered cinnamon. Roll up the dough like a jelly roll, cut it into pieces about 5 centimeters thick, and put the slices—cut side down—into a greased pan. Let them rise to double in size, and bake them in a quick oven.

When bread dough is ready to mold, a pleasing variety of fancy rolls may be made by forming it into different shapes and adding sugar, spices, fruit or nuts.

THE NATURAL LAW OF WORK.

We have a natural law of work, the substance of which is this: Work and you will reach a higher mental development; cease work and you will degenerate.

The law can be established scientifically if need be, but it is not necessary, for in this case common observation, science, and religion all agree. Each of us knows he will deteriorate physically and mentally if he ceases constructive work, and history shows that this is also true of communities, of nations, and of civilizations. Our proverbs, sacred and secular, affirm it. The cycle of work to wealth, wealth to idleness, idleness to poverty, and poverty to work again, is an evidence of inefficiency following inaction. Mental and physical activity are mutually stimulating; thinking and doing are reciprocal aids.—Education for Industrial Workers, by Herman Schneider,

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Mr. Vanderlip, president of the National City Bank of New York, when asked what qualifications influenced his decision in choosing a man to fill a high position answered:

"Personality first, or shall I say, charm? By personality I mean a man's ability to make people feel that he is frank, humane, capable, honest, red blooded—a broad-gauge man. He must be a good team worker—that is very important. He must be more concerned in getting a thing done than in getting credit for it. He must not be overconcerned about advancement. Before I select a man for a responsible position I take special pains to make sure that he will work harmoniously, because the effectiveness of an organization does not depend solely on the brains in it but rather on the brains being coördinated, on everybody pulling together. This demands a measure of unselfishness. Finally, in all things a man must have common sense."

THE NEEDLEWORK SITUATION IN THE UNITED STATES.

By Mrs. Mary W. MacNeel, General Office.

From San Francisco to New York, the fancy needlework departments at all of the large stores show the same combinations of lace and embroidery that the Bureau of Education is using, and the Philippine work is considered very much up-to-date. It is kept entirely separate from French. When it is asked for, the clerk frequently says, "You know Philippine embroidery has no lace on it." The characteristics are brought out as the articles are exhibited. Attention is usually invited to the calado or drawn work. Everywhere the clerks state that there is a great demand for the Philippine product.

A thorough examination of the linen departments of the greatest stores leads to the conclusion that mosaic embroidery, filet drawn work, and typical Philippine stitches must be insisted upon in the work here. All of the more expensive linens are in such styles.

Hemstitching on all kinds of embroidery is very popular this year and it is always in good taste. Underclothes have much single hemstitching instead of scalloping. The newest nightgowns are scalloped on the bottom and are made to clear the floor by 2 inches. Chemises are divided into two styles, long and short. The former takes the place of a corset cover and short skirt. The latter is worn instead of an undervest. Some chemises are finished straight around at the bottom and others are made in envelope style. The more stylish ones are finished "ball top" and without shoulder straps, while the ordinary ones have shoulder straps.

Many table linens are decorated with double hemstitching. This is done in block design; that is, enough threads are pulled out in the hemstitching process to leave squares of about 5 millimeters. Correct sizes for linens are set out below, the best sellers being indicated by stars. Unless otherwise stated, the sizes given are for finished articles.

HOUSEHOLD LINENS.

TRAY CLOTHS.

Oblong.	Oval.	Round.
8 by 12 inches.	6 by 11 inches.	8, asterisk 12, and 15 inches.
10 by 14 inches.	7 by 13 inches.	
*12 by 18 inches.	10 by 14 inches.	
*14 by 20 inches.	*12 by 18 inches.	
*16 by 24 inches.	*14 by 20 inches.	
18 by 27 inches.	*15 by 24 inches.	
20 by 30 inches.	18 by 27 inches.	

Tray cloths are similar in shape and size to those of Bureau of Education design. They are made up from a single piece of material or from two pieces which are sewed together far enough around so as to form a bag in which to insert an asbestos mat.

NAPKINS.

Dinner napkins:
*24 or 26 inches square with 1-inch double hemstitched hems.
Luncheon and tea napkins:
20 inches square, with 1-inch double hemstitched hems.
18 inches square, with ¾-inch double hemstitched hems.
*15 inches square, with ½-inch double hemstitched hems.
16 inches square, with ½-inch double hemstitched hems.

Many French luncheon napkins have a cluny edge similar to Bureau of Education designs 5511–4, 6a, 3a and 2*b*. This lace is whipstitched on a napkin and looks very well. Filet lace is also handled in the same manner.

Luncheon napkins with mosaic corner designs are on sale in Washington, D. C., at from ₱9 to ₱16 per dozen, but these are very poorly done, hemstitching being substituted for the mosaic edge.

Tea napkins:
12*, 13, and 14 inches square, usually with scalloped edges.

All napkins may be scalloped but a great many people prefer them hemstitched, especially in dinner and luncheon sets.

LUNCHEON SETS.

13-piece sets:
6 doilies, 6-inch.
6 doilies, 10-inch.
1 centerpiece, 24-inch.
*25-piece sets:
12 doilies, 6 or 8 inch.
12 doilies, 10 or 12 inch.
1 centerpiece, 24, 27, or 30 inch.
36-piece sets:
12 doilies, 6-inch.
12 doilies, 8-inch.
12 doilies, 10-inch.
1 centerpiece, 27 or 30 inch.

Madeira work retails cheaper in the United States than it can be made wholesale in the Philippines: 13-piece luncheon sets sell at ₱6 and ₱8; the scallops are beautifully made with the buttonhole stitch. A set similar to the plainest of those sold by the Bureau of Education brings ₱36.

TABLECLOTHS.

Round.	Oval.	Rectangular.
*72, *80, *90 and 108 inch.	*72 by 80 inches.	*80 by 80 inches.
	*72 by 90 inches.	*80 by 108 inches.
	72 by 108 inches.	90 by 108 inches.
		90 by 126 inches.
		90 by 144 inches.

The more elaborate and expensive tablecloths are usually large. These all have mosaic designs combined with filet. The open-work designs usually depict scenes from Lohengrin or some other German opera. This is so in both the real and darned-in filet. Most of these tablecloths are priced at about ₱200. All of the good Bureau of Education designs are in the very best style and find a ready sale in the United States.

TEA AND BRIDGE CLOTHS.

Square, *36, *45, and 54 inches.
Small round tea cloths, 36, 54, and 60 inches.

TOWELS.

Most towels have designs at one end. The other end may have a scallop to match, or it may be double hemstitched. Mosaic or Italian cutwork designs are better kept away from the outer edges. A design may have a double row of hemstitching around it, separated by half an inch or less of material.

Lavatory or guest towels:
*15 by 24 inches, and 18 by 27 inches with design at one end only.
Medium-sized towels:
*20 by 40 inches or 24 by 42 inches, with design at one end only.
Very expensive towels:
*24 by 45 inches or 27 by 45 inches.

BEDROOM OR BOUDOIR SETS.

Bedroom sets in four pieces are much in demand and bring goods prices. They are usually made on fine batiste or pearline. One and one half inch hems are used on many runners, and these hems are generally put on with drawn work or fancy hemstitching ¼-inch wide. Calado and filet drawn work make boudoir pillows very salable, but such work is not used on baby pillows. It would be advisable to stamp the sets on one piece of cloth so as to keep them together, even if they may need to be separated for embroidering. The measurements here given refer to the finished articles.

Runners and night-table scarfs:
18 by 36, 18 by 45, and 18 by 54 inches.
20 by 36, 20 by 45, and 20 by 54 inches.

A night-table scarf always accompanies each set of 3 runners. The scarf is either 18 or 20 inches square to correspond with the width of the runner.

LINEN BED SHEETS.

These have designs at one end only. All are 108 inches in length; the widths are 72, 80, and 90 inches, finished.

BEDSPREADS.

The bedspreads most worthy of note are those embroidered on fine lawn by cottage workers in Ireland. These are showy and are more heavily padded than those on linen. The embroidery is placed inside of the interwoven border designs of the material.

PILLOW CASES.

Lengths, all *36 inches; widths, *22-½, 25, and 27 inches, finished.

A great many fancy daytime pillows are offered in Chicago. Some of these have an opening on the side with a deep flap, but the newer ones are open at both ends.

FRENCH PILLOW CASES.

(27 inches square inside the flat ruffle.)

Fancy pillows are usually embroidered on batiste or pearline, but the linen stores require genuine knotted filet to be done on linen only.

ROUND CENTERPIECES.

(24, *26, *27, 30 and 32 inch.)

A good many old-fashioned cluny centerpieces with linen centers are on sale in Washington. A very showy centerpiece with cluny insertions and 3-filet medallions combined with Italian cutwork was recently offered there at ₱90. In this centerpiece the cluny was the same as that found in many places in China, where it is known as Chefoo lace.

One wonderful oval centerpiece 22 inches by 36 inches in size, all in genuine Italian filet, was marked at ₱200, retail, in St. Paul. Oval centerpieces, luncheon napkins, runners and tray cloths are very much in demand.

DINING ROOM RUNNERS.

*18 by 36 inches.	*20 by 36 inches.
*18 by 45 inches.	*20 by 45 inches.
*18 by 54 inches.	*20 by 54 inches.
18 by 60 inches.	20 by 60 inches.
18 by 72 inches.	20 by 72 inches.

A great deal of real filet lace is shown in runners and centerpieces. Most of it is Italian, but some is Chinese.

WEARING APPAREL.

HOUSEMAID ARTICLES.

Caps and aprons are very easy to embroider and they bring satisfactory prices. Stiff organdy is used.

HANDKERCHIEFS.

One house in New York that is said to make sales of handkerchiefs alone amounting to ₱2,000,000 a year, is willing to place orders up to 150,000 dozens, but the field here is too limited to warrant the taking of such a contract. In order to avoid too much tariff and to secure a very commercial handkerchief the firms are sending out hemstitched handkerchiefs to have the corners embroidered. The idea is a very good one and is likely to bring the Bureau of Education into the handkerchief field. In this work it is believed that a frame cannot be used, but that the embroidering must be done over the finger as in Europe. Placing the work in a frame is likely to strain or tear the hem.

Different concerns would like to have the Bureau of Education make a handkerchief to sell in the United States for ₱1, the embroidered corner not to cost more than 40 centavos. This can be done with simple designs. One firm shows designs much like some of those of the Bureau of Education for 1915–16.

From a study of the wholesale and retail market, it appears that the best workers in the Islands could make much more money on handkerchiefs by doing exceedingly high-grade work. The kind selling at retail in New York for ₱80 or ₱90 could well be made in the Philippines for ₱20. The work on these looks like some of the fine old Philippine embroidery such as is still made in places where the workers have not learned to commercialize their designs. The orders for such handkerchiefs are necessarily very small.

NECKWEAR.

Neckwear undergoes so many variations of style in six months that it would be impossible for Philippine workers to keep up with the changes. It is made on the finest of Swiss organdy. There are about ten standard models that are easily made, and only these should be attempted here. A great many fine collars, standard in style and material and exactly like those supplied by the Bureau on a recent large order, are being reordered.

WAISTS.

The best French embroidered waists are no better than can be produced in the Philippines; but it would be impossible for

the Bureau of Education to make up the finest articles. These can be produced at a profit when the American wholesale embroidery houses have established make-up departments in Manila as they are now planning to do. Pearline, fine linen, batiste, voile and organdy are used.

GOWNS.

The lowest priced Philippine gown exhibited in any of the stores at Washington last summer sold at ₱5; the highest, ₱14. The 5-peso gown had scalloped kimono sleeves, a scalloped neck, and a yoke with a small single-flower design that was worked out in decreasing numerical units; there was a flower between the eyelets also. In going over the bargains in hand embroidered goods, it is surprising to see that the cheap French gowns do not compare favorably with the low-priced Philippine gowns. Almost all are on batiste or pearline.

Set-in sleeves are found only in the most expensive gowns. Bias flounces are being worn on skirts. Very few embroidered dresses or waists on cotton materials are shown.

ARTICLES FOR INFANTS.

A great many baby articles are exhibited in Washington. They should all be on the finest white batiste or pearline.

In New York the firms insist that articles for infants be pure white, that they have little or no calado, and that the designs be small and dainty; bugs should not be represented, as there is a prejudice against such ornamentation in infants' clothing. The designs in baby pillows should be kept away from the center. For the wholesalers, when ruffles are used they are gathered to the pillow with an embroidery beading, but for other trade the beading may be superseded by a scallop. A gathered ruffle should be from 1 to 1½ inches wide, and a plain flat ruffle should be from 1 to 2¼ inches wide. Featherstitching is very good on all baby articles this year. Baby dresses and skirts for commerce are classified as follows:

SHORT DRESSES, USUALLY MADE FOR CHILDREN SIX MONTHS OLD.

Size.	1.	2.	3.	4.	5.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*
Length from front of neck to bottom of hem	20	21	22	24	25
Length of sleeves inside seam	4½	5¼	6¼	7⅛	8⅛
Width around wrist	8	8½	8½	8⅝	8⅝
Width across chest	9½	10½	11	11½	12
Width across back	9	10	10½	11	11½
Width around neck	11	11½	12	12½	12⅝
Short skirts, usually attached to waist.					
Length from top of shoulder to bottom of finished hem	21½	22½	23½	25½	26½

LONG DRESSES, THE FIRST.

	Inches.
Length from front of neck to bottom of finished hem	27
Length of sleeves inside seam	6
Width around neck	9
Width around wrist	6½

LONG SKIRTS, THE FIRST BABY PETTICOATS.

Length from top of shoulders to bottom of finished hem	27
Length from top of shoulders to bottom of wrist	5

All skirts are from 60 to 72 inches around the bottom.

BABY BONNETS.

Baby bonnets are divided into two styles: Those with fronts that turn back and those without. The latter are usually cheaper. The bonnets have tucks and featherstitching as well as embroidering. The design usually occurs on the piece turned back, while tucks and featherstitching are placed on the body part of the bonnet. The featherstitching may be omitted; tucks are not more than 1/16 inch wide. There are four sizes of these bonnets as follows:

Size 1—
12 inches around the face.
9½ inches around the neck.
2⅞-inch disc in back of bonnet.

Size 2—
12 inches around the face.
10 inches around the neck.
3-inch disc.

Size 3—
14 inches around the face.
10¾ inches around the neck.
3¼-inch disc.

Size 4—
15 inches around the face.
11 inches around the neck.
3¼-inch disc.

BABY BIBS.

Embroidered baby bibs are made up without rubber cloth or waterproof materials, but beneath the bib proper is a pad made of several pieces of cotton cloth sewed together.

BABY AND BOUDOIR PILLOWS.

The sizes given indicate measurements inside the sewing line. Gathered ruffles are 1 or 1¼ inches wide on the smaller pillows and 2 or 2¼ inches wide on the larger ones. These boudoir pillows are so much like the baby pillows in size and design that they are difficult to distinguish from them. Boudoir pillows have very elaborate designs with much calado and drawn work.

Round pillows:
These are 16 or 18 inches, and have a plain scalloped ruffle 2 inches wide.
Square pillows:
*16, 18, and 20 inches square.
Oblong pillows:
*12¼ by 16, *14 by 18, and 16 by 20 inches.

Heart-shaped pillows:
12½ by 16, and *14 by 18 inches.

HAMPER SETS.

These sets consist of one large piece for the top of the basket, two for pockets, one for a pincushion, and one for the back of a chair; small and dainty designs such as wreaths are embroidered in the centers. They are on the finest of batiste or pearline. The five articles should be embroidered on one piece of material, in such a manner as to allow space for make-up when they are separated in the different establishments.

Top.—22 inches square.
Pockets.—12½ inches square. The designs should be placed lengthwise.
Pincushion.—6 inches square.
Back for chair.—15 inches square.

LACES.

Valenciennes laces and insertions ¾ to 1½ inches wide are the best sellers and are easily made. They come wholesale from Europe in the following lengths:

1½-inch width, 25 to 50 yards.
¾-inch width, 50 yards.
2-inch width, 20 yards.

Genuine valenciennes laces retail at from ₱0.60 to ₱4.50 per yard, the price depending on the width. The wider and more expensive laces, come in the shorter lengths. One New York firm shows valenciennes laces similar to those being made here, in 40 and 50 yard pieces just as they come from Europe; but it is considered that 12-yard lengths from the Philippines will be satisfactory for a long time to come.

A clever imitation of filet lace is being made in America. It looks well, sells readily, and is very attractive to persons unacquainted with handmade laces.

Owing to war conditions it is very difficult to buy any high-grade table linens, and all wholesale dealers complain that French as well as German supplies of these can no longer be procured. The big dealers all state that they have quantities of linens paid for in Europe, especially in Germany and Switzerland, but that it is impossible to get them out of those countries. They say that the present embroidery trade can be kept in the Philippines after the war ceases if the prices here are not increased. This seems probable, as these firms would not be establishing make-up houses in Manila if they did not expect them to be permanent.

RELATIVE PROFITS IN SCHOOL INDUSTRIAL WORK.

By GILBERT S. PEREZ, Division Industrial Supervisor, Tagbilaran, Bohol.

It may be taken for granted that all branches of industrial work are in some way profitable to the pupils and to the community, but there is a difference between educational value, which attaches to every course, and commercial gain which means the maximum amount of money for the least expenditure of labor.

In any consideration of the relative financial advantages to be gained from different industrial courses, gardening naturally comes first, since agriculture is the chief occupation in these Islands. In spite of the difficulties encountered in some localities, more than 95 per cent of the school gardens can be made to yield an appreciable profit to pupils; but there are places where it is extremely costly to raise vegetables. Some gardens have been made over rocks or built up from swamp beds. These have produced excellent tomatoes and radishes, but the pupils at work on them cannot be considered as making a profit when the labor expended is taken into account. It is doubtful if gardens should be made in towns where conditions are so unfavorable that the very soil for the plots has to be transported from a great distance, and where the only garden likely to be made in the community will be at the school.

Only vegetables which can be sold should be grown. A pupil ought not be required to plant mustard, greens, and carrots, when neither he nor the people of his barrio can be induced to eat them, especially as there is a ready market for all of the pechay and radishes that his small plot may yield. In Bohol, beets, carrots, and okra are not cultivated, because after three years of trial and demonstration pupils refuse to eat them, and time spent in their production is wasted.

In different provinces profits on industrial articles vary with the cost of transportation of raw material to the workers and of finished articles to the markets. Because of the expense of boxing and shipping, baskets with attached handles which do not nest conveniently should not be made in places remote from Manila and where transportation facilities are unsatisfactory. For example: Baskets Nos. 1013 and 1019 can be made easily, but the cost of shipment is so high that unless these models

can be fitted with detachable handles similar to those on Nos. 1064 and 1066, it will be impossible to make them pay.

The tendency during the past two years has been to increase gains by producing a great number of cheaper but more easily made baskets. Any reduction in the price of materials augments profits. By using heavier weavers or those made of the whole stem, the cost of preparing material in some cases has been reduced fully 90 per cent while the price of the basket has not been diminished 30 per cent. Bureau of Education design No. 1025 at ₱1.10 is apparently a better business proposition than B. of E. design No. 1016 at ₱2; but here the advantage is likely to be offset by the fact that there is a steadier demand for the latter since it is essentially an article for constant use, while the other is only of occasional utility.

In provinces where loom weaving prevails, the making of native cloth is more advantageous than either lace or embroidery, for the demand is usually greater than the supply and the expenses of transportation and packing are eliminated. In the time required for a girl to make a tray cloth or 10 yards of lace for ₱1, she can finish three crêpe camisas which sell at from ₱1.20 to ₱1.60 apiece. The drawback to weaving in the schools is the large floor space that is needed for the looms. This difficulty has not been satisfactorily solved by the small loom, as that is worthless except for the most elementary work. In a few barrios in Bohol, special buildings have been erected to accommodate the looms. Because of the profit in loom weaving, the formation of embroidery and lace centers will be difficult and scarcely advisable in some localities.

In the primary grades, lace making is more profitable than embroidery. If a mistake is made it can be corrected without spoiling the material, while a drop of ink or the accidental falling of a pair of scissors on cloth which is being embroidered, may reduce a girl's compensation on her whole year's product by 25 per cent. If the pupil takes her work home, the frame is more likely to be injured than is a compact lace pillow. If a girl does the first meter of lace well, it is probable that she can complete the other 23 meters satisfactorily; if the first meter is wrongly made, she can cut the inferior work out and begin anew.

The most careful attention and supervision is needed in order that accidents may be avoided and the highest quality secured in embroidery. There is a firm in Manila that is said to reject 25 to 30 per cent of the articles offered by professional embroiderers; and to meet such exacting requirements is much more

difficult for amateurs. Embroidery should be limited to the very simplest of stitches except in communities where the work has for years been established as a home industry. The new Italian cutwork designs which contain only one or two different stitches and those on articles so small that the spoiling of one will not mean total loss, seem to offer the best remuneration for beginners.

There are articles which excessive labor makes unprofitable. Coir mats were an example of this. When first made they were far superior to the usual commercial product, but they were a losing proposition. The warp was made of expensive abacá or maguey fiber which had to be dyed, and an elaborate cabo negro design was painstakingly woven into the woof. The labor required made it impossible to sell the mat at a profit for less than ₱5. In the schools today this mat is made wholly of coir, a material that costs practically nothing in most provinces, and the designs have been eliminated. The cost of production has been so reduced that they pay well even at a low wholesale price. Abacá coil baskets are profitable only when disposed of at fancy prices. Bureau of Education design No. 1402 sells at ₱4, but the returns would be better on lupis trays No. 1450 at ₱1.50 each.

Staple industrial products generally offer better compensation than do fancy goods. Sixty pesos seems a large price for an elaborate tablecloth, but the remuneration is poor. In the time required for its making, an equal number of girls using less thread can finish twelve dozen napkins No. 16–1305 at ₱13.20 per doxen. After a certain point, the placing of more embroidery on a luncheon set means a diminishing rate of compensation. A centerpiece may be artistic and technically perfect, yet few people might be willing to pay for it a sum commensurate with the great amount of time spent in its production. It is true that there are some elegant embroidered articles which may command good prices, but the purchasers are usually wealthy and the market is very limited.

One of the secrets of success in industrial work is the ability to satisfy the market. In Japan the manufacturers are awake to the necessity of suiting their products to the requirements of an ever-changing buying public. If there is a good sale in the United States for Philippine nito and rattan tea trays, the tasks of the Japanese weavers are immediately changed and the American market is soon flooded with imitations. Whether the basket conforms to their idea of the artistic or not never worries the Japanese; they are working for profits.

School training, although specialized, should be broad enough to enable workers to adapt their skill to varying demands. The

popularity of mosaic work will not last indefinitely. Pupils in embroidery should secure present profits from this kind of work, but they must not be allowed to neglect the fundamental stitches upon which their future success depends. If the industrial courses are to have commercial value, training should be broad enough to qualify workers for catering to all of the vagaries of style.

Efficiency means that the right thing is done in the right manner by the right men at the right place in the right time.

Whether we are animated by selfishness or by altruism, the methods, the solution and the results are the same. Ideal, highest efficiency can be attained only through a combination of infinite goodness, infinite wisdom, and infinite power.

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True efficiency means ameliorated conditions for the worker, both individually and collectively—not only for the worker, but also for the employer—not only for the employer, but also for the corporation, and finally for the nation.—Harrington Emerson.

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A man's greatness lies not in wealth and station, as the vulgar believe, nor yet in his intellectual capacity, which is often associated with the meanest moral character, the most abject servility to those in high places and arrogance to the poor and lowly; but a man's true greatness lies in the consciousness of an honest purpose in life, founded on a just estimate of himself and everything else, on frequent self-examination, and a steady obedience to the rule which he knows to be right, without troubling himself about what others may think or say, or whether they do or do not do that which he thinks and says and does.—George Long.

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It is assumed that needlecraft was the pioneer art of the whole world, that the early attempts to decorate textiles by embroideries of colored silks, and the elaborate use of gold and silver threadwork, first suggested painting, sculpture, and goldsmith's work. Certainly early Egyptian paintings imitated embroideries, and we have good ground for supposing that stained glass was a direct copy of the old ecclesiastical figures or ancient church vestments.—Chats on Old Lace and Needlework by Mrs. E. L. Lowes.

THE BUSINESS SIDE OF THE INDUSTRIAL SUPERVISOR'S WORK.

By J. A. Robbins, Division Industrial Supervisor, Pampanga.

The introduction of the commercial courses into the schools of the Philippines has necessitated the organization of the office of the industrial supervisor upon a business basis. Orders are received from the General Office through the division office. The prices are net to the schools, and expenses of transportation are borne by the division office. A working fund for the division industrial sales department is secured by making a small discount from the amounts received from the General Office.

Fabricated articles are forwarded to the division office where they are checked before shipping to the Director of Education. If they are well made and conform to Bureau of Education designs, they are paid for within 30 days; otherwise, no payment is made until the General Office passes upon their value and determines the amount to be paid for damaged articles. Orders received locally are of small consequence compared with those from the General Office, but they are cared for in the same manner as the others.

The division industrial supervisor must keep a close check upon the cost of materials used and on the time consumed in fabricating articles. Carefully made out Forms 153 are of great assistance in comparing profits in the various courses. It is necessary for the industrial supervisor to devise some way to keep his accounts up to date, and, since he has no clerk, to do it with the least possible amount of bookkeeping. In Pampanga a series of blanks have been devised upon which a record of the various transactions is kept. There are separate blanks for the following accounts: Material, orders, fabricated articles, sales, and disbursement of money received. These are prepared and bound together in the division office. Upon one half of a blank is kept an account of quantity and cost of material received from the General Office or purchased by the division office. Upon the other half of the same page is kept an account of material issued to supervising teachers and principals. A page is devoted to each of the following: Embroidery thread, Valenciennes lace thread, cluny lace thread, embroidery material, and miscellaneous material.

Another set of blanks is kept for recording all the orders

accepted from the General Office. These show the quantity of articles wanted, the design numbers, the prices to be received, and the dates of delivery. On still another page there appears a list of the orders accepted by the supervising teachers and principals of the various schools. This record contains the same data relative to quantity and price as the one previously mentioned.

For each school and supervising district, there is a separate set of blanks upon which are entered all articles completed and shipped from the school or district, the price, and the date received at the division office. Upon the same pages are spaces for such items as the names of purchasers, also for tag numbers, and prices received.

When settlement with a school is made, a receipt is taken, the invoice is marked paid, and the sales entries are checked in red ink.

The transactions are all made under the authority of the division superintendent of schools, but owing to the great amount of detail, the actual keeping of accounts falls to the division industrial supervisor.

COPPER TEST FOR COTTON IN LINEN.

As in some other tests for the same purpose, the fabric should be free from all finishing materials, submerged in a copper sulphate solution of 10 per cent and allowed to remain there for ten minutes, rinsed in water, and then submerged in a 10 per cent solution of potassium ferro-cyanide. The linen will have taken on a copper color by reason of decomposition of the ferro-cyanide, while the cotton will remain white.—Cleaning and Dyeing World.

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Article 26 of Japan's new factory law has this provision for the protection of boys entering the employ of a factory:

"In case the factory owner intends to engage as an apprentice a lad who has not yet completed his course at the ordinary primary school, he shall provide measures for his education and obtain the sanction of the Prefectural Governor therefor."

o o o

A youthful Irish chemist having invented an aniline dye, the British government is experimenting with it and is making the inventor a quarterly allowance of approximately ₱6,000.—The India Textile Journal.

BUREAU OF EDUCATION DESIGN MAKING.

By S. J. Rowland, M. Lizaya, and E. Bien, General Office.

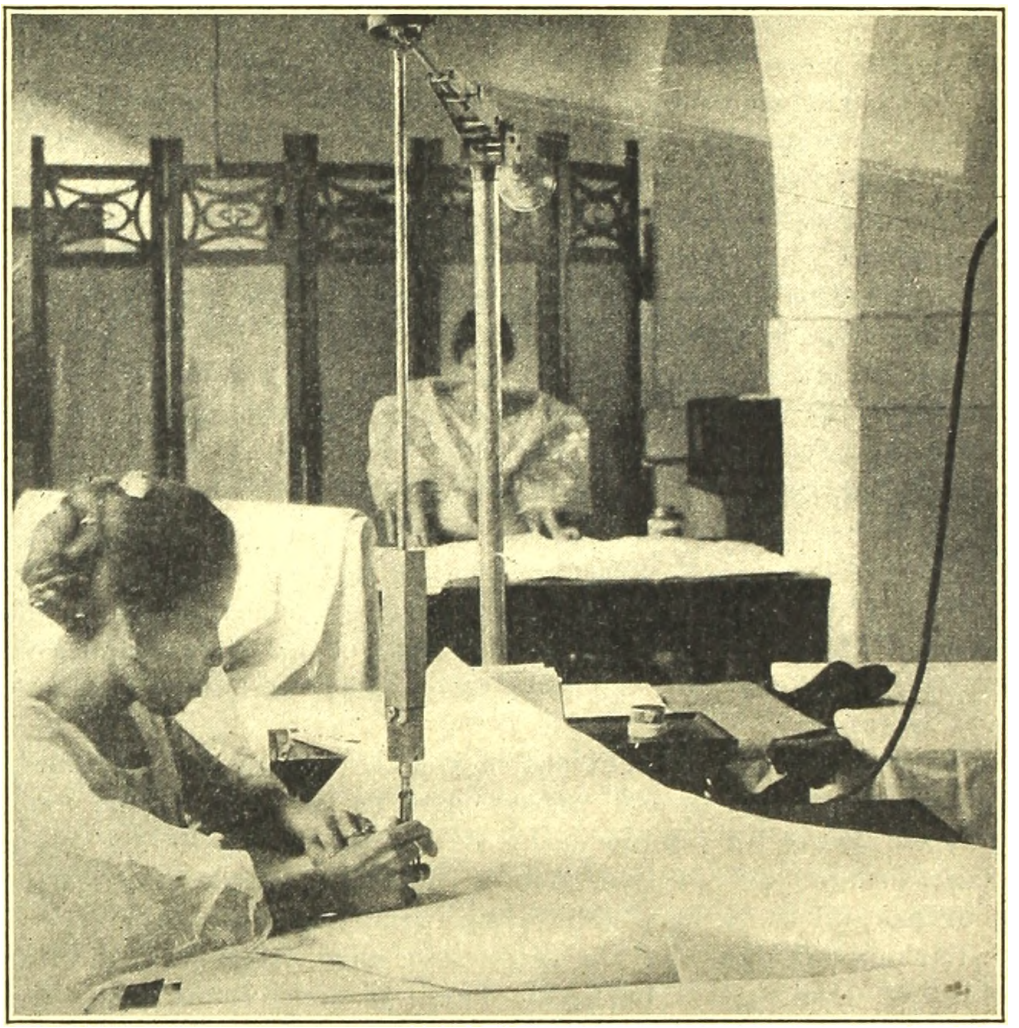
When industrial work was first started in the schools, supervising teachers had to provide not only materials but designs as well. For embroidery they laboriously copied patterns from American magazines and made the desired number of tracings by means of carbon and tissue paper. In basketry every division and almost every town or school produced different styles, due to the facts that distinct types of baskets were found in homes in the various sections, and that each superintendent or supervisor had his schools make what pleased him best.

Such conditions did not tend to elevate the standard of taste; and sales of finished articles were local and occasional, mainly to Americans leaving the Islands. In order to secure or to create a demand for Philippine school products, it soon became obvious that these would have to be standardized and produced in quantities. As a consequence, the control over industrial work within the Bureau of Education was centralized in the General Office, and the present system of issuing to the field standard designs for basketry, embroidery and lace products, was begun.

Bureau designs are sent out in the three forms: Blue prints for basketry, perforated paper patterns for embroidery, and printed sheets for bobbin lace. From the standpoint of origin these designs are of two sorts: Those developed from native sources, and those in which foreign influence predominates.

Basketry designs for the most part have originated in ideas obtained from native baskets. These in some cases have been so altered in the process of standardizing as to lose most of their resemblance to the first models. For example, the Imugan sweet potato baskets of Nueva Vizcaya suggested wastebasket, B. E. design No. 1023, which was fabricated all last season. This season there has been a considerable demand for jardiniere baskets made to fit the usual sizes of clay flower-pots used in the United States. So the color scheme of design No. 1023 was adapted to this use, and B. E. design No. 1081 in sets of nine sizes, was the result. A comparison of the dainty 1081–A with the original Nueva Vizcaya basket illustrates the effectiveness of B. E. design making.

The common native hat called "salacot" has been applied to lampshades in B. E. design No. 1078. In the Bicol provinces the people pin large, gorgeously colored moths (Atticus atlas) to the wall as decorations. Consequently it is not surprising that in Albay and Camarines a moth is represented in divi-



Perforating embroidery designs at the General Office.

sion designs for coil baskets of abaca, and for "pinolpog" embroidery.

In the production of a basketry blue print, an experimental basket is made in the artisan section of the industrial division, either from a native basket, a division design sent in from the field, a foreign basket, or simply from descriptive data. Some times several baskets are made before a satisfactory one is secured. From the approved model a drawing is made by a qualified draftsman who notes on the drawing the dimensions

of the finished article and all necessary specifications. The drawing is sent to the Philippine School of Arts and Trades, where blue prints are made. The number of people usually engaged in the production of basketry designs is: Artisans, 15; draftsmen, 5; blue print makers, 6.

Most Bureau of Education embroidery designs come from the United States, which offers the chief market for the product. Some are adapted from magazines, while others are secured on visits made to American stores and factories by employees of the industrial division of the General Office. Some of the most valuable suggestions for designs have been made by buyers for the large stores which now purchase most of the output, and by an American woman employed as designer in the General Office.

Embroidery designs are developed and decided upon by the embroidery designer, and are drawn by a draftsman under her direction. They are traced in order that the perforated pattern may be made from the tracing, thus allowing the original to be kept for possible further reference. The machines for perforating resemble a sewing machine with its needle unthreaded. Two girls are constantly employed in guiding the rapidly moving needles along the pencil-traced lines. This work is very tedious and nerve racking, owing to the constant noise and vibration of the machines on the tables. The number of people usually employed in the embroidery designing section is four: The designer, one draftsman, and two perforators.

Since in the marketing of its industrial products the Bureau becomes a commercial as well as an educational institution, it must respond to changes in commercial demands. The elements to be considered in the effort to make an article attractive to buyers for the United States market are: Use, appearance, shipping qualities, price, supply. The Bureau therefore eliminates unprofitable designs, and increases the output of designs for readily salable articles so as to be able to do business in a wholesale way.

Wastebasket design No. 1014 was dropped this year because the basket would not nest for shipping, and because its dominant feature, the barrel shape, occurred also in wastebasket design No. 1080. Sewing basket B. E. design No. 1206 was discarded as it required too much work to be profitable at 85 centavos, the highest price for which it could be sold. Trinket basket, design No. 1006, was eliminated for a variety of reasons: It was too large for such a basket and was not well adapted to any

other use; it was too difficult for primary pupils and not profitable enough for intermediate pupils to make.

The production of colored embroidery has been almost entirely discontinued because its sale was local and the supply exceeded the demand. The Bureau had, and still has, difficulty in filling the large orders for white embroidery.

The design-making process is subjected to continual checking, yet errors occasionally reach the field. This is not to be wondered at when it is considered that the total number of blue prints, printed lace sheets, and perforated patterns, issued for use during the season of 1916–17, to August 31, 1916, was 37,693. The kinds and numbers of basketry, furniture, and carving designs for this period were as follows:

Class of work.	Number of designs.	Number of blue prints issued.
Wood furniture	26	175
Bamboo-rattan furniture	14	936
Basketry, ribbed	90	4,423
Basketry, bamboo	12	711
Basketry, coiled	44	1,055
Basketry, platted	6	199
Basketry, miscellaneous	6	171
Carving, bamboo	15	58
Carving, wood	6	3
Craftsman designs	19	1,249
	238	8,980

Colored embroidery, crochet, and weaving designs are also sent out in the form of blue prints. In the case of bobbin lace, printed sheets of patterns are supplied. Several patterns for lace or crochet occur on one sheet. Counting each pattern separately, the kinds and numbers made were as follows:

Class of work.	Number of designs.	Number of blue prints issued.
Cutwork	2	2
Cross and square stitch (colored embroidery)	3	22
Filet lace	56	289
Crochet, Irish and filet	33	356
Bobbin lace	48	21,847
Weaving	19	1,136
	161	23,661

The articles for which perforated designs were made, the varieties of designs made for each article, and the total number of perforations sent to the field for the season of 1916–17, to the end of August 1916, were as follows:

Article.	Number of varieties of perforations.	Number of perforations issued.
Nightgowns	13	65
Baby clothes	55	1,269
Neckwear	14	59
Flounces and ruffles	11	206
Kimonos	4	33
Bed sets	3	15
Handkerchiefs	38	472
Tea cloths	8	105
Tablecloth sets	8	36
Tray cloths	16	775
Napkins	22	542
Luncheon sets and centerpieces	37	327
Towels	6	254
Runners	16	272
Miscellaneous	15	622
	266	5,052

Since the above tables were made out, many other designs have been issued on requisitions from division offices. Hereafter, it is believed that fewer perforated patterns will need to be sent out, because so much stamping is now being done by the General Office and by commercial firms before goods are sent to division offices. Stamping insures greater accuracy and it lessens the expense of the General Office design service. By removing the necessity for stamping goods at the division offices, the materials can be put into the hands of the workers with less delay.

The making of designs by the Bureau of Education has been fully justified by commercial results: The output and sales of handicraft products are today larger than ever before, and they are far beyond what was hoped for in the days of independent industrial activity. Also from an educational standpoint, the great improvement in taste and workmanship displayed, is proof that the Bureau has made no mistake in issuing its own standard designs.

Whether or not the family meal is healthful for children depends not only on the food materials selected but also on the way in which they are cooked. Simple methods are to be preferred from the standpoint of health as well as from that of the housekeeper's time. All dishes that are likely to contain overheated and scorched fats, such as foods carelessly fried in a pan in a small amount of fat, should be avoided.

The advantage of putting the meal on the table promptly and of having foods served in individual portions, or at least ready to eat when they are brought to the table, should be kept in mind.—Weekly News Letter.

THE VILLAR SETTLEMENT FARM SCHOOL.

By W. J. CUSHMAN, Division Industrial Supervisor, Zambales.

The Villar Settlement Farm School was established in 1907 in a community of Negritos the majority of whom had never seen a plow, a hoe, or even a sewing needle. Few ventured among them without police protection. The school was started with about 15 pupils, the first teacher being a half-blood Negrito who had been raised and educated in town. The equipment consisted of a chart, some slates, and a few pencils.

The school has advanced steadily until the four primary grades are now represented. There are more than 40 pupils; a principal of second-year secondary attainment; an assistant principal of first-year secondary attainment; a Negrito teacher, and a Negrito matron, with fourth and third grade attainments, respectively.

The boys began gardening with a plot less than 20 meters square. Now they cultivate with plows about 8 hectares of rice land. They care for a good garden and fruit orchard, and keep cattle, carabaos, and sheep. Besides, they repair houses, and clear, fence, and dike new rice fields each year. In addition to taking care of the hogs and chickens, the girls do all kinds of housework. They make, wash, and iron the clothes for the entire school, and they weave mats and cloth.

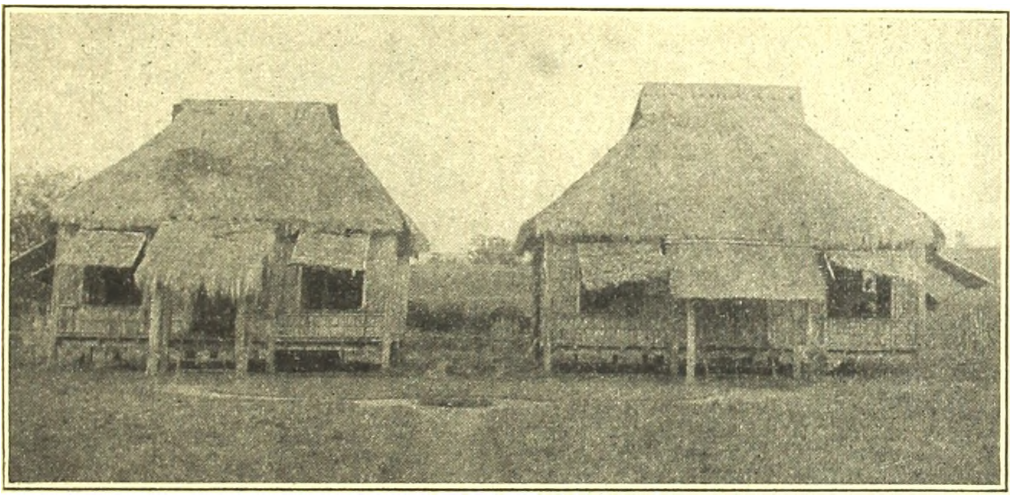
When industrial work was started in the school it was almost impossible for 20 pupils to accomplish as much as one should have done. During the past year with an average daily attendance of 37 boys and girls most of whom were very small; the products of the school amounted to more than ₱1,000. This is significant when it is considered that the Negrito of Zambales cannot earn more than 10 centavos a day, unless he has had special training.

A very noticeable effect of the school is in the increased reliability of the pupils. The faithfulness of the girl who acts as matron is remarkable. She has not been absent or away from her work a single time in six years, although the school is in session every day in the year except on Sundays. Two of the boys have been used as apprentice teachers, and one is now a regular teacher. Boys are sent from 30 to 40 kilometers

with carts to get supplies for the school, and they always prove faithful to their trust.

Because of their cleaner habits and better physical condition, the children who have been in school for some time are quite easy to distinguish from newcomers. Pupils dress better and take much more interest in their personal appearance than do children not in school. Some of the girls have umbrellas and wear modern skirts to the Saturday night dances.

Both boys and girls go about their work in an orderly manner. They are separated into groups, which are given different assignments for each week. The assembly bell rings in the morning before sunrise. Every pupil answers when his name is



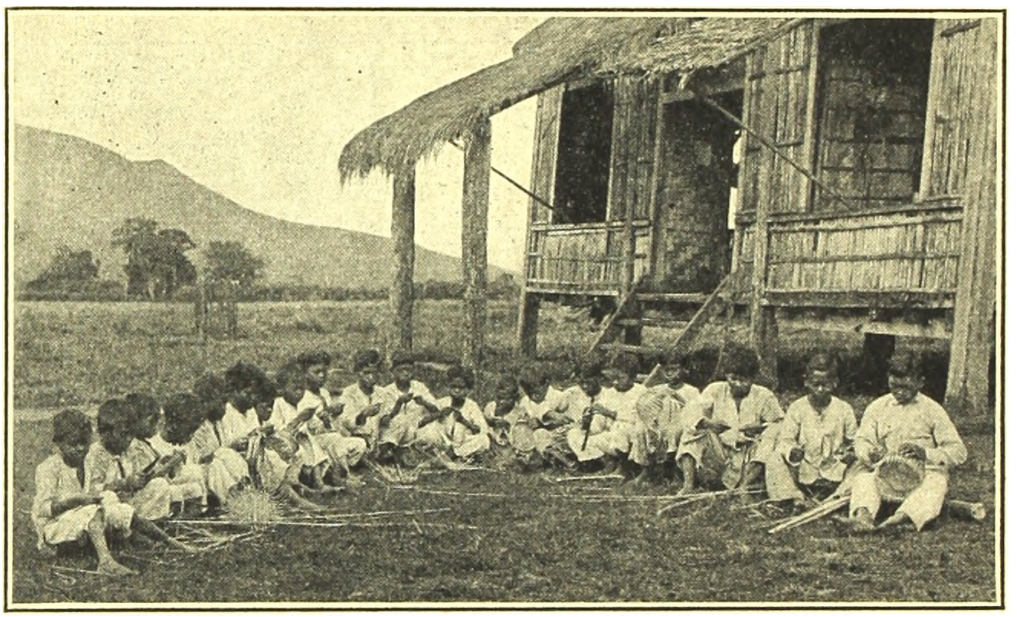
Industrial and classroom buildings of the Villar Settlement Farm School.

called and then goes to his particular work without a word from the teacher.

The great problem at Villar is to keep the children in school. This requires a great deal of tact, for Negritos can not be forced to do anything. If pressed a little too hard in any matter they immediately go back to the mountains and resume their former mode of living. The only recourse is to make the school so attractive that the children would rather be there than elsewhere. This is done by furnishing them as good food as can be produced on the school farm, by holding weekly dances and by giving school entertainments. On arbor day the children are permitted to kill a hog and to invite their parents and friends for the day. Occasionally they are taken to some neigboring barrio to have a ball game with Filipino school children. They usually send a baseball team to the provincial meet. The attention given to the health of the children is another means of

keeping them in school. Formerly when a pupil was sick he stayed out of school for a month or two or he left altogether. Now the principal keeps on hand a small supply of simple remedies, and when a boy becomes sick he is promptly treated at the school.

But when every device has been tried, the problem of keeping up attendance still remains. It is the custom of the parents to insist on some compensation before they permit their daughters to be married. When they have been trained to do housework and to dress better, they are more attractive than the other girls and the parents are able to exact larger sums. Consequently



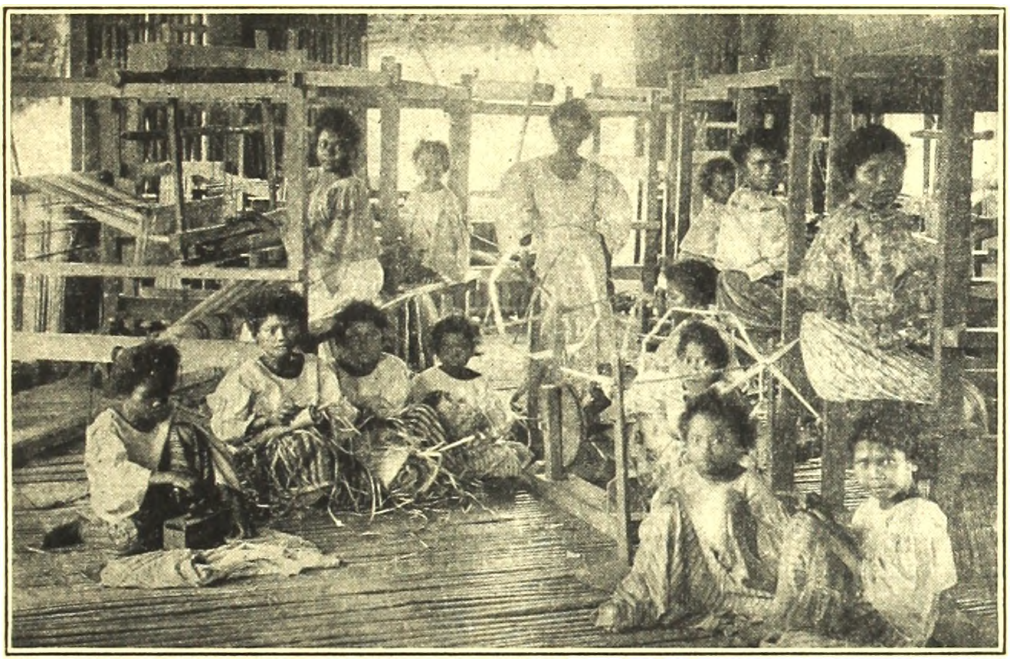
Making baskets at the Villar Settlement Farm School.

few of the girls are permitted to complete the course that is offered.

The school has had a beneficial effect on the people of the community in general. Before it was opened one might have been in the barrio a week without hearing voices of young people. Now, boys and girls can be heard laughing, singing and playing on any evening.

Many of the young men now farm instead of making a "kaingin," and they show an increasing interest in public affairs. The people have been induced to build better houses and to live in the barrio instead of in the woods under a shelter of sticks and banana leaves. To a great extent they have dropped their primitive mode of planting and have learned to use implements in tilling the soil.

Many Negritos who before the coming of the school never planted a stalk, now grow rice. They are anxious to have carabaos of their own so that they may plow and plant as the lowland people do. They take more interest than formerly in their



Girls at work in the Industrial department of the Villar Settlement Farm School.

children, in the school, in the affairs of the barrio, and in owning property and having a home. Their principal barrio, Villar, is more like a small Filipino village in every respect than it is like other Negrito settlements. The people class themselves with the lowlanders and speak of the other Negrito tribes as wild people.

A recipe for milk candy which has proved very satisfactory is as follows:

Put 2 cups pure fresh milk and two cups of sugar into a pan and place on a moderate fire. Stir constantly until the mixture becomes thick, and then pour it on a well greased board and roll it to a thickness of one centimeter. Cut into pieces 1 decimeter long and 4 centimeters wide. Unless made for immediate use, each piece should be wrapped in thin paper.

o o o

Every man I meet is my master in some point, and in that I learn of him.—Emerson.

TRADE SCHOOLS.

THE STANDARD OF WORKMANSHIP.

By FRANK E. CLAY, Principal, Trade School, Tacloban, Leyte.

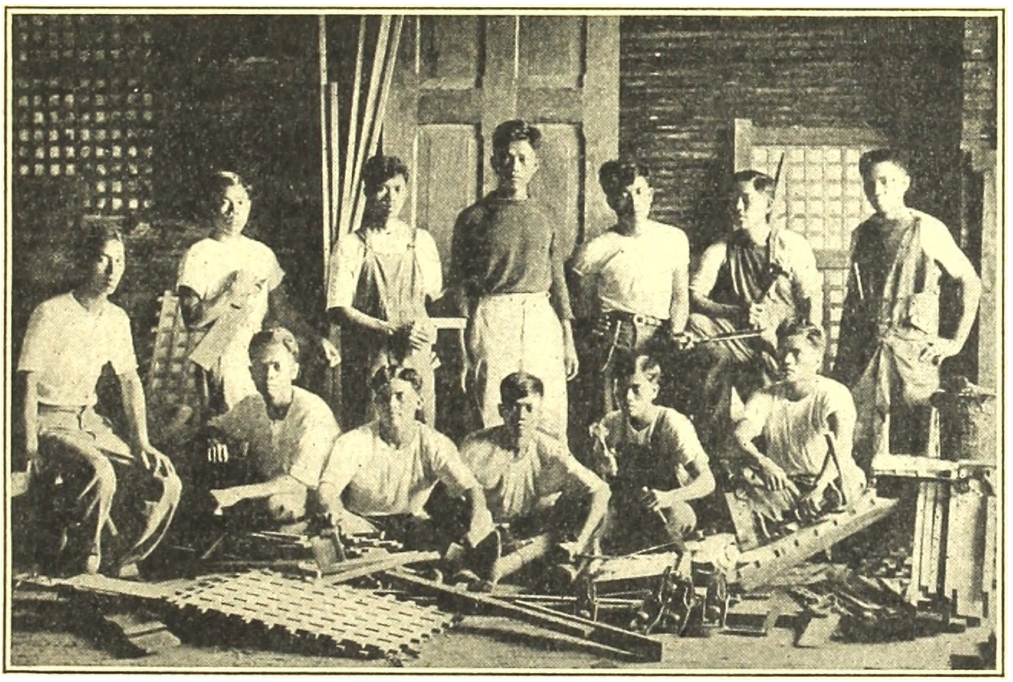
There is no better criterion by which to judge the success of a provincial trade school than the quality of its output, and this applies both to the commercial and educational aspects of the work. If the school puts out jobs that show conscientious and accurate workmanship, its patrons are pleased, and their goodwill is quite as much an asset to a school as it would be to a manufacturing concern. More than this, the maintenance of a high standard of workmanship indicates that the school is fulfilling its mission in preparing young men for useful and worthy citizenship.

In the effort to secure a high quality of product, there is a marked difference between the position of a trade-school teacher and that of a foreman in a factory. The latter has under him a selected staff of workmen who must produce the desired results. Skilled journeymen having performed the same operations over and over again grow so accustomed to turning out good work that they do so unconsciously; accuracy ceases to be an effort and becomes a habit. The feeling that they must maintain high standards of workmanship becomes ingrained in their minds. Furthermore, these men are permitted to hold their positions only as long as they can turn out acceptable work.

The shop teacher has a varied assortment of students: some show signs of becoming excellent workmen, others give less promise, while a few appear to be almost hopeless. In the factory, the latter would be gotten rid of, but in the trade school these must receive special attention, if the aim of the school is to be achieved. Even the best students need constant attention. They are in a formative stage, and if allowed to pass off a careless job occasionally, they are likely to form a habit of doing so. It is the first instruction that they will always remember, and they can be trained to be careful.

Continual faultfinding is to be avoided, but aid and encouragement on the part of the teacher are indispensable. Before any article which is sold leaves the school, it should be thoroughly examined and graded. No concern selling a manufactured prod-

uct could afford to let goods go out unless they had passed through the hands of a competent inspector, even though the men who did the work were classed as journeymen mechanics. The mere fact that work must pass a rigid inspection is conducive to better results. The finding and pointing out of errors in finished products has an educational value, but these errors should be remedied before any article is delivered to a purchaser. Otherwise there is injustice to student as well patron. The student does not profit as he should from his attendance at a trade school, unless the standard of workmanship is maintained above reproach.



Shelf-window makers at the Leyte Trade School.

THE BUSINESS SIDE OF THE WORK.

By C. M. WADDELL, Principal, Woodworking Department, Philippine School of Arts and Trades.

Commercial work in provincial trade schools is of prime importance from the educational viewpoint, and the task of handling the business of such schools involves transactions not found in any other part of the public school system. The principal's business duties correspond in a way to those of the general manager of an ordinary manufacturing firm. These duties may be listed under four general heads:

1. Requisitioning and purchasing supplies.
2. Obtaining orders.
3. Supervising shops.
4. Accounting.

Trade schools are operated with funds appropriated by the provincial board. These are apt to be liberal if the principal displays good business ability and shows a balance on the credit side of the ledger at the end of the fiscal year. The trade-school fund is an annual reimbursable appropriation; that is, sales of school products are credited to this fund till the end of the fiscal year, when the money reverts to the general fund.

The principal is responsible to the provincial treasurer for all supplies and equipment, and requisitions must be approved by the treasurer. Supplies may be bought locally if it can be shown that prices do not exceed those quoted by the Insular purchasing agent. Requisitions are made on Provincial Form No. 122, and when the goods arrive they are receipted for on the same form by the principal. New principals are confronted with a difficult proposition in requisitioning supplies because of their great diversity.

Having stocked the storehouse with materials, the principal is ready to receive orders, both official and private. An official order is a request for work, or for the manufacture of an article, to be paid for from Insular, provincial or municipal funds. It must be made on Form No. 122 and bear the approval of the provincial treasurer.

A private order is to be paid for by an individual. It is made out on a trade-school form, called "Request for work," which gives a description of the article to be made, together with the estimated price. The order is signed by both principal and customer, the original is filed in the principal's office, and the customer receives the duplicate copy.

The principal is responsible for the materials that are used in carrying out private orders, and he may require a deposit to cover the cost. In case a customer does not furnish a sketch of the article desired or is in doubt as to design, he is shown drawings and catalogues, which are kept on file for that purpose. From these, and with the advice of the principal, a satisfactory design is chosen.

After an order is taken, a responsible student is designated as job foreman and helpers may be assigned to assist him. He is held responsible for the completion of the work within a given time and in an acceptable manner. The order is given a number in the "Job record," and the student is issued a card, bearing the job number, which entitles him to draw supplies. A working drawing is furnished the boy, he reports to the shop teacher, is assigned to a workbench, draws the necessary supplies, and proceeds with the job.

In shop supervision, equipment for the bench room is to be looked after, the storeroom and lumber shed must be restocked often, and the machinery must be kept in running order. The shops are usually full of articles under construction, the design and workmanship of which require close supervision. When an article is finished it is given a thorough inspection, and, if passed, the customer is notified to accept delivery.

In the early days of the provincial trade schools little attempt was made to account for funds and supplies used; but when the production of salable articles grew large, cost records similar to those used in factories, became necessary. In 1910 the Bureau of Education had sufficiently systematized the commercial work of the trade schools to make possible the issuance by the Bureau of Audits of a uniform accounting system. The duties of various Government officials concerned in the furnishing of supplies and in the disposal of fabricated articles were defined, and schools in all provinces were required to operate on a uniform basis.

The original trade school accounting system was promulgated in Bureau of Audits Circular No. 190. In transmitting it to the various school divisions, the Director of Education said: "Its use protects teachers and instills business ideas in the minds of pupils by requiring them to account accurately for labor and material entering into the composition of articles, and by allowing them to receive compensation for their labor under conditions similar to those of the business world."

The output of trade schools continued to grow and business details increased till the old accounting system failed to cover all necessary transactions. District auditors began to pick flaws in the system. Finally the Bureau of Audits and the Bureau of Education agreed upon the present accounting system. It was transmitted to the field as Bureau of Audits Provincial Division Circular No. 300.

This system enables the principal to manage his business intelligently, and to carry out his duties with full protection to himself and to the Government. It enables the treasurer at any time to show in his accounts the financial condition of the trade school, and at the end of the year's work to show the results obtained.

The following names of the various forms, the keeping of which is required, are self-explaining in most cases:

Special trade school forms:

No. 154 (A). Daily record of material and supplies.
No. 155 (A). Summary of supplies issued and sold.

No. 156 (A). Time book and pay roll.
No. 157 (A). Time card.
No. 158 (A). Record of jobs completed.
No. 159 (A). Record of sales and transfers.
No. 160 (A). Invoice.
No. 161 (A). Request for work (private orders).
No. 162 (A). Statement of manufactured articles and completed jobs remaining on hand.

Regular provincial forms:

No. 122 (A). Issue voucher.
No. 118 (A). Supplies ledger (card).
No. 27 (A). Supplies identification tag.

The forms serve the double purpose of reports and school records. They are bound in book form, and those used as reports are arranged so that a carbon copy is left as a record, the original being sent to the treasurer's office.

The system is complete in every detail and serves its purpose admirably, although the details require a great deal of clerical work. Reports, all to the provincial treasurer, are made at the end of each month. The pay roll requires the approval of the division superintendent of schools.

From funds advanced by the provincial treasurer the principal pays the students for labor performed outside of regular school hours, and he receives cash for the pay roll at the end of the month. When an article is sold on a private order, the principal issues the invoice which is an official receipt for the cash received. If the order is official, the invoice is signed by the person receiving the article, and at the end of the month the transaction is reported on Form 159, thus taking the matter out of the principal's accounts.

All cash collected during the month is turned in with the reports, and the treasurer issues his receipt in the proper amount. Some of the forms serve as cross checks on others, and it is impossible to make an error in the account, which will not be obvious.

Real Brussels point applique lace, 18 to 27 inches wide, sells at retail for ₱200 per yard and higher; point gros brings as much as ₱3,000 per yard for a piece 10 inches wide. A 6-yard piece represents the labor of many people. The woman who begins the work cannot complete it in her lifetime. Valenciennes lace 9 inches wide sells for as much as ₱450 per yard. This can be bought only direct from the family in the cottage where it is made.

PROMOTING EFFICIENCY IN AN EMBROIDERY CENTER.

By LEROY MARTIN, Division Industrial Supervisor, La Union.

An embroidery center was organized at San Fernando on February 21, 1916, with a nominal membership of seventeen, all of whom were graduates of the School of Household Industries at Manila. The first shipment of finished work was made about April 1, and it amounted to ₱78.40; a second shipment in May amounted to ₱30, and a third in July, to ₱44. Considering the time required in filling the orders, the efficiency of the class was apparently declining.

At the end of June the class was meeting in a room of the temporary intermediate-school building. Sessions were held 5 days a week, during the mornings only. The attendance was very irregular and was generally not more than 8 daily. The girls worked on an average, less than 15 hours per week, and an air of discouragement prevailed.

It was necessary to improve conditions promptly. A careful study was made of the individual and of the conditions under which she worked. Remedial measures were taken as occasion and necessity demanded. Quarters were secured in a large airy room in the provincial building. Attention was directed to the seating of the workers. If a girl is uncomfortable she will tire quickly, and the quality and quantity of the work will be directly affected. Ordinary school benches seating two, have hitherto been used in this class. The girls are now urged to bring their own chairs, and later they will be required to do so. It is endeavored to make the workers understand the reasons for such changes as this.

A conscientious effort was made to find the underlying errors and to devise means for their correction. The results for the three months ending October 1, 1916, were encouraging. During this period the class completed work to the value of ₱250. The membership increased to 21, notwithstanding the fact that 6 of the original members went to Manila. In October the usual daily attendance was 14, and the girls worked on an average 30 hours per week.

In securing these results, the principle was recognized that a discontented worker cannot be efficient. The common cause for dissatisfaction among the girls was found to be that they were not making more than 15 centavos per day, which was not enough. It was necessary to raise the pay or else to convince

them that they were receiving a fair remuneration. The pay could not be increased, as the prices for the articles are fixed by the General Sales Department. In the attempt to convince the workers that they were receiving a fair compensation in proportion to the time they gave, the fundamental difficulty was disclosed. The girls had not been brought to realize that the hour is the correct unit of labor. They counted as entire, the work days intervening between the date on which they received the article and the date on which they returned it finished. They failed to consider the fact that they averaged less than 3 working hours per day.

To change this idea, the teacher was required to keep an accurate register of the attendance of each worker, and of the time that she spent on an article, showing the actual number of hours and minutes necessary for its completion. With such data it was comparatively easy to convince the workers that they could make from 4 to 8 centavos per hour, according to their skill. This time record changed the whole attitude of the class. The girls began to realize that the work was profitable.

A further study of the record showed that no standard of regularity for working hours had been set or maintained. Not a girl in the class could be depended upon to work for 5 consecutive days. The most trivial causes often kept them from class. The excuse given for working only 5 days in the week instead of 6 was that they had to do their washing on Saturday. They had never grasped the idea that by doing the work themselves they were paying 50 centavos for work which a washwoman would do for 40.

The habit of working regular hours and days is necessary to efficiency, and a standard of 40 work hours per week has been set as the minimum, 6 days in the week being the regular schedule. The class works from 7.30 to 11.30, with a 30-minute rest period at the discretion of the teacher. The afternoon session lasts from 2 to 5. A girl is required to give a definite excuse for tardiness or absence. As yet there have been no penalties prescribed. By emphasizing attendance and commenting on tardiness, the workers are made to feel that the class is organized for business, and that it affords an opportunity to each of its members who is industrious, to make a comfortable living. Girls who do not wish to take full advantage of the opportunity for profitable employment, are not welcome in the class. Exceptions are made in the cases of women with families and of those who can give legitimate reasons for not attending regularly.

A time record on a luncheon set B. of E. design No. 15–1516 special, was 516 hours. At ₱36 for the set, this gave the workers 7 centavos per hour. The average worker will not make more than 5 centavos per hour. Reports to the effect that embroiderers can earn a regular wage of 80 centavos per day in Manila, have impeded the development of the class. Seven of the girls have gone there. The difficulty is being minimized by inspiring the workers with confidence that they will be justly treated.

Experiments looking to the betterment of some of the old Filipino recipes have been an important part of the work in Miss Purificación Humbria's domestic-science classes at the Carigara Intermediate School. Two excellent guava recipes have been evolved. They are as follows:

Recipe No. 1.—Grate 1 large coconut, extract from it as much pure juice as possible and set the juice aside. From the grated coconut from which the juice was extracted make 2½ cupfuls of coconut milk. Pare and remove the seeds from enough ripe guavas to make 3 cupfuls of minced fruit. Heat 1 tablespoonful of lard and fry in it 3 cloves of garlic, cut into small pieces. Pour 3 cupfuls of minced guavas into the hot fat and cook them for about 8 minutes. Add 2 cupfuls of brown sugar to the fruit and cook the mixture for about 12 minutes, stirring it constantly. Add ½ teaspoonful of salt. Pour the 2½ cupfuls of coconut milk over the fruit and continue the cooking. When the mixture is reduced to the desired consistency, pour the pure juice of the coconut into it, stir it well and remove it at once from the fire. Serve either hot or cold.

Recipe No. 2.—Grate 1 large coconut, extract from it as much pure juice as possible and set the juice aside. From the grated coconut from which the juice was extracted make 2½ cupfuls of coconut milk. Pare and remove the seeds from enough ripe guavas to make 3 cupfuls of minced fruit. Heat 1 tablespoonful of lard and fry in it 3 cloves of garlic, cut into small pieces. Pour 3 cupfuls of minced guavas into the hot fat and cook them for about 5 minutes, stirring them constantly. Add ½ teaspoonful of salt. Over the fruit pour the 2½ cupfuls of coconut milk and cook the guavas until they are soft. Stir into the mixture 2 cupfuls of brown sugar and continue the cooking, stirring constantly. When the mixture is reduced to the desired consistency, pour the pure juice of the coconut into it, stir it well and remove it at once from the fire. Serve either hot or cold.

EDITORIAL.

THE VALUE OF PRODUCTIVE EFFORT.

The educational, social, and economic level of the Filipino people is being gradually raised. But further effort can and should be made to utilize to a greater extent the human resources of this country. The manner in which ordinary occupations are followed by many Filipino men and women leaves them unemployed during a considerable part of the year. Irregular working habits are formed, and the per capita wealth of the country is kept at a much lower point than it should be. The Filipino people ought to do everything within their power to remedy such a situation.

In this country there are perhaps two million women and girls who are capable of engaging in some form of industrial activity. If each one of them were to do only twenty-five pesos worth of salable work during a year, the net income of the Islands would be noticeably increased.

The women of the Philippines are able. One has only to visit the municipal markets throughout the provinces to note how largely the retail business of the country is in their hands. If the keen interests in trade which so generally characterizes them, were applied in a larger measure to productive pursuits, the economic benefit to the country would be enormous. As it is, the women have taken advantage of the peculiar situation existing during the past two years, by greatly increasing the production of Philippine embroidery.

The advantage so gained should not be lost. The school system of these Islands is directly intended to bring about the social and economic improvement of the Filipino people. Even more than in the past, therefore, teachers should do everything in their power to impress upon the minds of all boys and girls, the necessity for productive effort, and, as to the girls, particularly in household industrial work.

INFLUENCE OF AGRICULTURAL SCHOOLS.

Educators are turning their attention more and more toward the development of schools which will turn out individuals better prepared to solve the problems of everyday life. The learning of theories and definitions, and the recitation from various texts,

unless supplemented by practical work, do not fit young people to answer the calls that await them today on every hand.

Some people have received a kind of education by memorizing what they have read in books and what others have told them. To learn theories is admirable, but unless these can be applied in a manner which will enable one better to perform his everyday duties they are of no real benefit.

At the Central Luzon Agricultural School, young men receive an education that is alive and practical. They are inspired by the things that are. The following comments are taken from a letter written by a boy studying in Muñoz to his father in Abra:

"As to our daily life here, I say it is hard, due to the amount of work required in cutting rice and providing for our own subsistence. I am mighty glad I am having such an experience as this now, for when I have finished my studies I shall not have difficulty in handling any work required of me.

"I praise all of our agricultural schools for the way in which they prepare their pupils. I appreciate these schools very much because boys are not only prepared to read books but to meet hardships as well. I believe that one is not really educated unless he can work and get good results. No matter how high his degrees are, if he is ignorant in using his two hands together with his head, he is useless.

"I know that most of you there have been saying that you know how to till the soil, and that it is not necessary to attend an agricultural school. But you are truly mistaken. For at an agricultural school one learns not only how to plow, harrow, and plant, but also how to improve the soil and its products, for the benefit of the community.

"Instead of walking from place to place, going to the stores and cockpits, and doing nothing but wasting time, we should go to our fields with a notion of improving the land. Then I am sure that none of our fields would be neglected and unprofitable as has been the case around our home.

"Instead of spending our time as we usually have done, it would be better for us to take our bars and go to our fields to make an irrigation ditch."

The father of this boy was very proud on receiving the letter. It seemed to fill him with hope.

The young man's remarks show that he realizes that true education consists in the training of mind and muscle. He feels that he is receiving the training which will fit him to contribute something to the welfare of his home and community. He

realizes that books are also tools; that they are a necessity, but not an end. (J. A. W.)

THE SELECTION OF PICTURES FOR THE SCHOOLROOM.

There are a few great pictures with which everyone ought to be familiar, and reproductions of these should be found in every school, though not necessarily upon its walls.

Color and the feeling of atmosphere are lost in gray or sepia prints and many fine pictures thus copied are flat and uninteresting and fail to give any idea of the beauty of the real paintings. No reproductions of Mona Lisa, Millet's Song of the Lark, or the Angelus have ever made them appear beautiful, yet in the original they are wonderful. Such subjects are out of place upon the walls of a classroom because they make little appeal to the beholder. Landscapes, unless in color, suffer most in this respect and are, therefore, undesirable.

The best judges of suitable pictures are the pupils themselves, and since they are expected to enjoy them they should be consulted in the selection.

There are some excellent catalogues on the market, and the best of these contain miniature half tones of the prints listed. A class will enjoy studying these catalogues and deciding upon a picture, and they will need very little advice from the teacher; their choice is pretty sure to be a good one. Children in the lower grades will invariably choose Baby Stuart, the Dutch Girl with a Cat, the Landseer animal studies, or some of the lovely fairy tale pictures of the modern school of painting. Seventh-grade pupils will like Taylor's Hiawatha and Minnehaha, Evangeline, and other pictures that strike a familiar note. Alma Tadema's paintings of Greek and Roman life please high-school students, as do representations of gladiatorial combats and wild chariot races in the Circus Maximus, or photographic reproductions of fine architecture, or portraits of great historical characters. In all grades pictures of the Madonna are liked, and Hoffman's Christ among the Doctors and the Gethsemane are favorites. These beautiful religious pictures command the admiration and reverence of all children, who do not hesitate to choose them if given the opportunity.

Colored pictures are the best of all, and they are especially good against stained or varnished walls. Brown or sepia prints rank next to these, and the yellow with which time seems inevitably to tinge all half tones, rather adds to their appearance, giving them the mellow tone of old etchings. (M. C. S.)

INDUSTRIAL NOTES.

GENERAL.

The most popular jewelry made in Bohol household industrial centers, consists of necklaces each having 62 gold or silver beads strung on a silk cord. The silver necklaces sell at ₱6 each and the gold at ₱25.

At Anonang, Caoayan, Ilocos Sur, Bonifacio Roxas has a thriving brush manufactory. His output averages about ₱75 per month. He has specialized on military brushes, hand brushes, and clothes brushes, all of excellent quality. Hog bristles and hair from the manes of horses are used in the brushes. The backs are made of selected camagon, the polish of which has been improved through suggestions given by the principal of the provincial trade school.

The average value of the manufactured articles sold monthly by the Leyte Trade School for the first six months of the school year 1916-17 was ₱2,225. Recently several pieces of polished furniture were arranged as an exhibit in the trade school office and they were sold almost immediately.

A visit to the wholesale storeroom of the industrial division discloses the fact that there are no more attractive or better made articles in the whole collection than the wastebaskets from Palawan and the small finely woven rice baskets from Pangasinan.

The main differences between the 1917 Vacation Assembly and previous assemblies will be in the reduction of enrollment and of the number of courses.

Until very recently there have been practically no needles of sizes finer than No. 8, on the Manila market. American needles above size 8 have been selling wholesale at 1 centavo apiece in papers, while coarser English needles have been bringing about 50 centavos per tube of 100. However, the Bureau now has 1000 tubes of sizes 8½-12 which it will be able to sell at approximately 70 centavos per tube.

Geography has been eliminated from the trade course at the Philippine School of Arts and Trade but illustrated lectures on the different countries of the world are being given from time to time.

A Javan industrial arts exhibit has been received. It is being presented to the Bureau of Education in exchange for an exhibit sent to Java two years ago.

This Bureau has just accepted a sample order for 52,600 square feet of sedge (balangot) mats similar to those introduced during the past year in Pampanga Province. The order is from a large New York house locally represented. The price is slightly in advance of that accepted last year. The size of the order will necessitate outside workers becoming interested in it. This order gives the balangot mat business a fair start. Ten towns of Pampanga are already planning to take up this industry at once, as it furnishes employment during the dry season.

Just inside the entrance to the Philippine Normal School, there have recently been installed new and rather elaborate bulletin boards which are a great improvement over the former ones. They were made at the Philippine School of Arts and Trades at a cost of something over ₱800, and were presented by the Normal-school classes of 1915 and 1916.

An office-furnishing house on the Escolta has just given the Bureau an order for school-made desk baskets. It is said that many prefer these to the wire baskets.

Mr. Robert E. Manly of Naga, Camarines, has built and equipped a school on his plantation. It is conducted by a teacher furnished by this Bureau. Entertainments are frequently given for the benefit of pupils and for the entertainment of their parents and friends. Mr. Manly is now planning to make it a social, educational, agricultural and civic center. He hopes to give free cinematograph entertainments at the school, thus helping to spread a knowledge of better methods of agriculture, and to give the people on his place better ideas concerning the outside world.

Two hundred cuttings of each of the following sweet potatoes were recently received by the division of Nueva Vizcaya from the Bureau of Agriculture: Momungan, large white, and New Jersey red. They were issued to the provincial and Lamo schools, where cuttings for distribution will be secured hereafter. Two hundred pili nuts from Albay were distributed among schools which are planting orchards. One hundred and fifty Robusta coffee seedlings were set out at Lamo school. In Bintawan, linga is planted between the rows of sugar cane. Both plants are growing well. Three hundred violeta cuttings from the nursery of the provincial school were issued to the schools of Bascaran and Aggub.

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LACE NOTES.

It is expected that the next importation of Falcon brand linen lace thread will command a higher price, and this is likely to force up the price on lace.

Certain dealers and manufacturers prefer cotton laces to linen, especially for lingerie made in the Philippines.

A heavy demand for lace has sprung up since the manufacture of lingerie was started in the Philippines. Recently an order from a commercial house was accepted for work on embroidered garments in which the lace had already been basted. The work consists of inserting the lace by means of the French stem stitch and embroidering the pattern, part of which extends into the lace itself.

Valenciennes lace will be most in demand by lingerie manufacturers. Samples of these laces adapted to use in lingerie, have been sent to various domestic and foreign houses with a request for quotations.

For the making of valenciennes lace it is planned to use lighter and shorter bobbins than those employed heretofore in the schools. (H. H. M.)

REAL KNOTTED FILET LACE.

There is a great demand for real knotted filet lace in both cotton and linen threads. It is stated that all the markets of the world will not be able to supply the demand for years to come.

The real knotted filet laces now made in the Philippine Islands are of the very best old Italian and French design, and are very well done.

Simpler designs that are less expensive and more in demand commercially, are being prepared for the schools. (M. W. MacN.)

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THE CABACAN SETTLEMENT FARM SCHOOL, COTABATO PROVINCE.

The Cabacan settlement farm school was opened in August, 1915, at Cabacan, a town about 125 kilometers up the Cotabato river at the junction of the Cotabato and Cabacan rivers.

By the first of January, 1916, a good hog-proof fence inclosing 17 of the 32 hectares of the site was completed and 3 hectares were under cultivation. One hectare was set out as a school orchard and lawn.

The first crop was lost through a flood, but two crops have been harvested since. The greater part of the product is used in the pupils' mess. The following table shows the amount harvested prior to September, 1916.

Corn	cavans	248
Peanuts	do	17
Mongos	do	3
Shelled beans	do	1½
Sword beans	do	8
Okra	do	3
Patola	do	8
Eggplant	do	1
Pechay	bunches	1,150
Mustard	do	1,400
Ampalaya	fruits	110

In addition to the above, 2 hectares of legumes were plowed under and 1 hectare of palay and ½ hectare each of corn and beans, were ready for harvest.

There are now 6 hectares under cultivation and the clearing of an additional 5-hectare plot has been begun. There is only one work animal available. Two buildings, a plan No. 2 temporary schoolhouse and a teachers' cottage, were built under the direction of the principal. A new dormitory is under construction and the teachers' cottage is being enlarged, all under the direction of the teachers. Additional equipment has been requisitioned, and as soon as the buildings are completed the enrollment will be increased from 44 to 100.

The success of this school, located as it is in a remote part of Mindanao among Moros who were not at first symphathetic with the undertaking, is due entirely to the efforts of Mr. Doctolero, the principal, and Mr. Damaso Abenes, his assistant. Both of these young men are graduates of the Central Luzon Agricultural School, and the training they received there has fitted them admirably for the work they are doing. An additional teacher has recently been assigned to Cabacan. (J. C. McC.)

BURI AND ITS USES IN ROMBLON SUBPROVINCE.

Romblon was long noted for its beautiful mats woven of buri. The process used is described in The PHILIPPINE CRAFTSMAN, Vol. I, p. 157. Other sections have succeeded in duplicating the vegetable colors but the whiteness of straw attained in Romblon has probably not been equaled elsewhere. The high-grade Romblon mats were never a success commercially, and with the leaving of many Americans, who bought them to keep or to send to the United States as novelties from the Philippines, the demand has practically vanished.

The low-grade mats, used chiefly for wrapping tobacco and hemp for shipment, find a ready market and are extensively made at the present time, though the weavers earn only about 1 centavo an hour. Sugar sacks are woven at San Fernando for about the same compensation.

In 1911, when searching for data called for by the Bureau of Education, it was found that on the little Island of Banton, located just south of Marinduque, the people sometimes made a kind of cloth called "sagurung" which was woven from buri raffia. In lengths of 4 varas (3.39 meters) it was made into blankets for home use. Forty centavos was considered a fair price for a piece of this cloth. The Bureau's investigation showed that sagurung was made in various islands, but that the product of Banton was by far the finest. Banton is a small mountainous island of the Romblon group, having about 5,000 inhabitants. It is 53 kilometers from the nearest post-office or point of call for steamers.

In 1912, the head teacher requested the principal at Banton to secure 50 pieces of sagurung at 50 centavos each. There was no definite idea as to what use it could be

put to, but after consideration it was decided that a hat should be designed for fabrication from sagurung. When the teachers' institute convened a model was furnished the classes, and each teacher was directed to make two hats, the better of these to be kept as a pattern in his or her school, the other to be offered for sale at the close of the institute. It was found that the demand was greater than the supply. The proceeds from the sale of these hats alone, more than offset the cost of all materials used at the institute.

One person can cut and make about 10 sagurung hats daily. Their manufacture was immediately taken up by the storekeepers and tailors. From the time of the institute, the output of Banton sagurung probably doubled each month for a year, and it is still increasing. At no time has the supply been equal to the demand.

The hats that were made in the 1912 normal institute were sold at 35 centavos each. The material cost about 15 centavos. The quality of the material has improved since that time, and the hat sells for as much as ₱1.50 in Romblon. Those that are specially bleached and blocked, sell in Manila for as much as ₱5.

During a visit to Romblon in 1915, it was learned that the price being paid for the best quality of sagurung was ₱1.20 and that the price of the hat had increased in proportion. The price of buri, 5 centavos a stalk, has remained unchanged, as it can be secured from Mindoro, Burias and the coast of Tayabas in practically unlimited quantities. (R. L. B.)

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THE SCHOOL OF HOUSEHOLD INDUSTRIES.

The school of Household Industries which has been in operation since June, 1912, closed with the calendar year 1916. Out of a total enrollment of 924, there were 801 graduates. Miss Norah M. Wise, its principal has been assigned to the industrial division in the General Office.

The following table shows the distribution by provinces and the total number of students enrolled at the school during its 4½ years of existence:

Manila	108
Rizal	76
Bulacan	66
Cebu	55
Cavite	54
Batangas	51
Tarlac	49
Pangasinan	48
Ilocos Sur	43
Pampanga	42
Bataan	34
Union	31
Ilocos Norte	26
Iloilo	24
Bohol	23
Laguna	23
Leyte	22
Tayabas	22
Nueva Ecija	17
Capiz	13
Samar	13
Albay	12
Camarines	12
Sorsogon	10
Occidental Negros	9
Oriental Negros	7
Cagayan	6
Mindanao and Sulu	6
Antique	5
Surigao	5
Misamis	3
Zambales	3
Isabela	2
Mindoro	2
Palawan	2
Total	824

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BOAT BUILDING IN THE DAVAO INDUSTRIAL SCHOOL.

While the Davao Industrial School was still located at Lais in the southern part of the province, a small boat was needed for fishing, so the school built one. It was of the skiff type, 4.87 meters in length by 1.37 meters beam. This craft was soon sold to the Philippine Constabulary for use in transporting men and supplies to the various stations below Malita. Mr. Henry Peabody of Lais afterwards bought it, and he has now been using it for

over two years in hauling all of his merchandise from Malita to Lais. This boat is equipped with a 2-horsepower Ferro motor, and, for its class and size, has rendered an unusual amount of service.

The second boat was constructed in Davao for Mr. H. M. Joyce of Kulaman. It is of the dory type 6 meters in length, and has now seen two years' regular service over a stretch of 80 kilometers of the roughest water in Davao Gulf. A short time ago the boat came back to the school for some minor repairs, and it was afterwards sold for ₱500.

A 6-meter dory, launch type, was next built for the provincial treasurer, who when he left Davao recently, sold it at a good profit.

The fourth boat was made for Mr. O. V. Wood of Malita. This was a launch of the fishing-dory type having a length of 6.2 meters and a beam of 1.6 meters. It is equipped with a 5½-horsepower Ferro motor, which gives it a speed of 11.2 kilometers per hour. For its size, this is considered the most seaworthy craft yet turned out by the school.

The latest product of the Davao Industrial School is the *Indiana*, an Atlantic dory type launch, 9.75 by 2.29 meters. It has a draught of 91 centimeters and ample free board. It is a real rough-weather craft, and is equipped with an automobile engine developing between 8 and 10 horsepower and giving a speed of about 13 kilometers per hour. The engine has been fitted with a reliable petroleum vaporizing system, and uses only about 1½ gallons of petroleum per hour. The boat has been thoroughly tried out and has proved most admirably adapted to gulf travel.

The pupils who have worked upon these boats are from the following tribes: Bila-an, Tagacaolo, Manobo, Calangan, Bagobo, Mansaca and Mandayan. (G. W. C.)

THE DEVELOPMENT OF SPEED IN BOBBIN LACE CLASSES.

Next to natural ability, the matter of practice is the most important element in the efficient production of bobbin lace. Formerly pupils from the San Fernando Central School who had studied lace making, were compelled to take up embroidery in the provincial school. These pupils were not proficient and results were unsatisfactory. In order to furnish an opportunity for uninterrupted practice, the work of the various primary schools has been so outlined that those who enter the intermediate grades continue lace making if they attend their local school.

The separate schools of the province have been divided into lace and embroidery districts. Records are kept of the time employed and of the quantity fabricated by each worker. In every instance these show that the fastest workers are those who made lace in the lower grades. Observations will be continued during the entire year with the object of ascertaining whether or not the pupils making lace for the first time in the fifth grade are able to overtake the others in speed.

Below is indicated the amount the fastest workers in Pampanga were able to fabricate per hour in each design, at the end of the first quarter of the present school year.

Design No. 6511. Amount per hour.

	Inches.
No. 103-A. Valenciennes	2.92
No. 103-B. Valenciennes	2.82
No. 108-A. Valenciennes	1.75
No. 108-C. Valenciennes	3.80
No. 108-D. Valenciennes	2.25
No. 110-A. Valenciennes	2.16
No. 12-A. Cluny	4.50
No. 12-B. Cluny	3.50

Up to December 1, the best workers completed lace as follows:

	Yards.
108-A San Fernando	5½
108-B. San Fernando	6 11/25
103-C. Santa Ana	10 8/17
108-D. San Simon	4½
103-A. Arayat	6

110-A. Arayat	6
12-A. Angeles (intermediate)	8 3/23
12-B. Magalan	7 1/10
2-A. Mabalacat	10 7/9
2-B. Mabalacat	13½

Since the reports on which the above figures are based were made, 3 girls in the Cluny lace class have each completed 30 yards of design 5511–12A, and their earnings amount to more than ₱12 each. Up to January 15, the fastest workers each completed more than 11 yards of valenciennes lace, design 108A. They earned over ₱9 since school began. Although these figures are far above the ordinary, they show conclusively what a good worker can do if she tries.

The average amount earned by December 1, on each design was as follows: 12–A, ₱2.14; 12–B, ₱1.53; 2–A, ₱0.73; 2–B, ₱1.48; 108–A, ₱1.42; 108–B, ₱1.39; 108–C, ₱1.24; 108–D, ₱2.02; 110–A, ₱2.12. These figures make it evident that No. 2–A offers the poorest remuneration and that No. 12–A pays best.

The production of lace for the province up to December 1 was as follows:

Design No.	Number of schools.	Number of pupils.	Lace made.
			Yds.
108-A	10	144	398
108-B	7	105	350
108-C	5	82	401
108-D	4	78	256
103-A	*2	55	327
103-B	1	17	102
110-A	2	18	90
12-A	6	114	673
12-B	6	99	470
2-A	5	29	244
2-B	5	31	169

* Intermediate.

The assignment of only one kind of commercial work to all of the girls in a school, has been of great assistance in promoting efficiency in classes. At the division normal institute lace teachers were given special training in the designs they were to teach. In their regular work, they are required to enter in a notebook the number of hours a pupil is employed and the amount of lace fabricated each week. They inspect the work before the pins are removed preparatory to winding the lace. The cardboard pattern is marked in inches, and the teachers note the length and time consumed in the making.

At the beginning of the year uniform bobbins were prescribed and pupils were given instructions as to the size and kind of pillows to use. It was recommended that a slip large enough to enclose it, be made for each pillow. The upper end of this cover is closed by means of a draw string.

Large pillows are not suitable for small girls. Bobbins 13 centimeters long are too short for the larger girls. They should be long enough to reach below the worker's hands, not just to come in contact with the palm of the hand. Each pupil is required to keep her equipment in a definite place. Everything is so arranged that the girls lose the least possible time in beginning work. They march into the room and secure their pillows as they pass. Every method or device having a tendency to prevent waste of time by adding to convenience, is adopted.

Classroom order is of considerable importance in speed development. Where the discipline is bad the workers are indifferent. A listless teacher secures neither speed nor excellence in workmanship. The interest of the classes can best be kept up by comparative reports of what is being accomplished with the various designs in the different schools. The reports should be sent out quarterly. (J. H. R.)

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INDUSTRIAL CENTERS.

Household industrial centers under the guidance of the Bureau of Education have been established in

17 provinces. Among these provinces Bulacan ranks first both in the number of centers and in the quality of work accomplished. All such work as that on lingerie, baby articles, table linen and piña, is done.

In quality of work, Union ranks second, and Pangasinan third. These two provinces specialize in lingerie, table linen and bed sets.

The following list shows the number of working centers in several provinces.

	Centers.
Bulacan	24
Rizal	14
Pangasinan	9
Laguna	9
Albay	8
Union	7
Sorsogon	7
Ilocos Sur	6

(N. M. W.)

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BATAAN.

In connection with the provincial meet which was held at Orani during the Thanksgiving holidays, there were contests in cooking, plain sewing, embroidery, and basketry. Industrial exhibits were displayed in the Orani Primary School building. The concrete shingles made by the pupils at Mariveles under the charge of Mr. Simonson attracted most attention. The Bureau of Health hopes to replace nipa roofing with concrete shingles.

Embroidery centers have been organized at Balanga, Abucay, Samal (two), Orani (three), and Hermosa. There are now some 140 women, qualified to do commercial work, connected with these centers. At Mabatang, Abucay, a center for broom making was organized. The division has accepted orders from the Bureau of Education for a regular bimonthly shipment of 200 brooms.

A school site which affords sufficient room for an excellent garden has been secured for Bagac.

The present policy of the division in relation to industrial work, is to exceed or at least to equal last year's output. The articles fabricated in this division during the quarter ending September 30, 1915, were valued at ₱159.35, while those made during the same period in 1916, were valued at ₱724.15. The success of this year's work is to a great extent due to the foundation laid last year.

GARDEN DAY CELEBRATIONS.

Garden days were celebrated at Orani and Balanga on a Saturday. Orani held its program in the morning; Balanga, in the afternoon. It was, indeed, gratifying to note the active coöperation of farmers, municipal and provincial officials, and employees of the different bureaus. At Orani the Bureau of Health and the Bureau of Forestry showed interesting and instructive exhibits in their booths, the latter Bureau winning the first prize for the best booth.

The celebration in Balanga was the biggest and the most successful of its kind ever held at this capital. The parade was a splendid one. The Bureaus of Constabulary, of Public Works, of Lands, and of Health, besides the municipal and provincial officials, took part in the parade. Several prizes for the best floats, booths and exhibits were awarded. Among the prizes given were a clock by the provincial governor; a silver cup by the municipal vice-president of Balanga; and a set of garden tools by the municipal president. Also, a local pharmacist offered a clock.

The booths were erected on a beautiful school site recently acquired for Balanga. The ground was converted into a small "Carnival city," the main attraction being garden products. (H. P.)

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BATANGAS.

Miss Paula Ledesma, a traveling industrial teacher of the Bureau of Education, arrived in Batangas early

in January to introduce mosaic work in the Taal embroidery classes.

Mr. G. T. Shoens, division superintendent of schools, made a visit in December to his old station of Capiz, and returned with a number of new ideas concerning industrial work.

A summary of reports on agricultural clubs shows that almost every town in the province has formed a club, the membership being approximately as follows: Pig raising, 101; chicken raising, 161; vegetable raising, 91; corn raising, 239; and fruit raising, 75. (W. D. G.)

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CAMARINES.

Mrs. Felisa V. Badong, principal of the domestic science department of the provincial high school, resigned in November. The vacancy was filled by Mrs. Crispina Sison.

The gardening work of the high school is at present in the hands of Mr. Julian Meliton, formerly in the division office. He succeeds Mr. Mariano Calleja.

The provincial shop has been turning out quite a number of artistic small articles, such as book racks, taborets, paper weights and picture frames, made of red narra and camagon.

Rice is being raised in the intermediate school garden at Daet. The plants in the seed beds grew very fast and by December 15, were about ready for transplanting. A total of 6,570 square meters of land have been fenced and planted to rice by the boys of this school.

The response of parents to the needs of the schools when their children are affected, has again been demonstrated. The pupils of the Daet Intermediate School were badly in need of a shop. When other means for securing one failed, work on the building was enthusiastically started by the boys and contributions from home were forthcoming for the construction of the building. The conduct of the student body in this matter influenced the municipal council to take action.

Cabusao, a little town at the mouth of the Bicol River, is almost solely dependent upon fishing. The popular industrial course in the schools at this place is the weaving of nets. These are made in 5-meter lengths, but for practical use sections are joined together to make nets from 100 to 500 meters long.

Clean-up week was well observed in all schools of the division. The towns of Naga, Caramoan, San Jose, Nabua, Calabanga, Daet, Mambulao, and Libmanan deserve special credit for the interest taken by municipal officials. The Hon. Manuel Crescini, provincial governor, deserves special mention for having given the movement his attention.

During an inspection trip through the province in December, the division superintendent received orders from different municipalities for 485 schools desks to be made at the provincial school shop. (E. S. and J. M.)

Mr. Francisco Nacienceno, formerly teacher in the Libmanan Intermediate School, has been transferred to the provincial high school. Mr. Nacienceno will be in charge of fifth-grade basketry, in which work he was very successful at his former station.

Mr. Moises Balon, a graduate of the high school, has been appointed to the position of clerk in the provincial shop.

A large amount of voluntary labor has been expended by pupils of the high school on the improvement of the grounds. The walks were graded and planted with violeta hedges, the front lawn leveled, drainage ditches dug, flowers and trees planted. It is hoped that some day the high-school grounds will serve as a park for the public.

The value of the crops harvested from the school gardens during No-

vember was ₱115.82. Products valued at ₱35.30 were sold, and the money was distributed among the pupils.

A new school-garden site has been fenced, prepared and planted, by pupils at the barrio of Sabang, Naga. The use of the land was donated by a public-spirited citizen.

A plain-sewing contest is planned for the girls of Grades I and II in the Naga District. The aim will be to test their ability in executing the various stitches, and to find out how well they understand the terms used in connection with the work.

The provincial board has appropriated ₱2,500 for draining and grading the provincial athletic field.

Bato furniture makers have found it almost impossible to get good white rattan. They are now using young colored rattan. This is bleached white by boiling it in water containing 10 per cent of vinegar or of the juice of limes.

The Nabua chair-making class has difficulty in getting good raw material. On November 24, the pupils were excused from academic work, and with their teacher they started for the forest. After a hike of about 30 kilometers they reached Cabognan where they gathered 300 meters of "labnig." Although the trip was difficult, all of the boys were back in school on Monday morning. The material has been made up into 27 chair frames, and the boys are planning another trip to get material for weavers.

A baseball diamond has been cleared and laid out by the pupils of the Miranda School, Pamploma.

An athletic meet was held at Pamploma, December 20 to 22. There was an interesting competition in academic and industrial exhibits.

Twenty agricultural clubs with a total membership of 462 pupils were organized in the division during December. (E. S.)

CAVITE.

From June to December this division has accepted the following orders from the General Office:

Embroidery	₱1,108.06
Baskets and bamboo carving	274.93

About 90 per cent of these orders have been delivered to the General Sales Department. Besides orders from the General Office, some schools and all the household centers have received orders from private firms in Manila.

The division office has in its salesroom baskets, bamboo carvings, embroidery, and some small pieces of bamboo furniture.

Gardening is being emphasized this year in all the schools, especially in the upland towns. Most of the garden days in this division were held in the latter part of January and the balance will be held this month.

Clean-up week was observed in all the schools of the division. Insular, provincial, and municipal officials took an active part.

The domestic-science building of the Bacoor Primary School has been newly painted. (R. G. McL.)

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ILOCOS SUR.

Mr. James E. Haifleigh of the Santa Maria Farm School, reports an unusually good year for rice in that section. Three hectares of rice were planted, two belonging to the farm and one being rented. In order to have feed for the chickens and hogs as early as possible, about 0.6 hectare was planted to upland rice. This yielded 187 bundles averaging three fourths ganta of clean rice to the bundle.

In case of 10 paddies of 0.1 hectare each, different methods were tried on each so as to demonstrate the influence of fertilizer, cultivation, and

care. Early "cayading" was the variety used. The results were as shown below.

Fertilizer used; cultivation.	Plot No.	Yield, 1915.	Yield, 1916.
Stable manure, heavy	1	63	70
Ashes, heavy	2	54	59
Stable manure and ashes	3	46	44
Maguey	4	44	37
Green manure	5	36	53
Carabao manure, heavy	6	42	62
No manure; planted 30 centimeters apart. All the above were well cultivated.	7	43	44
No manure; planted close; ploughed only once as the farmers do	8	24	39
Japanese method	9	21	40
No manure; poorly cultivated	10	30	38

By comparing plots Nos. 7 and 10 it will be seen that cultivation had something to do with the yield, as other conditions were equal. Plot No. 1, fertilized with stable manure gave the greatest yield, 70 bundles, which averaged 5½ gantas of unhulled rice each. This yield is the equivalent of 47 cavans of unhulled rice per hectare.

From the hectare of rented land, 408 bundles of rice were harvested. The bundles yielded an average of 1¼ gantas of clean rice. The farm's share of this was 230 bundles. Last year the owners of the land allowed about three fourths of it to stand idle and from the remaining one fourth raised 15 bundles.

This year the rice was attacked by moth borers (*Schaenobius punctellus*) at just about the time that it began to head. An attempt was made to get rid of them by placing an herb known as "dangla" in the intake of the irrigation ditches and by sending boys into the plots to pick off the moths and kill them. In this way some of them were disposed of but the moths destroyed perhaps a fifth of the crop.

An endeavor was made to impress upon the boys and farmers the fact that to get a good yield of rice it is necessary to fertilize well, to cultivate the ground carefully, and, above all, to pay particular attention to seed selection in order to get good hardy seedlings.

The yield in detail was as follows:

	Bundles.
Upland rice	187
Lowland rice raised on school land	628
Lowland rice raised on rented land	408
Total	1,223
Share for rent	178
Total for the farm	1,045

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LAGUNA.

The Lilio Central School has just finished an order for 88 tray cloths valued at ₱107.84 and 29 sandwich baskets valued at ₱19.45. Ninety-six articles valued at ₱50.83 were disposed of locally during the last quarter.

Agricultural clubs have been organized in every town in the province. The members are showing keen interest in the work.

The intermediate schools of Santa Rosa and Santa Cruz had industrial exhibits at the provincial athletic meet, and the articles exhibited met with ready sale. Most of these articles consisted of canned fruit and garments for children.

The provincial salesroom was completed and opened to the public in November. There is a fair stock of baskets, lace work and embroidery on hand.

The provincial trade school boys have just completed the construction of a storeroom for the high school, the work, costing ₱400.

The College of Agriculture at Los Baños maintains booths and has representatives at the garden-day celebrations which are held in this province.

Mr. Guillermo Cariño, traveling industrial teacher, was at Santa Cruz and at San Pablo during January. He taught the new method of making binding twine for doormats. This

method is nearly three times as rapid as that formerly used. The apparatus is simple and inexpensive. Experiments are being made in the use of salt water to hasten the extraction of fiber from husks, but satisfactory results have not yet been secured.

During January the division office shipped ₱143.50 worth of pandan tampipis, ₱145.75 worth of sabutan hats, and ₱208.10 worth of other industrial articles.

Miss Maxima del Rosario, traveling industrial teacher of embroidery, was at Pagsanjan, San Pablo, and Santa Rosa during January.

Colored embroidery on pinolpog is a successful handicraft of the pupils in the Santa Rosa Intermediate School. Demand for this product is greater than the supply. The girls have been working two additional hours each day to fill some of the orders.

The provincial board has voted ₱1,500 to finance the provincial sales department, which is now in operation.

Garden day was held at Majayjay on January 27. It was a success both in attendance and in interest displayed. The people of the town cooperated with the schools in the celebration. (H. M. W.)

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LEYTE.

Garden day was celebrated by the Carigara Central School on December 15, 1916. Two rooms of the intermediate school were filled with exhibits of garden and farm products supplied by over one hundred pupils and forty-two farmers. Three barrios participated in the celebration.

Two carabaos, one of which was white, a large bull, and several selected chickens, a model house, and an American plow were among the exhibits.

The celebration opened at 8 o'clock in the morning. During the whole afternoon, when deliveries were made of articles sold, the rooms were crowded with people. All of the agricultural products offered, were sold. (F. M. S.)

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MINDORO.

There seems to be no limit to the quantity of industrial materials in Mindoro. Pupils are being encouraged to gather and sell them. The Philippine Normal School and the city schools of Manila have taken several shipments of bacog, tipon-tipon and nito. Two new materials known as "agnaya" are abundant and seem to be well adapted to the making of window baskets.

The agricultural clubs in the Lubang and Pinamalayan districts are specializing in poultry; in the other districts they have selected coconut growing. The schools in Lubang have invented a neat and economical form of hen's nest. Old farmers have actually attended industrial classes to learn how to make the nests.

The first garden day this year was held in Calapan on January 1, 1917. The provincial board appropriated ₱200, the municipal council appropriated ₱150, and the people donated ₱100 for the celebration. The Bureaus of Health, Forestry, Constabulary, and Agriculture participated in the festivities.

The Mangyans of Mindoro make baskets of bacog and rattan, and they weave mats from rattan. It is believed that those in the interior are in a better economic condition than those near the towns. In the remote places, it is said that they live in larger groups, have farms, and raise pigs.

A lace bobbin winder which was recently received from the General Office, has been placed in the school at Pinamalayan. It is planned to place one in every school. (A. N. and F. S.)

NUEVA VIZCAYA.

THE SUGAR INDUSTRY AT CASIBU.

At the Ilongot settlement farm school of Casibu, Nueva Vizcaya, may be seèn a carabao-power sugar mill, which is more remote from civilization than any mill of its kind in the Islands. The press and five large iron kettles, or "cauas" purchased by the Bureau of Education were carried by the people over the mountain foot trail to the school.

The Ilongots near Casibu raise very fine sugar cane, and the soil seems to be particularly well adapted to its production. Before this mill was set up, the people extracted the juice from the cane by means of a wooden press, probably the most primitive in existence. They used most of the juice to make "ayob," a drink of which they are fond.

After the opening of a school at Casibu, it was thought that if there were a mill at the school, and if the people could be induced to plant larger areas of cane, quite a sugar-making industry might be developed. So the matter was taken up with the people, who readily agreed to plant larger areas of cane, and to bring in and set up the press and kettles.

After the mill was in running order, the people were very anxious to see what it would do. When it was started, they were greatly surprised and pleased at the large amount of juice it was capable of extracting, as they were accustomed to getting only about 20 per cent of the juice by means of the wooden presses.

The school now has a considerable area in cane, and the people are all planting much larger tracts. Some sugar has already been made by them, and they look upon the mill as something that belongs to the community.

The Christian people of Nueva Vizcaya use a great deal of native sugar called "penoche," most of it being brought from Pangasinan. By working up a sugar-making industry through the school at Casibu, it is hoped to have the Ilongots furnish the sugar supply for the province. (B. F. N.)

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OCCIDENTAL NEGROS.

According to Mr. Roman S. Legaspi, the Silay woodworking class began the year with an enrollment of 80 boys from Grades IV, V, and VII. The shop is open for three 80-minute periods in the morning and for one in the afternoon. The lumber used is mostly lauan and costs 8 centavos per board foot. From the opening of school to the beginning of the short vacation the shop turned out 57 embroidery frames, 102 school desks, 4 tables, 3 picture frames, 5 coir-mat frames and a large shelf for lace pillows, the total value of which is nearly ₱400.

Mrs. Maria G. Yulo writes that at La Carlota from the opening of school in June to December 16, 121 yards of valenciennes and 230 yards of elementary lace were made by 62 girls from Grades III to VI, only 18 of whom were in the intermediate school.

Hinigaran has 105 girls in Grades III to VI, who are making lace. The average production per pupil for each double period is 15 centimeters. Since the opening of school each girl has made an average of over 7 meters of lace.

With the present designs, lace can be produced commercially in lower academic grades than can embroidery. Grade II pupils are successfully producing 1*a*, 1*b*, B. E. design, in this province, while no Grade II pupils are producing embroidery.

The following figures are available on the amount of thread required for certain lace patterns:

8*a*–8*b*, B. E. 5511, 12-yard pieces, 21 small skeins Falcon No. 100.
102*a*–102*b*, B. E. 5511, 12-yard pieces, 6 spools ONT 150; or 1½ balls Alexander 300.

These figures, of course, pertain to Occidental Negros. They are based on data from schools where there is no waste of thread. Other provinces may not have the same experience.

In the La Carlota schools, Mrs. Maria G. Yulo, an experienced lace teacher, has found that 1 per cent on the monthly rating, given for every inch of valenciennes lace, 102*a*–102*b*, is fair marking and that it sets a definite goal to strive for. Needless to say, interest in lace making among Mrs. Yulo's pupils is at the highest pitch. The product has tripled since the rule was put in force.

Shipments from Occidental Negros to Manila have to go by lorcha to Iloilo and be transhipped by steamer. The division office now allows shipments of heavy or bulky articles to be made direct from the points of origin, only the invoices and the triplicate copies of the bills of lading passing through the division office. This will develop producing centers which are now below standard by offering an outlet and the quality of articles produced as a local responsibility. (W. J. R.)

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PALAWAN.

As a part of Clean-up week, the supervising teacher of Corón reports that the whole town is cleaner than it is has been for a year, and an effort is to be made to keep the town that way permanently.

High winds and cold weather have interfered with the preliminary trials for the swimming contests.

The provincial office has recently been supplied with desk baskets from the schools of the division.

Basketry materials are rising in price.

The provincial school and the Cuyo municipal schools combined in their celebration of garden day which was held on February 2. The local representatives of the Bureau of Health helped in the preparation of the program. The domestic-science classes served lunch to all visitors.

The greatest trouble with the sales department of the General Office has been that it has been placing more orders with the division than it is possible to fill with certainty. (R. C.)

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ZAMBALES.

BURI FLOUR.

According to Mr. Silverio Diñoso, when crops are poor and food is scarce in Zambales, many people use as food the flour made from buri palms. Not all of these palms are of equal value as flour producers. Experience has taught that trees at least 10 meters high with trunks which bulge just below the place where the petioles come out, should be selected. Flour obtained from the lower half of the trunk is richer in flavor than that from the upper part.

As soon as the tree is felled, the trunk is cut into pieces not over a meter in length; the outside or bark is chopped off to a thickness of about 12 centimeters, and the inner part is cut into pieces which are pounded in a mortar in order to separate the flour from the fiber. The flour is further separated from the fiber by means of a sieve. If finer flour is desired, it is again pounded in a mortar, sifted through a finer sieve and put in the sun to dry, after which it will kept for two or three years. A well cleaned section of buri trunk a meter in length and 60 centimeters in diameter, will yield about 75 liters of fine flour.

Buri flour is mixed with rice to make pudding and such Filipino delicacies as "maruya," "buche," "noñgotan" and "suman."

LETTER BOX.

[From time to time there are received questions of general interest which require relatively short answers. Whenever the questions are of wide enough application to warrant it, the answers will be published under this heading.]

1. What is the best way to preserve garden seeds in the tropics?

Answer.—They should be thoroughly dried, placed in glass bottles, and covered with a layer of powdered charcoal. The bottle should then be tightly closed with a cork stopper; paper will not do. See Bulletin No. 31, page 71, for more detailed instructions.

2. When should linen thread and when should cotton thread be used for filet lace; what is the best thread for valenciennes lace?

Answer.—Filet lace for use on household linens should be made of linen thread; for use on garments and underclothes, cotton thread will do. The best thread for valenciennes lace is believed to be that marked "Belpen," which is manufactured by J. and G. Stuell of Derby, England. This thread is cotton with a linen finish.

3. Should Italian cutwork be laundered before or after the fabric is cut away?

Answer.—All Italian cutwork should be laundered before the linen is cut away, as otherwise the work pulls out of shape.

4. What is the difference between Valenciennes and bobbin lace?

Answer.—Valenciennes lace is bobbin lace.

5. How should square or oblong articles with hemstitched borders be stamped so that the lines denoting the places to draw the threads for hemstitching will run parallel with the threads of the fabric?

Answer.—Articles such as baby pillows, with hemstitched borders should have the necessary threads pulled for hemstitching before the design is transferred. After the threads are pulled correctly, the center and ruffle are stamped. In no other way can the ruffle be made perfectly even all the way around.