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The Philippine Craftsman

Vol. V, No. 9 March 1917

The Philippine Craftsman

VOL. V MANILA, MARCH, 1917 No. 9

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THE PHILIPPINE CRAFTSMAN is published by the Bureau of Education at Manila, P. I., monthly during nine months of the school year from July to March. The subscription price is ₱3 per year or ₱0.60 per copy, postage prepaid in the Philippines, the United States, and other countries under the same postal regulations; to countries not counted in this classification, ₱4 per year or ₱0.70 per copy. (₱1 equals $0.50 United States currency.) Address correspondence and make subscriptions payable to the Director of Education, Manila, P. I.

Entered at the Manila post office as second-class matter.

If I have acted well my part, greet my departure with your applause.

Augustus

1917. BUREAU OF PRINTING, MANILA.

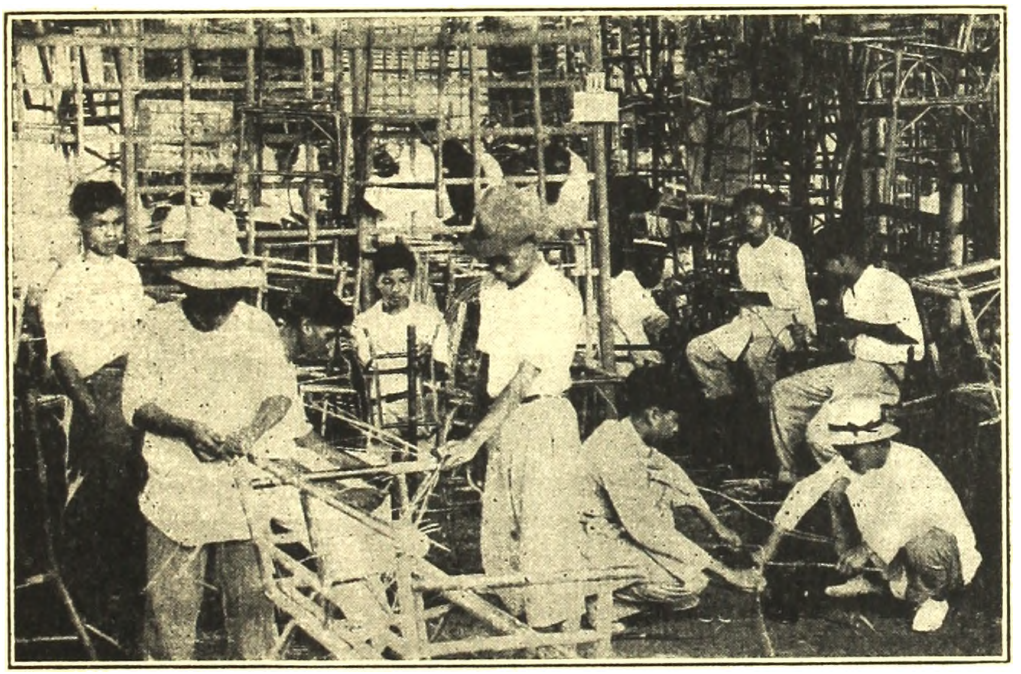
The Philippine Craftsman

VOL. V MANILA, MARCH, 1917 No. 9

AN ACHIEVEMENT IN RATTAN FURNITURE WORK.

By VICTOR ORLEANS, Supervising Teacher, and TOMAS FLORDO, Industrial Teacher, Lopez, Tayabas.

Three years ago, the industrial teacher of Lopez Central School took a course in rattan furniture at the Tayabas Normal Institute. After the institute, this course was selected as the

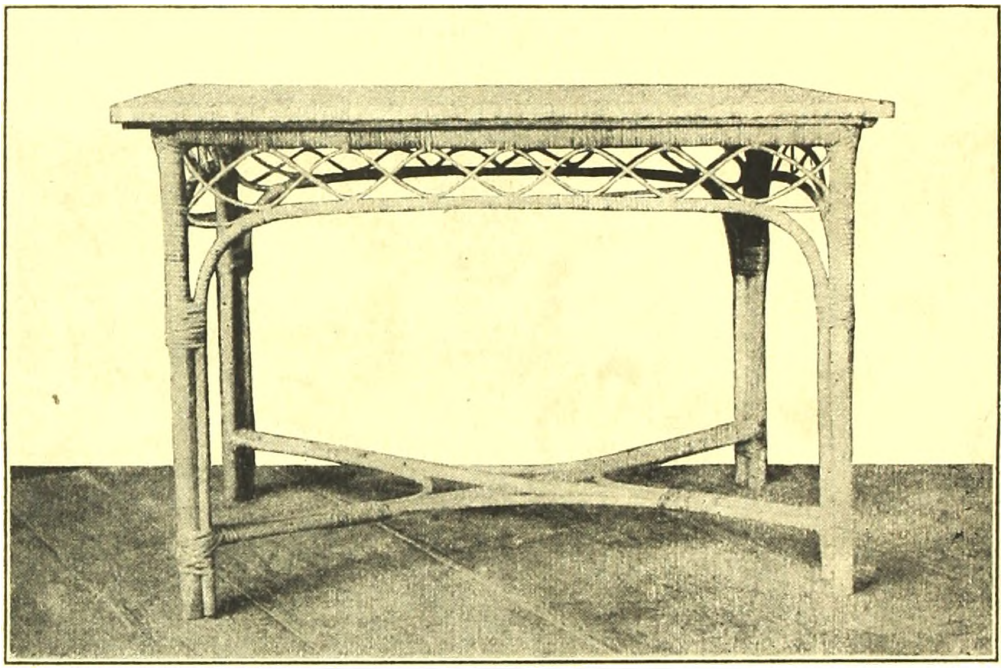


Interior view of the rattan furniture shop, Lopez, Tayabas.

required industrial work for Grade V boys and for about one third of the Grade VI boys in Lopez. The course proved popular among the pupils and good results were obtained from the beginning. During the following school year, by special permission of the Director of Education, it was given to the Grade VII boys instead of woodworking. In order that there might be continuity of effort and no loss of the skill already acquired by pupils in the fifth grade, special permission to give the rattan furniture course instead of gardening in the sixth grade,

was obtained from the Director of Education at the beginning of the current school year. Gardening was placed in the seventh grade. This arrangement enables the majority of boys to become skilled in rattan work by taking it in the fourth, fifth, and sixth grades continuously.

In June and July, a new shop was built, the former one having been destroyed by the typhoons of 1915–16. Palma brava was used for posts, bamboo for rafters and beams, and nipa for the roof and sides. With the exception of ₱5 worth of nails which were paid for from municipal funds, all materials were donated by school patrons and pupils.

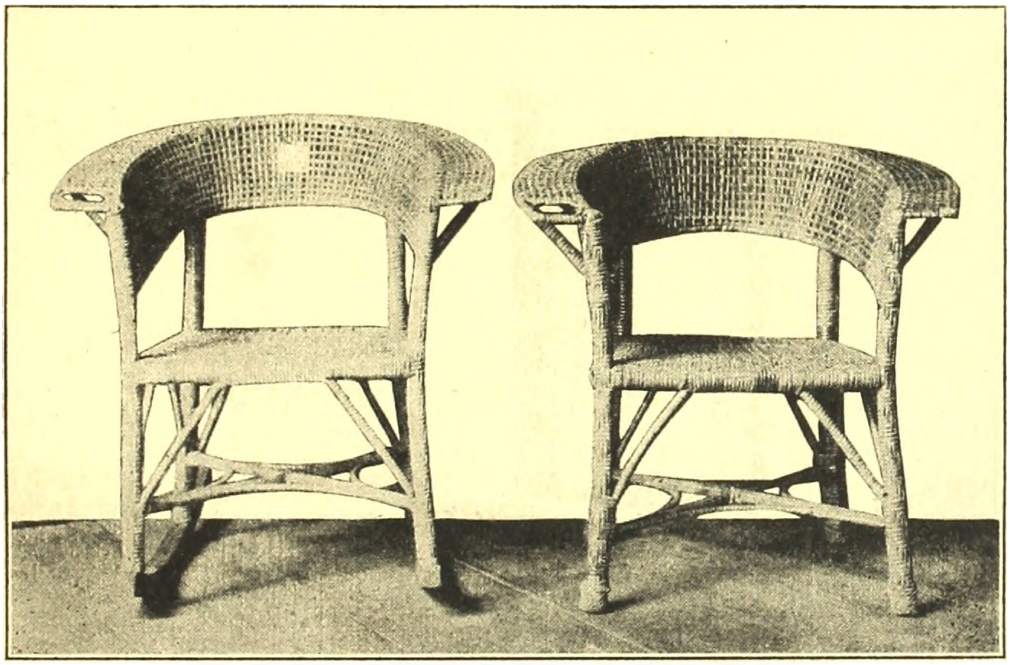


A rattan table suitable for any home.

The interior of the building is divided into a tool and storage room, a place for seasoning the rattan framework after it is assembled, and a work room. The tools and equipment used in the shop, and their cost are as follows: Twelve hammers, ₱13.44; eleven bolos, ₱11; twenty-four Sloyd knives, ₱12; six backsaws, ₱7.50; twelve brad awls, ₱2.30; one rip saw, ₱2.50; one turning saw with 16 blades, ₱3.20; three braces, ₱8.58; five assorted auger bits, ₱2.70; five folding rulers, ₱1.25; sixteen assorted chisels, ₱7.44; one saw set, ₱0.48; one divider, ₱0.40; one pliers, ₱0.48; one brush file, ₱0.45; six small clamps, ₱3; two large clamps, ₱1.50; two block planes, ₱3.20; three iron jack planes, ₱5.20; one large iron jack plane, ₱5; four wooden jack planes, ₱10; one large wooden jack plane, ₱3.85; ten spoke shaves,

₱2.50; one blow torch, ₱10; three work benches, ₱72; total value, ₱189.97.

Giant and small rattan abounds in the forest within the jurisdiction of the municipality of Lopez, and the teacher has only to organize excursions on Saturdays in order to secure materials. Enough for two months' use is collected on one trip. In order that a sufficient quantity, properly seasoned, will be on hand when school begins in the following June, it is the practice to require each worker to give to the industrial teacher, before the close of school, 5 pieces of small, 5 of giant, and 10 of cleaned rattan for wrapper, all 5 meters long.



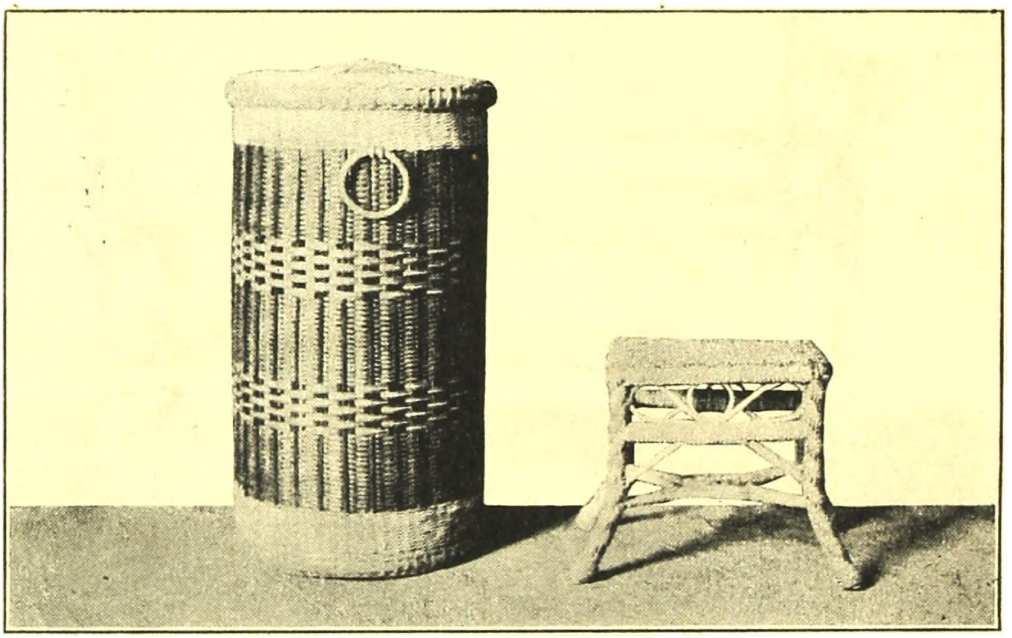
A rocker and an easy chair of good workmanship.

No materials are allowed to go to waste. Short pieces which can not be used on large chairs, serve in the making of footstools and baby chairs. These are sold as fast as they can be made. Division of labor is practiced. Younger pupils prepare materials and construct the frames, while the more experienced boys do the wrapping.

It has been the practice to use wrappers of rattan peel obtained from local sources, but this material usually does not give satisfactory results because it is in most cases green and therefore shrinks. A trial order of rattan peel was secured from Bilibid. The results were excellent. The preparation of the wrapper is not indispensable in order to develop the highest efficiency of each pupil. Since it can be obtained at a reasonable price,

the cost of transportation being very low, the Bilibid wrapper is now employed on those articles which are ordered by the public. Its use gives a smoother finish to the articles manufactured, and it makes possible an increased output. The wrapper made from material gathered locally is employed on those chairs and tables which are for the pupils' own use.

One advantage which the Lopez chairs have over those from other places is that the ends of the legs have special covers or "shoes" which prevent unraveling of the weavers. For a description of these, see page 382 of THE PHILIPPINE CRAFTSMAN for November, 1916.



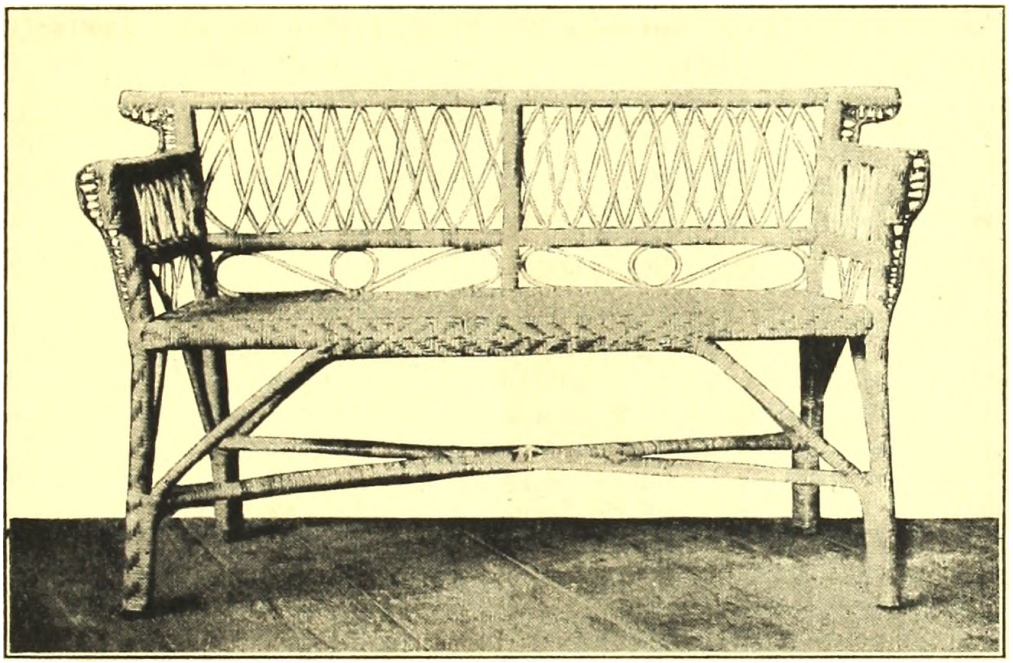
Clothes hampers and stools are finding a place in Filipino homes.

Bureau of Education designs are followed, but in some cases the output is the result of adaptation to local demands. The chair of design No. 761 which in some cases is furnished with rockers, is the most popular. Orders have been received from two municipal treasurers for 1 dozen each of this design. These chairs will be used by the municipal councilors in the session rooms. Sets consisting of 2 such chairs, 2 dining chairs, 1 table, and 2 footstools have been sold as fast as made.

From July 10, when the division normal institute closed, to December 16, 1916, the production by classes was as follows: Twenty-one pupils in Grade IV made 44 chairs and tables valued at ₱99.99; fifty-seven pupils in Grade V made 184 chairs valued at ₱325.60; fifty-two pupils in Grade VI made 200 chairs valued at ₱409.76. The total output was 428 articles worth ₱835.26.

Besides this, the school shop was built, the 130 pupils being employed at the work for 44 hours. Allowing 3 centavos an hour for the labor of each boy, the construction work represented a value of ₱171.60.

Next year, when school funds become more adequate in consequence of the reassessment of property, the shop will be enlarged, and the equipment will be improved. The stock of materials such as giant and small rattan and the wrappers or



A settee made in the shop.

peel, will be increased by purchase. With part of the Grade IV boys, and with all of those in Grades V and VI working, the output of the shop will be sufficient to meet the increasing orders.

Rattan furniture making as an industrial activity in Lopez has come to stay. The school shop not only creditably executes Bureau designs, but most of all, the product pleases the parents who delight in the visible results of the training of their children. The output cannot compete in quality with that of Bilibid, but an end has been achieved: comfortable chairs and tables have been provided at prices within the people's means.

Life itself is only growth, an ever-changing movement toward some object or ideal. Growth within is health, content and happiness, and growing things without stimulate and enhance growth within.—Luther Burbank.

IDEAS AND ACHIEVEMENTS OF RIZAL IN INDUSTRIAL EDUCATION.

By CAMILO OSIAS, Division Superintendent.

The writings of Rizal are replete with ideas concerning education. Public instruction was one of the problems uppermost in his mind. He recognized the efficacy of education and industry as means of national redemption. The principal character of his famous novel, the Social Cancer, possesses a consuming desire to establish an efficient school. He himself cherished the dream of founding a school "in accordance with the demands of modern times and circumstances." Austin Craig speaks of this ambition of our hero, as follows:

> The teaching instinct that led him to act as mentor to the Filipino students in Spain and made him the inspiration of a mutual improvement club of his young countrymen in London, suggested the foundation of a school in Paris. Later a Pampangan youth offered him $40,000 with which to found a Filipino college in Hongkong, where many young men from the Philippines had obtained an education better than their own land could afford but not entirely adapted to their needs. The scheme attracted Rizal, and a prospectus for such an institution which was later found among his papers not only proves how deeply he was interested, but reveals the fact that his ideas of education were essentially like those carried out in the present public-school course of instruction in the Philippines.

An occurrence most gratifying to Rizal was the presentation to General Weyler by a group of ladies of Malolos, of a petition for the establishment of a school. Weyler denied the petition; and Rizal, in an article commenting upon the matter, eulogized the ladies for their patriotic action. He preached the need of education. "Ignorance," he said, "is slavery."

Rizal recognized the importance of industrial education. Among the five purposes of the Liga Filipina, which he founded, were "the development of instruction, agriculture, and commerce." In chapter 26 of The Social Cancer, is to be found a description of what he considered a modern school. The building, according to him, should be spacious and hygienic; the site should be large and provided with playground and garden. It is therefore apparent that he conceived of gardening as one of the activities that should be carried on in school.

Rizal believed in the enlightenment of all classes, including farmers and laborers. As a proof of this we have the following

conversation between two of the characters of Rizal's novel entitled The Reign of Greed; see chapter 15, pages 145 and 146 of Derbyshire's translation:

Señor Pasta said: "There are too many lawyers now, many of them become mere clerks. Doctors? They insult and abuse one another, and even kill each other in competition for a patient. Laborers,-sir, laborers, are what we need, for agriculture!"

Replying to this, Isagani said: "Undoubtedly, there are many doctors and lawyers, but I won't say there are too many, since we have towns that lack them entirely, and if they do abound in quantity, perhaps they are deficient in quality. Since the young men can't be prevented from studying, and no other professions are open to us, why let them waste their time and effort? And if the instruction, deficient as it is, does not keep many from becoming lawyers and doctors, if we must finally have them, why not have good ones? After all, even if the sole wish is to make the country a country of farmers and laborers, and condemn in it all intellectual activity, I don't see any evil in enlightening those same farmers and laborers, in giving them at least an education that will aid them in perfecting themselves and in perfecting their work, in placing them in a condition to understand many things of which they are at present ignorant."

Rizal's ideas concerning education and industrial instruction were not confined to theory. They were actually put into practice. As an exile in Dapitan he acquired a piece of property, built a house, and had a farm. He also organized a school where he gave practical training in designing, drawing, carving, sculpture, carpentry, and farming. The following description is by Austin Craig:

The school, including the house servants, numbered about 20 and was taught without books by Rizal, who conducted his recitations from a hammock. Considerable importance was given to mathematics, and in languages English was taught as well as Spanish, the entire waking period being devoted to the language allotted for the day, and whoever so far forgot as to utter a word in any other tongue was punished.

Nature study consisted in helping the Doctor gather specimens of flowers, shells, insects and reptiles which were prepared and shipped to German museums. Rizal was paid for these specimens by scientific books and material. The director of the Royal Zoölogical and Anthropological Museum in Dresden, Saxony, Doctor Karl von Heller, was a great friend and admirer of Doctor Rizal. Doctor Heller's father was tutor to the late King Alfonso XII and had many friends at the Court of Spain. Evidently Doctor Heller and other of his European friends did not consider Rizal a Spanish insurrectionary, but treated him rather as a reformer seeking progress by peaceful means.

Doctor Rizal remunerated his pupils' work with gifts of clothing, books and other useful remembrances. Sometimes the rewards were cartridges, and those who had accumulated enough were permitted to accompany him in his hunting expeditions. The dignity of labor was practically inculcated by requiring everyone to make himself useful, and this was really the first school of the type, combining the use of English, nature study, and industrial instruction.

Rizal wrote from Dapitan:

My life now is quiet, peaceful, retired and without glory, but I think it is useful, too. Here I teach the poor but intelligent boys reading, Spanish, English, and mathematics, moreover I teach them to behave like men. I taught the men here a better way of earning their living and they think I am right. We have begun and success so far has crowned our efforts.

The great Filipino teacher was not ashamed to soil his hands. He was an industrious worker. In company with his pupils he installed a public lighting system for the municipality of Dapitan. With the aid of his pupils, also, he constructed an aqueduct which furnishes the town of Dapitan with good water and which has won the admiration of American engineers. The following passage is quoted from an article by Mr. H. F. Cameron in the Quarterly Bulletin of the Bureau of Public Works for October 1, 1912:

Another famous and well-known water supply is that of Dapitan, Mindanao, designed and constructed by Dr. José Rizal during his banishment in that municipality by the Spanish authorities. This supply comes from a little mountain stream across the river from Dapitan and follows the contour of the country for the whole distance. When one considers that Doctor Rizal had no explosives with which to blast the hard rocks, and no resources save his own ingenuity, one can not help but honor a man who, against adverse conditions, had the courage and tenacity to construct the aqueduct which had for its bottom the fluted tiles from the house roofs, and was covered with concrete made from lime burned from the sea coral. The length of this aqueduct is several kilometers, and it winds in and out among the rocks and is carried across gullies in bamboo pipes upheld by rock or brick piers to the distribution reservoir.

The work of the Bureau of Education in its academic, athletic, and industrial aspects is essentially in harmony with the best ideas of our greatest thinker. If he were living today, he surely would be happy to see that our schools do not exist to educate "ladies" and "gentlemen" who are averse to hard, manual labor. He would take a keen satisfaction, especially in the efficient industrial program of our public schools which is contributing so much to promote intelligence, skill, and sympathy in the country he loved and whose people he served. The message and the example of Rizal should serve ever to inspire the teachers and pupils of our public schools, for with them lies the fulfillment of his vision.

I have learned that success is to be measured not so much by the position that one has reached in life, as by the obstacles which he has overcome while trying to succeed.—Booker T. Washington.

FIVE YEARS' PROGRESS IN GIRLS' INDUSTRIAL WORK.

By Mrs. PEARL F. SPENCER, Provincial High School, Union.

Girls' industrial work in the public schools of the Philippine Islands embraces seven years of instruction in both the primary and intermediate grades and includes lessons in plain sewing, cooking, hygiene, sanitation, ethics, and one commercial subject such as embroidery, lace making or tatting. The chief aims that have been kept in mind in planning the work are: First, to raise the standard of living; second, to improve the home and home life; third, to provide better methods for doing routine housework and to supply the home with the necessary conveniences; and fourth, to provide the women of the land with the means of augmenting the very limited family income or to give them the means of earning a livelihood.

Five years ago, the organization of the industrial courses had really just begun. There was little system or uniformity. Each school was a unit in itself and instruction within the same province varied greatly. The course of study was not definite, and the work to be accomplished in each grade was not clearly enough defined. Much energy was wasted through lack of system, attempts at too many kinds of work, and ignorance of commercial requirements. The Bureau of Education has been systematizing the industrial activities of the schools so as to secure efficiency and uniformity throughout the Archipelago.

Various mediums have been used to promote girls' industrial work. The General Office has issued circulars, bulletins, perforated patterns, and blue prints. It has sent out inspectors who have given superior instruction to teachers, and who have done much toward making the work uniform. Models from the Industrial Museum have been of great help in raising the standard of work.

Division industrial supervisors see to it that instructions from the general and division offices are carried out. Some of the provinces ranking highest in industrial work have an industrial supervisor in each district, in addition to the provincial supervisor. The division normal institute, which is attended by all of the primary teachers of a province, lasts for one month each year and is intended to give every teacher from two to four hours of special industrial training every day. The standard of indus-

trial work in the schools has risen as the teachers' knowledge of the subject has increased.

The Philippine Normal School has contributed its share toward the progress of domestic-science instruction. Every year pensionados are sent to this school at the expense of municipalities, provinces, and the Insular Government itself. They receive training designed to prepare them to teach the subjects prescribed in the course of study. The Filipino Teachers' Vacation Assemblies held for five weeks each year in the Normal School, have gradually increased in importance until their influence for good is felt everywhere. The annual conferences held at the Teachers' Vacation Assembly at Baguio have helped to shape the industrial policy of the Bureau.

Photograph by Edgar A. Morgan.

A typical intermediate schoolgirl. She has the poise and self-reliance which only the ability to do some kind of work well, can give. This becoming dress was made by her at the provincial school, Pasig, Rizal.

The School of Household Industries which was in operation from June, 1912, till December, 1916, both directly and indirectly made for progress in girls' industrial work. Many of its graduates have established paying household centers, and others of them have been employed to teach embroidery and lace making in the schools.

For several years, the Bureau of Education building was one of the main attractions at the Philippine Carnival. The sales exhibits demonstrated to the public that the Bureau was getting substantial results, and gave division superintendents and industrial teachers opportunity to compare their work with that from other provinces. The greatest school industrial exhibit ever made was that from the Philippines in the Education Building at the Panama-Pacific International Exhibition in San Francisco in 1915. Interest ran high, business men began to think of these Islands, and much

was accomplished toward establishing a permanent market for industrial products.

Not least among the mediums through which girls' industrial work has been promoted is THE PHILIPPINE CRAFTSMAN itself. Its pages have constantly been devoted to the advancement of industrial training in the schools, and it has issued some beautiful, original, and appropriate designs.

Five years ago, there was practically no system in plain sewing. At many schools, the girls were allowed to make whatever they chose, irrespective of grade; at others, garments were fashioned to suit the taste of Americans and to exhibit and sell at the Carnival. Now they are made for the use of the people themselves.

Bulletin No. 53, Elementary Plain Sewing, has done more than anything else to systematize this work. In it, provision is made for instruction in all four of the primary grades. The course is very carefully graded from sampler work on canvas and the making of dolls and doll clothes in Grades I and II, to the making of children's clothes in Grade III and the making of garments for men and women in Grade IV. The aim of the Bureau is "to fit each Filipino girl who completes the primary course to do all the necessary household sewing."

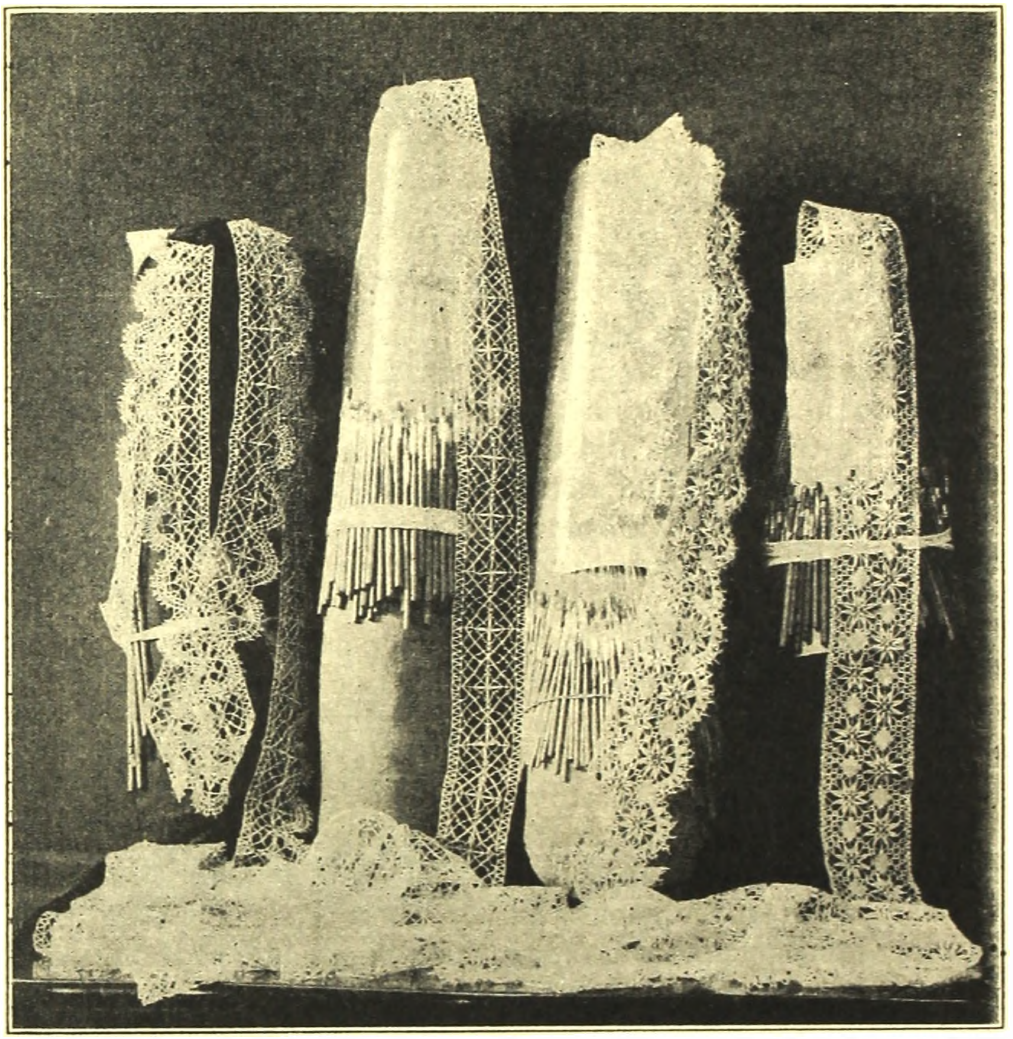
The course of study provides that plain sewing be given in Grade I every day; that it be given in connection with one other subject in Grade II; that in Grade III two days, and in Grade IV one day, shall be devoted to plain sewing each week. In the first three grades all work is done by hand, but in Grade IV, the girls are taught the use of the sewing machine and all long seams are stitched on the machine. In most schools the materials are furnished by the pupils themselves, and the garments made are worn in the homes.

In the intermediate grades, it is the ultimate aim of the Bureau to institute a course in dress making based upon the primary plain sewing course. As it is now, one day in each week is devoted to plain sewing until the work prescribed in the textbook on housekeeping has been completed.

The results from instruction in plain sewing have been gratifying. Schoolgirls have more and better-made clothes than formerly, and everywhere children appear much better dressed than they did a few years ago.

In 1912, at almost any school where a course in cooking and housekeeping was given, one might have found equipment such as American stoves and cooking utensils that could not have

been bought by the girls in their home towns. At many schools too, the cooking lessons consisted largely in the preparation of American dishes. Gradually there came a breaking away from the use of American utensils and recipes, and those things which really touched the home life of the girls were made the basis of instruction.



Laces made in Miss Mora's class at Olongapo, Zambales. Five years ago such beautiful laces were not produced outside of Manila.

Bulletin No. 35, published in 1911, was for three years used by teachers, in the fourth and intermediate grades. This was a great improvement over the domestic-science "guide" issued in 1908 and showed that many lessons had been learned since that time. In July, 1914, Bulletin No. 35 was replaced by "Housekeeping," a textbook for the use of girls in Grades V and VI of intermediate schools.

It is the desire of the Bureau that cooking and housekeeping

be taught in houses similar in construction, furnishing, and equipment, to the homes from which the majority of schoolgirls come. "The work should be directed toward increasing the necessities of the people; but each new step must be based upon what they already have."

This branch of girls' work is much more practical now than in 1912, although it has not yet touched the homes to the extent desired. The reason is that girls who come to school are generally not in charge of the cooking at home, and instructional

Photograph by L. P. Willis.

Girls demonstrating embroidery work at the Dumaguete garden day and agricultural fair, Feb. 17, 1917.

standards, even now, are higher than those possible to most of the poorer people.

In addition to plain sewing, cooking, housekeeping, hygiene and sanitation, it has always been the policy of the Bureau to give expert instruction in at least one kind of work which would enable a girl, if she so desired, to gain a livelihood upon leaving school. This course is very carefully chosen for each town, the purpose being to select work which is already established as a household industry, or which may eventually be developed into one.

In these commercial courses it has been the policy of the Bureau to require the girls to specialize, the work from Grade

III to Grade VII, inclusive, being the same. A girl during that time should not only become expert, but she should be able to keep herself supplied with pin money. The approved courses are embroidery, bobbin lace, Irish and filet crochet, real filet lace, tatting, hat making, and foot-loom weaving. By far the most popular and widely distributed of these is embroidery. It has for a long time been a household industry in the Islands,

Photograph by Miss Dolores Barrera.

At three socials held during the school year, this progressive domestic-science class cleared P205.92 for the intermediate-school fund at Gerona, Tarlac. Such initiative on the part of girls was unthought of a few years ago.

and it seems to appeal to most Filipino girls. The making of bobbin, Irish, and filet lace, has also been in favor.

In 1912, each school procured its own patterns and designs for this work. There was no systematic teaching and no market except at the Carnival. Now the field is supplied with stamped material, perforated patterns, and blue prints, from the General Office; the market is assured, and the teaching of industrial work has been systematized.

In the Annual Report of the Director of Education for 1912 the following statement was made: "A year ago, officials and public alike looked largely to the probable industrial product

of the schools as the ultimate result of the work. That is not the end to be attained. The scope of the work is much broader. In industrial education, as in every other subject, the schools must serve as a medium of instruction only, and the great problem of the coming year will be to extend to the homes of the people the industries now taught in the schools." This has continued to be a problem, but it is slowly being solved through the establishment of household industrial centers.

About five years ago, the Bureau felt the need for a system whereby a permanent record could be kept of all articles made by pupils, and of all money paid for industrial material or turned over to pupils for their work. This led to the installation of the present industrial accounting system in June, 1913.

An industrial sales organization became increasingly necessary until, finally, the Philippine Legislature passed Act No. 2629. This law made provision for the newly established General Sales Department under the control of the Director of Education, and provincial sales departments under the control of division superintendents.

The Bureau is handling the commercial side of school industrial work only as a means to promote the welfare of the people. No employee of the Bureau profits financially from the work, so there can be no temptation to cut prices. As long as the Government is interested in commercial work and is able to market it, the women may feel pretty sure that they will be justly treated in the matter of prices, by private firms in the Islands.

The Bureau of Education has cause to look back over the progress made in girls' industrial work during the past five years with a great deal of pride and satisfaction: Plain sewing is ministering to the fundamental needs of the people; the lessons taught in the schools are resulting in improved living conditions in many homes; and the incomes of household workers are rapidly increasing.

Homer makes constant allusions to embroidery. Penelope throws over Ulysses, on his departure to Troy, an embroidered garment of gold, on which she had depicted incidents of the chase. We read that in Greece the art was held in the greatest honour, and its invention ascribed to Minerva. Phrygia became celebrated for the beauty of its needlework. The "toga picta," decorated with Phrygian embroidery, was worn by the Roman generals at their triumphs, and by their consuls when they celebrated the games.—Townsend, Embroidery.

THE ATTITUDE OF GIRLS TOWARD INDUSTRIAL WORK.

By Mrs. ENGRACIA YAMZON, Industrial Supervisor of Girls' Work, Manila.

The achievements of a people can be measured by its industrial activities. During the last decade, economic progress in the Philippines, due very largely to the intelligent and efficient direction of the Bureau of Education, has been notable. The principal industries furthered in the schools have been embroidery, lace making, weaving, basketry, woodworking, and gardening. The first three are per se feminine occupations and were introduced or improved by the Spaniards more than 200 years ago. It remained for the Americans to adapt the old arts to the demands of modern commerce, and to popularize industrial work in all its phases.

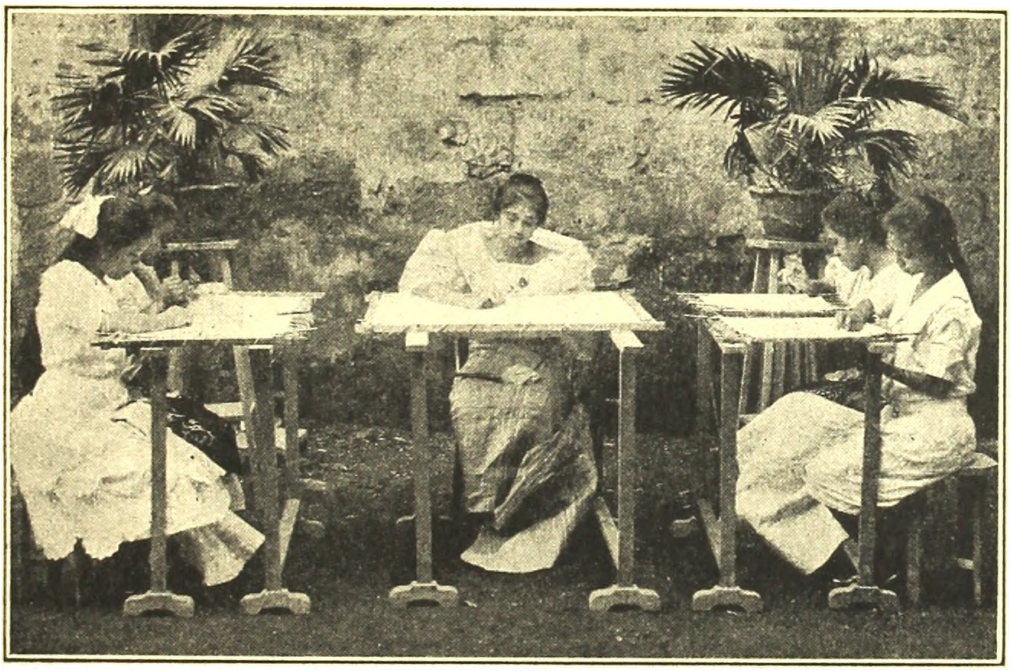
The predominant characteristic of Filipino youth is its plasticity. This may be either a help or a hindrance to advancement. The determination as to which it shall be, lies in the hands of him who directs and controls the child. In one school in Manila, the girls want nothing but mosaic work. This is because the teacher does not understand the satin stitch. In another school, the workers are all eager for embroidery on coarse material. The teacher there likes embroidery, but is not expert in it, so she selects a coarse linen because wrong stitches may the more easily be taken out without injury to the fabric. In a third school the girls delight in fine work on sheer linens and muslins. The reason is that the teacher is a remarkably fine needlewoman. The city over, it will be found that almost all likes, dislikes, and selections of pupils, are accounted for by the preferences of the teachers in charge.

Even equipment has comparatively little influence in determining the class of work which proves most popular in any given school. With a resourceful, enthusiastic teacher, the pupils are willing to attempt almost anything. Of course, poor equipment inevitably retards progress.

The natural vivacity of the child makes it desire variety and change of occupation. The present time periods, 60 minutes for the third and fourth grades, 40 minutes for the second grade, and 30 minutes for the first grade, are satisfactory. It is difficult to hold the attention for a much longer period, though pupils often voluntarily offer to work overtime when they know

that their efforts are appreciated. In a relatively small number of girls, the creative faculty is aroused and they work for the joy of it, but almost all of them do well, when they are properly encouraged by the teacher.

In most of the embroidery centers of Manila, many schoolgirls work during the afternoons and in this way they earn enough to pay for their pencils, blank books, and lunches. They do hemstitching and scalloping, even before they learn to embroider. This work has an influence more far-reaching than merely to provide for present incidental outlays. It teaches habits of industry and thrift, gives the girls a greater degree of economic



Embroidering under ideal conditions in the Manila schools.

freedom, and will ultimately tend to elevate the standard of living in the homes which they will preside over and direct in the near future. One girl in Manila has shouldered the responsibility of helping to provide for her aged father. She does fine sewing in the afternoon, while she attends school in the morning. Great credit is due to the teacher who imbued her with the desire to help, and taught her how to bring that desire to fruition.

The attitudes of pupils and of outside adult workers are different. The average embroidery women seek to do simple and cheap designs that can be finished in a day or two, and in a majority of cases they refuse to try to better their work. The school children prefer intricate designs, as time does not enter

into their calculations. The outside worker has her daily fish and rice to earn, and it is daily actually, and not figuratively. The children know that difficult and pretty designs bring better prices, and as they are not paid until the end of the term, the desire for immediate returns does not influence their choice. The training of girls to select designs because of their beauty and their suitability to the material, can not but react favorably

The girls enjoy work in the kitchen.

upon Philippine embroidery and appreciably raise its standard.

It is difficult to decide whether cooking or lace making holds the second place in the schoolgirl's heart. The girls are much interested in learning how to prepare new dishes and this interest is carried to their homes and often materially changes the cookery there. As regards lace making, it is the well-to-do that take it up most generally, while those who are expected to help the family turn to embroidery. The former wish to learn how to make lace for their own use; the latter realize that lace

making is a slow process, and that the pecuniary returns are uncertain, and comparatively small. Still, the shaping of their preferences is in the hands of the teacher. In one Manila school where there is an expert lace teacher, the girls are enthusiastic over their work. Every week the lace is measured, progress is noted, and praise is bestowed as deserved. This competition brings out a friendly rivalry and the result is a good production of lace.

In order to get satisfactory results in industrial work, teachers must make the tasks of pupils interesting. To do this, they themselves must have a deep concern in the work, and they must bring to its accomplishment enthusiasm and patience.

REVISION OF BULLETIN NO. 53.

Bulletin No. 53 has been revised in conformity with suggestions from the field, and it is still in the hands of the printer. A circular dealing with the requirements in plain sewing is being prepared. It will be sent to the field, together with a complete set of perforated patterns for garments, at about the opening of the normal institutes. If the circular is followed in connection with the use of the perforated patterns, no difficulty should be experienced in the plain sewing course during the normal institutes.

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Forms 80—84, Industrial Schedule for 1917–18, will in general be returned to the field with very few changes. The comment made by the General Office during the preceding year on the accomplishment of these forms, has had the desired effect.

It is believed that bids for valenciennes lace will be from 20 to 100 per cent higher than they were last year. The increase in the selling price will be a special incentive to workers and there will undoubtedly be a much greater output than during the school year just closed.

Recently a single order for ₱50,000 worth of baskets was received, these to be in 63 different designs. The least number ordered in any one design is 200, and the maximum number is a trifle over 4,000. A great part of this ₱50,000 order has already been allotted, Bohol taking a larger share than any other province. Due to the unusual size of the order the General Office may be compelled to make a number of arbitrary assignments of designs.

RESULTS OF DEMONSTRATION WORK IN RICE CULTURE.

By ELADIO SABLAN, Teacher, Central Luzon Agricultural School.

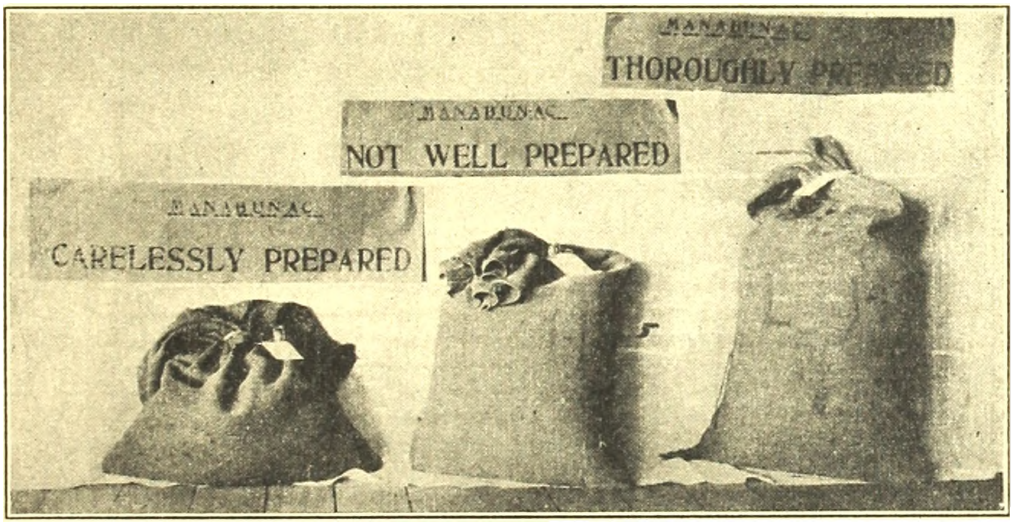
During the past year a number of demonstrations in rice culture were carried out at the Central Luzon Agricultural School. The general plan was similar to the one published on pages 254–259 in the October issue of this magazine. The tests were made in a row of fifty-five double plots, each containing 100 square meters.

Preparation of seed beds.—Under ordinary conditions the preparation necessary for "sabog," sowing broadcast, is more laborious than that for "bakal," drilling in. A plot of 100 square meters prepared for sabog, requires about 22 kilos of seed rice, while the same area prepared for bakal requires only 8 kilos. When the seeds are first germinated, then sown broadcast and given a thin covering of mud, the seedlings make better headway in their growth. By actual count there are an average of 14,838 individual plants in a square meter of sabog, and 5,383 plants in an equal area of bakal. The distribution of seedlings is not at all uniform. To find the average number of plants per square meter, five areas of a meter square were selected in each of the two experimental seed beds at Muñoz. These were staked out near the corners and in the middle of the plots. The seedlings were pulled out and counted one by one. For bakal, the five squares taken separately yielded 9,600, 3,764, 4,650, 7,000, and 1,901 seedlings, a total of 26,915 and an average of 5,383 per square meter. For sabog, the yields were 44,000, 9,000, 6,400, 8,740, 6,050, a total of 74,190 and an average of 14,838. From this it is evident that the area required with the bakal method, for the same results, is much greater than that required with sabog. The bakal method is much the slower. On 100 square meters, four boys drilled in by hand 8 kilos of seed in sixty minutes. On an equal area, one boy sowed broadcast 22 kilos of seed in about fifteen minutes.

The fertilization of rice-seed beds is unnecessary, and it may be injurious to the plants in causing their too rapid growth. When tender seedlings are pulled, the leaves give way, and the stems are left in the soil. In transplanting, the leaves are cut off and much of the benefit resulting from fertilization is lost. It is the fertilization of the plot to which the seedlings are transplanted that affects the yield. Whether the seedlings are from bakal or sabog seed beds, matters little, as the treatment

of the field to which they are transplanted and their care after transplanting are the essentials. Local conditions will determine in which way a seed bed should be prepared. Bakal is suited to upland fields where there is no irrigation, while sabog gives the better results in lowland districts. Seeds planted by the bakal method may not germinate on low land where water is likely to cover the whole field for many days.

Age of seedlings for transplanting.—Roxas seedlings 50 days old, irrigated, yielded 19.2 kilos per are or 44.6 cavans per hectare; 30 days old, non-irrigated, yielded 27 kilos per are or 62.8 cavans per hectare; and 30 days old, irrigated, yielded 38 kilos per are or 88.33 cavans per hectare. Inasimang seedlings 62 days old, irrigated, yielded 12 kilos per are or 28 cavans per



Results of tests in preparation of ground.

hectare; 40 days old, irrigated, yielded 43.4 kilos per are or 100.9 cavans per hectare. When seedlings are very young they are so tender that they break when pulled out; when very short, the water covers them entirely and they do not thrive. For early varieties, seedlings should be transplanted when 30 to 35 days old; for late varieties, when they are 40 to 45 days old.

The selection of seedlings.—The planting of the largest, greenest, and tenderest seedlings, is not consistent with the best agricultural practice; but it represents an idea prevalent among some farmers. In the tests at Muñoz, Inasimang selected seedlings in plot O yielded 39.8 kilos per are or 92.5 cavans per hectare; ordinary Inasimang seedlings in plot 23 yielded 43.4 kilos per are or 100.9 cavans per hectare.

Concerning rice in nursery beds, the late Professor F. H. King observed: "Although these plots are flooded, the marginal plants

adjacent to the free water paths were materially larger than those within and had a much deeper green color, showing better feeding; but what seemed most strange was the fact that these stronger plants are never used in transplanting as they do not thrive so well as those less vigorous."

Seed must be selected before the rice is harvested. Plants should be chosen with reference to vigor, stooling, uniformity of heads, height and number of stalks, fullness of grain, time of maturity, and resistance to disease. The taking of the best heads from poor stools of rice or of poor heads from good stools, does not give the best results. Plants and heads should be considered together in making the selections.

Results of tests in methods of planting.

Seedlings necessary for each hill.—The ordinary way of transplanting is to set from 3 to 8 seedlings in a hill. This is wasteful. If the seedlings are from selected seed there is no danger of having to replant vacant hills. Three plots similarly prepared were planted to Roxas rice. In all cases the hills were 20 centimeters apart as is customary. Plot 39 with 1 seedling per hill, yielded 38 kilos per are or 88.3 cavans per hectare; plot 41 with 2 seedlings per hill, yielded 33.4 kilos per are or 77.6 cavans per hectare; plot 42 with from 3 to 5 seedlings per hill, yielded 32.4 kilos per are or 75.3 cavans per hectare.

Not only were the yields of plots 41 and 42 smaller, but a big loss of seedlings resulted from planting more than were necessary. By increasing the number in a hill, more are required for a given area, some of the plants in each hill are lost, and the severe competition among the plants results in a poor yield. Of

nineteen plots planted to Roxas rice, plot 39, having one seedling per hill, was only exceeded in yield by plot 47, which was irrigated and fertilized with stable manure and ashes.

Distances between hills.—Plants will fully develop and produce the maximum crop, only if they can obtain all the food material and sunlight needed. To grow them too close together prevents all from getting enough food; but to give plants more room than they need wastes valuable space. Four irrigated plots were planted to Roxas rice with from 3 to 5 seedlings in each hill. Plot 54 with hills 10 centimeters apart, yielded 19 kilos per are or 44.1 cavans per hectare; plot 52 with hills 20 centimeters apart, yielded 27.8 kilos per are or 64.6 cavans per hectare; plot 50 with hills 30 centimeters apart, yielded 28.6 kilos per are or 66.5 cavans per hectare; plot 48, with hills 40 centimeters apart, yielded 18.8 kilos per are or 43.7 cavans per hectare.

The ordinary distance between rice hills is 20 centimeters. The inference to be drawn from the experiments is that one seedling only should be planted in each hill at distances of 20 centimeters, or that 3 to 5 seedlings should be planted in hills 30 centimeters apart. The space required varies somewhat with the variety.

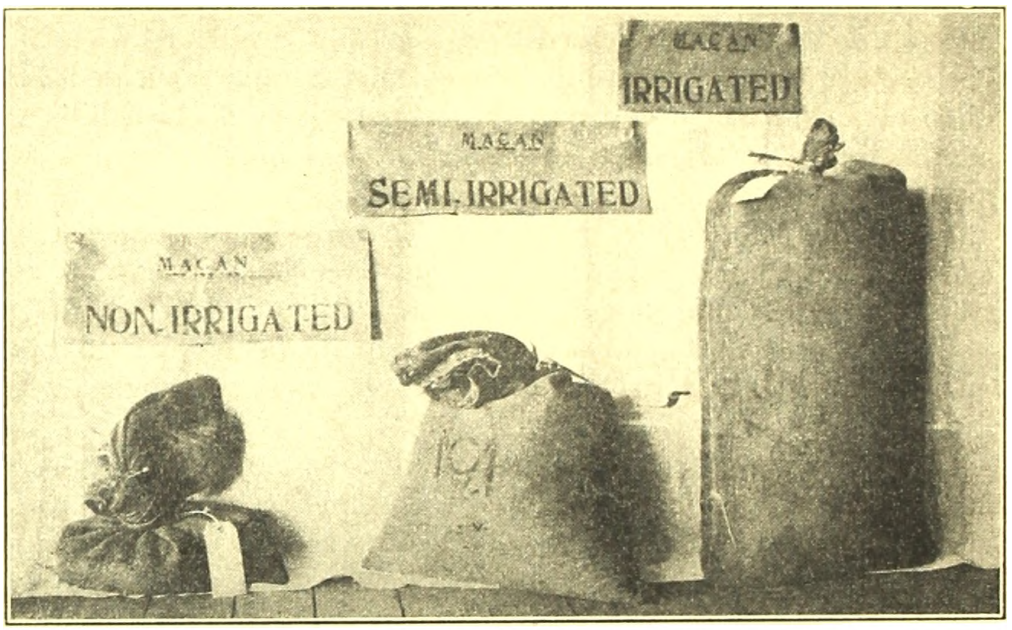
Preparation of fields.—Tillage is just as important as seed or soil in its influence on crop production. Three plots were planted to Manabunac rice. Plot 5, which was thoroughly plowed and harrowed, yielded 33.6 kilos per are or 78.1 cavans per hectare. Plot 6, which was not so well prepared, having been plowed and harrowed three times, yielded 27.3 kilos per are or 63.4 cavans per hectare. Plot 8, which was carelessly prepared, yielded 11 kilos per are or 25.5 cavans per hectare.

The planting season.—It is easiest and best to cultivate plants in their natural habitat and during their proper period of growth. In the region of the Central Luzon Agricultural School, the earliest rice seed beds are prepared during the latter part of May to the first part of June, while most of them are prepared about the middle of June or in the early part of July. From the latter part of July to August, late seed beds are worked. Under normal conditions, transplanting from July 1 to 7, is early; from that time till August 7, is medium; and from August 7 to September 7, is late.

Experiments in transplanting were made in three plots with Manabunac rice. Plot 5, transplanted July 7, yielded 33.6 kilos per are or 78.1 cavans per hectare. Plot 6, transplanted August 8, yielded 36.8 kilos per are or 85.6 cavans per hectare. Plot 1,

transplanted September 8, yielded 33.8 kilos per are or 78.6 cavans per hectare. Transplanting at Muñoz should be done not later than August 8.

Method of planting.—There are three well-known methods of planting rice, American (drilling and sowing), Italian (broadcast sowing), and Chinese (transplanting seedlings). A test was made by planting Cruz rice according to each method. Plot 29, American, yielded 9.6 kilos per are or 22 cavans per hectare. Plot 30, Italian, yielded 12 kilos per are or 27.8 cavans per hectare. Plot 31, Chinese, yielded 34.2 kilos per are or 79.5



Results of tests in irrigation.

cavans per hectare. The Chinese method is evidently the best suited to Philippine conditions.

Irrigation.—Rice must have water at all times till the grains harden, except during seed germination and during the first five days after transplanting. To withhold water entirely or in part, is detrimental to the growth and yield of rice. The following table shows the effect of water on rice:

Variety.	Semi-irrigated.		Irrigated.		Non-irrigated.	
	Kilos per are.	Cavans per ha.	Kilos per are.	Cavans per ha.	Kilos per are.	Cavans per ha.
Roxas			32.4	75.3	27.0	62.7
Cruz			38.6	89.7	33.8	78.6
Apostol			32.4	75.3	26.8	62.2
Capiz			25.0	58.0	16.0	37.0
Macan	32.0	53.4	47.0	110.7	16.8	39.0
Inasimang	37.8	87.9	43.4	100.9	4.0	9.3

These results show that irrigation is not so necessary for early as for late rice. In localities where there is no need of irrigation, the rains can be depended upon more for early than for the late varieties.

Fertilizers.—Continuous cropping without returning vegetable matter or supplying other fertilizers to the soil, will impoverish it to such an extent that it will no longer produce a profitable crop. To bring back the original fertility is a very difficult task and requires a number of years for even partial accomplishment. The commonest, cheapest, and most abundant fertilizers, are stable manure, ashes, green manure, canal mud, and compost, or well rotted straw. Tests made at Muñoz indicate that the best fertilizer to use on fairly rich soil is a combination of stable manure and ashes. The others used singly, lower the yield, perhaps because they contain too much nitrogen. This causes the plant to run to leaves and to lodge, and it makes successful pollination impossible. A full crop can be secured only when the growing plants are supplied with the particular food that they need. If there is enough nitrogen in the soil to produce 200 cavans of rice and if there is only enough phosphorus for 60 cavans, no more than 60 cavans of rice can be secured no matter how much water is supplied. Soil is extremely variable with regard to the plant food it contains, so that the successful application of manure in one place cannot be a sure guide at another place.

Variety tests.—Of the 12 varieties which have been grown at Muñoz during the past two years, 8 were obtained from the Bureau of Agriculture. One of these, Conner, was discarded because of its poor yield and lack of vigor.

The list here given shows the varieties in the order of their respective yields during the first generation:

1. Cruz, 39 kilos per are, or 91 cavans per hectare.
2. Macan, 37.75 kilos per are, or 88 cavans per hectare.
3. Piniling Daniel, 36.25 kilos per are, or 84 cavans per hectare.
4. Apostol, 35.75 kilos per are, or 83 cavans per hectare.
5. Roxas, 35.5 kilos per are, or 82.6 cavans per hectare.
6. Manabunac, 32.25 kilos per are, or 75 cavans per hectare.
7. Conner, 31 kilos per are, or 72 cavans per hectare.
8. Inasimang, 26 kilos per are, or 60 cavans per hectare.

The following table shows the yield secured from 11 varieties at the next planting:

Variety.	Disease present.	Yield.		Days old at transplanting.	Days old at flowering.	Days old at maturity.
		Kilos per are.	Cavans per ha.			
Late.						
1. P. Daniel	None	48.6	113.0	43	137	172
2. Macan	When not irrigated	47.6	110.7	42	148	181
3. Inasimang	do	43.4	100.9	40	133	167
4. Manabunac	do	39.0	97.0	42	148	182
5. Minalit	None	41.6	96.7	44	137	172
6. Matayosa	Rice borers	39.5	91.8	41	133	163
Early.						
7. Cruz	None	36.6	89.7	31	98	132
8. Apostol	Slight	32.4	75.3	33	110	145
9. Calibo	None	35.8	83.2	35	111	148
10. Roxas	None	32.4	75.3	31	98	130
11. Capiz	None	25.0	58.0	36	86	118

Cruz led in the first harvest, but in the second it came seventh, being exceeded in yield by all of the late varieties, while still holding first place among the early ones. For the two plantings, Macan and Piniling Daniel were the best yielders. Among the early varieties, Capiz flowered and matured first. Its grains are plump and the variety is promising. Among the late varieties, Macan and Manabunac were the slowest to flower and mature. A few plots of Roxas were attacked by fungus, but the damage was insignificant. Manabunac and Inasimang, when not irrigated, are subject to fungus attacks and rice borers. Apostol is lighter in color than all of the other varieties. Cruz is peculiar, as the immature grains have a purple color which later disappears. The kernels are plump and short. Roxas has a brown husk when mature. All of the early varieties have close panicles while the late varieties have open panicles. Apostol and Minalit have slender kernels.

Judged from this last test alone, the late varieties would seem to be better yielders than the early ones, but the time of maturity does not entirely control production. Under ordinary conditions, early rice is not subject to typhoons or to insect depredations, and better results are generally secured with it than with late rice.

ISABELA.

Mr. Horatio Smith of Echague, Isabela, has sent to Manila two young alfalfa plants which bear the characteristic nitrogen nodules. In a plot where the soil was by no means of the best quality he gathered a few stems a little over 45 centimeters in length, which bore buds about to open. In his opinion only one thing remains to be proved before success in the cultivation of the plant is assured, and that is as to whether or not the blossoms will become fertilized.

EMBROIDERY IN ILOCOS SUR.

By Miss HELEN FLORENDO, Assistant Supervising Teacher, Vigan, Ilocos Sur.

In this province, embroidery was introduced by the Spaniards at a very early date. Seventy or 80 years ago, four kinds were known: White, or what is ordinarily used in washable fabrics; colored silk without padding, such as is found in church vestments, picture mountings, slippers and camisas; hair, as used in a few handkerchiefs and souvenirs, and which consists of very fine seed stitches following the outline and shade of designs; and gilt, as found in very valuable silk ornaments, fancy shoes, and costly slippers.

All classes of girls with taste took up embroidering. Those of means had the best opportunity to do fine work, because they had money for buying materials and were not under the necessity of earning their living. The poorer class did the ordinary work.

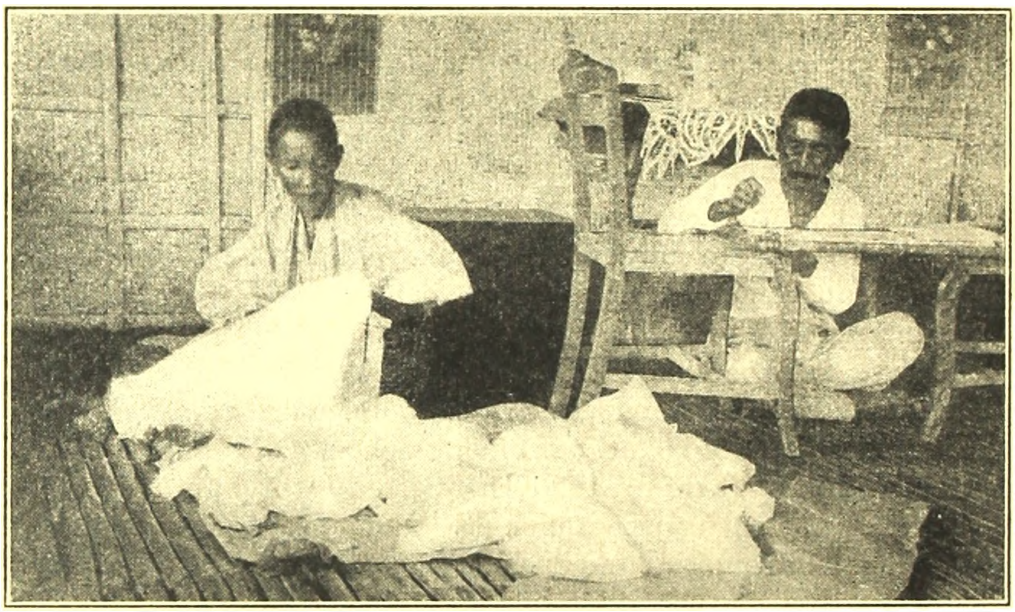
About 1892, the Dominican Sisters started a school for girls in Vigan. From the beginning, they included embroidery in their course of study. Government schools did not give the course at all. When in 1896 the Sisters were authorized to institute a normal course for girls, they placed increased emphasis on embroidery, and students returning home followed this work and taught it to other girls. Embroidery outside of the convent began to attract more attention, and household workers learned a few new stitches both for their art and for their usefulness. Garments, linens, chair and table covers, and picture mountings were embroidered.

Although in the old days embroidery was never exported as it is now, Spanish women bought it for use here and to take home, and well-to-do Filipino women always sought articles of finery for special occasions. This demand kept the business running. An embroidered jacket and handkerchief, in those years when labor was very cheap, cost from ₱5 to ₱50. Prices were not such as might have been expected greatly to encourage the industry.

Under the present Government, industrial work is taught to pupils, both primary and intermediate. The schools have helped to spread the art of embroidering throughout the province. The Bureau of Education in its efforts to put the industry on

a reliable commercial basis, has acted as agent for commercial firms and even for individuals. American women take much of the product. They have had their own garments, and those of their friends in the United States, embroidered. A wonderful impetus has been given to the business. As a result, the sales of school embroidery and pay for work during the school year, 1915–16, amounted to about ₱1,700, while a sum equally large went to household workers.

Until recently, many household workers were employed in centers under leaders and they were usually paid from 30



Embroiderers at Vigan, Ilocos Sur. The man is working on a 37-piece piña set for which ₱200 will be paid.

centavos to 1 peso a day. Others received orders and worked independently. With the establishment by the Bureau of Education of industrial centers under the guidance of graduates of the School of Household Industries, the workers of the old régime are being taught new commercial stitches. The nine young women who are in charge of household embroidery centers are directly responsible to the division superintendent through the division industrial supervisor, or to commercial firms. Both the workers and the firms handling embroidery are being benefited. Since the establishment of a provincial industrial department, and the allotment of funds for the conduct of industrial work, much is to be expected.

SAPPAN AS A DYE.

By JUAN SANTOS, San Antonio Central School, and NICOLAS ADAMOS, San Narciso Central School, Zambales.

In the Philippine Islands there are many dyewood trees, but since it costs much to extract colors from most of them, only one is extensively used. This tree belongs to the family of Leguminosae and is commonly known as sappan, hapang, or sibucao, its scientific name being *Caesalpinia sappan*. According to the Bureau of Forestry, it is practically the equivalent of the South American brazilwood known as *Caesalpinia echinata*. The favorite habitat of sappan seems to be on hillsides near streams. It is found in thickets throughout the Archipelago but is especially abundant on the Island of Guimaras, from which place most of it comes.

The plant reaches a height of 4 meters. It resembles the fire tree, but is covered with thorns. The leaves are similar to those of the acleng-parang (*Albizzia procera*). The bark is from 1 to 2 millimeters thick and has a very tough outer layer. The sapwood is creamy white. The heartwood is of a rich reddish brown color, rather coarse grained, and moderately hard. It is the part best adapted to making dye, though all portions of the stem which are red, can be used.

The trunk of sappan and its branches vary in the intensity of the tints produced. The former yields a dark red tint while the latter gives light red. Hence, in order to secure more uniform results, in making sappan extract or paste, the trunk and the branches should be worked up separately. The dyewood is cleaned by removing the bark and the white external parts. It is then chopped into small chips, and pounded fine in a mortar. The powdered sappan is mixed with twice its volume of fresh water, and the solution is boiled for from 1 to 3 hours, after which the chips are separated from the heavily colored liquid by straining through a fine, clean cloth. After one boiling, the chips, to which fresh ones obtained by chopping up the material secured from the branches have been added, can be reboiled several times so as to secure further coloring material.

The solution obtained is then reboiled until it thickens into a paste. A large quantity may be prepared at one time, but it must be given careful attention to prevent molding. The paste

may be reduced to a gum by placing it in shallow receptacles and drying it in the sun. The product is practically the equivalent of campeche sold and used as a dye by the Chinese. Sappan gum is more convenient to handle than is the paste, and it can be kept without danger of molding.

When employed alone, sappan produces browns; with iron sulphate or iron rust, it produces black; with potassium bichromate, red; with lime, dark red. Other shades may be obtained by combining sappan with materials such as the bark of the Philippine tree, "aro-ó," or rootstock of kunig. The mixture of sappan and bark of aro-ó produces a reddish brown color. Sappan and kunig produce a golden or yellowish brown.

DIRECTIONS FOR DYEING WITH SAPPAN GUM OR PASTE.

Light brown.—Use 10 grams sodium carbonate to 1 liter of water, and in this solution boil the materials to be dyed for 20 minutes; then transfer them to a solution made with 10 grams gum or paste to 1 liter of water into which a tablespoonful of common salt has been dissolved, and reboil for 20 minutes.

Brown.—Use 10 grams sodium carbonate to 1 liter of water, and boil materials for 30 minutes; then transfer them to a solution made with 10 grams gum or paste to 1 liter of water into which a tablespoonful of common salt has been dissolved, and reboil for 30 minutes.

Dark brown.—Use 10 grams iron sulphate or a handful of iron rust to 1 liter of water, and boil materials for 15 minutes; then transfer them to a solution made with 15 grams gum or paste to 1 liter of water into which a tablespoonful of common salt has been dissolved, and reboil for 20 minutes.

Black.—Use 10 grams iron sulphate or a handful of iron rust to 1 liter of water, and boil materials for 30 minutes; then transfer them to a solution made with 10 grams gum or paste to 1 liter of water in which a tablespoonful of common salt has been dissolved, and reboil for 1 hour.

Red.—Use 5 grams potassium bichromate to 1 liter of water, and boil materials for 20 minutes; then transfer them to a solution made with 10 grams gum or paste to 1 liter of water into which a tablespoonful of common salt has been dissolved, and reboil for 20 minutes.

DIRECTIONS FOR DYEING DIRECTLY WITH POWDERED SAPPAN.

In the supply can, No. 1, put 8 liters of powdered sappan to every 3 liters of fresh water. The solution should be boiled for 2 or 3 hours before it is used, and it should be kept boiling while

the dyeing continues. Fresh water may be added to this can from time to time, to maintain the supply.

To every 4 liters of water in a second can, 1 tablespoonful of copper or iron sulphate should be added. All materials, such as nito or rattan binders, bamboo or rattan weavers, and bamboo spokes should be boiled in this solution for at least 15 minutes.

In localities where copper or iron sulphate can not be readily obtained, rusty pieces of iron may furnish a substitute. In such case the work will be facilitated by the addition of a little vinegar to the solution. The acetic acid acts on the iron chemically, thus supplying the necessary amount of soluble iron. This method is not to be recommended if commercially prepared chemicals are available.

The coloring bath in still another can, No. 3, is taken from the supply can No. 1. The materials soaked in can No. 2, should be directly transferred to can No. 3 for dyeing. Light materials, such as skinned nito or rattan, and bamboo weavers, are colored more quickly than heavy materials, such as bamboo spokes and unskinned nito.

For light brown, light materials are boiled for about 5 minutes and heavy materials for 10 minutes. By boiling light materials 8 minutes and heavy materials 15 minutes, brown is produced, and by boiling them 12 and 20 minutes, respectively, dark brown is obtained. If the boiling is continued for 30 to 60 minutes, the materials turn dark blue. It should be remembered that the length of time required to produce a desired shade, varies with the strength of the dye bath. If the bath becomes exhausted or thick, fresh liquid should be added from the supply can. While boiling, the materials should be stirred from time to time, being kept completely under the bath.

Whether the dyeing has been done with paste or gum or with powdered sappan, the materials should be thoroughly boiled in clear water, before mordanting. Good mordants are made with iron salts, sodium carbonate, and potassium bichromate.

After dyeing, it is well to rinse the materials in clean water, preferably running water. They should be dried in a shady place, care being taken to prevent molding. They should not be dried in the sun, for thin spokes will warp and other materials will usually become brittle.

The materials may be polished before or after they are made into baskets. A gelatinous mixture of beeswax, coconut oil and paraffin is a good polishing paste. Ordinary tan and black shoe polishes seem to give better results, but their use is expensive.

THE BARRIO SCHOOL AT SULVEC, NARVACAN, ILOCOS SUR.

By CELESTINO BUENO, Supervising Teacher for the Narvacan District, Ilocos Sur.

Sulvec is a seaside barrio in the municipality of Narvacan, Ilocos Sur. It is situated on a small harbor and is traversed by the provincial road. The town center lies 5 kilometers to the south. Being so well located, one would expect to find a model barrio with the people anxious to accomplish everything possible to promote primary education. This, however, has not been the condition in the past, and it is only recently that the people have awakened to their opportunities and have taken a pride in their school.

Two years ago the school was housed in a temporary affair hardly fit to be called a building. The attendance was poor and little interest was taken in any matters pertaining to education. The supervising teacher, believing that better work could be accomplished under improved conditions, began a campaign to arouse school spirit in the barrio and, finally, to get a better building constructed. On each of his inspection trips he talked the matter over with the leading men of the barrio. Later he called a meeting which practically every resident attended. The president of the municipality of Narvacan and several of the councilors were present, and each assisted in explaining the advantages of having a permanent school building. Interest was aroused, and after a long discussion the people voted that they would construct a schoolhouse large enough to accommodate two teachers with their classes. An agreement to this effect was signed by all but one or two of the persons present. All of them understood that the erection of this permanent building would be a difficult task, and that they need not expect any financial aid from the municipality.

Shortly after the agreement was made, the location for the building was determined upon and all plans were completed. On May 7, 1915, actual work was begun in gathering stones and lime rock and hauling them to the school site. A large kiln was constructed and all lime necessary for the building was prepared on the grounds. Every able-bodied man in the barrio did his share of the work. If a few were reluctant at the start, they soon caught the enthusiasm of their neighbors, and then all went to work with a will to accomplish as much as possible before the opening of the rice-planting season.

The structure as planned was to be 18 meters long, 10 meters wide, with solid walls of rubble 3.9 meters high by 0.66 meters thick. This took a great amount of work and material, and as a result the building was not ready for school use until June, 1916. At that time the inside walls, the floor, and a part of the outside walls had been cemented. Good double doors had been put in place but the windows were not yet hung. Since the opening of school, first-class shell windows have been supplied, and the plastering of the outside walls has been finished.

The building is now complete in every detail. It provides 2 good classrooms and there is a book room between. The division superintendent regards this as one of the most satisfactory types of buildings for northern Luzon, where frequent typhoons destroy wooden structures.

The schoolhouse was not finished as originally planned. The people, wanting the best building possible under the circumstances, had decided on an iron roof. Upon investigation they found that the price of sheet iron had advanced so much that it was impossible for them to collect enough money to buy it. For the time being they have to be content with a cogon roof, and upon advice of the school authorities they have decided to secure additional land for the enlargement of the site before providing an iron roof. Most of the surrounding property is good rice land, and it may be difficult to secure even at a high price, but it is expected that the site will be enlarged during the present school year.

In August, 1916, the residents of the barrio were informed that their children needed more and better desks. They were told that for each desk made of good lumber according to a model furnished from the Vigan Trade School, one peso would be paid. Notwithstanding the fact that it was a busy time of the year, and that the materials used in each desk would be worth at least as much as the price offered, these people had, within two months, completed sixty good desks in order that their children might work to better advantage.

As was expected, the completion of this building has done much toward improving school spirit. In June, 1916, Mr. Leoncio Viloria and Miss Agueda Soria were assigned as teachers. They began work in the new building and soon had 140 pupils, 90 boys and 50 girls, enrolled in the first 3 grades of the primary course. The monthly enrollment for November, 1916, was 131. The supervising officials are now certain of finding a high percentage of attendance in the school on each visit made. The pupils are busy and a high quality of work is being done.

In industrial work the boys weave with soft strips, do gardening, and improve the school grounds. They have fabricated a number of buri hats and mats, which they have sold or kept for themselves. The girls do plain sewing. Those in the third grade have completed a number of garments for their own use or for the use of their smaller sisters. During the first 2 quarters of the present school year 152 articles valued at about ₱35 were made by the girls.

Several buildings of the type of the one at Sulvec, are being started in other barrios of Narvacan.

The Camanza Settlement Farm School in Davao, was opened last August by Mr. Fortuoso L. Simplicio. The children of the locality had never seen a school before. At this time nearly 6 hectares of land are planted as follows:

100 square meters of beans.
2,600 plants of sugar cane.
4,920 plants of cassava.
½ hectare of rice and corn.
15,030 plants of gabi.
80 square meters of peanuts.
1½ hectares of camotes.
3 hectares of corn.
223 banana plants.
630 pineapple plants.
100 papaya trees.

The buildings and grounds are in good condition; flowers, walks and hedges are well arranged and cared for. Sixteen boys from the barrio of Buan live at the school and are subsisted from the products of the farm.

o o o

THRIFT.

The best time for us all to learn is when we are young. So it is with thrift. Unless thrift is taught us in our early years, we are likely to be unthrifty when we grow up. For this reason thrift advocates are striving to instruct the young in the schools in the great lessons of foresight, prudence, sane living, and character building, that are all comprehended in the one broad word "thrift." One of the most interesting aspects of the thrift question in the public schools lies in the use pupils make of their summer vacation. Some spend the summer months in play; others spend them in productive work.—Straus Investors Magazine.

FIRST ANNUAL FAIR AT THE CENTRAL LUZON AGRICULTURAL SCHOOL.

By KILMER O. MOE, Superintendent, Central Luzon Agricultural School.

During the last week in March, the Central Luzon Agricultural School held its First Annual Fair. There were combined agricultural, industrial and livestock exhibits, as well as athletic and entertainment features. Every town in Nueva Ecija voted a small amount of municipal money to cover the cost of furnishing and caring for an exhibit at the fair. Similarly, provincial funds were granted for the placing of exhibits which pertained to the whole province.

The control of this fair was vested in an executive board composed of the provincial governor, the provincial treasurer and the superintendent of the Agricultural School. The following committees were organized under competent chairmen: Provincial and municipal exhibits, school exhibits, athletics, music and entertainment, transportation, restaurant and sleeping accommodations, building and grounds, and propaganda.

Success was assured from the start in regard to the exhibit features, the activities of the Agricultural School being so varied and its products of such a quality as to furnish material for an excellent display in themselves. There was a threshing machine in operation, while a rice mill hulled the product; a sawmill converted logs into lumber, some of which was immediately worked up into a variety of useful articles; a large traction engine was hitched to a disc plow; a 10-inch centrifugal pump was used to demonstrate a practical method of irrigating high land; and the gravity method of open-ditch irrigation was shown as a part of the Muñoz Communal Irrigation System.

There were extensive exhibits of garden and field products, poultry, hogs, cattle and horses, with reference to all of which instruction is given at Muñoz. The schools of the province showed work of a high grade, especially in gardening and handicrafts. Besides these features, there were commercial and sale displays from Manila.

A homesteaders' pavilion served as convention headquarters for those who have taken up Government land. This gave the general public some idea concerning the operation of the homestead law. The progress made in the northern half of Nueva

Ecija Province is due in a large measure to the many settlers who have come to occupy the fertile lands there. These pioneers have been formed by towns into an organization known as the "Homesteaders Coöperative Association." The purposes of this organization are as follows:

1. To promote the interests of homesteaders by securing coöperation in matters of common interest such as irrigation, the establishment of rural credit, and the securing of animals for breeding and seed for planting.

2. To avoid lawsuits whenever possible by settling disputes over land among themselves.

3. To secure the help of the more advanced homesteaders in making out applications for homesteads, leases, sales, and free patents, without cost to the applicants.

4. To compare the achievements of individual homesteaders and groups of homesteaders in order that satisfactory progress may be recognized and encouraged.

5. To promote sociability among the members by holding annual conventions of homesteaders at which ideas may be exchanged and products exhibited.

6. To coöperate in maintaining sanitary conditions and in combating pests and animal diseases.

7. To help build better dwellings for homesteaders, and schoolhouses for homesteaders' children.

8. To demonstrate better methods in the production and marketing of agricultural products.

9. To make more effective the campaigns which are designed to promote the interest of farmers.

10. To encourage and help homesteaders to maintain residence and cultivate their land so that they may prove up and secure title.

The organization serves as a medium through which a great deal of agricultural extension work and improvement of all kinds may be accomplished, and in all of its activities, the Central Luzon Agricultural School coöperates closely.

The holding of the Homesteaders' Convention offered a splendid opportunity for effective team work on the part of the various government bureaus whose activities affect this particular class of citizens. The Bureau of Lands had charge of the homesteaders' pavilion. The Bureau of Public Works had charge of irrigation and water rights exhibits and its attendants explained the proper procedure in securing the beneficial use of public water. The Bureau of Forestry gave practical demonstrations of the proper use of forest products and the evil effects

of deforestation. The Bureau of Science showed several processes by which raw materials are converted into commercial products. The Bureau of Internal Revenue handled the subject of weights and measures, making practical explanations of frauds commonly practiced. The Bureau of Health exhibited sanitary devices and gave instruction in the taking of precautions necessary to the preservation of public health. The Bureau of Agriculture exhibits pertained to such matters as plant propagation, improvement of animals, eradication of animal diseases, and pest control. The Bureau of Education showed the manner in which agricultural instruction is given in the schools throughout the Islands.

It was not to be expected that all features of this fair could be perfected in the first year, but a good start was made in an enterprise which will constantly exert a wider influence in bettering living conditions in rural communities.

The "home project" came into existence because many educators saw the need of connecting classroom instruction with actual work in the field, garden, poultry house, dairy, barn, orchard or nursery, at home. * * * The home project as the center of agricultural instruction has been well developed in Massachusetts, and is fully explained in various publications of the Massachusetts Board of Education and the United States Bureau of Education. It has been successfully worked out in the special agricultural schools of that State, under the strong central direction necessary for its success. This direction is furnished by the State Board of Education through the office of the special agent in charge of this work. It requires opportunity at the homes of the students of these schools to have or secure the necessary land, flock of chickens, dairy herd, part of an orchard, or whatever it may be. In addition, it is necessary that home project plans shall not be interrupted in the course of the period required for their completion, either through lack of time, means or opportunity to carry them out. For this form of home project work expert and continued supervision is essential, as well as special instruction.—C. G. Selvig, University of Minnesota.

HOUSEHOLD INDUSTRIES.

By HERBERT D. FISHER, General Industrial Supervisor.

By Act No. 2629 of the Philippine Legislature, the Director of Education is authorized to promote industrial work by extending the supervision of the Bureau over handicraft industries in the households, and by disposing of the products of such industries. This new work of the Bureau resolves itself into the operations of introducing handicrafts in some places, and in locating those industries which already exist; appointing responsible persons as leaders in the various household industrial centers; and then in finding a demand equal to the supply.

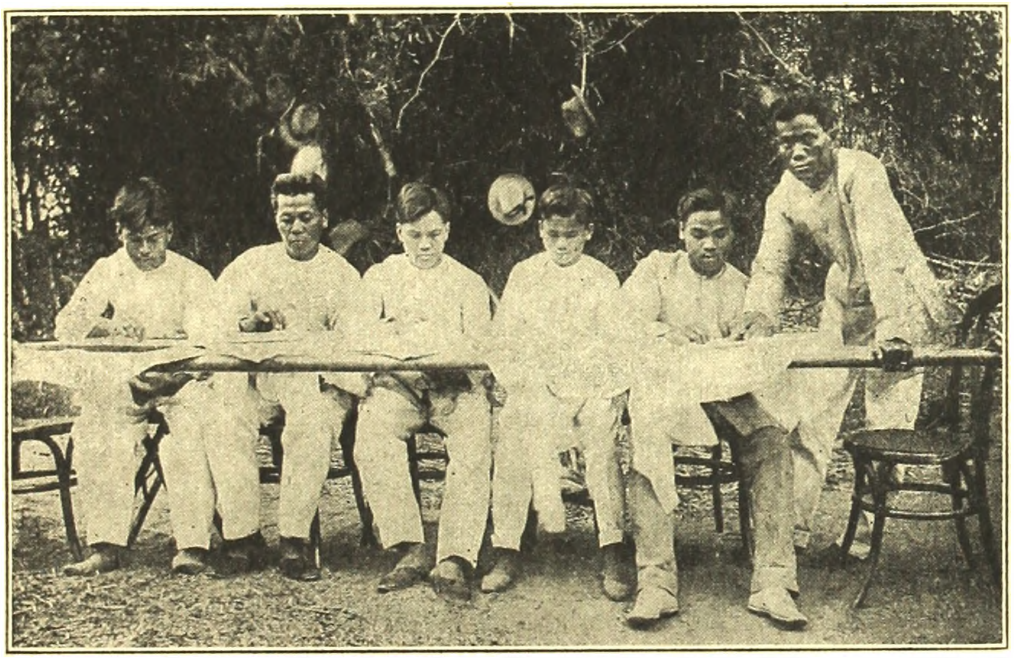
Established industries are considered with a view to further commercializing them. In the economic survey of the country, the art already established is studied for the purpose of applying it to the production of articles for which there may be a steady commercial demand. In one center where formerly only native baskets were made, the work in export bamboo basketry was introduced. The work being so similar, it was a comparatively easy matter for the people to produce baskets in excellent commercial designs, and thus to secure a more permanent demand for their goods. It has been found that some industries which were previously considered of no general commercial value might be greatly extended on their own merits. Again, products have proved very acceptable for other purposes than those for which they were originally intended. The pandan tampipis formerly made only for the local market, on account of their cheapness serve excellently as packing cases for export embroideries. One of the hardwoven salocots in its original form, makes an excellent lamp shade. Centers organized for producing these articles have secured good results, and their future seems assured.

The establishment of industries in localities to which they are new is necessarily experimental. The location and supply of material and the peculiar social and economic conditions of the people must be considered in the selection of places where attempts are to be made. Success is more likely to follow in localities where the schools have already given the proposed work considerable attention. Embroidery centers are easily established in sections where the work has been taught in the schools for a number of years.

The selection of a leader is the most important step in the organization of a household industrial center, as it is the leader

who creates the local market, controls the supply, and serves as the connecting link between workers and the Bureau. A leader must possess knowledge of the work, influence with the people, and some business ability. The leader is responsible for the quality of the product and the selection of workers.

The general sales department of the Bureau deals directly with the provincial sales departments on the one hand and with commercial concerns on the other. The provincial sales department deals with the leaders of the centers who in turn have sole control over the workers. Each center should be considered as a separate project, and should be given a serial number by



The embroidery center at San José, Calumpit. This is the only center in Bulacan which is composed entirely of men and boys.

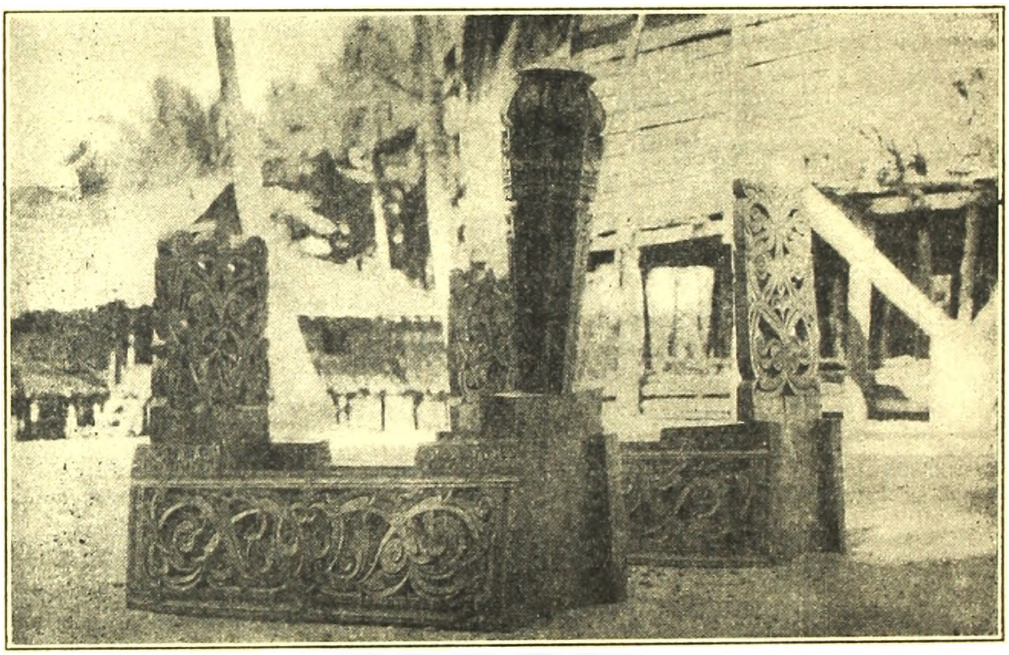
the division office. When a center has been located, a sample order is placed. The articles finished are then sent to the General Office for comment and action. Along with the samples is sent a report showing the nature and scope of the industry, the location of the center, the name and address of the leader, the number of workers, the estimated output per month, and the wholesale prices for the articles delivered at Manila.

If the work is acceptable, a trial order is placed. Much depends upon the success with which it is handled. If it is thus ascertained that the work can be done, the division office makes it its business to secure steady orders. It is the policy of the Bureau following the intent of Act No. 2629, to turn the centers over to comercial concerns as soon as it is feasible to do so.

WOOD CARVING IN THE SULU ARCHIPELAGO.

By JAMES P. COOLEY, formerly Supervising Teacher at Bongao, Sulu.

The Moros of Sulu are skilled carvers in wood and in stone. The quality of their work is remarkable when it is considered that the only instrument which the craftsmen use is a small knife; that they conceive the designs in their own minds, and execute them without first making patterns. Almost all Moros



Moro graves at Bongao.

do some carving, yet practically every village has its professional carver.

Carving is most employed on monuments erected to the memory of the dead. Formerly this work was done on soft coral stone more often than on wood. At present wood is used almost to the exclusion of stone. The people say that wood is more readily secured and is easier carved than stone, and that it lasts about as long. The monument usually consists of four pieces: The head and foot pieces, called "sunduo," and the sides, called "dahan." These are notched and fitted together and placed on top of the grave. The carving is done on the head and foot pieces and on the outer surfaces of the sides. The difference in a monument for a man and that for a woman is in the head-

piece. For a female this consists of a flat slab, while for a male the headpiece is round. The age of the dead is indicated in the height of the headstone. For an infant it is very small and short, often not more than two feet high. For a young man or a young woman it is somewhat taller, and in the case of a very old person it is sometimes six or eight feet high. The reason for this is plain. As in life the Moros only estimate their ages, so after death they judge the ages of the dead by the monuments.

Next to the monuments, the most carving is done on their sapits, vintas, and sailing craft of different kinds and names. There is scarcely a vinta to be seen—and there are not a few in Sulu—that has not the prow and stern carved in some design. In many boats, the sides are also carved. A surprising number of different designs is employed.

The handles and scabbards of barongs are always elaborately carved. With these they take special pains, usually employing the finest woods, and in many instances doing excellent inlaid work with gold and ivory.

The systematic care of tools and the systematic order of doing things, and the habits of close observation and of reporting observations, acquired by the child, will form a trait which will be invaluable to him throughout life. Where gardens have been conducted for several years, long enough to make practical tests, it is found that the boys having the garden work are thirty per cent more rapid in mental, moral and physical development than those not having gardens. The school garden tends to develop the best traits in the children, and to creat in them a love for the beautiful. It gives play to all their motor activities, and shows that results follow causes. They begin to understand something of ownership and responsibility, and look more kindly at their neighbor's products, and, as they do not wish to lose their own, that for which they have worked, the value of the product of another is more forcibly demonstrated to them. The school garden can be made especially valuable to girls, particularly those in the city, as they do not have the same liberties of the street as have boys, and are in the open air and sunshine all too little for good, strong physical development.—H. D. Hemenway (How to Make School Gardens).

ACHIEVEMENTS IN AGRICULTURE.

By North H. Foreman.

The aim of the Bureau of Education is to fit boys and girls for more intelligent and better citizenship, and the special purpose in its industrial program is to train young people to become productive factors in the economic development of this country. In no phase of its activities are the achievements of the Bureau more patent than in agricultural instruction.

Boys of a garden class suitably dressed for work. Rambiun.

The first systematic school gardening ever undertaken in the Philippines, was started in a few towns in 1906. From this beginning, training in productive agriculture has now become a part of the course of study for every primary and intermediate school. The required work has been extended until there are now 3,545 school gardens and 48,432 home gardens, all of which are under the supervision of teachers. Along with this work must be considered the tremendous influence of the correlated activity which takes the form of teaching the people how to prepare palatable and nutritious dishes from vegetables grown locally. Campaigns to secure greater production of corn, sweet

potatoes, yams, and legumes, have from year to year been receiving a great deal of attention. What has been achieved can be best understood by those observers who have lived among the people and who have kept in daily touch with the food markets in an endeavor to provide their own tables with wholesome garden products. Vegetables now abound where such foodstuffs were formerly expensive and too often even unknown, and the rural population is better fed than ever before.

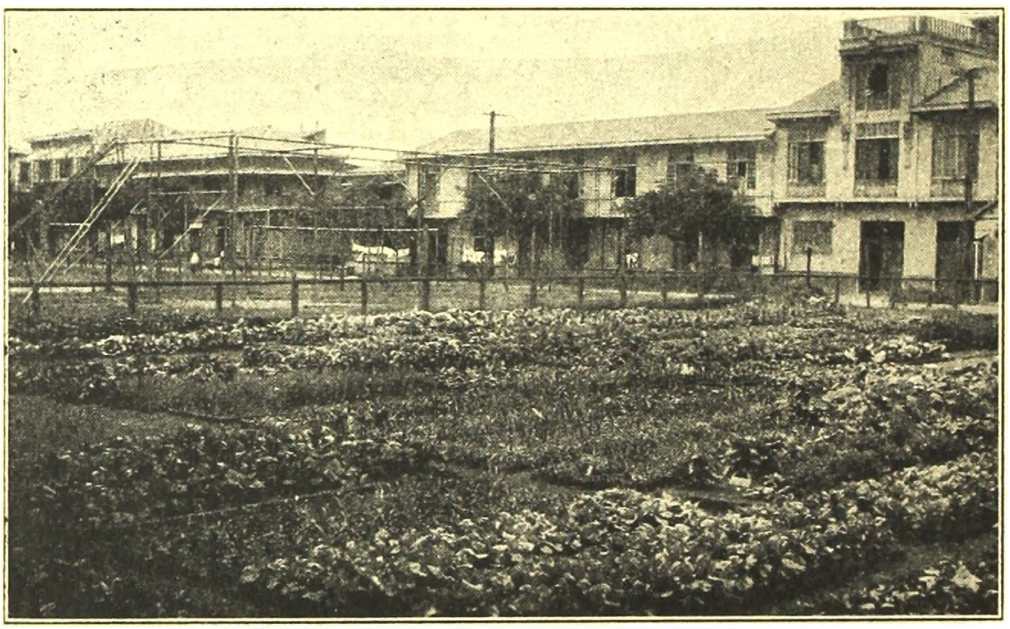
There has been progress of infinite value to the people in the matter of bettering home surroundings. Even before industrial

In the Tondo school garden, Manila.

instruction became an integral part of the school work, pupils under the guidance of teachers began to level and to clean up the municipal plazas. Arbor day and clean-up week were celebrated, and tree planting was begun. This early activity resulted in the shaded and well-kept public plazas which are now a pride to hundreds of municipalities in the Philippines. The old Spanish schoolhouses which were practically without yards, gave way to the present large fenced school sites which contain room for lawns, playgrounds and gardens, and where modern ideas concerning sanitation are put into practice. The influence of improved school environment has made itself felt throughout the Islands. Better houses are yearly becoming more common,

home yards are cleaner and improvements are everywhere in evidence.

In 1907 the Bureau of Education established the first school farm ever cultivated in the Philippines. The Bureau now controls 100 productive farms at schools which are real factors in the economic development of the country. Not only do the boys become acquainted with agricultural activities, but they are taught to play the parts of men in securing production on real farms. That this is not all theory is proved by statistics which show that last year the schoolboys had under cultivation about 1,300 hectares of land. The largest of the school farms is located

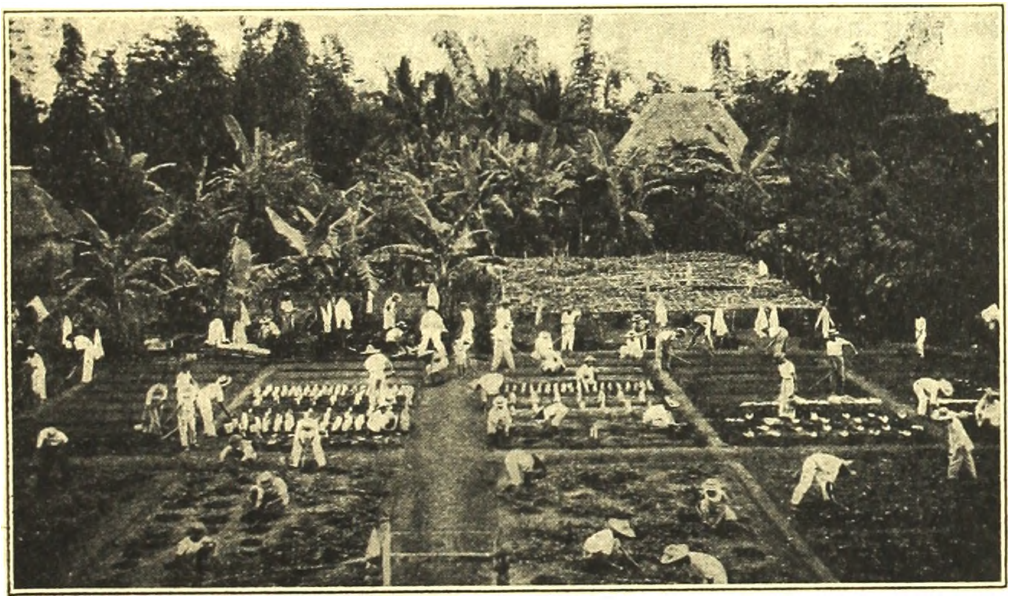


A good use for vacant lots. The Tondo School garden, Manila, 1917.

at the Central Luzon Agricultural School where a cultivated tract of 160 hectares forms a part of the reservation. There are, besides, superior facilities for forestry and cattle raising; an excellent irrigation system which was constructed with student labor; and modern machinery including traction engines, saw mills, sugar mills and rice machinery. The young men attending the school are taught in actual practice the value of superior ability in securing returns from the soil. That nearly 6,000 farmers have taken up homesteads in the vicinity of the school is in itself a most notable achievement of agricultural education.

In 1910 the enterprising principal of the Indang Farm School, J. A. Cocannouer, now of the College of Agriculture, included in his study of poultry which might be suited to conditions in the

Philippines, the mongrel breed of chickens from southern China which is called the Cantonese. In 1913 the Bureau of Education sent him to China to select hens and cocks of that breed for distribution to farm schools. This was the first step in a big campaign to promote poultry raising and thereby to reduce the heavy importation of eggs from China. Favorable results were secured from the beginning, and thousands of chickens have been distributed from the farm centers. The poultry clubs with their 3,000 boys and girls, and the poultry stations of the Bureau of Agriculture, are means now employed for promoting the industry. The encouragement of pig clubs with an enrollment of 2,000 active members, and the extension of hog raising to



Intermediate-school garden, San José, Antique, 1916.

even the most remote settlement farm schools, are recent steps which have been taken in the movement to teach farmers the value of breeding and care in hog raising. The demand for grade hogs for breeding purposes already far exceeds the possible supply from school farms. A school herd of range cattle was sent into the Bukidnon grazing lands three years ago and now 40 of the residents in that district own small herds. In every case the progeny of the pure-bred Nellore bull that runs with the herd is sought for breeding purposes. The registered Mysore bull and the other breeding animals at the Central Luzon Agricultural School make it possible for the 6,000 homesteaders of this section constantly to improve their livestock.

Pupils are now using work cattle on productive school farms in 77 sections where a few years ago the people knew practically

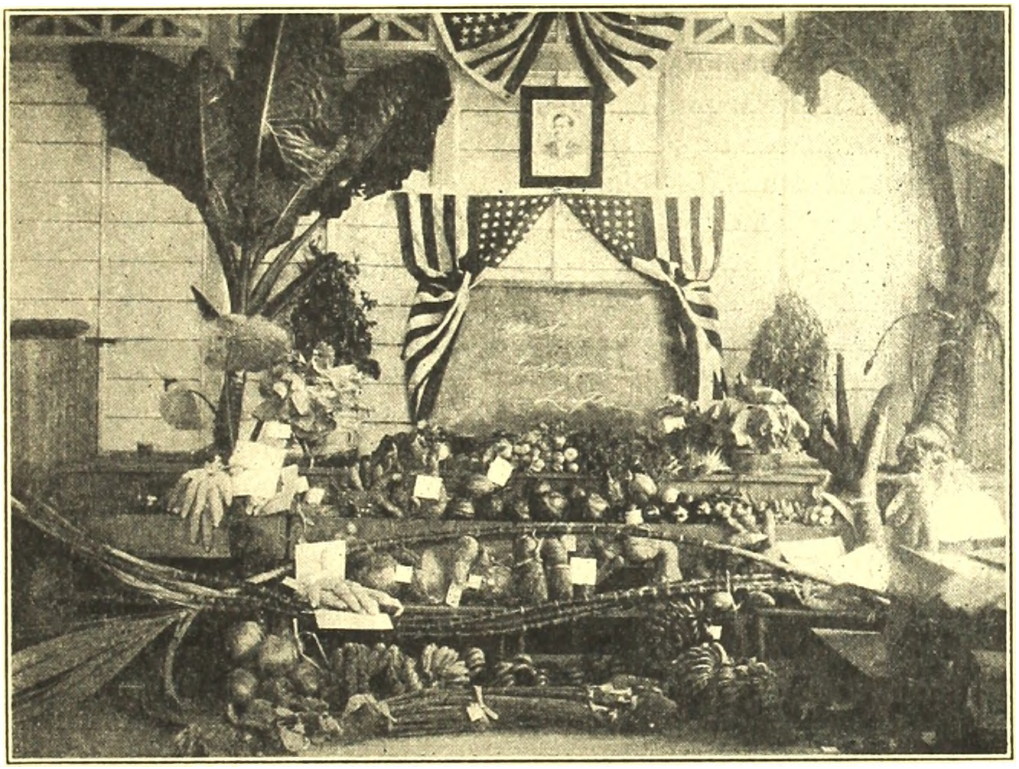
Members of the Fruit Growing Club of the Romblon Intermediate School clearing the orchard site.

nothing of the employment of animals in securing greater farm profits. These people farmed, if the "caingin" system can be called farming, by felling a few trees or removing the limbs of standing trees, scratching the mellow top soil with a stick and planting a few seeds. When weeds or grass crept in, the family

Where coöperation counted. The Lucban, Tayabas, school garden in the yard of the church.

moved and began another caingin. Each year numbers of mountain people desert their caingins and settle on real farms in school neighborhoods.

It is perhaps worth while to count the hogs and chickens,



Garden-day exhibit, Carigara, Leyte.

and to measure grain in order to form an estimate of what the school farms are producing; but the real output is boys and girls who leave the school with the feeling that they have already done something worth while and who have a determination to secure creditable results in the future.

Farmers should take an active interest in agricultural fairs, garden-day exhibits, corn contests, and in everything of a public nature designed to improve agriculture. These fairs, exhibitions, and contests serve to bring the farmers together. They give opportunity for each participant to see what the other has grown. They create an interest in producing better crops, in selecting better seed, in learning more about cultivation, and improved methods. These things not only help the individual farmer by teaching him how to produce better crops and make more money, but they serve to increase the food production of the whole country, thus reducing the importation of food products, a thing of vital importance to the whole people of the Philippine Islands.—The Philippine Farmer.

FILIPINO SILVERSMITHS.

By Elmer S. Green, General Office.

The trade of the silversmith is an old one in the Philippines. From the Mountain Province to Mindanao are to be found men skilled "in all manner of workmanship; and to devise curious works, to work in gold, and in silver, and in brass, and in the cutting of stones to set them. Almost every town in the Christian provinces has its "platero" who often lives in the same house and uses the same tools as did his father and grandfather. The members of his own household assist in the simpler and cruder operations, some soldering or assembling parts of chains, others polishing. Work in silver has lately been taken up as an industrial subject in some of the public schools, especially in Bohol. A large assortment of products from that province was exhibited at the Carnival and is now on sale at the retail salesroom in Manila.

Perhaps the largest center for the silversmith's craft is at Bantay, Ilocos Sur, just beyond Vigan. Necklaces and bracelets of gold and silver are made there in great numbers. Long strings of hollow gold beads terminating in pendants, are sold at from ₱30 to ₱100. In each of these at least three forms of beads are combined; the largest number are of simple tube shape, flaring at the center; others are flat and circular, each face bearing a design; the finest are spherical, about 5 millimeters in diameter, and designs are embossed upon them. Sometimes small pearls are alternated with the beads. The pendants are most commonly oval medallions, 2 centimeters or more across the face; in the center of each is a carved gold flower, glass covered on both sides. Crosses are common also, some of most delicate workmanship being ornamented with rows of small leaves, one set above the other. The crucifixes are generally of silver with gold plating. Strands of beads, rather crudely made of silver, then gold washed, are sold at Bantay and in the shops of Vigan for ₱2. Many of these are carried to distant provinces for sale by Ilocano traders. These "rosarios" whether cheap or dear are distinctive and beautiful, and it is to be regretted that they are being displaced in favor, except among the more conservative people, by tawdry imported machine made chains.

Rings of low karat gold are often set with clusters of small pearls. Back combs, the visible parts covered with gold and ornamented with raised and usually detachable flowers, the petals

of gold, the center of pearl, are sometimes of exquisite workmanship. Brooches and long metal hair pins are similarly decorated with gold and pearl. Earrings are for the most part copies of old-fashioned European models. Among the hoarded treasures of the wealthier people of Vigan are to be seen examples of the workmanship of older days. A style of neck chain now rarely seen is made of small rectangular planchets of gold bordered with filigree work, the chain having the appearance of a narrow strip of lace transformed into gold.

At Bangued in Abra is a silversmith whose work is known and sought throughout the Islands. After the Carnival which just closed, the Bureau of Education bought from him more than ₱500 worth of goods, chiefly silver mounted camagon canes and boars' tusks, for disposal at the retail salesroom. At Baguio and Trinidad there are half a dozen Ilocanos who make spoons and "Igorot" earrings for the tourist trade. The spoons have twisted handles and terminate in figures of Igorots, rather too elaborate. If one has the confidence of a silversmith and asks his opinion, he will explain that the highly ornamental stuff is not artistic; that he makes it to sell, and not because he considers it beautiful.

The fine jewelry of a hundred years ago was made from Spanish gold coins without additional alloys. Now American five and ten dollar pieces are used, and they command a slight premium in the provinces. At Bantay, some of the work is done with "sea gold," dust which a few of the inhabitants of San Vicente laboriously wash from the black sands which the Abra river brings to the coast. For the making of beads, a mixture of two parts of gold to one of silver is ordinarily employed, the unfinished article appearing very white. For rings and earrings copper is added, the resulting alloy being extremely red. The beads are colored by placing them in a saucer with a gold coin. An acid solution is poured over beads and coin and after a time the beads take the desired color.

In silver there are made spoons, key rings, knobs for canes, and an infinite variety of pieces to order. These articles are rough cast into the general form desired, then beaten and filed into shape. The price is fixed in accordance with the amount of metal used: as much for the work as for the silver. The silver is secured from obsolete coins. Mexican dollars, Spanish "pieces of eight," so old that they might have been pirates' treasure, and later pieces bearing the portraits of Alfonso XII and of Alfonso XIII, all go into the melting pot. The older "Carlos" pieces are preferred, as they are said to be of softer and purer metal.

EDITORIAL.

THE PHILIPPINE CRAFTSMAN.

As was announced in a circular letter to subscribers, the publication of THE PHILIPPINE CRAFTSMAN by the Bureau of Education, ceases with the present number.

The issuance of this magazine was started at a time when industrial training in the public schools of the Islands was in its infancy and needed help of the kind that such a periodical could give. In the first editorial in July, 1912, the following paragraph appeared:

"The time has now arrived when some systematic means must be employed by the Bureau of Education to convey to its entire personnel information regarding its latest achievements and instruction as to approved standards. Through THE PHILIPPINE CRAFTSMAN * * * members of the Bureau's teaching force will be promptly informed of the methods employed and the results secured in every industrial experiment which is carried to successful issue in any public school. By this means new industrial processes will be advertised and introduced throughout the school system, and the industrial program of the Bureau will be enriched and strengthened."

It is believed that that first promise has been fulfilled. The industrial program has long passed the experimental stage; "the extensive development of a practical scheme of manual instruction" is an accomplished fact; the "several school farms" referred to in the first editorial have developed into a system of agricultural instruction which in some way touches every pupil in every school of the Islands; the minor industries which five years ago were "ready for general introduction" have been established everywhere; production has been standardized, and much has been done toward making the handicraft products of the Philippines distinctive; the consummation of the efforts to promote industrial education has come during the present school year in the establishment of the General Sales Department, provincial industrial departments, and household industrial centers, all under the guidance of the Bureau of Education.

During this period of achievement, THE PHILIPPINE CRAFTSMAN has been the mouthpiece of the General Office and the field. The constant aim of those most directly concerned with the work

of publication has been to let this magazine represent the field primarily. The great majority of articles have come from teachers throughout the provinces. A source of gratification has been the ever-increasing number of contributions from Filipinos. Faithful record has been made of the changes within the Bureau, and of the achievements of the Filipino people, industrially and educationally.

Occasionally the magazine has been subjected to some criticism, most of it friendly and therefore helpful. Many letters of commendation furnish proof that its pages have been a source of help and inspiration not only to teachers within the Archipelago but to those concerned with industrial education elsewhere. Words of praise have come from India, Italy, China, and America; but more gratifying has been the encouragement received from teachers, both American and Filipino, within the Bureau. In a recent communication, a supervising teacher remarked as follows:

"As to the benefits received by the field from the 'CRAFTSMAN,' these are already so well known as to need little comment. In the uniformly high quality of its content, in the neatness of its 'get-up,' in the excellence of its illustrations, and in the quality of its printing, it stands alone among Philippine periodicals."

Since the purposes for which this magazine was founded, have been so largely achieved, its continued publication is no longer essential to the furtherance of the industrial program of the Bureau.

To its subscribers is attributable whatever success has attended its publication. They have at all times been generous with contributions and helpful comment, and it is to them that the editorial staff desires to express its most sincere thanks.

TRADE SCHOOLS.

A remark was recently made to the effect that a certain trade school had not had an enrollment of more than a hundred boys during any one of the past three or four years, while, during its first year, it had nearly one hundred and fifty. The speaker cited the case as typical and inferred that trade schools were retrograding. What had happened in the case of the school mentioned, as well as in that of quite a few others, was easily accounted for.

Not so very long ago trade schools were new. Anything new is almost always regarded with greater interest and supported with more enthusiasm than something that long has been estab-

lished. In some towns, when trade schools were started there was a rush to enter and see what the course was like; consequently at such places, the first year showed a bigger attendance than did the succeeding years. In some sections, there was prejudice against the teaching of trades, and the first enrollment was low; but the apathy of the people was gradually overcome, and succeeding years have brought increased enrollment.

Notwithstanding the fact that there has been a considerable decrease in attendance at some trade schools, they are filling a genuine need in the educational system of the Islands. The boys are learning how to work. When a boy has been through the necessary three or four years of instruction that enables him to graduate from a trade school, he has demonstrated superior qualities. The unfit are eliminated, as is illustrated by the record of enrollment at the trade school in Manila. Last June about 930 matriculated; during the school year the enrollment dropped to about 600. Four years ago, 750 enrolled; this year 64 finished the work.

The 64 boys who are being graduated from the Philippine School of Arts and Trades this year, have been subjected to a pretty severe test, and they will be valuable men to the employers who get them and start them in right. There are a few employers who do not understand conditions and who expect too much. Occasionally boys are reported as failures on their first jobs. This is chiefly because the change from the easy hours of the school to the long, steady hours of labor that are required of the artisan, is too rapid.

Some critics point to the fact that not all of the graduates of trade schools follow the work for which they have been trained. An inquiry into specific cases would be illuminating to such persons. In one of the Government Bureaus, a graduate of the ironworking department, in the Philippine School of Arts and Trades, is employed. He is not following his trade at all, and the Bureau Chief was asked to explain why he employed a machinist to do clerical work. He replied that he did so because a trade-school boy knew how to work.

It may be admitted, with reservations, that some work has been pushed too far in the trade schools. It was quite natural when a new form of educational work was being introduced on a large scale, that in a few instances, the matter should be overdone. When the trade schools were started, they all specialized in woodworking. There was good reason for doing so, as this is a country where a large majority of the dwellings will always be built of wood; but possibly too much emphasis was

placed upon this course. A few small mistakes are invariably made in carrying out any big job, but now that the work is firmly established, efforts should be directed toward correcting errors. Whatever is done, the paramount object of the trade schools, which is to teach our boys how to do hard, honest work, should not be lost sight of. If that object is attained, whatever the means employed, no trade school will ever be a failure.

Agriculture helps one to live the freer, broader, deeper and more helpful life. It needs no argument to prove that the study of agriculture helps one to make a living not in the selfish, sordid, commercial sense where one profits by the loss of another, but in the higher social-service sense which the Master had in mind when he said, "He that loseth his life shall find it. Do unto others as ye would that others should do unto you." Luther Burbank puts the thought beautifully when urging more men to stay on the farms and take up plant breeding. He says, "And thus with better fruits, nuts, grain, and flowers will the earth be transformed and men's thoughts turned from the base destructive forces into the nobler productive ones, which will lift to higher planes of action toward that happy day when man shall offer his brother, not bullets and bayonets, but richer grains, better fruits and fairer flowers."—Arthur D. Cromwell, Agriculture and Life.

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The best handkerchief work has been coming from Samar.

A fine specimen of the Panama hat plant, *Ludovica palmata*, can be seen at the Victoria Gardens, Manila.

At Laoag, 350 pupils, of which 133 are girls, have enrolled for industrial work during the long vacation.

Batangas, Pampanga and Ilocos Norte are the leaders in lace making. Pampanga is producing the most valenciennnes lace.

A sample order for 1,500 dozen handkerchiefs has been received from a large New York house, and the work has been distributed.

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LEYTE.

A girl in Grade IV of the Tanauan Central School made 24 yards of valenciennes lace of design No. 102b between August 1 and January 1; and between January 1 and the close of school she made 4½ yards of design No. 106 valenciennes lace.

INDUSTRIAL NOTES.

ALBAY.

The boys of the San Antonio barrio school in Tabaco, of which Mr. Crisanto Bongan is the teacher, have cultivated a total area of 2,816 square meters of land in school and home gardens. The girls have produced ₱700 worth of Irish crochet since 1911. The poultry club is raising selected native fowls which are claimed to be good layers.

Before the end of July the boys of the gardening class in the Camalig Central School had planted 90 per cent of their garden which covers 1,400 square meters of land. In August they put in an irrigation system. From September to November they sold ₱34.59 worth of vegetables. According to Mr. Getulio Nebres, this class has received three corn-contest prizes, and at the 1915 and 1916 Bicol meets it received first prize for the best home-garden exhibits.

Guinobatan, Albay, has long been noted for its well made lupis and abacá fiber baskets. Mr. Wenceslao Olaguera, the teacher who has been instrumental in developing this work, says that the class turned out over ₱200 worth of these baskets up to the first of the year.

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ANTIQUE.

Rufino Dubria is a 15-year-old boy of Valderrama, Antique. He enrolled in the fourth grade on July 11, 1916, and up to November 8, he had finished 5 baskets which readily sold for ₱2.10. He not only accomplishes more than most of his classmates but he does his work better. His best records are 1 flower basket, design No. 1033C, completed in 21 hours; 1 tray, design No. 1033B, in 20 hours; and 1 wicker bowl, design No. 1034, in 25 hours. He also did very creditable work in gardening. Mr. Ledesma, his supervising teacher, credits him with never borrowing anything, which is probably an important factor in his success.

The Antique provincial-school shop had an enrollment of 29 last December, up to which time it had turned out ₱514.76 worth of work. Mr. Flaviano Santos is the teacher.

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BATANGAS.

Up to the opening of school in January, the 88 girls of Grade III, together with 31 girls of Grade IV, Batangas Central School, had completed ₱258 worth of lace. Mr. Perfecto Condes says that the entire order for ₱430 worth of lace will be filled by the close of the school year.

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BOHOL.

One feature of particular interest in connection with the Ubay garden day was a parade in which approximately 2,000 head of native cattle were driven past the reviewers' stand in herds of from 50 to 75. With each herd was a placard bearing the name of the owner.

During the last Christmas vacation, the 30 boys of the Bohol Trade School manufactured 204 primary-school desks, 4 office cabinets, and 10 plain tables; also, they finished work on 5 office desks. The total value of work done during the 9½ days of the vacation was ₱990.

The report for the quarter ending December 31, 1916, shows that ₱1,335.57 were distributed to pupils of Bohol schools for articles made

in industrial classes. Of this sum Jagna received ₱206.28 and 10 other towns received from ₱50 to ₱173.38, each.

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BULACAN.

Special work in the care of tools is now being given to each boy in the Bulacan Trade School. In every grade each boy is assigned as tool-room boy for one week of the school year. Under the instruction of the tool-room clerk the fifth-grade boys take care of the cleaning of tools and the prevention of rust; the sixth-grade boys are given two morning periods for drill in sharpening planes, chisels, drawing knives, and spokeshaves. Each seventh-grade boy spends an entire week at learning how to sharpen crosscut and rip saws, backsaws and band and circular saws. The results of this system are very encouraging. (M. R. C.)

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CAGAYAN.

Among the central-school girls who have done especially well in industrial work during the past year are those of Tuguegarao, Cagayan, writes Miss Crispina Singson.

Mrs. Sapitula's embroidery class consisted of 70 girls in Grades III and IV. From July to December they completed 60 tray cloths and 101 baby bonnets. This was in addition to a number of samplers both elementary and advanced.

During the same period 36 girls in Miss Baba's crochet class finished three pairs of towel insertions, six 5-yard lengths and seven 2-yard lengths of crocheted lace, 6 handbags, and 20 samplers.

Before the first of the year, all of the girls in Grades III, IV and V, had completed the articles outlined in the plain sewing course. The fifth-grade girls alone made 2 chemises, 40 nightgowns, 82 bloomers and blouses, and 13 baseball suits.

Aside from the above, the girls in the cooking classes of Grades IV and V learned 14 very appetizing recipes and sold ₱25 worth of the product.

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CAMARINES.

Work has been started on elementary embroidery on ruffles in Iriga, Pamplona, Daet, and Naga.

Five times as much was sold from the provincial-school garden during January as during any previous month.

The home gardens of Tabuco, Sabang, and Dinagá were destroyed by the floods during January, but the plots were planted again, and the young plants did well due to the coating of sediment fertilizer which was left behind. Between 65 and 70 home gardens in Iriga, Nabua, Bato and Buhi were under water for several days and many were totally destroyed.

The Magarao municipal fair was a decided success both from the standpoint of attendance, and quantity and quality of produce exhibited.

The barrio school of Tabuco is doing creditable work on lupis basketry and filet drawn work. In addition to this work the pupils are cultivating home gardens and a large school garden.

Baao Central School has completed the 4 embroidered bridge sets ordered by the General Office.

All seats used in the San José Intermediate School are made of bamboo by the pupils. A seat, or chair, has a wide arm on the right side, with a box underneath. The arm serves as a desk and the box serves as a receptacle for books.

LUPIS BASKETRY AT INDAN.

When lupis basketry was first introduced at Indan, no satisfactory manner of preparing the material

was known, and the product, of course, was poor in quality. Designs were also lacking and there was no certainty that the baskets would find a market.

The course in lupis basketry is now very popular with the pupils of Indan. Sandwich trays, B. of E. Design No. 1453, are being produced in large quantities at ₱1 each.

For the purpose of attaining a greater degree of efficiency, the pupils of the class have been organized into three sections: Lupis makers, rattan preparers, and weavers. The lupis makers prepare lupis every day during the industrial period. This insures uniform and well made lupis. The rattan preparers gather the rattan and put it into shape for use in the foundations of the baskets. The weavers turn the prepared lupis and rattan into finished baskets. Pupils like this arrangement because to a certain extent they can choose the kind of work for which they are fitted, and also because the result of their work from day to day is more easily estimated. (J. A.)

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CAPIZ.

It is expected that vacation industrial centers will be established in Calivo, Panay, Dao, Mambusao, and Capiz.

The barrios of Maayon, Hipona, Casanayan, Aranguel and Dulangan in the Capiz district have committees of public-spirited citizens who are collecting voluntary contributions with which to purchase desks for their schools. In some cases they have collected as much as ₱150.

Successful garden days were held at Pontevedra and at the large barrio of Hipona in December. The exhibits of the farmers were very good. Mr. Timoteo Unson exhibited several interesting products from his famous farm.

Malay, Buruanga, also held a successful garden day on December 9, 1916. A large crowd attended.

Miss Matilde Sitjar the domestic-science teacher in the Ibajay Intermediate School and her girls, deserve special mention for the part they took in visiting homes and in directing the work of clean-up week.

The Dao district reports that a very successful garden day was held at Mambusao in December. A large crowd was present as the date was that of the local fiesta.

The public schools conducted industrial and agricultural exhibits and held a corn demonstration at the sub-provincial carnival in Romblon, January 14–17, 1917.

The Calivo Intermediate School still holds the honor of having the best garden in the province. At the garden day held there on February 17, many fine vegetables were shown and the girls demonstrated the best methods of preparing them. A woven wire fence now completely surrounds the school grounds, and the boys and teachers deserve much credit for constructing it.

At the Calivo Central School garden-day celebration held on February 22, every municipality of the district was represented. Besides a great variety of excellent fruits and vegetables, there were fine exhibits of plain sewing and some excellent fourth-grade embroidery. The farmers had exhibits, and much enthusiasm and rivalry were manifested by the different barrios.

At the Capiz Central School garden day, February 24, Governor Mobo made a fine address. The exhibits were interesting and included garden vegetables and a large amount of industrial work. Poultry and a fine young Berkshire hog were also shown. The teacher of domestic science and her fourth-grade pupils ably demonstrated the many ways of cooking the various vegetables exhibited.

The garden products shown were remarkably large considering the fact that January and February were two of the rainiest months of the year.

The provincial-school shop will be kept open during the long vacation. A large quantity of supplies has been ordered and over ₱3,500 worth of work is available. It is expected that most of the schools will be supplied with such necessary equipment as desks and aparadors, at the beginning of next school year. Where funds are insufficient, citizens have formed committees and secured money for these things. Much has been done by way of improving equipment even in remote barrios. (H. W. B.)

THE CAPIZ CENTRAL SCHOOL.

In his description of the industrial achievements of this school, Mr. Jose R. Suarez, assistant supervising teacher of the Capiz district, writing under date of December 15, 1916, mentions the factors that determined the selection of industrial work for the school. These were: The material available in the locality at a reasonable cost; fitness of the work for the different pupils, age and sex being taken into consideration; previous training of pupils; salability of articles; and the interest of parents.

By the middle of December, the first-grade plain sewing class had finished from 9 to 10 of the 12 exercises required. In the second-grade class in elementary weaving of hard strips 5 of the 44 boys enrolled had finished all the exercises, 12 had finished more than 15 of the 18 required, and the rest of the class had finished from 10 to 15 exercises. The fourth-grade plain sewing class had an average monthly enrollment of 29. Two 60-minute periods a week were given to this work, and the making of 8 articles was the required work. On December 15 every girl had completed 5 articles, and most of the class had nearly finished the 6 garments required. It took an ordinary pupil 6 hours to finish a short skirt, 6 hours for a camisa, 8 hours for an envelope chemise, 12 hours for a petticoat, and 6 hours for a nightgown.

The class in book-satchel making had an average monthly enrollment of 25 third and fourth grade boys. The equipment was supplied by the pupils, but the material was furnished by the municipality. By the middle of December the class had fabricated 77 satchels. Ten pupils had finished 4 apiece, 7 had finished 3, and the rest were about to finish their third satchels.

In all of these classes monitors were selected from among the pupils who had shown special efficiency in their industrial work. They were given instruction in the afternoon and were required to teach in the morning. Their duties were to take care of completed articles and to distribute the partly finished work before the classes began; to see that equipment was complete and well cared for; to keep records of absences and to supervise the respective sections assigned to them. The employment of these monitors prevented waste of time and material, and made it easier to keep order. It gave a chance for the teacher in charge to supervise the class and to devise methods for the purpose of increasing efficiency.

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CAVITE.

The growing of Momungan sweet potatoes is a succes at the Indang Farm School. Practically every hill produces from 3 to 5 big potatoes besides the many smaller ones. Four years ago the school introduced two American varieties and they proved to be heavier producers than the native sweet potatoes, but

the Momungan surpasses both of them in quality and quantity of yield. The Momungan potato is not a good cover crop as it produces very little foliage. The red California yam is, on account of its dense foliage, much superior to it in this respect. (M. M.)

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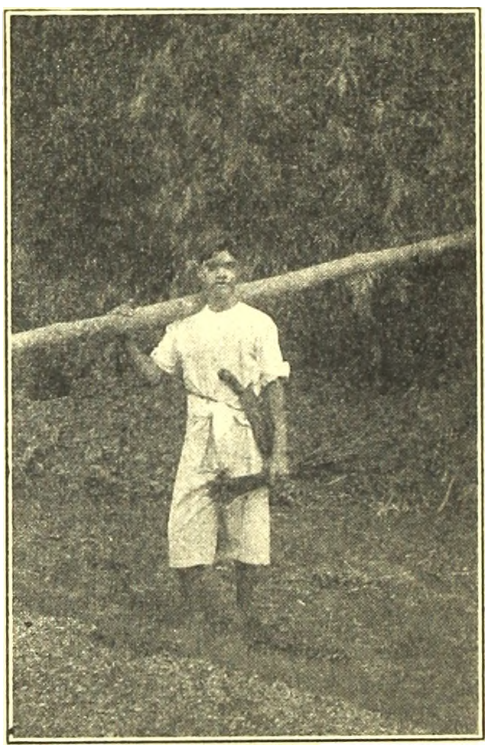
CEBU.

Cirilo Tanente, 14 years old, is a third-grade pupil at San Nicolas, Cebu. In 1914, when he entered the first grade, Cirilo first attracted the notice of his teacher by completing the twenty-four exercises in elementary handweaving on hard strips



A typical sight. Cirilo Tanente returning from the mountains with industrial materials.

in twenty days. During the balance of the year he made 6 bamboo fans, 8 coconut dippers, 4 flower baskets, and 3 market baskets, with a total value of ₱4.30. During his second year in school he was placed in the third year industrial class which was making Cebu work baskets. He finished 20 salable baskets, 9 of which were sold for 40 centavos each. The first of these was better than the model.

He has been making jardiniere baskets during this school year. Between August 12 and November 2, he completed a nest of 5, and by December 15 he had finished 3 more. He made his first basket in twenty-four working hours. Cirilo gathers his own materials and prepares them at home. Mr. Vicente Zapato, his teacher, says that he is a model in obedience.

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ILOCOS SUR.

There are nine household industrial centers for embroidery in the province, the largest of which is that of Filomena Altona with 15 workers.

The Magsingal Intermediate School is reported to be doing the best embroidering of any school in Ilocos Sur.

Miss Josefa Espiritu, industrial teacher at the provincial high school, has found out that the average cost of fuel and rice for cooking lessons is 50 centavos. This is doubtless for a class of 12 to 16 girls.

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ILOILO.

Mr. Cirilo Torrefranca, has the following to offer relative to achievements in the Iloilo Intermediate School:

The garden ground was at first very low. It was filled with water all of the time during the rainy season, and high tides overran it. But gradually the higher parts of the school site were cut down, and the extra soil was used to fill in the garden. In this way it was brought to the desired level after a considerable amount of time and labor had been spent on it by the teacher and pupils. A large ditch was dug across the middle of the garden to drain off the water during the rainy

season. Now the garden is accessible to the pupils at any time during the year, and they can be kept at work without further difficulty.

By keeping a record of the work, it has been learned that the average cost of cultivating 100 square meters of garden is now about ₱3, that the approximate value of crops harvested is ₱5, and that the pupils make a gain of 66⅔ per cent on their investment. In the school year 1914–15, for every ₱3 spent, pupils harvested only about ₱3.75 worth of crops.

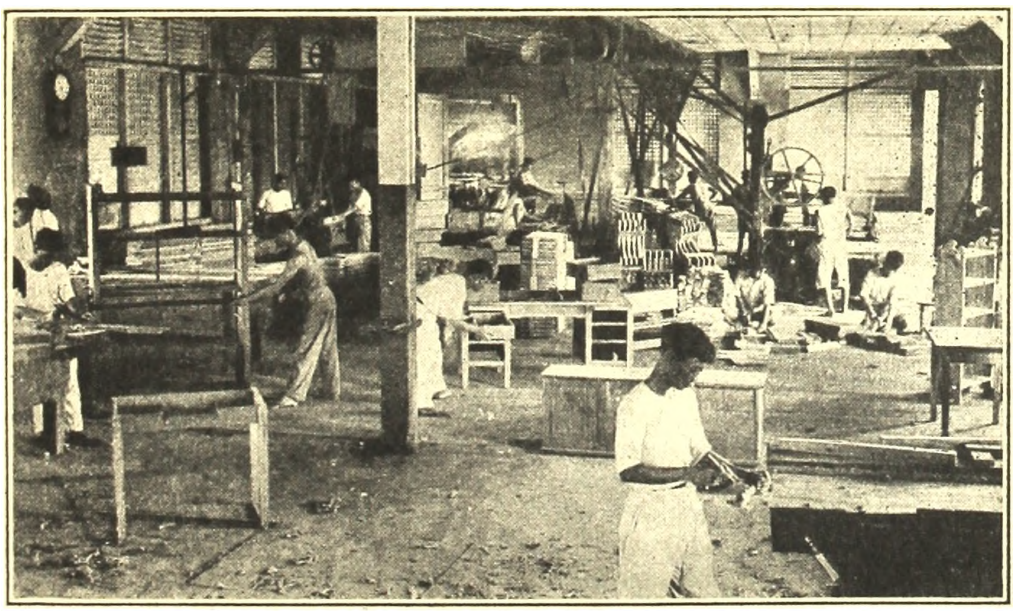
In the school year 1914–15, two kinds of articles were made in the basketry classes: Rectangular jewel boxes and wastebaskets. Sixty of the former and 50 of the latter were made. The jewel boxes were sold at an average price of ₱0.80 each. In the year 1915–16, one hundred Tigbauan oval jewel boxes were fabricated, valued at ₱251. In the same year 126 export market baskets valued at ₱0.30 each were also made. During the present school year 1916–17, Iloilo carrying baskets in three sizes were being made. The large one is listed at ₱0.75, the middle sized one at ₱0.60, and the small one at ₱0.45. The cost of materials for making the baskets is ₱0.35, ₱0.25, and ₱0.20, respectively. Each of the pupils was required to make three baskets.

In order to provide a market fund for cooking classes, the plan of charging an enrollment fee was adopted. Each pupil was required to pay ₱1 before she was enrolled. The scheme proved to be very satisfactory since every pupil is anxious to enter. The food cooked was served at the intermediate school, or it was taken home by the members of the cooking class. Through this procedure parents as well as pupils became interested. So many applied for admission to the course in household arts that the principal was compelled to limit the enrollment.

LEYTE.

Mr. Candido Fornillos, of the Leyte Trade School, has reason to be proud of his fifth-grade boys, who during the months of September and October, turned out ₱2,340.80 worth of office and school furniture. Nearly all of the work was done by machinery.

The boys of the Tanauan school,



A woodworking class in the Leyte Trade School.

of which Mr. Abdon Almacen is principal, often make trips of 25 kilometers for their rattan. They have produced ₱329 worth of baskets during the past 3 years. In the first 6 months of the present school year, the 40 boys who are making Tanauan baskets produced a total of 49 baskets valued at ₱74. Six of these were made by the best 2 workers, Paulino Escarda and Eduardo Catudio, both of the fourth grade.

Mr. Julian Maglinte, the teacher, reports that there are boys in his class who can make a set of 3 Tanauan baskets valued at ₱4.50, in from 12 to 14 weeks, working only during industrial periods. They have been making this handled basket for 3 years, and in 2 years only one has been rejected. This was because the maker, wishing to improve his basket, gave it a coat of varnish.

According to Mr. Ramon J. Esperas, principal of the Carigara Central School, a class of 59 girls has accepted an order for 844 yards of Valenciennes lace with a total value of ₱250.32. Last year only ₱206 worth of lace was made at this school.

Mr. Narciso T. Villas, principal at Ormoc, reports that between September 9 and January 25, 60 boys of Grades II to VI fabricated 89 baskets, as follows: Twenty-four Polangui work baskets, design, 1011, and 15, design 1012; 5 Polangui wastebaskets, 1016; 32 Batac work baskets, 1018; 2 Zambales jardiniere baskets, 1020; 5 stem flower baskets, 1066; 6 flower baskets, 1097.

DIFFICULTIES ENCOUNTERED AND OVERCOME IN IMPROVING SCHOOL SITES.

Some school sites readily lend themselves to improvement, while others are infinitely harder to bring to a presentable appearance owing to the nature of the soil, elevation, drainage and surroundings. It is usually easier to obtain results with a site containing some elevation, as it offers a greater chance for variety to be brought into the decorating scheme. More striking effects can be secured through rows of terraced lawns and gardens.

When the Baybay Intermediate School moved into its new building last June, the grounds were far from inviting. The building was partly hidden from the street by a grove of coconut trees and either wing was built in what had previously been used as a rice paddy. In addition to this, the grounds were cut up by numerous ditches. Since the entire site was low and partly covered by water during the rainy season, the dirt for filling could not be taken from the immediate neighborhood but had to be carried some distance. The chief difficulties encountered were the following: (1) Cutting down trees and digging out stumps; (2) filling in ditches and leveling the ground; (3) carrying dirt to fill in the low places.

It was first necessary so to organize the school that each boy would have a share in the work and that each could be checked up to see that he did his part. Four groups of 25 each were formed. An hour after the industrial period on each school day, and from 8 until 11 o'clock on Saturdays, were spent at this work, each group taking its turn. This kept the tools, of which only a limited number were available, in use each day.

The first thing to do, and this proved to be the easiest part of the work, was to remove the trees. The logs to be covered with dirt eventually were used for filling up the low places, and the leaves, when dry, were used as fuel to burn out the stumps. The grubbing of the stumps was the most difficult task of all. A little dynamite or giant powder would have been of great assistance and would, in a short time, have secured the result that required several weeks of patient digging on the part of the boys.

As every little rain turned a portion of the grounds into a pond, it was necessary, before filling, to build a permanent roadway through the low, swampy ground, over which the dirt could be carried during all kinds of weather. A "corduroy" road of coconut logs was constructed, and it furnished a firm, hard and dry pathway. Since sufficient wheelbarrows could not be procured with which to move the dirt, petroleum cases with handles attached and suitable for two boys to carry, were used. Every boy in school carried from 6 to 10 boxes a week depending on his size, the weather, and the distance the dirt had to be moved. The amount of dirt which can be handled in this way is surprising. Every day a few cubic yards were added to the fill. The boys were not only interested but they actually seemed disappointed if they did not have a chance to perform their work on the days specified. Several carts and carabaos were offered for Saturday work, but these could not be used to advantage on account of the swampy condition of the ground.

The entire front is now free from stumps, leveled, graded, and laid out with walks and planted with grass and hedges, and all are proud of the part that they took in the work. (J. L. S.)

PALOMPON.

During the past year the school grounds at Palompon were all leveled and fenced and the stones put in piles, writes the supervising teacher, Mr. Saturnino Mari. Violet and cucharita hedges, flowering plants and trees were set out. The work proceeded as follows: The various sites were divided into plots and the boys of the school were separated into as many groups as there were plots. The work of each group was in charge of one of the men teachers. The groups took daily turns at ground-improvement work, and every boy devoted one regular industrial period per week to it. In some central schools, girls were enrolled in this work and cared for the flowering plants. Those teachers and groups that were not able to bring their plots up to standard in the regular class periods, worked on Saturdays. Attractive banners awarded monthly to the groups whose plots were in the best condition encouraged the work. (S. M.)

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MANILA.

SOIL IMPROVEMENT IN MANILA SCHOOL GARDENS.

The improvement of the soil is a matter which demands more attention. In most Manila school gardens the soil is poor, heavy, and clayey. It is sticky if even slightly wet, and something has to be done every year to better it.

During this school year, the gardens have been improved by working in stable manure, by adding fertile soil rich in plant food, or by removing all soil from plots and replacing it with good soil. At every school, all waste vegetable matter is saved and mixed directly with the soil, or it is placed on the compost heap to decay. Several gardens are so wet that it is quite impossible to cultivate them during the rainy season.

Effort on the part of the pupils is sure to result in a better garden; but it must be borne in mind that a first-class garden soil is the result of many years of patient work in its improvement. The use of the wheelbarrow, if the school is fortunate enough to possess one, is given as a reward to boys showing most interest in the garden.

Nearly every school has done creditable work, but the need and the effort have been greatest in the Sampaloc and Paco intermediate schools, and the Herran and San Andres primary schools. The San Andres Primary-School garden has better soil than others, but nevertheless it

is constantly being improved by the addition of stable manure.

GARDEN CALENDAR.

January.

Water thoroughly when necessary.

Put the water where the roots can get it.

Cover wet soil with a mulch of dry soil or grass.

Guard against insect pests.

"Never one weed in the garden."

February.

1–10. Utilize all decaying vegetable matter by mixing it with soil or by putting it on the compost heap.

Plant a leguminous cover crop, patani, cowpeas, or Lyon beans preferred.

Some corn may be planted.

11–28. Water and cultivate cover crop.

March.

Water and cultivate cover crop.

Spade thoroughly and fertilize vacant space in home garden.

Plant home garden.

Mongo, cowpeas, patani, camote, native lima beans, peanuts, corn, or yams, planted in the home garden at this time, will thrive with ordinary care.

Beets, cucumber, eggplant, endive, lettuce, melon, mustard, okra, pepper, pechay, radish, or tomato, may be planted in the home garden at this time if very great care is given them.

Sprinkle wood ashes on the ground in the garden but do not let them touch the plants.

April–May.

Care for the home garden.

Water the plants thoroughly when necessary.

Water where necessary—where the roots can get the water.

Cultivate thoroughly, but do not injure roots.

After watering, mulch with dry soil or grass.

June.

Utilize all decaying vegetable matter by mixing it with soil or putting it on the compost heap.

Plant a leguminous cover crop, patani, cowpeas, or Lyon beans preferred.

Some corn may be planted.

Ampalaya, cucumber, eggplant, cadios, gabi, peanuts, patola, squash, and calamismis may be planted.

July–August.

Drain and weed the garden.

September.

Prepare seed house and seed boxes.

Plant seeds of garden vegetables for early harvest.

October.

Finish planting seeds of garden vegetables.

Prepare garden plots carefully.

Transplant largest seedlings if weather is suitable.

Corn may be planted.

November.

Finish transplanting.

Cultivate, cultivate, cultivate.

Watch for insect pests.

December.

Cultivate, cultivate, cultivate.

"Never one weed in the garden."

Water when necessary.

Water where necessary—where the roots can get the water.

Mulch after watering with dry soil or grass. (W. K. B.)

TONDO.

A report on the observance of garden day at the Tondo Intermediate School on January 27, 1917, shows that more than 2,000 people attended, and that 150 pupils exhibited their garden products.

The school spends daily an average of ₱8 for market supplies and ₱12 for groceries. This money returns to the school treasury through the sale to pupils of such delicacies as doughnuts rolled in sugar, at 2 centavos each, cheese sandwiches at 3

centavos and banana fritters at 2 centavos. These dishes are prepared by the girls of the domestic-science classes, under the direction of their teacher Miss Arsenia Aguilar.

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MINDANAO.

POULTRY RAISING AT THE PIANG AGRICULTURAL SCHOOL, COTABATO.

Poultry raising was introduced at the Piang Agricultural School as a part of the regular farming course during the latter part of 1915. At that time 12 Cantonese hens and 2 cocks were received from the General Office of the Bureau of Education. By the end of the year the flock had been increased by 68 chicks.

Seven hundred and ninety-seven Cantonese eggs were sold or otherwise distributed for setting purposes in the Cotabato valley during the year. Forty-seven grown hens and cocks were distributed to datus, or were traded for native chickens which were used in the school mess. Thirty-two colonists now have good flocks. There are at present on hand at the school, 23 hens, 11 cocks, and 63 chicks.

The success which has been attained in introducing Cantonese chickens in the Cotabato valley is encouraging. It is believed that with increased facilities for carrying on this work it will be only a short time until these chickens shall have completely displaced the native stock.

Mr. Luis B. Azura gives the following description of the home of a middle-class Marano Moro:

The dimensions of the main building are 9 by 11 meters. The walls are of hewn timbers, placed tightly together. The timbers are beautifully carved on the outside. The only windows are long narrow holes between boards. The floors are also of hewn timber about twice as thick as the siding. For the roofing, shingles are hewn in lengths of 80 to 90 centimeters. The posts are of hard wood, and they are set upon flat rocks which are level with the surface of the ground. In the middle and at the two ends of the building, big ropes are tied to the topmost part of the building. They run through the floor to the ground, where they are fastened to heavy stones. This anchoring seems to be sufficient to withstand the strongest winds. The cost of the building is about ₱800.

The house contains two sleeping rooms and a porch which serves as a reception hall. The walls are entirely bare. The only thing that attracts the eye of the visitor is the fancy decoration of the mosquito net, under which, on the floor, the bed is made. The kitchen is in a separate building connected with the main one by means of a roof and a floor.

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MINDORO.

The whole town of Calapan took part in the garden-day festivities which were held there on January 1. School and home garden products, field crops, poultry, and live stock, were the main exhibits. Examples of school industrial work and the products of local industries, were also displayed.

The exposition was located in the town market, and the buildings and arrangements were planned by the district engineer. The three large sections in the main building were devoted respectively to the interests of school, town, and farmer. The Bureaus of Agriculture, Education, Health, Constabulary, and Forestry, all maintained booths separate and distinct from the main agricultural exposition building.

The fair was financed with ₱450, raised as follows: Provincial appropriation, ₱200; municipal appropriation, ₱150; voluntary contributions, ₱100. Nineteen cash prizes and one cup were awarded. The coöperation

of committee members and farmers was admirable. (A. N.)

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MISAMIS.

Twenty-three sixth and seventh grade girls of the embroidery class at Cagayan completed 36 tray cloths, design No. 15–1208, between August 15 and November 1.

Eight girls of Balingasag completed 84 yards of lace, design No. 2*a*, and 84 yards of design No. 2*b* between the first week of September and the middle of October. Their teacher, Miss Paz Veloso, thinks that the work is perhaps remunerative enough to become an established industry.

Each of the 69 girls of the Mambajao intermediate embroidery class finished at least two commercial articles apiece before the Christmas vacation, according to Miss Rosario M. Bollozas.

At the Misamis Central School the average age of the 25 boys in Grades I and II who took the work in sedge hand bags is 13. Almost every one of them finished 4 bags up to December 15 and during the same period about one third of the 42 boys in the elementary handweaving class, average age 8, completed the work in hard strips which included 20 exercises, 2 fans, and a candy basket. Nearly half the work was done at home. More than 80 per cent of the girls in the fourth-grade sewing class finished the year's work by the middle of December.

Anastacio Tamola, in Grade IV of the Oroquieta Central School, is 13 years old and is the smallest boy in the class. In 1913–14 while he was in the first grade, he completed the exercises in soft strips and finished 2 pairs of salable tikug slippers. In Grade II, he made 5 good hand bags without the aid of blocks. In 1915–16 he made 8 excellent hand bags, 5 of which were of design No. 9651. During the first two quarters of 1916–17 he completed one bag of each of the following designs: 1054A, 1054C, 1012C, and 2 baskets of design 1055, and had another started before Christmas vacation. Anastacio makes the bag of design No. 1054C in 12 hours, while the average time is 16 hours. He can make ₱0.035 per hour on this design but only ₱0.029 on 1054A. He makes design 1012C in 30 hours while the average time is 60 hours. It takes him 18 hours to make the basket of B. E. design No. 1055 at which work he can make ₱0.033 per hour. (E. O.)

Mrs. Rosario Ozarngza, the teacher, gives the following account of the work of the seventh-grade domestic-science class of Oroquieta:

Although 13 girls enrolled in the class during the period June 12 to December 15, 1916, only 10 continued until the Christmas vacation. Their average age was 17 years. Since all had at least a year's experience in embroidery, they were given commercial work to do. There was neither equipment nor material on hand when school opened, but it was not long before the shop boys made the embroidery frames and the teacher secured material and suitable patterns. It was decided to make nightgowns. While the average number of hours required to complete one of these was 40½, four of the girls were able to complete theirs in less than 35 hours. The class also embroidered 4½ dozen cocktail napkins, B. E. design No. 15–1309, the average compensation being ₱0.04 per hour. The total profits were ₱30.40 or ₱3.04 per pupil.

Not only did the girls embroider but they learned to cook and were allowed to take home several different dishes for their parents to try. The people liked the cakes and cookies so well that it was difficult to supply the demand, especially during the fiestas in Oroquieta and the neighboring towns. Twenty pesos' worth of sugar cookies, peanut cookies,

muffins, and doughnuts were sold. The profits all went to the pupils' fund.

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MOUNTAIN PROVINCE.

During the first two quarters of the year, the 36 boys of Grade VI and the 20 boys of Grade VII at the Baguio Industrial School, made school furniture and equipment to the value of ₱286.40. In addition, they accomplished the regular woodworking exercises and did considerable repair work. They also made ₱162.05 worth of tree-fern articles, among which were 133 pencil holders with a value of ₱53.40, 86 vases worth ₱61.40, and 98 napkin rings. Mr. Roman A. Balagtas, the shop teacher, says that the demand for tree-fern articles is growing rapidly, and that practically all articles completed have been sold. Inasmuch as the wood of the tree-fern is darker in color if gathered during the rainy season, most of it is cut then.

Twelve girls in the Ananaao barrio school in the township of Concepcion produced ₱40 worth of lace in one year.

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NUEVA VIZCAYA.

Mr. Filomeno Jacinto reports that the provincial school shop of Nueva Vizcaya produced during the period from June 12 to December 29, 1916, four hundred and sixty-eight desks. Many other articles, bringing the total value of the product up to more than ₱2,000, were completed. During the long vacation more than 200 shell windows were made for concrete school buildings under construction in the province.

A short comparison of this year's output with that of previous years, shows a marked improvement. From January to December, 1914, sixty-six articles with a value of ₱546.46 were made. During 1915, two hundred and sixty-nine articles with a value of ₱1,055.88; and during 1916, nine hundred and forty articles with a value of more than ₱3,240, were completed. (F. J.)

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OCCIDENTAL NEGROS.

BAGO.

During the present school year, the domestic-science classes at Bago, Occidental Negros, completed a number of articles of good commercial quality and tried out several Filipino recipes, writes Mrs. Asuncion A. Concha. During the first week of the school year, the teacher devoted her time to arranging the classes, grading the girls, and to methodizing all work in cooking and housekeeping.

Nine girls attending the domestic-science classes were enrolled in Grade VII, 13 in Grade VI, 18 in Grade V, 40 in Grade IV, 60 in Grade III, and 75 in Grade II. In sewing and lace making, the following articles were fabricated: Valenciennes edging, 24 pieces of 6 yards each, value ₱43.20; elementary lace, 52 pieces of 6 yards each, ₱93.60; chemises, petticoats and men's garments, 123 pieces, ₱95.93; total value ₱232.73.

At present there are nearly 30 girls in the embroidery course. The following were the most salable articles which they fabricated during the first seven months of the present school year: one luncheon set, value ₱30; 2 tea-cloth sets, ₱16; 6 hand towels, ₱9; 1 chemise, ₱3.50; 9 tray cloths, ₱4.50; total ₱63.

The kitchen is provided with 2 American stoves and ovens, a native stove and a number of kitchen utensils. All the girls in Grades IV to VII, are divided into groups, each group cooking one kind of food. A number of Filipino recipes gave a profit of something over ₱24 to the domestic-science funds. The articles for which orders are most often received, are jellies, jelly rolls, and vanilla and soft cookies.

On October 16, 1916, a punch

party was given in honor of the outgoing and incoming elective town officials, for which ₱50 worth of food was cooked by the girls. On December 16, 1916, a dance was given to the winning indoor-baseball team, for which ₱61 worth of refreshments were prepared by the domestic-science classes.

CADIZ.

Mr. Alfonso Liboon is proud of the Cadiz Intermediate School concerning which he offers the following:

The girls of the domestic-science classes of the Cadiz Intermediate School raised ₱146 by means of a box social. With this money the expenses of the class were met without any aid from the municipal treasurer.

The pupils, whether domestic-science or trade, always know that they are to share in the profits from sales of articles made by them. On January 1, there was due the 40 girls ₱40, and the 50 boys ₱181.96.

One order for 100 school desks was completed within 7 days by 45 boys. Dressed lumber was used. An order for 60 school desks was received from the town of Sagay. To lessen the cost of transportation, the material was prepared in the shop, the parts were taken to Sagay in a parao, and then seven of the shop boys went over with tools and nails and put them together. Thus ₱10.50 was saved.

When the trade course was first introduced, it met with much opposition, as the old folks said that they did not want their sons to be carpenters. In fact a number of people visited the school with a view to finding so many objectionable features about the work that it would have to be discontinued. However, when they saw the table tops ready to be polished and noted the fine examples of joinery, they were convinced that the course was a good thing.

This is an unsually good place for offering the trade course. The shop is near the Philippine Lumber Company's mill. Lauan and narra are used. On January 1, 1916, the total value of commercial work turned out by the shop was ₱766.06.

At San Carlos, Occidental Negros, pupils of the third and fourth grades

A basketry class at San Carlos, Occidental Negros, and some of its products.

are required to complete 1 basket in 2 months or ₱2.50 worth of basketry per year, and fifth-grade pupils are required to finish ₱3.50 worth per year.

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ORIENTAL NEGROS.

At the provincial high school, the intermediate embroidery classes consist of 58 girls of the fifth grade, 48 of the sixth, and 26 of the seventh, with an average age of 16 years. They made ₱255.80 worth of handkerchiefs, luncheon sets, tray cloths, and table runners, from June 21 to December 15, 1916.

Order with respect to the putting away of embroidery frames is maintained at this school by making a deduction from the daily grade of the girl who fails to put her frame in the place where it belongs. Five per cent is subtracted for the first offense, and 10 per cent for the second.

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PAMPANGA.

Mr. Apolonio Ramos, principal, writes that the garden of the Angeles Intermediate School has an area of 1 hectare, 2,280 square meters of which are under cultivation. The teacher is Mr. Jose Angeles, a 1914 graduate of the Philippine Normal School. The gardening class consists of 47 boys. The soil is sandy, and the nearest water is at a well nearly 300 meters distant. During previous years little or no work was done in the wet season, but this year peanuts, squashes, beans, and sweet potatoes were planted. The harvest of peanuts alone amounted to ₱50.93. After the peanuts were gathered, the garden was planted to other vegetables, the total harvest from which amounted to ₱263.82.

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PANGASINAN.

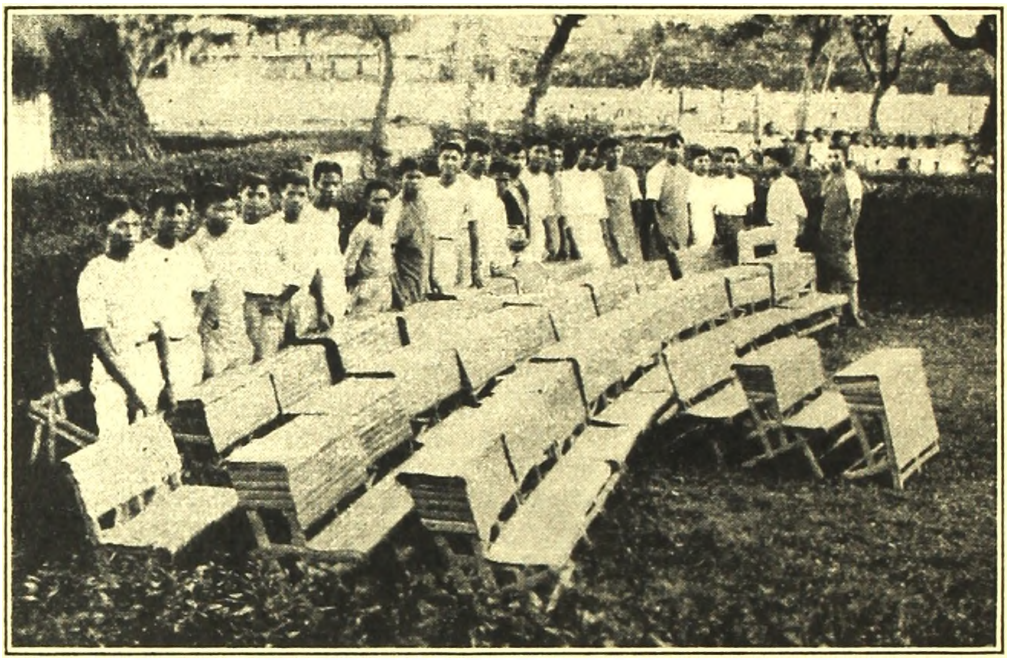
Miss Pastora Sison, industrial teacher in the Pangasinan Provincial High School, says that there are 94 girls in the three grades with which she has to do, practically all of whom are taking embroidery. The 41 fifth-grade girls began practice work about the end of July and a majority were through with this by the end of November. Italian cutwork was then begun, and runners, flounces, centerpieces with calado, and napkins, were sucessfully made. The sixth and seventh grades made centerpieces with complicated designs, nightgowns, luncheon sets, baby dresses, and fine handkerchiefs.

In order that the girls might have a definite aim in their work, a system of grading was devised by Mr. B. A. Gregory, the principal of the school, as follows:

During the present year the method of grading girls taking needlework, embroidery or lacemaking will be similar to that in operation during the last school year. A complete record of industrial work done by each girl will be kept on Form 152 and grades will be given on the basis of 50 per cent for quality and neatness and 50 per cent for quantity.

In grading for quantity only the value of the work will be considered and this value will be entered on the Industrial Record Card at the time each piece is finished, turned in and the selling price determined. The following schedule will show the approximate ratings, on the basis of 50 per cent for quantity, that will be given in different grades for various amounts of work completed during the year.

	Grades—		
	VII.	VI.	V.
10 per cent or less.	₱1.00 or less.	₱0.75 or less.	₱0.50 or less.
10 to 20 per cent.	1.00 to ₱2.00	.75 to ₱1.50	.50 to ₱0.75
20 to 30 per cent.	2.00 to 3.00	1.50 to 2.00	.75 to 1.25
30 to 40 per cent.	3.00 to 4.50	2.00 to 3.00	1.25 to 1.75
40 per cent or above.	4.50 or more.	3.00 or more.	1.75 or more.



Bamboo desks and the boys who made them at Alcala, Pangasinan.

This information is given at this time so that each girl can plan to do the amount of work required. It will also enable each pupil to determine approximately the industrial grade she will receive for the year, knowing as she does the quality and quantity of work she has done. For example, if a seventh-grade girl has completed work which in quality is fair and is worth 35 per cent and at the same time has completed more than ₱4.50 worth of work during the year, her grade will be 75 per cent or more, while if she has finished only ₱2 worth of work, her grade will be only 55 per cent.

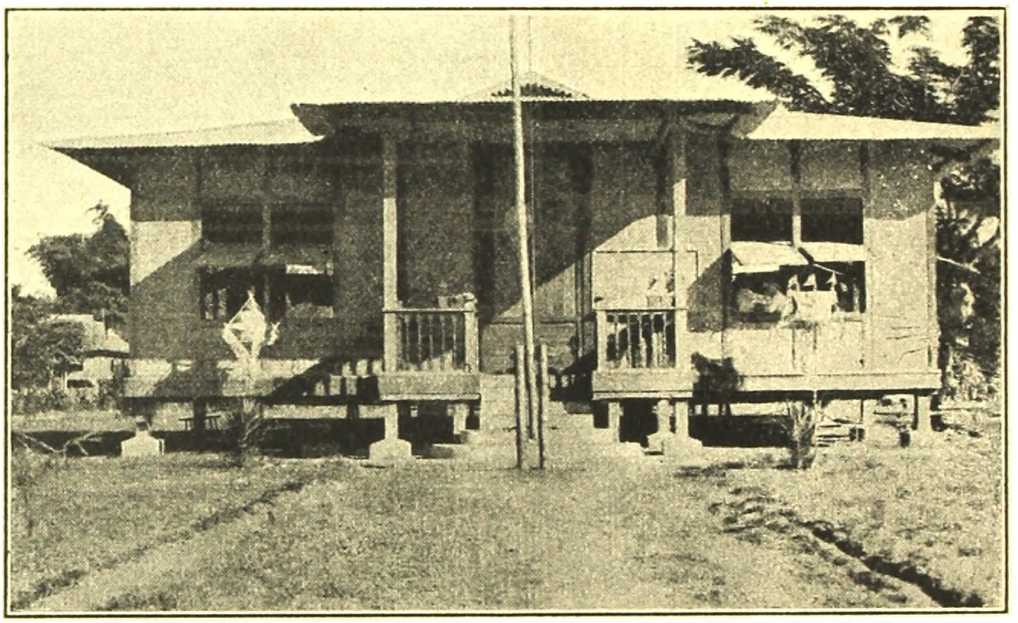
The system, writes Miss Sison, is very successful. At the end of the second quarter, the provincial high school had produced about ₱220 worth of articles. The best workers in the fifth grade made about ₱2 profit; in the sixth grade, ₱3; and in the seventh grade, ₱5.50.

Such training, in order to be worth while, must produce good embroiderers, who, after they have finished the course, will be capable of doing commercial work. By teaching the girls not to waste their time, the habit of keeping busy at home is developed. As a result, many of those who have finished the intermediate grades are now seeking orders from the people, and they are turning out work that meets the demands of the public.

The following records from Pangasinan for individual achievement during the period from July to November, were submitted by the division industrial supervisor. They show that this province has some of the most industrious workers in the Islands, and they also indicate that the accomplishments of pupils are closely noted.

District.	Pupil.	Age.	Academic grade.	Accomplishment.	
Agno	Alejandro Reyes	12	II	All exercises and 1 market basket.	
Do	Librada Gascon	11	I	All exercises and 1 handkerchief.	
Bayambang	Tomas Quingon	16	IV	2 tables at P5	P10.00
				2 stools at P1.50	3.00
				1 handkerchief frame	.25
Do	Soledad Guzman	16	IV	Irish crochet, 5010-16 m	2.52
				Irish crochet, 5012-8 m	.84
Dagupan	Ciriaco Astadan	17	IV	4 baskets, 1020A	2.60
				2 baskets, 1020B	1.50
				1 basket, 1020C	.40
				1 basket, 1205A	.25
				Total	4.75
Do	Maria Perreras	15	IV	Elementary sampler 16-1700.	
				Table runner 15-1604	2.00
				Envelope chemise	1.00
				Nightgown	1.20
				Petticoat	.90
				Chemise	.80
				Long skirt	1.30
				Drawers	.50
				Trousers	.60
				Short skirt	.85
				Total	9.15
Lingayen	Perfecto Ferrer	15	IV	1 set baskets, 1208	3.50
				1 basket, 1208C	.45
				Total	3.95
Do	Maria Paz Lopez	16	IV	2 tray cloths	2.40
				1 petticoat	1.80
				1 night dress	1.20
				1 envelope chemise	1.00
				Total	6.40
Manaoag	Apolinario Reyes	18	III	3 sewing baskets, 1206	2.60
				1 sewing tray, 1209	1.00
				Total	3.60
Do	Beatriz Edades	13	IV	1 chemise blouse	.75
				1 skirt	.75
				1 envelope chemise	.50
				1 petticoat	1.00
				1 night dress	1.25
				Total	4.25
Mangatarem	Sinforoso Orince	17	III	6 baskets, 1020	4.00
Rosales	Leoncio Reboso	13	III	2 market baskets	.25
				1 pin tray	.20
				4 Imugan baskets	3.90
				Total	4.35
Do	Anatalia Evangelista.	11	IV	1 sampler, Grade IV	6.40
				2 handkerchiefs	.60
				1 ruffle	.75
				1 baby bonnet	.85
				Total	8.60
High school	Angel Macaraeg	....	V	2 desk baskets, 1022	1.60
Do	Demetria Sison	....	VII	1 handkerchief and part of a runner	5.00
Farm school	Boys—No report	....	....	....	....
Do	Maria Ferrer	....	VII	8 baby bonnets, 16-128	8.00
				1 napkin, 16-1000	.50
				½ centerpiece, 16-1000	1.25
				Total	9.75

An attendance of 145 children at the Villanueva School, barrio of Bautista, in the latter part of 1915 made a new building a necessity, writes Mr. Lino Ferrer. A meeting of parents and teachers was held and a building campaign was outlined. Boys and their fathers went to the woods, 60 kilometers distant, and brought in trees which they sawed into lumber. Girls and their mothers busied themselves in soliciting donations. Sand, gravel, cement, and labor were contributed, and overgrown with weeds and bushes. The children cleared the land of these, built a substantial fence, and laid out a garden. During the latter part of the school year, 1915–16, the industrial supervisor pronounced it the best in the province. At that time the children had used many of the vegetables in their homes, but they kept the garden producing by continuous planting. It was near the middu of vacation before all the crops were gathered. The lessons taught were so effective that now



Primary-school building erected by the people of the barrio of Villanueva, Bautista, Pangasinan.

by March, 1916, ₱1,800 had been collected. The principal of the school, Mr. Severo P. Elizano, and the assistant supervising teacher, Guillermo Marzo, secured the cooperation of the municipal president, Mr. Cirilo Francisco, upon whose recommendation the municipal council agreed to furnish the outer walls and an iron roof for the proposed building. A 3-room structure, following a temporary building plan of the Bureau of Education, was begun in March and finished in June, 1916, at a cost of about ₱2,500.

The site, containing about a hectare, was covered with ant hills and almost every home in Villanueva has a garden resembling that of the school in plan and in variety of plants grown.

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RIZAL.

Jose Tecson entered the Bagongbayan Barrio School, Navotas, for the first time in the school year 1914–15 and is at present in the third grade at the Navotas Central School. He belongs to a basketry class of 32 pupils. His equipment consists of a saw, bolo, knife, and gauge, and his materials are bamboo, rattan, dyes, and floor wax.

None of these are wasted. His interest is not limited merely to completing the articles required, but he devotes spare time to making other articles of original design. He made several small "tampipes" of excellent quality, some of which were sent to America. This boy is quick to grasp the ideas involved in a design. If shown an article, he produces another, which, if it is not better than the original, is at least its equal.

Jose Tecson, of Navotas, Rizal.

During the first two years at school he finished 3 tampipes, 12 food baskets, 4 Batangas rice baskets, and 2 sets of winnowing baskets, for which he received ₱7.15. During the first six months of the present school year, he finished 2 wastebaskets, B. E. design No. 1036, and 3 jardiniere baskets, B. E. design No. 1075. These were of very good quality, and their total value was ₱3.30.

SAMAR.

ACHIEVEMENT OF A CLASS IN LACE MAKING.

Lace making has been taught in the schools of Samar since about 1910. However, no serious attempt at specialization was made until the past year or two. A considerable quantity of lace had been made in the schools, but only a small part of it was sold. Much of the lace heretofore made was of inferior quality and, as there is practically no local demand, most of it was returned to the makers.

About the beginning of July, 1916, this division received an order from the General Office for 14,400 yards of lace to be made in 6 patterns, 2A, 2B, 101A, 101B, 13A, and 13B, by far the greater portion of which was 13A and 13B.

Not having anticipated the manufacture of lace to any such extent, this subject had not been featured during the 1916–17 provincial normal institute. It was found that an insufficient number of trained teachers were on hand. Notwithstanding this handicap, the order was accepted, and immediate steps were taken to train more teachers and to organize classes in most of the central and in certain of the barrio schools. The division industrial supervisor assigned a definite amount of the work to each school where lace making was included in the industrial schedule. The plan as being carried out requires each girl to produce 24 yards of lace. One of the industrial assistants was sent out to those schools where there was no one capable of teaching lace making, for the purpose of giving instruction to some teacher, who, after mastering the work herself could organize and train a class. This plan worked out so well that according to present indications there will be no difficulty in filling the large order.

Among the schools which stand out prominently in achievement in lace making, Calbiga is a good example. In July, one of the teachers, Miss Romana Daradal, organized a class of 35 girls. Twenty of these were assigned to the making of valenciennes lace, 101A and 101B. They began work during the first part of August. On December 7,

the class had completed an average of 15 yards each, the longest piece being 23 yards and the shortest 10 yards. About one half of these girls were beginners and had to do about 3 weeks' preparatory work.

Fifteen girls were assigned to the making of linen lace, 13A and 13B. They were all beginners and spent the time from July 1 until about the end of October in preparation for the work. By December 17, they had completed an average of 3 yards each, of these difficult patterns. They have mastered the design and have acquired such speed and skill as will enable each one to make 24 yards before the end of March.

The members of this class are girls from Grades II to IV who also take plain sewing. Lace making is given 4 times a week during the industrial period, and sewing is given once a week. The girls will complete the plain sewing course during the year, and, in addition, they will make an average of 24 yards each of lace. Besides this, the full amount of time required by the course of study, is being given to academic work and athletics. (J. B. G.)

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TARLAC.

Few classes can show better progress than a buntal basketry class in the Camiling Intermediate School which has been working on card trays, design No. D 31. According to Mr. Pablo Corsino, during the year 1915–16, there was an enrollment of 20 boys and they made 29 baskets with a total value of ₱11.05. Seven of the boys did not complete even one basket. During the 4½ months from July 12 to November 30, 1916, there were 46 boys enrolled and 156 salable baskets with a total value of ₱92.15, were finished.

The best individual record made last year was that of a 12-year-old boy who, during the whole year, finished 4 baskets valued at a total of ₱1.80. The best record this year was made by Generoso Tabilisma, a 13-year-old boy, who finished 10 very good baskets, with a total value of ₱6.30, in 4 months and 20 days.

The barrio school of Bani in the municipality of Paniqui, Tarlac, has had unusual success with its garden, according to Mr. Alfonso Cancio, the assistant supervising teacher of the district. There is a total of 131 pupils of whom 84 are boys. From April to September 1916, the garden products of this school were as follows: Corn, ₱40; cowpeas, ₱35; sitao, ₱1.83; pechay, ₱13.07.

The garden consists of a tract of 596 square meters of slightly sloping and loamy fertile land. It receives plenty of sunlight but not an excessive amount, and it is well protected from strong winds. The place is inclosed with a strong bamboo fence constructed by the pupils under the leadership of their teacher, Mr. Felix Guiang. The people of the barrio furnished the material.

Mr. Moises Aganon assistant supervising teacher, reports that the Gerona Intermediate gardening class under Mr. Segundo Simeon, produced vegetables to a value of ₱8.46 from June to December of 1915–16, while during the same period of 1916–17, the production was ₱96.20. This year each of the 27 boys, whose average age is 15 years, has cultivated 200 square meters of land. One fourth of the crop goes to the school.

The domestic-science class of the Gerona Intermediate School, taught by Miss Dolores A. Barrera, has demonstrated more than usual business ability. The school fund had always been too small to meet the special demands made upon it, and direct appeal for contributions from the people was not desirable. Miss

Barrera wanted the class to do practical things instead of merely memorizing rules. So a start was made by borrowing a small sum from the athletic fund. With this the girls bought materials for making such delicacies as doughnuts, cakes, pies and cookies, which later were sold to appreciative pupils and the public. A box social given by the class, brought in ₱94.29, and participation in the last garden-day celebration yielded a profit of ₱11. For the sake of variety, a basket social was given, at which baskets were sold for ₱0.50 each, and a profit of ₱77.98 was made. Still another social was held which brought in ₱33.65. In this way the girls not only secured valuable experience in housekeeping, but they learned how to keep records of expenditures and income, and how to sell to and deal with the public, and they helped their school.

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TAYABAS.

From the beginning of the present school year to February 15, 1917, orders for industrial articles to the value of ₱818.71 were received from the Bureau of Education for the Lucena district. These included 1,537 buntal baskets, 165 coir mats, 500 yards of bobbin lace, 715 stem baskets, and 96 embroideried articles. Pagbilao received orders to the value of ₱351.75; Lucena, ₱154.18; Tayabas, ₱139.08; Sariaya, ₱61.20; and a general order for the district calls for buntal baskets to the value of ₱112.50. About 65 per cent of the above orders were filled before the last of February, and practically all will be completed by the end of the school year.

The value of the various articles fabricated in the industrial classes at Lucena from the opening of school to February 28, 1917, most of which were made to fill orders, was as follows: Woodworking products ₱232.72; bamboo rattan furniture, ₱78; buntal baskets, ₱183.70; coir doormats, ₱69; articles sold at lunch counter, ₱129.94.

In Tayabas more orders for bamboo rattan furniture have been received than can be filled during the school year. Every article so far fabricated has been sold locally.

The work on the woven wire fence around the Kalumpong barrio-school site will be completed by the end of March. A domestic-science building, costing about ₱2000, will be erected on the same site during the coming vacation.

The fourth-grade domestic-science class at Lucena has been conducting a lunch counter in connection with the school. The sales for 2 months amounted to ₱53.78. The aim has not been to make money, but rather to provide better food than is sold in the shops near the school. (L. P.)

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UNION.

The provincial industrial department went into operation on March 1.

The experience gained with the embroidery center at San Fernando was put to good use in the organization of another one at San Juan under the direction of Miss Arcelea. Here no girl was admitted to membership who was not willing to work 7 hours per day for 6 days in the week. This class has since rivaled the first one in interest. It now has a membership of 18 girls and is doing excellent work on mosaic napkins, design No. 16–1307. The girls have this work so well in hand that they are able to make one of these napkins in 21 hours.

Early in November a center was organized at Carlatan, chiefly for beginners, only 4 of the 17 girls enrolled being rated as competent workers. By the middle of February they had completed work to the value

of ₱135. They are now doing commendable mosaic work. The class now numbers 20, and it is under the leadership of Miss Eschalar. (L. M.)

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ZAMBALES.

The San Antonio Central-School nursery was started in September, 1916, with an area of 168 square meters. Up to the present time, the following fruit trees have been distributed to the public: Papaya, 22; caturay, 20; lemon, 20; camias, 6; mabolo, 6; casoy, 5; nangca, 4; granada, 2; total, 86.

There are 238 more fruit trees in the nursery. They consist principally of oranges, atis, guavas, lemons, casoy, caturay, camoting cahoy, and cacao. In addition there are more than 200 ornamental plants in the propagating house.

Many of the school gardens throughout the province have been furnishing seeds to the farmers.

Up to January 31, 1917, articles to the value of ₱110.70 had been fabricated and sold by the provincial high school. Besides these, 91 articles had been finished for the Bureau.

The provincial-school shop fabricated 363 articles up to the end of January. These were valued at ₱578.14. This is ₱264.79 more than the value of the articles that were fabricated last year.

The boys of the Yangco Intermediate School, San Antonio, produced ₱378.60 worth of work up to December 27, 1916. By classes the output was as follows: Grade V, 135 boys, basketry, ₱140.40; Grade VI, 52 boys, gardening, ₱100; Grade VII, 64 boys, woodwork, ₱138.20. Mr. Felix de la Llana is principal.

The girls of the Olongapo, Zambales, lace-making classes have been turning out a yard of lace a week in designs Nos. 2 A–B and 3 A–B. The class consists of 29 girls with an average age of 14 years.

Up to December 31, the 36 girls of the embroidery class, embroidered, laundered, and sold 72 towels worth ₱180, in addition to work from the General Office. They also made 66 handkerchiefs, all but 3 of which were salable. The cheapest sold for ₱0.60 and 3 sold for ₱1 each.

The girls of the sixth-grade housekeeping and household-arts class at the provincial high school have developed into a set of young ladies of whom any community might be proud. Not only have they completed the industrial courses as outlined by the Bureau for plain sewing, cooking and housekeeping, embroidery and filet crochet, but they have maintained a high standard in their academic work.

From June 14, 1916, to January 1, 1917, this class of 16 girls turned out ₱60 worth of commercial embroidery, ₱40 worth of plain sewing, and ₱38 worth of filet lace. They also prepared ₱45 worth of refreshments for a dance given by the high school for the purpose of raising funds to purchase library books; made muffins and cakes to the value of ₱15 for a party given to the high-school boys who were making extensive repairs on the track; prepared ₱20 worth of refreshments for a dance given by the Iba farm school to raise athletic funds; made cakes, cookies, doughnuts, and candies to the value of ₱90 for the dance given during the provincial athletic meet; and, finally, gave a tea party to provincial and school officials on the evening of December 12, 1916, for which they prepared and decorated the tables and did the serving. (W. S. F.)

Mr. Emiliano Anonas, supervising teacher in the Castillejos district, submits the following concerning the industrial achievements of two pupils in the San Marcelino Central School:

Mariano Renojo is a fourth-grade boy, 14 years of age. During the

The girls of the sixth-grade domestic-science class at the Zambales Provincial School.

period from July 10 to November 30, 1916, he finished 3 clothes hampers of excellent quality valued at ₱5 each, besides a number of minor articles such as fans and egg baskets. Considering the large size of a hamper and the time necessary to finish a good one, and bearing in mind that only 90 minutes are devoted daily to industrial work by fourth-grade pupils, the accomplishment of this boy during a period of less than 5 months is exceptional in the history of the schools of this district.

Mariano Renojo is doing good work not only in basketry but also in gardening. Records show that during the period above stated he cultivated 58 square meters of land which he planted to different kinds of vegetables. He realized from the sales of his garden products ₱2.15, and besides furnished his home with vegetables worth ₱2.

Andrea Colorado, a fourth-grade pupil of 13 years of age, has shown exceptional qualities as a capable and progressive worker. Although her help is constantly needed at home, she has done much more than could have been required of a girl of her age. From July 10 to November 30, 1916, she finished 1 large centerpiece, and 2 small ones, 2 baby bonnets and 1 tray cloth, completing, besides, the prescribed course in advanced sewing. The total selling value of the articles finished by her during the above period was ₱6.50. Had it not been for the lack of materials, Andrea could doubtless have accomplished more than she did. She is a member of the cooking class and has as excellent a record in this as in other work. Her teacher states that she needs to be told only once to do a thing and then does it eagerly and carefully.

The industrial work of Dominga Recopero, a pupil of the fourth grade in Candelaria Central School, is so varied and so well done as to entitle her to very great credit, writes Mr.

Silverio Dinoso, supervising teacher for the district.

Dominga is a member of the class in embroidery. During the 31 days from July 11 to August 10, she learned how to transfer patterns and studied the different sampler stitches. On August 11, she began her first article—a doily. It took her 26 days to finish it. She did the work so well that the teacher assigned her a baby bonnet. This was begun on September 7 and was finished in 10 days. On September 18, she began another baby bonnet which was finished on October 2. Each of the bonnets is valued at ₱1. From October 4 to 26, she made 5 linen tray cloths with a total value of ₱2, becoming so skillful at this work as to be able to finish the last one of the tray cloths in 3 days. The total value of the embroidery which Dominga had completed by October 23 was ₱4.20.

According to her cooking teacher, she has proved to be the most active girl in the cooking class where she is sometimes used as assistant. She is the treasurer of the Candelaria primary domestic-science club.

But Dominga's industrial activity is not confined to embroidery and cooking, as she is also a member of the primary agricultural club, being enrolled in the chicken-raising contest. Thus far she is the most successful among the contestants. Her chicken house is well made of bamboo, and is so placed that one half is exposed to the sun. It is 4 meters long, 2.5 meters wide, and 2 meters high. The top is covered so as to furnish a protection from crows.

Isabelo Carpio, a boy in the supervising district of Mr. M. H. Acayan is an efficient and independent worker. He is in the fourth grade at the San Antonio Central School and is enrolled in the basketry class. The only materials available in the locality are bamboo and sappan. Nito and rattan must be taken from a mountain 25 kilometers distant. The gathering of these materials during the rainy season is difficult and is sometimes an impossible task, but Isabelo solved the problem by collecting all his industrial materials during the previous long vacation. When the school opened on July 10, 1916, he was ready to begin work at once. His equipment consisted of a knife, a bolo, and a tin device (batacan) for cleaning the weavers, and these were always kept in proper condition.

Isabelo Carpio of San Antonio, Zambales, in his garden.

From July 10 to November 25, 1916, Isabelo finished 4 fruit baskets, B. E. Design No. 1017, and was half through with a fish basket, B. E. Design No. 1076. All of these were of first-class workmanship, and the fruit baskets were sold at the provincial exhibit at ₱1.50 each, wholesale. It took him 20 days to finish the first basket, 16 days for the second, 13 days for the third, and 10 days for the fourth. Each one was a better basket than the preceding one, and his creditable record stimulated the other workers to greater efforts.

In addition to making baskets, this boy maintains a model home garden, 32 square meters in area. He did the cleaning and fencing during the rainy season, and the culti-

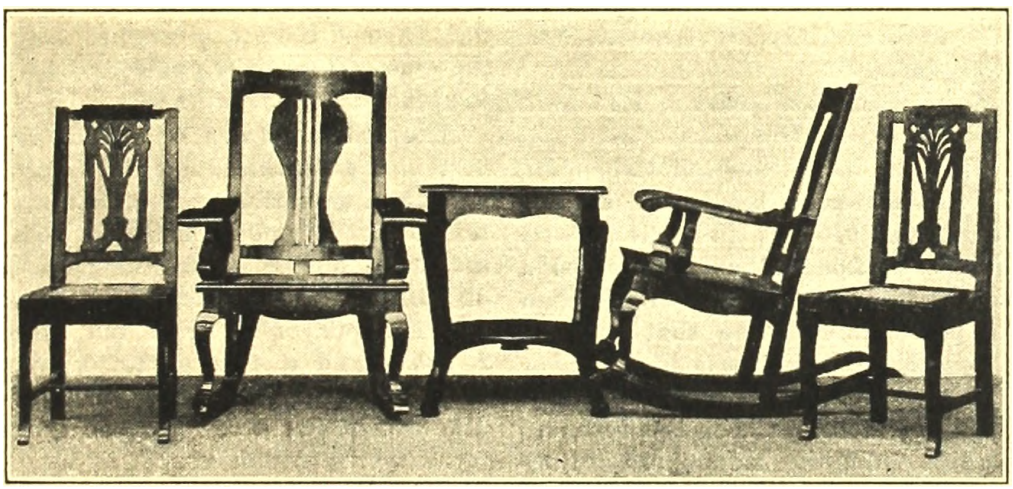
vating and planting in October when basketry work was entirely suspended. His garden implements were a bolo, a hoe, and a rake, and he was just as skillful in the use of these as he was in the manipulation of basketry tools. His vegetables consisted of eggplants, cowpeas, tomatoes, radishes, and pechay. The eggplants won first prize at the provincial garden-day celebration. The value of the vegetables sold and consumed up to November 30, 1916, was ₱2. This amount is only a small fraction of the entire value of the crop, as few vegetables were ready for harvest so early. The basketry and garden achievements of Isabelo Carpio represent a high degree of efficiency made possible through the harmonious cooperation of teacher, pupil, and home. (M. H. A.)

Laureano Aquino of Candelaria is one of the most successful workers in the schools of Zambales. The mere fact that he completed 2 jardiniere baskets between July 13 and November 20 would not have put him in the class of the very successful, for some of his classmates finished as many as 4 baskets during the same period. But in addition to his basketry, he cultivated with a plow 170 square meters of land planted as follows: One hundred square meters to corn, 60 to cowpeas, and 10 to tomatoes and radishes.

Felicidad Dumlao, of Grade IV in the San Narciso Central School, is one of the most industrious pupils in the province. From August 21 to November 15, she finished 4 baby bonnets and a lady's handkerchief. The value of the 5 articles was ₱3.70.

INDUSTRIAL ACHIEVEMENTS OF A WOODWORKING CLASS.

Never in its history has the provincial wood-working class of Zambales been able to produce more articles than during the school year 1916–17. From August 5, 1916, to November 30, of the same year, this class with an enrollment of about 90, made 363 salable articles, valued at ₱578.14. Mr. Jose de la Paz is principal.



Furniture made on private orders at the Zambales Provincial-School Shop.

Of the 90 pupils taking woodworking, 43 are of the seventh grade in the general course, each working 4 days a week with 2 periods a day; 18 are sixth grade, trade course, each working 3 periods a day during the week; and the rest are fifth grade, trade course, each working 2 periods a day.

The table given shows the number

Date.	Enrollment.	Number of articles.	Total value.	Profit.	Cost.		
					Total cost.	Material.	Value of labor.
1914-1915	48	37	₱277.25	₱52.25	₱264.47	₱105.59	₱160.91
1915-1916	69	66	303.357	39.887	268.47	105.81	117.66
August 5, 1916, to November 30, 1916	90	363	578.14	93.12	485.02	484.92	.10
Total	207	466	1,159.247	185.257	1,017.96	741.32	278.67

and value of, and the profit on articles manufactured in the provincial-school shop of Zambales during the years, 1914, 1915, and 1916.

The total amount received by the school for commercial work from 1914 to 1916 was ₱924.25. No part of this sum was paid to pupils. The cost of materials was ₱595.67, and the profit to the Government was ₱346.58.

INDUSTRIAL ACHIEVEMENTS OF A BARRIO SCHOOL.

Longos, in the town of Cabangan, is a very poor barrio of a poor municipality. But in spite of its handicaps Longos has maintained a school of one teacher for more than 10 years, and during that time its people have built 3 schoolhouses.

Notwithstanding the low salary, ₱12 per month, which the teachers receive from the municipality, Longos has generally had good teachers who have done some excellent work. During the present school year an average daily attendance of 25 boys has been maintained. Yet these mere children of the first and second grades, during the first 6 months of the present school year, made 45 baskets; fenced a yard of 300 square meters and a school garden of 347 square meters; and cleaned, planted, and cultivated the garden and 8 home gardens with a combined area of 1,136 square meters. Besides, they cleaned the school grounds, kept the fences in repair, and decorated the schoolhouse with plants.

The school garden is one of the best in the province, and for several years the premises have been maintained in a model condition. The industrial equipment of the boys is all furnished by the individual pupils and consists of 3 or 4 old hoes, 2 bolos, and a few pocket knives. The irrigation system for the gardens consists of a few bamboo tubes for carrying water.

The girls of the Longos school are even smaller and fewer than the boys. Their work consists in elementary sewing and mat weaving. (W. J. C.)

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BUREAU OF EDUCATION PUBLICATIONS.

(Abbreviated list.)

ANNUAL REPORTS:

First to Sixteenth Annual Reports of the Director of Education. 1901-16. (Supply exhausted except for 1911, 1913, 1915, and 1916 editions.)

BULLETINS:

1 to 8 and 10 to 30, inclusive. Various subjects relating to the early activities of the Bureau. Editions for the most part exhausted and material obsolete.

9. A List of Philippine Baptismal Names. 1905. (Revised, 1915.)
31. School and Home Gardening. 1910. (Revised, 1913.)
32. Courses in Mechanical and Free-hand Drawing. 1910. (Edition exhausted.)
33. Philippine Hats. 1910. (Edition exhausted.)
34. Lace Making and Embroidery. 1911. (Edition exhausted.)
35. Housekeeping and Household Arts—A Manual for work with the Girls in the Elementary Schools of the Philippine Islands. 1911. (Edition exhausted.)
36. Philippine Normal School—Catalogue and Announcement. 1911. (Edition exhausted.)
37. School Buildings and Grounds. 1912. (Supply exhausted.)
38. School Buildings—Plans, Specifications, and Bills of Material. 1912. (Supply exhausted.)
39. A Manual of Free-hand Drawing for Philippine Primary Schools. See Textbooks. Free-hand Drawing for Primary Grades. Vol. I, Grades I & II; and Vol. II, Grades III & IV. (Supply limited. Vol. I exhausted.)
40. Athletic Handbook for the Philippine Public Schools. 1911. (Revised, 1913.) (Edition exhausted.)
41. Service Manual of the Bureau of Education. 1911. (In course of revision.)
42. Intermediate English, II—Notes, Directions, and Aids to the Preparation of the Correspondence Study Course. 1911.
43. Philippine School of Arts and Trades—Catalogue. 1912. (Edition exhausted.)
44. Libraries of Philippine Public Schools. 1912. (In course of revision.)
45. The School of Household Industries. 1912. (Supply exhausted.)
46. The Industrial Museum, Library, and Exhibits of the Bureau of Education. 1913.
47. Good Manners and Right Conduct. 1913. (Supply exhausted.)
48. A course in Civics. (In course of preparation.)
49. Industrial Fiber Plants of the Philippines. 1913.
50. Arbor Day and School Holidays. 1915.
51. Philippine School of Commerce. 1913. (Supply limited.)
52. Philippine School of Arts and Trades—Nautical Department. 1913. (Supply exhausted.)
53. Elementary Course in Plain Sewing. 1913. (In course of revision.)
54. A Handbook of Industrial Plants in Common Use. 1915.

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THE TEACHERS' ASSEMBLY HERALD:

Volumes I-V. 1908-1912. (Supply exhausted.)
Volume VI. 1913. (Supply exhausted.)

THE PHILIPPINE CRAFTSMAN:

Volumes I to IV. 1912-16. (Supply limited.)
Volume V. 1916-17. (Now current.)

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English Composition—A Manual for use in Philippine Public Schools. 1916.
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