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The Philippine Craftsman

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He who would establish his craft in the knowledge and affection of men must possess enthusiasm, skill, discrimination and infinite patience.

Charles F. Binns, *The Potter's Craft.*

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The Philippine Craftsman

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BASKETRY WEAVES IN USE IN THE PHILIPPINES.

By EDWARD M. AYRES and LUIS DUKA, Industrial Division.

In the museum of the Bureau of Education, there is a representative collection of baskets from all parts of the Philippines, as well as from Java, Sumatra, Japan, China, India, the United States, and Europe. Most of the weaves found in these are common to many countries, though extreme modifications of design in some of the baskets, might induce the inexperienced to believe that they represent distinct types. That weaves similar to those of near-by lands have been found in many of the old native baskets of the Philippines, is largely explained by the fact that trade was carried on with those countries before the coming of the Spaniards. The traffic with China was especially important, and not a few of the weaves found in Philippine baskets show Chinese influence.

A diversity of weaves is employed in Bureau of Education designs for basketry, and the principal varieties of these are here illustrated and briefly explained. Standard names have been used, wherever available. In a few cases, names of general acceptance in the Philippines are given, although other terms may be applied elsewhere.

PLATE I.

Probably the most simple of all weaves found in Philippine baskets is the over-one-under-one, forms of which are illustrated in figures *a* to *h*. Those shown in figures *a*, *b*, *c*, and *d* may be designated as checker-work or mat weaves. Such weaves are used by beginners, as they require practically no experience on the part of the worker. *A* and *b* are especially adapted to soft strips, but in the schools they are used with both hard and soft materials. It is possible to obtain a number of different effects with this weave, but these are secured only by varying the size of the weavers, and by using two sets of strips, one set being heavier than the other.

The weave shown in figure *a* is commonly found in sleeping mats. In the Bicol provinces it is used in making pandan, buri, and karagumoy rice baskets.

Figure *b* shows this same weave, but with a diagonal effect obtained by superimposing weavers to form the decoration. This is common in the cigarette cases sold in the Iloilo markets, and a good example of it is applied in Bureau of Education design No. 1602.

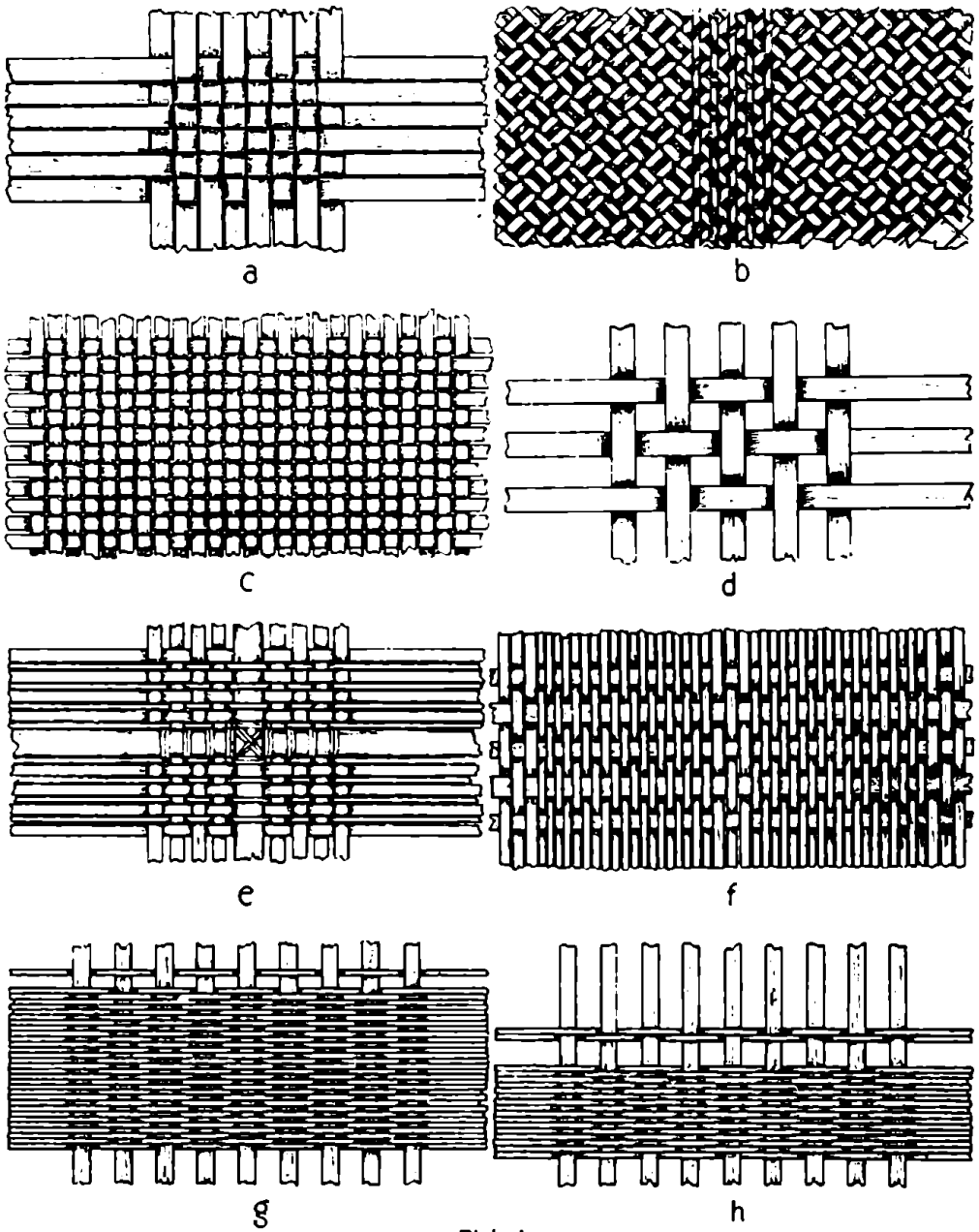


Plate I.

Figures *c* and *d*, open weaves, vary in the size of splints used, and in their spacing. In the schools they are known as over-one-under-one open weaves. The weave shown in *c* is commonly used in making sieves. In the western part of Leyte and in Pangasinan and Iloilo, it is found in market and fish baskets.

The weave shown in *d* is largely used in the bottoms of fish and market baskets in Surigao, and in chicken nests in the Ilocano provinces. It is naturally adapted to hard materials. The very open weaving does not lend itself to the use of pliable materials.

Figure *e* illustrates a weave which is found in the bottoms of certain division designs for desk, sewing, and work baskets, but which has so far not been incorporated into any Bureau of Education design.

Figure *f* shows a weave found throughout the Islands in fences, and in sides of carretons. The illustration was made from an old jewel basket, round in shape, from Tigbauan, Iloilo, and the weave is now used in Iloilo division designs for jewel baskets of various shapes.

The weaves set forth in figures *f* and *g*, and sometimes described as single weaving, are also used in houses, and they are employed in school basketry such as Bureau of Education design No. 1073. The weave in figure *g* is used only in baskets with an odd number of spokes. Figure *h* shows the "plain pairing" weave, so designated to distinguish it from the twisted weave illustrated in Plate V, figures *a* to *g*. In the Ilocano provinces it is used in the native baskets called "upigan" which are made to hold betel chewing outfits. Plain pairing weaving differs from single weaving in the number of spokes rather than in the method employed. It is very frequently found in European and Japanese baskets, but was seldom used in the Philippines before the establishment of the present school system.

PLATE II.

Figures *a* to *g* illustrate only a few examples of the more common twilled weaves, known in the Philippines as "sawali." All of them except *d* and *e* are in general use throughout the Islands. In the Bicol dialect these weaves are called "salanigo." The term is derived from the words, "salad," meaning weave and "nigo" meaning winnowing basket, hence "winnowing-basket weave." They are sometimes called "binalantac," meaning "jump over."

Sawali made in designs as shown in figures *a* and *b*, is sold in large rolls throughout the archipelago. It is used in constructing walls of houses, partitions, ceilings, screens, and window shutters, and—in some provinces—mats on which to dry rice and fish. The designs used in *f* and *g* are also frequently seen. Sawali weaves may be classed with those illustrated in Plate III.

F and *g* are elaborated examples, which, when used with

different colored materials, are very effective. These weaves, being wholly geometric, are usually monotonous; but variations in color arrangement make some of the old native baskets most distinctive. Ornamental sawali weaves are secured as follows:

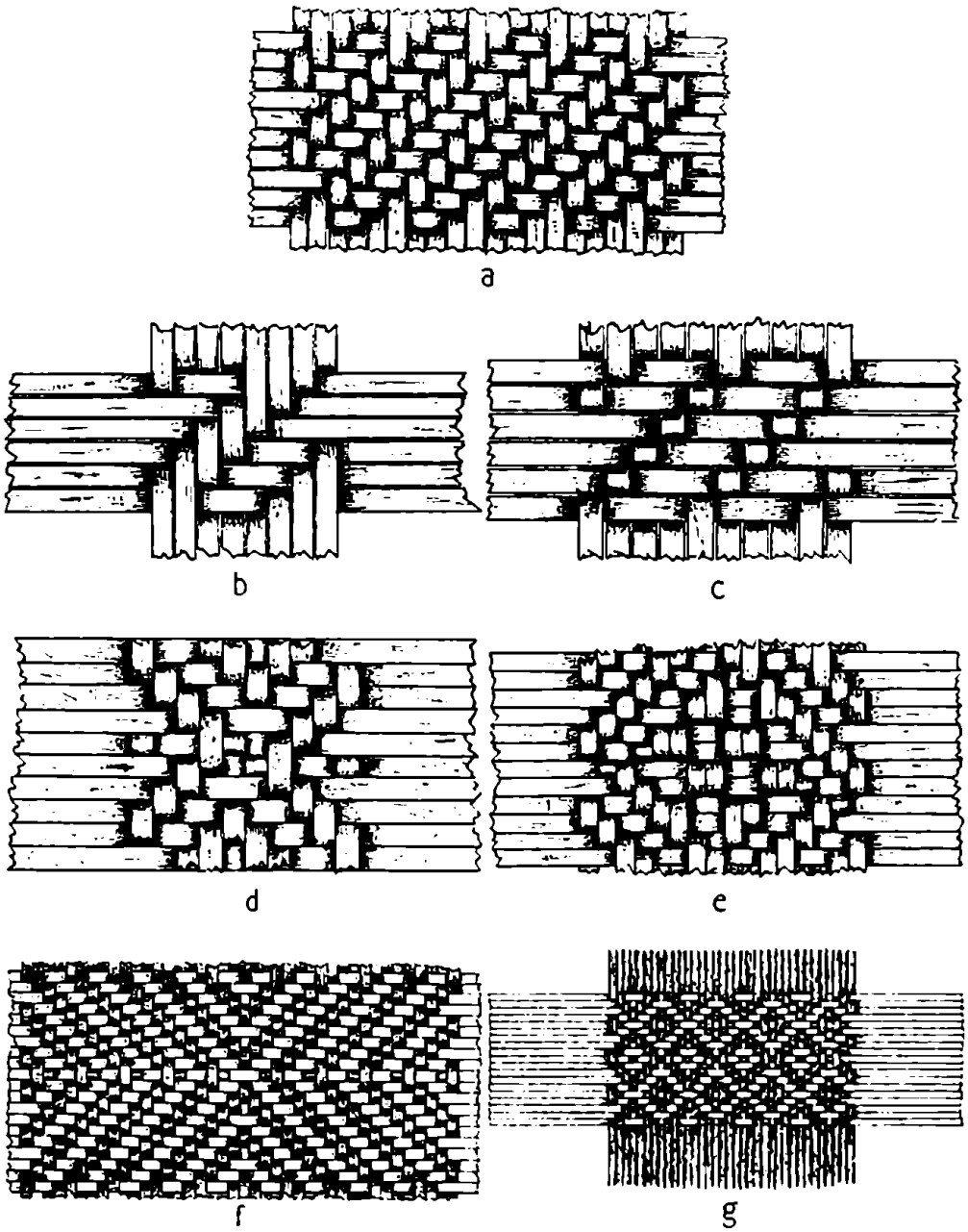


Plate II.

by weaving in one color only; by using a set of strips in one color and the cross set in another; by the use of three or more colors, each to bring out a certain set of motifs. Figures *d* and *e* show a slight variation of this weave as seen in the bottoms of rice baskets made in the interior towns of Iloilo province.

Still other variations similarly used are illustrated on page 16, Volume III, THE PHILIPPINE CRAFTSMAN.

PLATE III.

Figures *a* to *g*, set forth types of more highly developed twilled or sawali weaves, and what are classified, according to Bureau

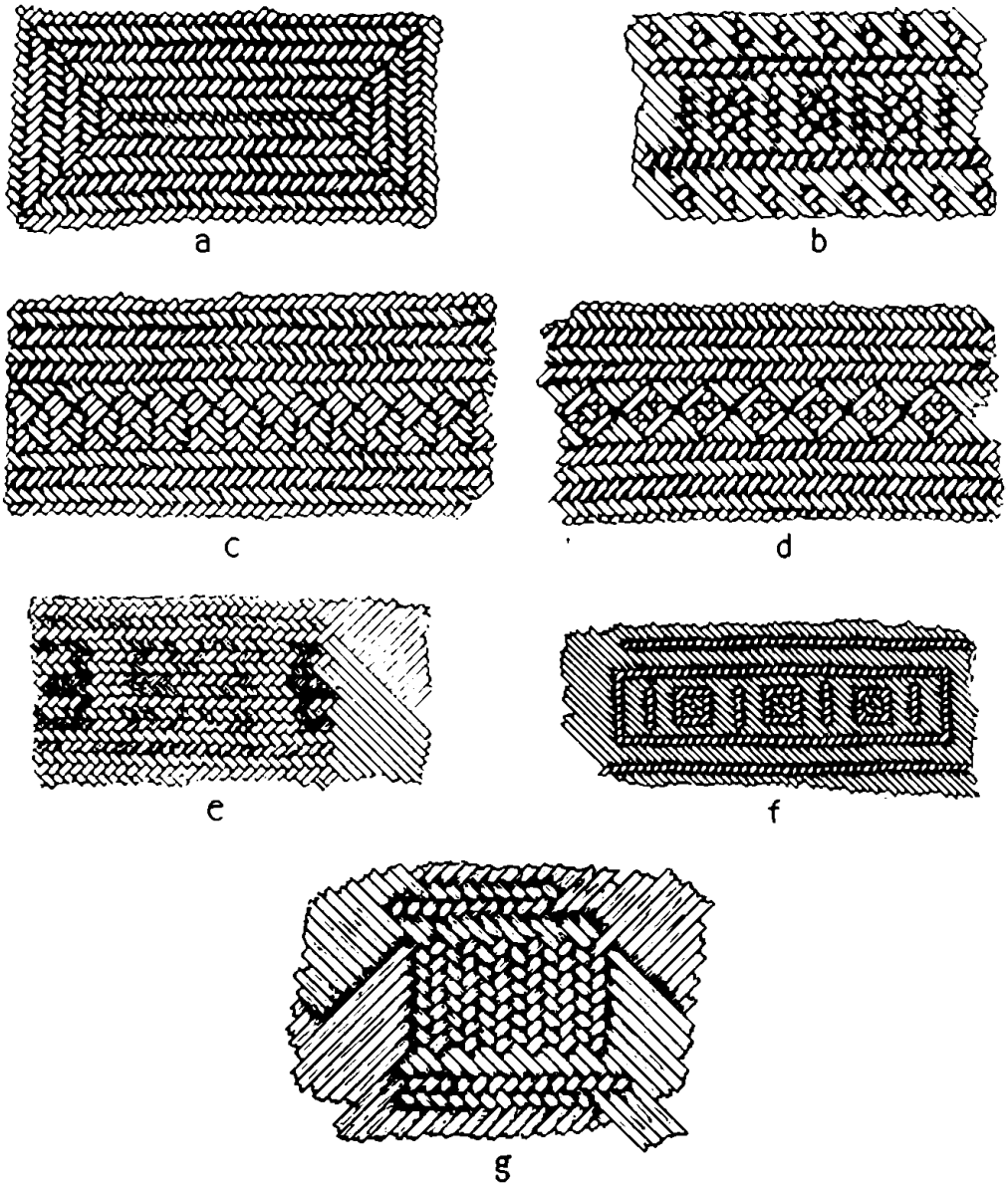


Plate III.

of Education standards, as Palawan weaves. Figure *a* shows the herring-bone pattern, found throughout the Islands in the tops and bottoms of bamboo telescope baskets which are used as traveling cases. It is also found in Bureau of Education design No. 1213 for jardinière baskets.

The weave shown in figure *b* occurs in the sides of Tinguian

rice baskets. All of those shown in Plate III lend themselves to a great variety of uses where rigidity is not of first importance. They have been employed with good results in Bureau of Education design No. 9654 for cigarette cases, and in several division designs for waste and work baskets.

The pattern in figure *e* is known to have been copied from baskets imported from Java, and it is now used here. The

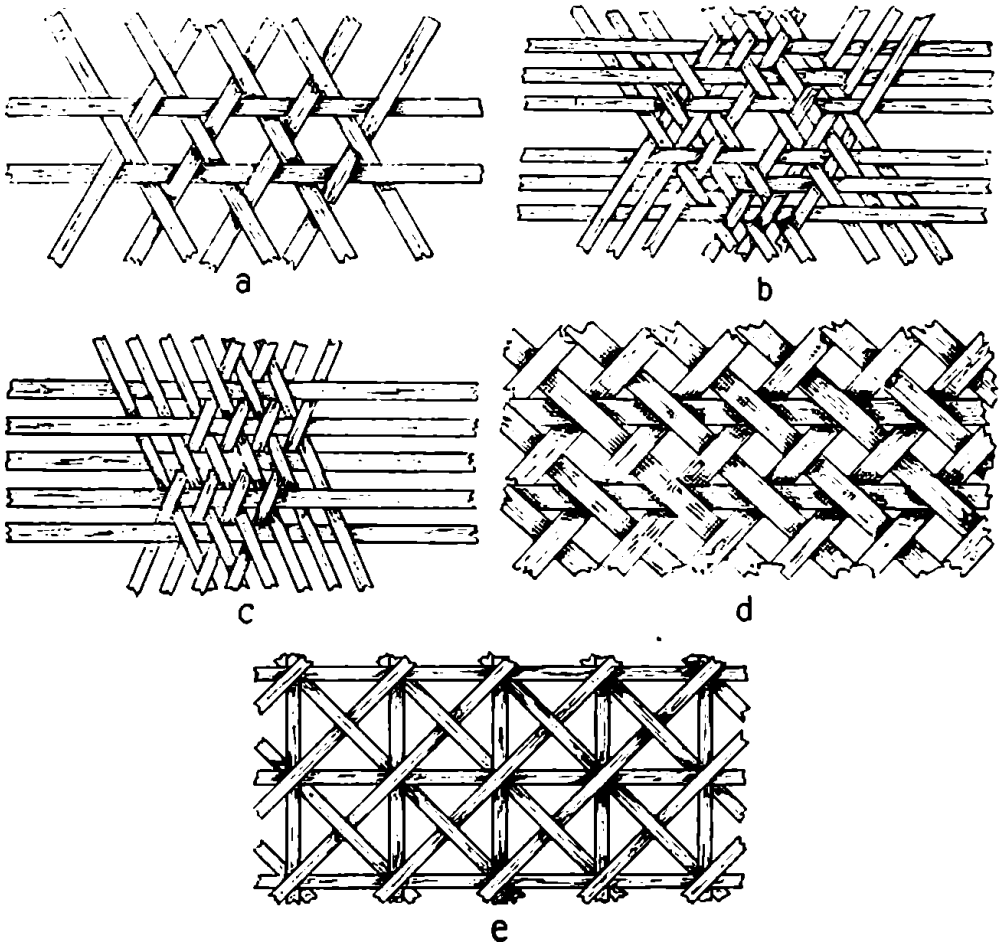


Plate IV.

design is worked in with superimposed colored strips which are much shorter than the main strips.

PLATE IV.

Figures *a* to *e*, exhibit several types of hexagonal open weaves. Figure *a* shows a weave which is very common throughout the Philippines. In most provinces it is used in egg and chicken baskets. The same weave is found in fish baskets in the Bicol provinces and in clothes hampers in Iloilo.

The weaves shown in figures *b*, *c*, and *d* are in general use in Batangas in making market and packsaddle baskets. In Manila,

the patterns shown in *b* and *c* are employed in baskets carried by the Chinese coolies.

The weave in figure *d* is common in the province of Bulacan. In the Bicol provinces it occurs in fish and egg baskets, and in Iloilo, in market baskets. It is not employed by the Bureau of Education, except possibly in certain division designs.

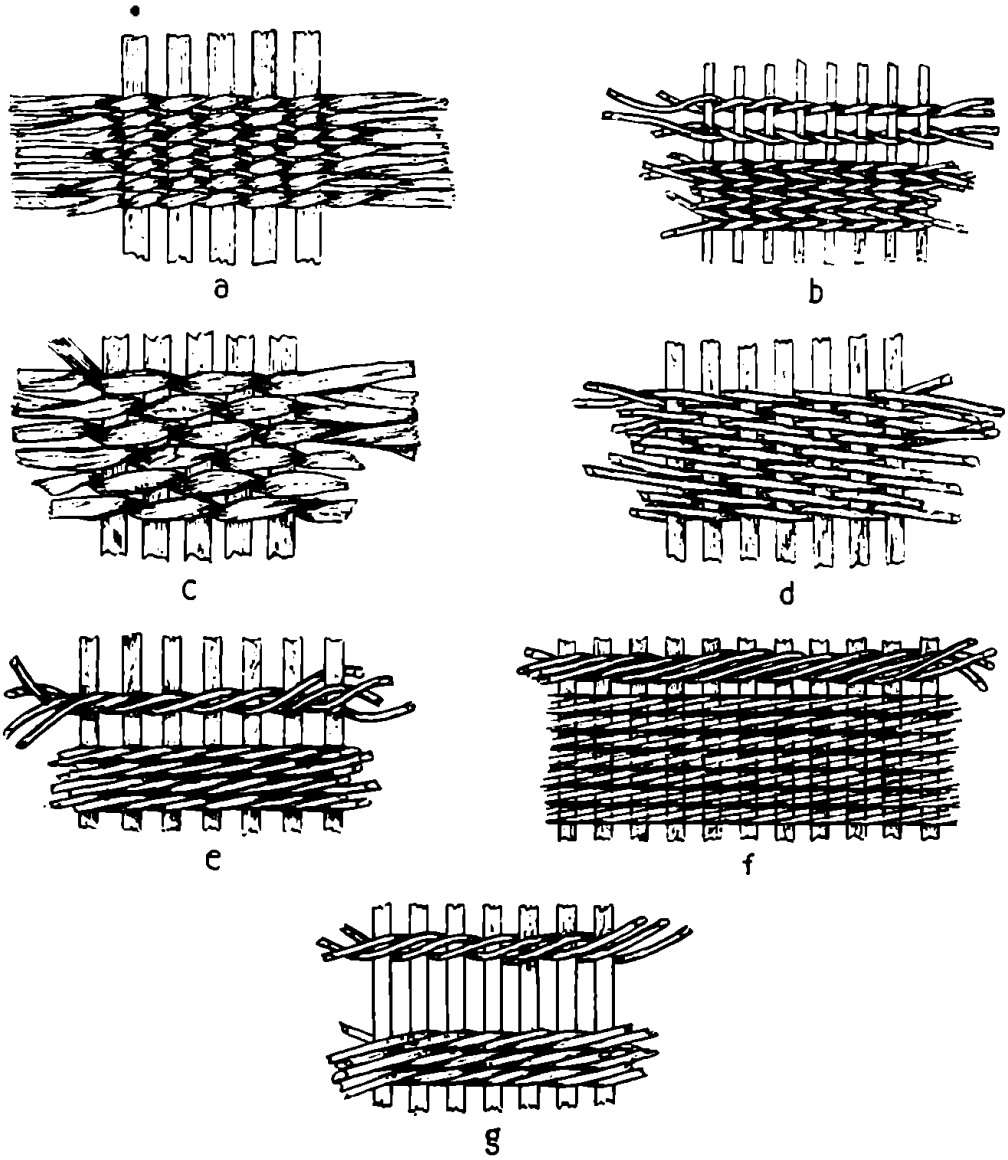


Plate V.

Figure *e* exemplifies a weave which is coming into general use in caning chairs, and which has hitherto been used in some of the Tagalog provinces and in Iloilo for the lattice work on porches.

PLATE V.

This plate illustrates twined weaves in use in Philippine baskets. Figure *a* sets forth the most simple form, in which two

strands are used. It is generally employed in making fish corrals, but the Ilocanos use it in baskets and chicken nests called "baqui." It is adapted to the use of either hard or soft materials for weavers, but the spokes are practically always made of bamboo.

The weaves shown in figures *a* to *d* are all done in two strands. Hard or soft materials may be employed for weavers in any of these, but better results are secured with soft strips. Figure *a* differs from figure *c* in that the weave in one case is over-one-under-one, while in the other it is over-two-under-two. The effect in figure *b* is caused by reversing the direction of each successive pair of weavers. This weave is found in Bureau of Education designs for vetiver fans. It was first applied to school basketry in the Ilocano provinces, but was soon taken up in other districts where vetiver is found.

Figures *c* and *d* exhibit comparatively new weaves adopted from the Igorot weave shown in figure *f* on Plate VI. The weaves in figures *e* and *f*, in which four strands are used and in figure *g* in which three are employed, are found in many Bureau of Education designs for baskets, and are made up in either polangui, stem, or buntal materials.

PLATE VI.

This plate illustrates miscellaneous weaves, as does Plate VII. The weaves in figures *a* and *b*, Plate VI, are commonly employed in America. They have long been used in the Philippine Islands for making fences, railings for porches, walls of houses and sides of carretons. In ribbed and stem basketry, they offer an advantage, in that the using of two or three weavers at a time greatly facilitates the work.

Figures *a* and *b* simply illustrate over-one-under-one weaves done with sets of two and three strips, respectively.

Figure *c* shows a modification of *a* and *b* secured by using flat weavers, two of one color and one of another. This gives the arrowhead effect. The weave was introduced through the schools, the first baskets being made in Albay and exhibited at the Philippine Carnival in 1912. It is now used principally for polangui baskets.

The knot weave seen in figure *d* has long been common in the Philippines. With such materials as buri, karagumoy and sabutan, and with rattan or coconut midribs as a foundation, it is used in making trays for holding cigars and tobacco; also desk baskets.

The weave illustrated by figure *e* is common in fish corrals, the foundation being made of bamboo tied together with any one of

the following stems: kamagsa (Tagalog), jagnaya (Bicol), jingiu (Bicol), or sig-id (Visayan).

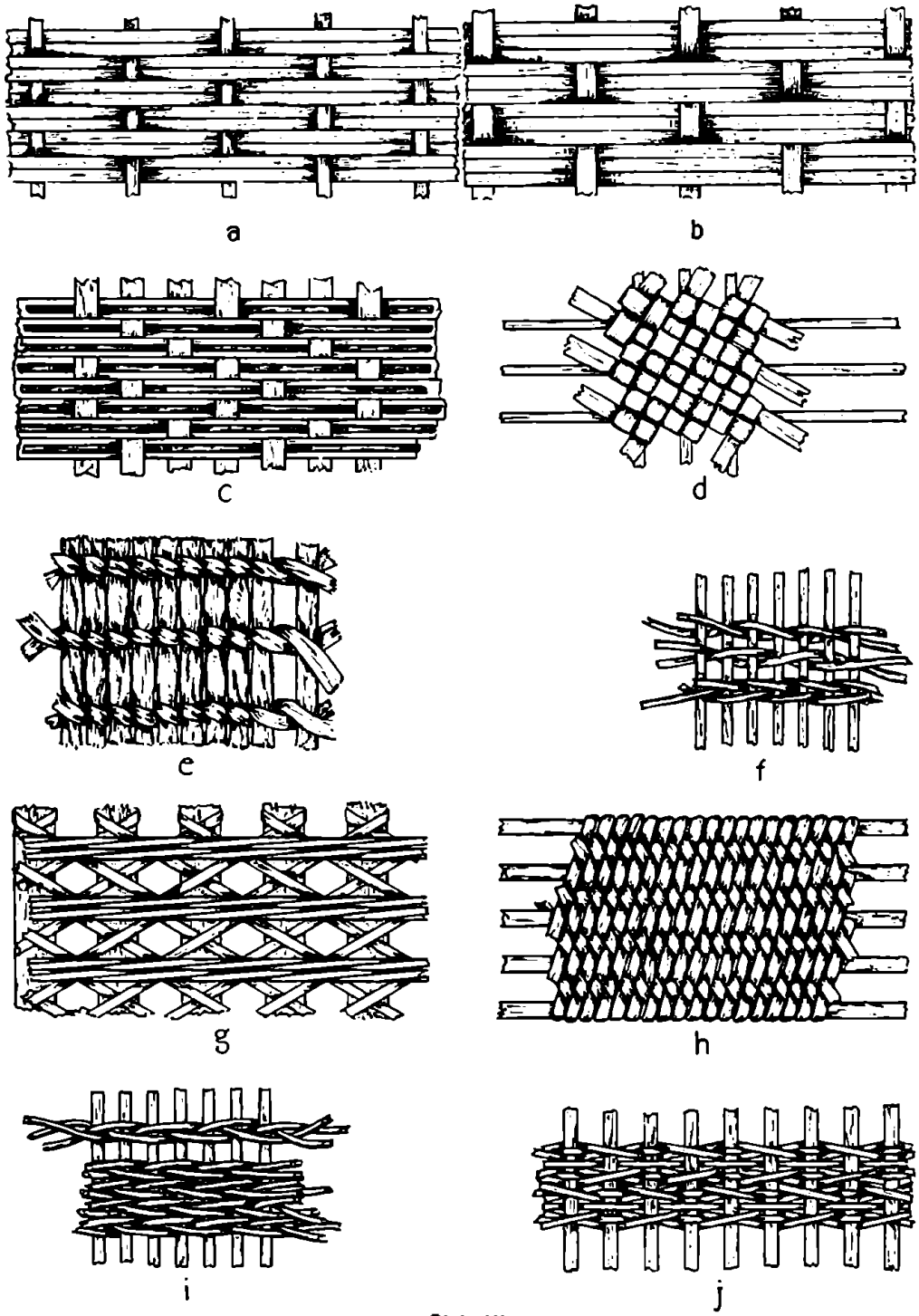


Plate VI.

Figure *f*, illustrates a weave lately adopted in school basketry, and which was previously found only in hats made by the Igorots. It is comparatively simple, and is usually made with round or

flat stem materials. It is used in Bureau of Education design No. 1072.

Figure *g* exhibits a weave suggestive of the hexagonal open weaves, but with the distinction that the spokes are of unusual width, and that the parallel weavers consist of sets of triple strands instead of single weavers. This is common in one style of Chinese basket. It is very frequently met with in the basketry of Iloilo.

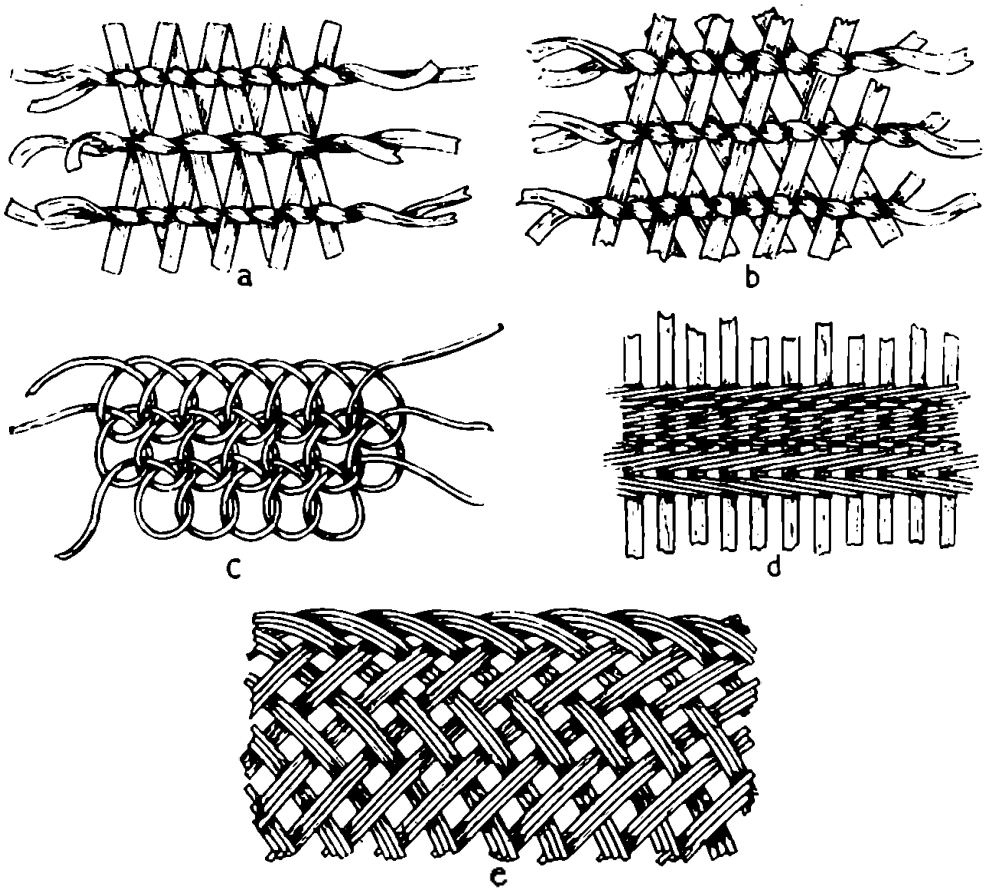


Plate VII.

The weave shown in figure *h*, was first observed in the old native carrying baskets (yovok) in general use in the Batanes Islands, the materials being air roots and rattan. A place has not yet been found for it in any Bureau of Education designs, but it will undoubtedly be utilized before long.

Figure *i* is copied from the triple or braided weave so common in Japanese baskets, and it is now in general use in the schools. The Japanese apparently employ flat weavers only, but the industrial teachers of the Bureau of Education have found that baskets are more satisfactory and look better if made with half-

round or round weavers of such materials as split rattan, tipon-tipon, bamban, idioc, pamago stems, and air roots.

The crossed weave, figure *j*, was evolved by a Filipino teacher in 1913. It is best adapted to polangui basketry. Bureau of Education design No. 1016, which is made almost exclusively in Capiz, requires this weave.

PLATE VII.

A and *b* are copied from Japanese weaves found in book satchels and handbags. Because of the peculiar diamond shaped openings left when splints of particular materials are used, these are sometimes called the diamond weaves. They are now used in Bureau of Education designs No. 1099 and 1101 for Capiz stem desk baskets; also in Bureau of Education design No. 9651, which is for a very serviceable handbag made of sedge. These weaves are often found in the coverings of perfumery bottles imported from France.

Figure *c*, an interlaced weave which was first seen here in Japanese-made lunch baskets, was taken up in 1911 in the schools at Vigan, Ilocos Sur, and is now in general use.

The twined weave shown in figure *d* is described in George Wharton James' book, "Indian Basketry." Industrial teachers from the General Office applied it to small work baskets of division design, and it was first tried out in the schools of Ormoc, Leyte. It is well adapted to pliable polangui materials, and there is practically no end to the variety of geometrical figures that can be secured. Several good examples of this weave were exhibited at the Panama-Pacific International Exposition.

Figure *e* is commonly called the Madeira weave, being seen in many baskets exported from the islands of that name. Before adoption in the schools, it was used in Sorsogon for baskets to hold chewing outfits, and in Cebu for market baskets. It occurs in such designs as Bureau of Education No. 1701 for midrib baskets.

PLATE VIII.

Figures *a* to *e*, illustrate a few of the more common coiled weaves found in Philippine baskets. That shown in figure *a* may be of Japanese origin. It is used here in handbags, lunch baskets, and hats; but it is not embodied in any Bureau of Education design.

Figure *b*, lupis coiled, and figure *c*, coiled stem, illustrate two weaves very much employed in Bureau of Education designs for baskets and trays. The weave used in figure *b* was first tried out in Albay with lupis, to which it is particularly suited. Coiled-

stem products, of medium or coarse flat stems, can be made almost as cheaply as coiled-strip articles, but they are not as salable.

Coiled weaves are simple, yet capable of much variation, and baskets produced by skilled weavers are often very beautiful. The material for the foundation or core may be almost anything that can be coiled, such as grass, sedges, rattan, or air roots. For wrappers, abaca in various forms, maguey, rattan, thin strips of bamboo, ferns, raffia, vines and air roots are used. In the Philippines single-foundation coiled baskets are widely distributed, but they are most commonly found in the northern

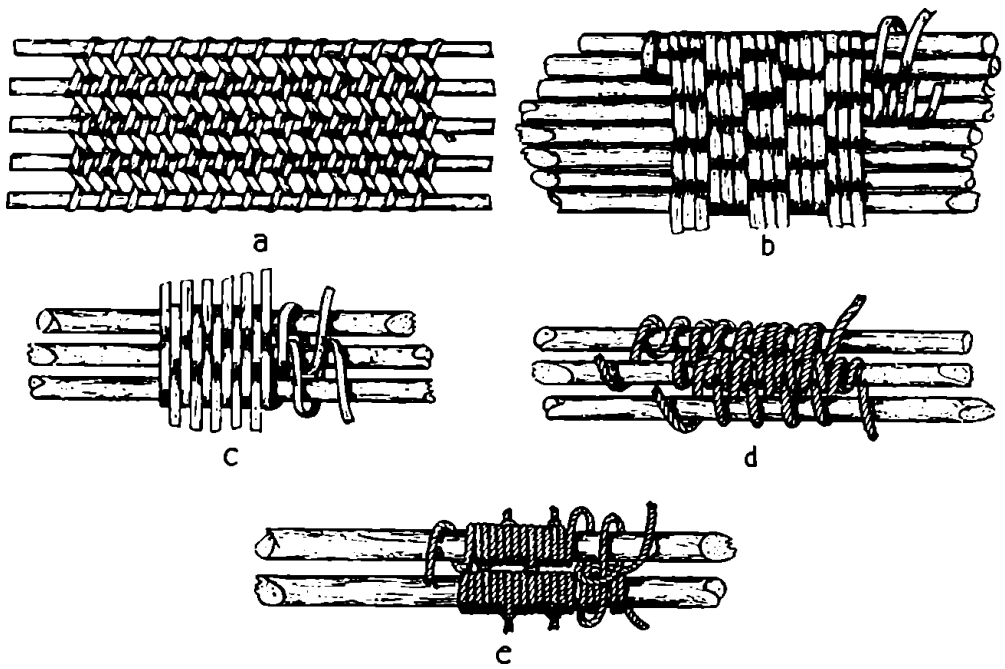


Plate VIII.

provinces of Luzon. Foundations of multiple coils are seldom used.

The weaves shown in figures *d* and *e* have been copied from Indian basketry.

PLATE IX.

The list of the more characteristic weaves found in these Islands, is complete with the mad weaves and the octagonal varieties illustrated on this plate.

The styles shown in figures *a* and *b* are commonly used in chair bottoms. Figures *c*, *d*, *e*, and *f* all set forth types of the intricate mad weave which is used in baskets, mats and hats. It may be considered as strictly Malayan in origin. Before basketry was introduced into the public schools this weave was in general use

in the Bicol provinces, Mindoro, and Romblon; also in parts of Panay. The style shown in figure *c* can be worked out in bamboo or other hard strips; but the patterns illustrated in figures *d*, *e*, and *f* require soft and pliable materials such as buri and pandan. The weave shown in figure *d* was first observed

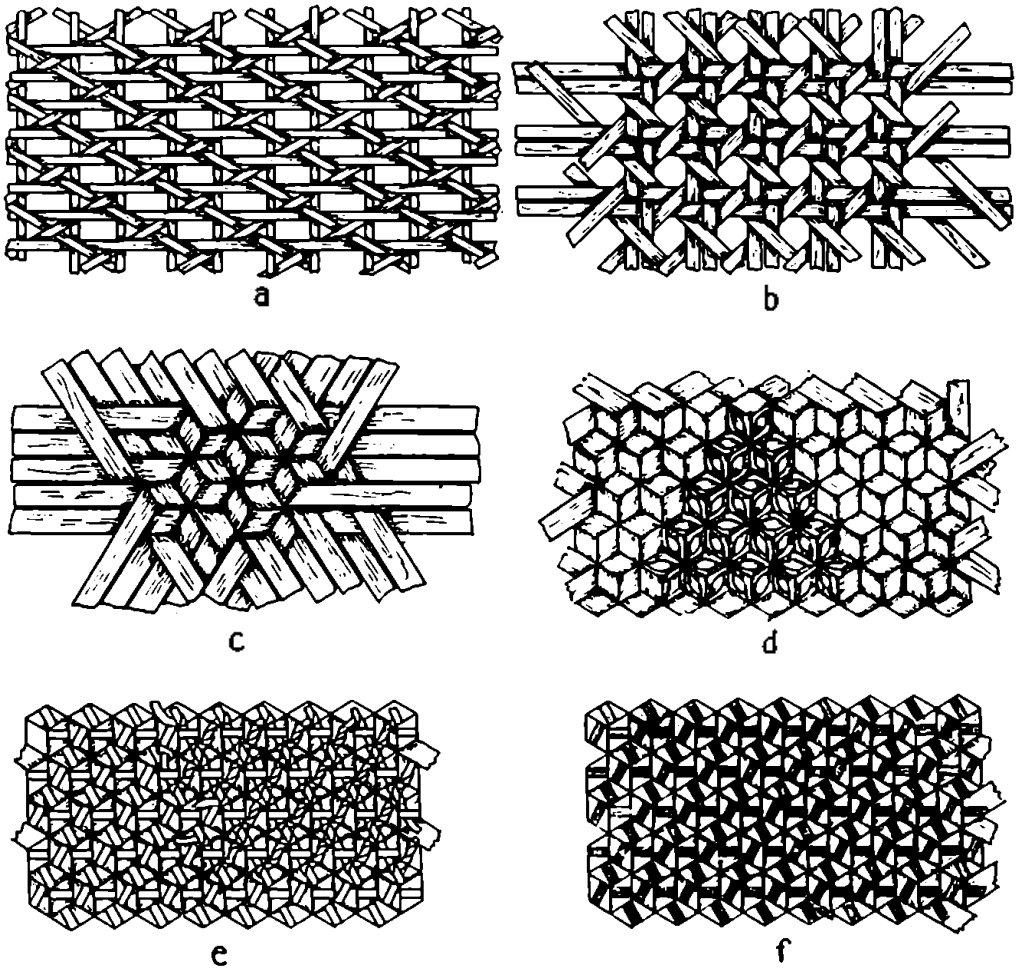


Plate IX.

in the Bicol provinces, *e* in Romblon, and *f* in Panay; each of them is now incorporated in several Bureau of Education designs for baskets.

In any work involving the use of mind, eye, and hand, we must learn by doing, not by casual seeing or reading. The solution of a series of problems will present difficulties unforeseen in the reading. It is in overcoming these difficulties, each in its proper place, that we exercise skill and judgment, learn to think in an orderly way, and thus progress.—Ernest A. Batchelder in "The Principles of Design."

FILIPINO HATS.

By Herbert D. Fisher, General Industrial Supervisor.

The hats produced in the Philippines are of two general types—soft hats of foreign style, and hard-woven hats of indigenous origin.

Most soft hats are made from the buri palm, the spiny bamboo, and two varieties of pandan. The leaf of the buri palm yields three kinds of material; namely, buntal which is taken from the fibrous bundles of the petiole of the matured leaf, midribs of the leaf segments of unopened leaves, and the actual leafy tissue

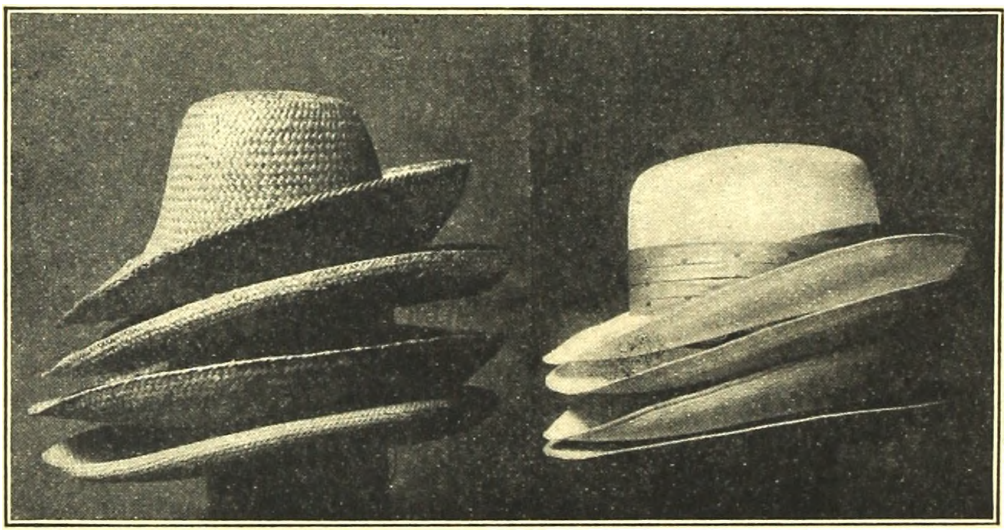


Plate I. Soft hats of straw.

itself. Bamboo hats are made of material taken from between the nodes of the stem. Pandan hats are made from the leaves of the plant. From the species known as sabutan, the more expensive hats are made. The other variety commonly called pandan produces a cheap rough hat, which is made in large quantities. Two other materials of limited use are rattan and sedge. Rattan fiber is very difficult of extraction, and the hats are costly. Sedge hats are not popular as they lack durability. Plate I shows two stacks of straw hats, each composed of four varieties. The cheaper grades beginning at the top are: sedge, pandan, sabutan and buri leaf; and the others in the same order are: buntal, buri midrib, sabutan, and rattan.

Single rattan hats have been sold for as much as ₱300, and

sedge hats bring as little as 5 centavos. The three varieties of the finer grades of stock hats—buntal, sabutan, and bamboo—net the workers ₱4, ₱3, and ₱2, respectively. The cheaper grades are known among merchants under the misnomer of "balangot." They include buri leaf, ordinary pandan, and coarse grades of sabutan hats, at prices ranging from 15 to 50 centavos.

The most distinctive among Filipino hats, and the ones that embody a native art, are the salacots. These hats are rigid and either conical or oval in shape. A projecting crown is sometimes added when narrow palm leaves are used, while hats of solid material are invariably plain. The colors include clear

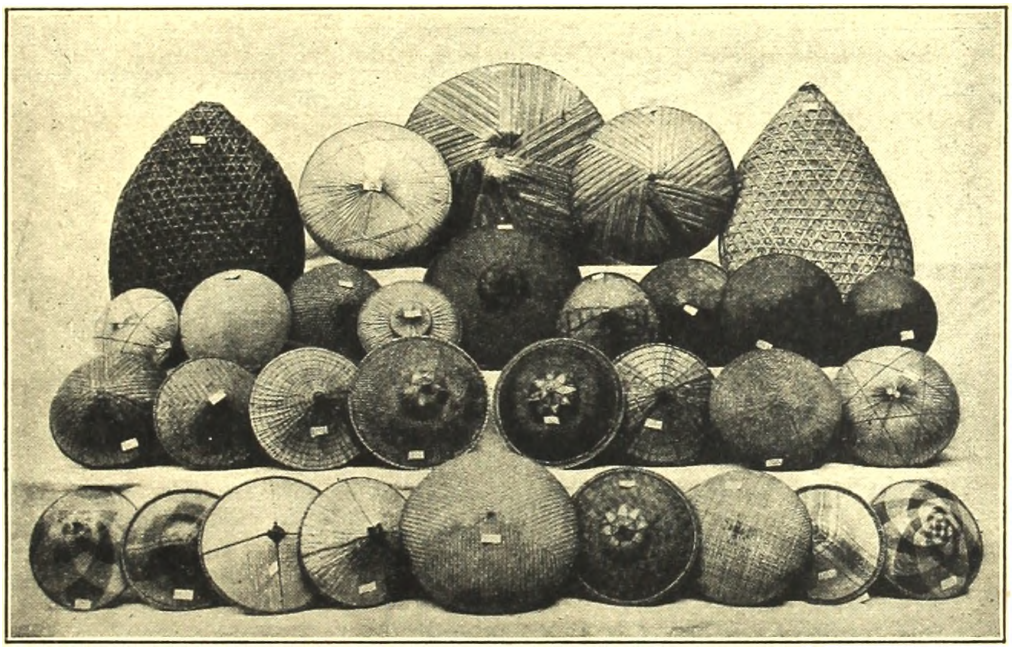


Plate II. A collection of salacots made for a museum in America.

white, straw, bright yellow, tan, olive green, shades of brown, and jet-black. No dyes are used, the natural colors being secured from native plants. Many styles of weaves and braids are employed. Plate II shows a general collection of salacots of the more common types.

There are some unusual hats which are perhaps best classified with the salacots. A few are made of goat skin stretched over a framework. Rare specimens made from tortoise shell, and some of coconut shell are to be found. In the Ilocano provinces scooped-out blocks of wood, and squash shells are also used. Plate III shows a collection of helmet-type salacots. Some rare specimens are represented. Plate IV illustrates four very scarce types of headgear. The two at the top are made of closely woven hard strips; the one at the left, of goat skin; center, of

palm leaves covered with plaits and network of colored vines; at the right, of tortoise shell. These hats were found in Mindanao.

The origin of such headgear, clearly designed to serve no other purpose than that of protection from sun and rain, cannot be exclusively attributed to any one people. Raw materials, climatic conditions, and needs being nearly alike, similar forms are evolved in different countries. So the fact that the inhabitants of Batanes wear straw hoods similar to those used by the people of Formosa, and that the Philippine salacot is similar to

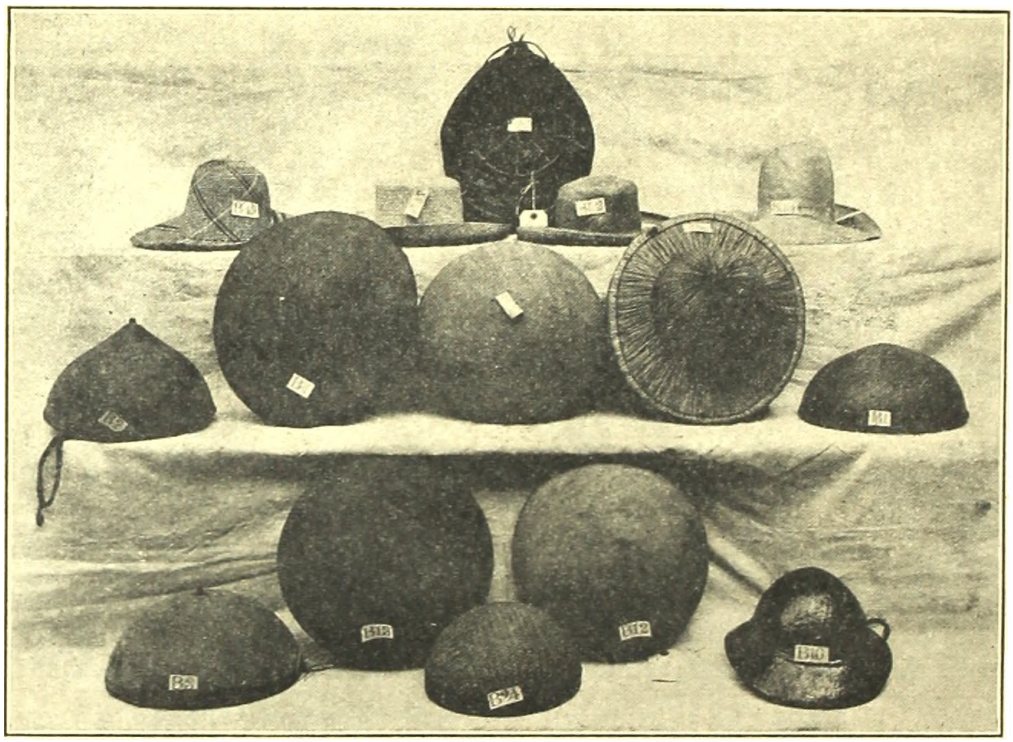


Plate III. Some helmet types.

the hats used on the coast of China and in the Malay Peninsula, does not prove that the local types were developed among other than the Filipino people.

Where hats are used as marks of distinction, it is comparatively easy to trace the styles to their origins. The shape of the skullcaps used by the Igorots might well have been copied from the caps of early Chinese traders. The turban, the popular headgear among the Moros, was introduced by Mohammedan missionaries. Neither of these forms of headdress and none of those introduced later, can compare in real serviceability with the salacot.

Salacots are admirably adapted to the requirements of a trop-

ical country. They are the common headgear throughout the Archipelago. Writers of the time of Magellan made mention of them. It seems that their use was then confined to women in the highest class of society. Even today the presentation of one of them to a bride is a part of the wedding ceremony in some rural districts; but their use is constantly decreasing, since they are regarded as a mark of primitiveness. In spite of this prejudice some beautiful examples are still produced, and their fabrication represents an attainment in handicraft which should be preserved to the Islands.

The more pretentious type of salacot, and the style which

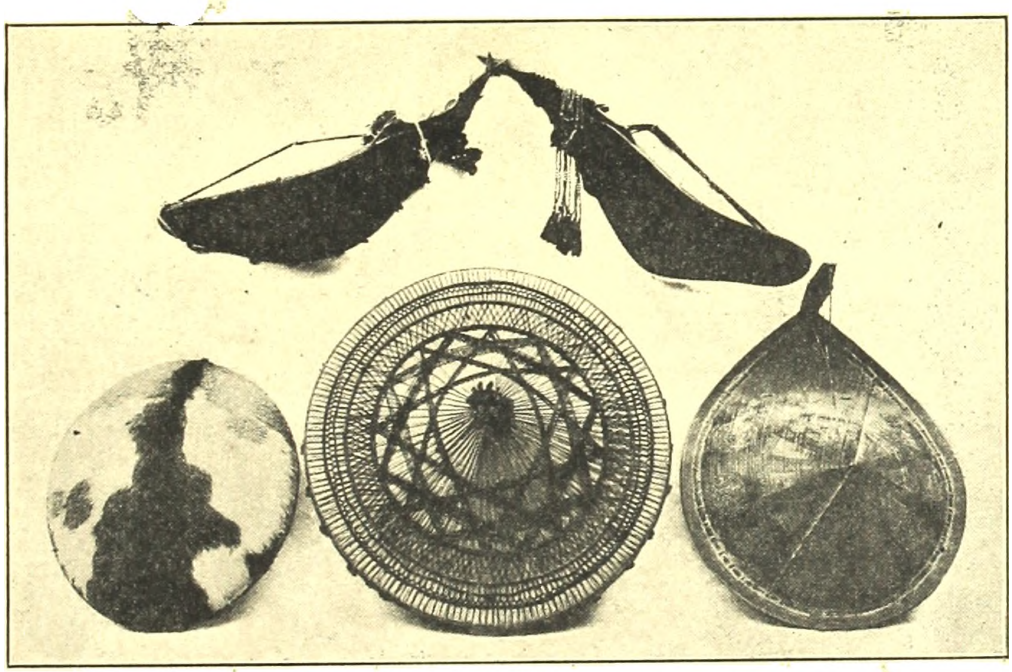


Plate IV. Some odd styles.

lends itself to the highest development in workmanship, is a combination hat consisting of four parts. There is an outer net work covering for which materials in their natural colors are used, a central and continuous layer of narrow palm leaves or other waterproof material, a framework of rigid stays or coarsely woven stems, and a headpiece made of woven strips or coiled stems. In the average type, the outer network protection is generally made of nito securely fastened at the exterior of the rim, and terminating at the apex of the crown in a close plait. The central portion is made of several layers of selected nipa palm leaves placed over a bamboo frame, and is securely fastened at both ends to either the outer rim or the crown. An inner layer of woven material similar to that of the outside is sometimes added, and to this and the framework is attached the

headpiece. The rim of this headpiece is sometimes woven upward into a kind of roll, leaving space all the way round where matches and tobacco can be carried. Combination hats range in price from 50 centavos for the common kind used in the

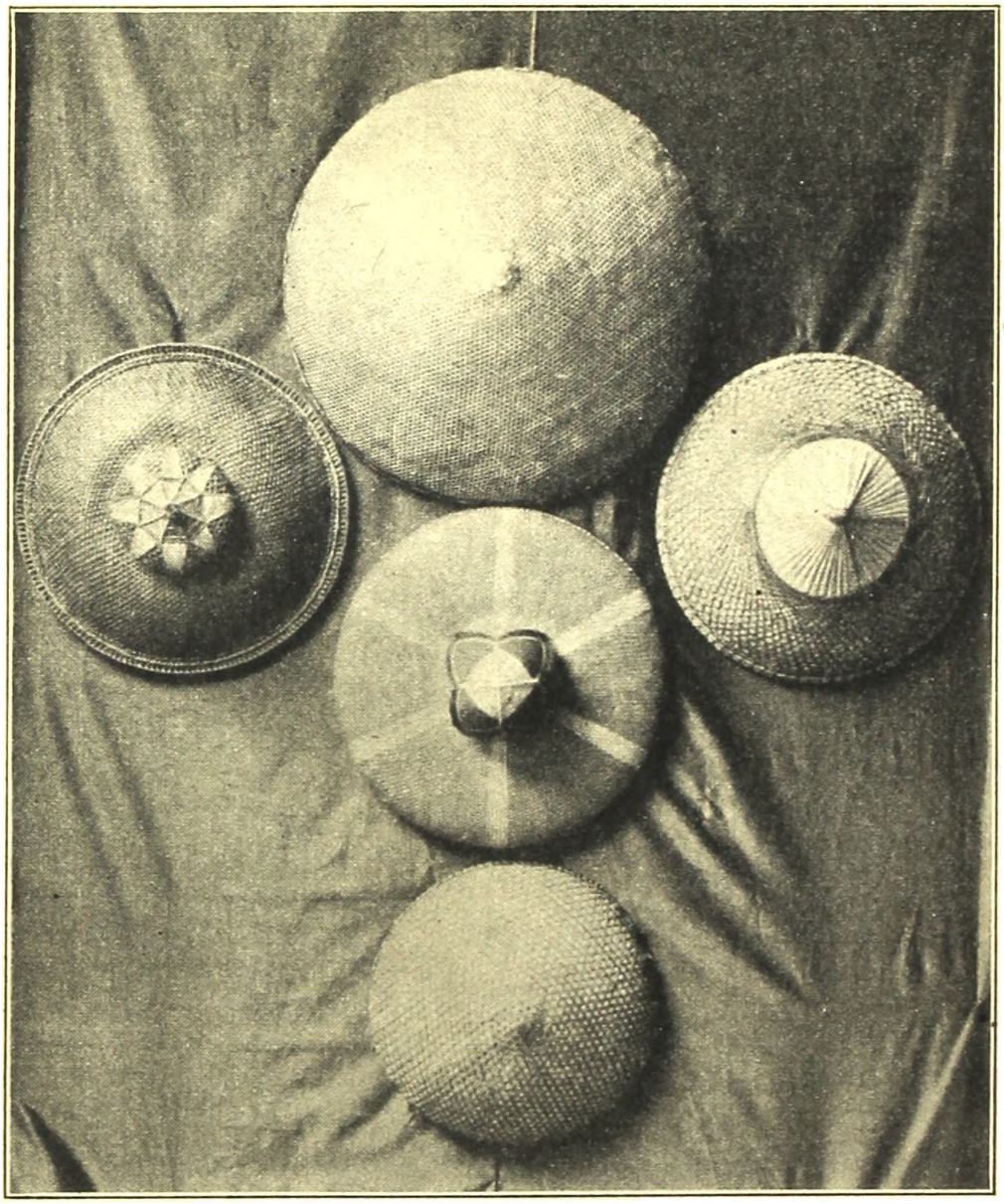


Plate V. Combination types.

Visayas, to ₱10 for those of excellent workmanship made near Manila. In ordinary use, these hats will last from three to five years, and they are sometimes serviceable for twenty years. Plate V shows a typical collection of the combination salacots. The three in the middle of the photograph are extensively used in the northern provinces, and the two on either side are very

common in the central part of the Archipelago. The one at the top and the one in the center are used exclusively by women, the former frequently being further decorated by adding a red plume to the apex and by suspending red tassels from the rim; the latter is the most elegant and expensive of all salacots.

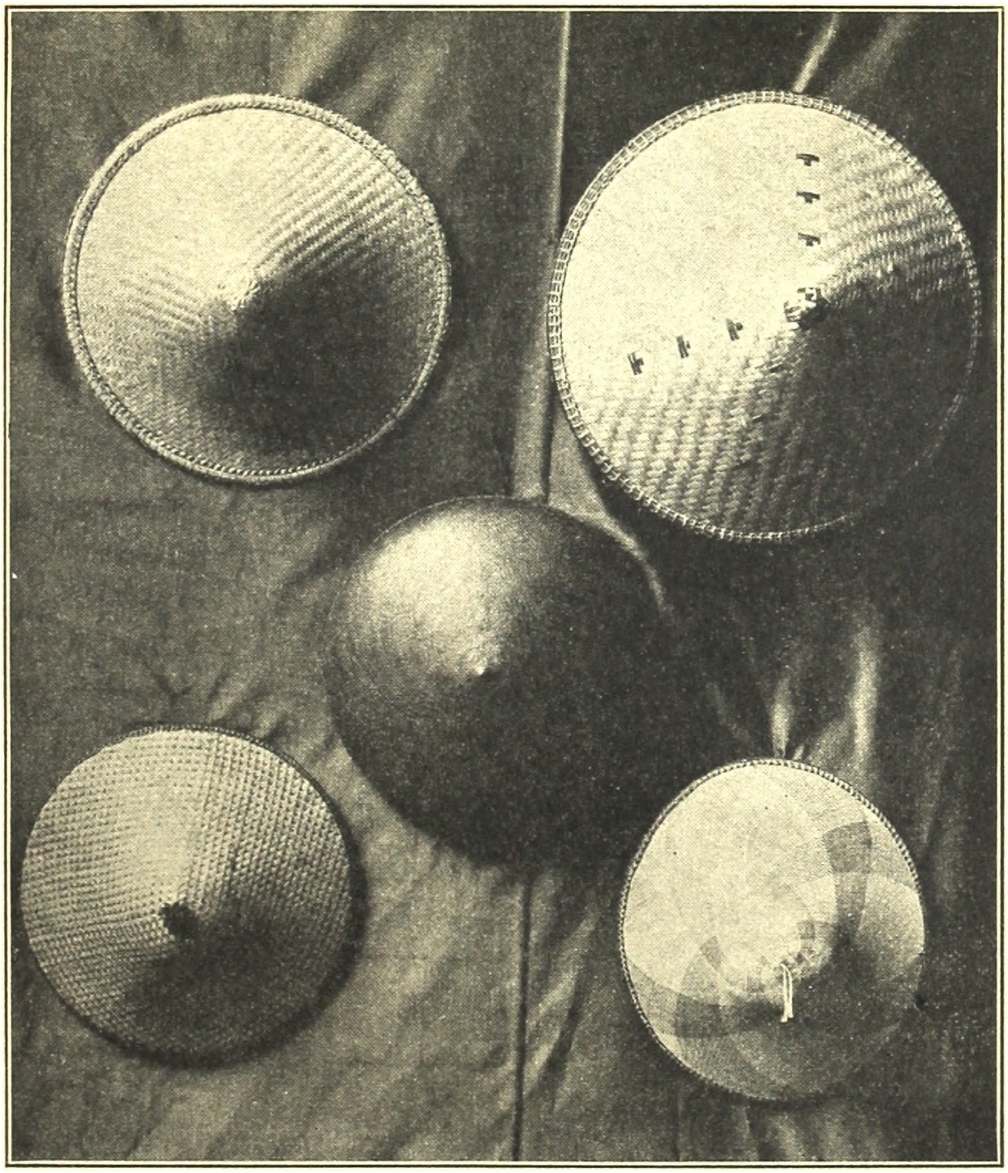


Plate VI. Platted hats.

The variety next in importance is a platted hat composed of three parts—an outer covering of closely woven narrow strips, and a similarly fashioned inner layer of wider strips to which a headpiece is sometimes attached. The material used is either bamboo or rattan. Several kinds of decorative material are plaited about the outer edge of the rim. The rims are sometimes

most artistically wrapped. The cheapest of these hats bring less than 50 centavos, and the finest grades sell at ₱3 or ₱4 for

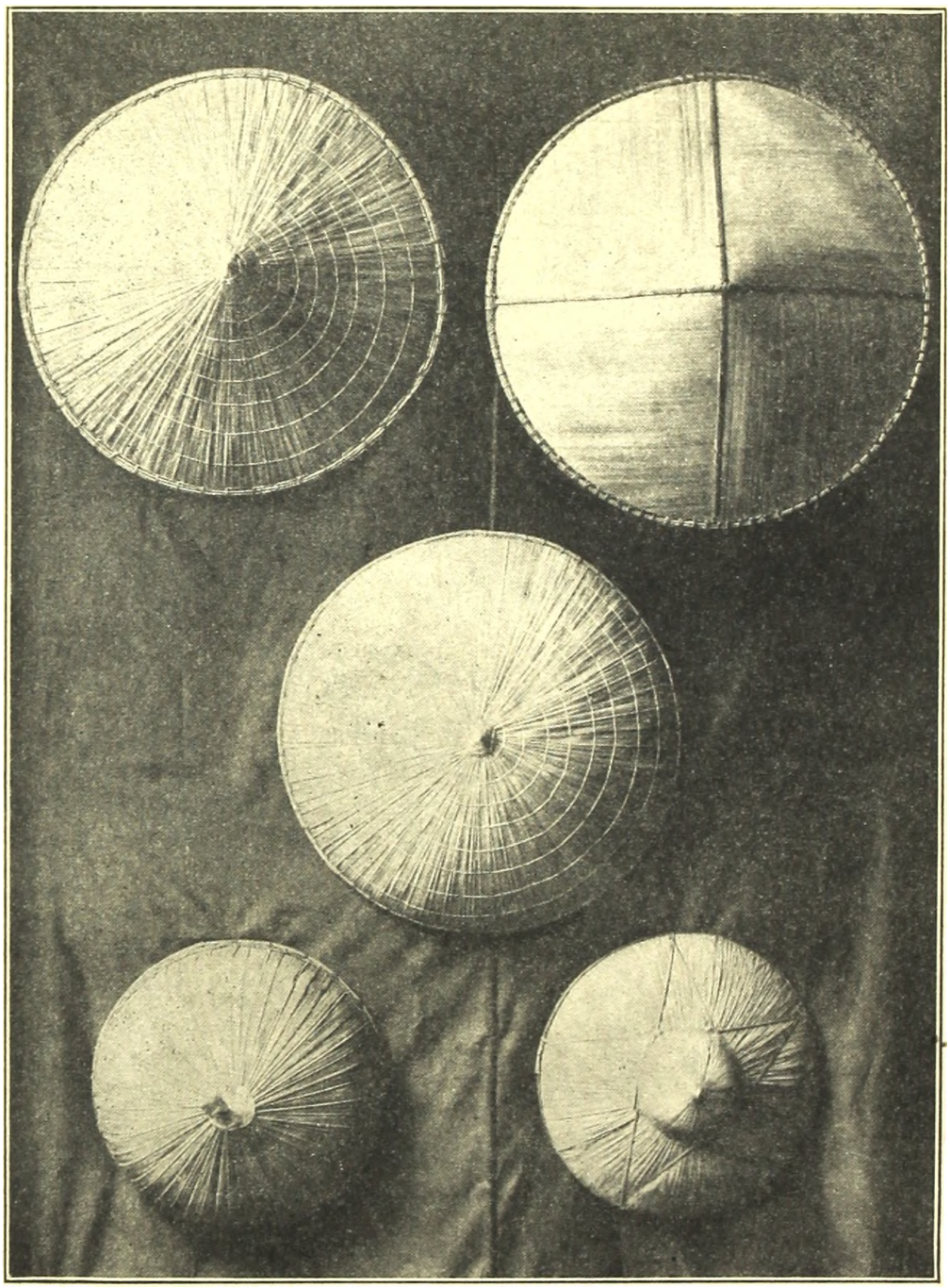


Plate VII. Models of slab hats.

the plain article, the price being higher when there is an ornament of metal. These adornments, often of silver, are attached to the apex of the hats, there being no raised crown. This type of hat is more solidly built than the others. It is the hard hat

among salacots. Its use is as widely distributed as is that of the combination hat, and particular shapes are likewise typical of different sections of the country. Plate VI shows the more common types of the woven salacots. The relative values of

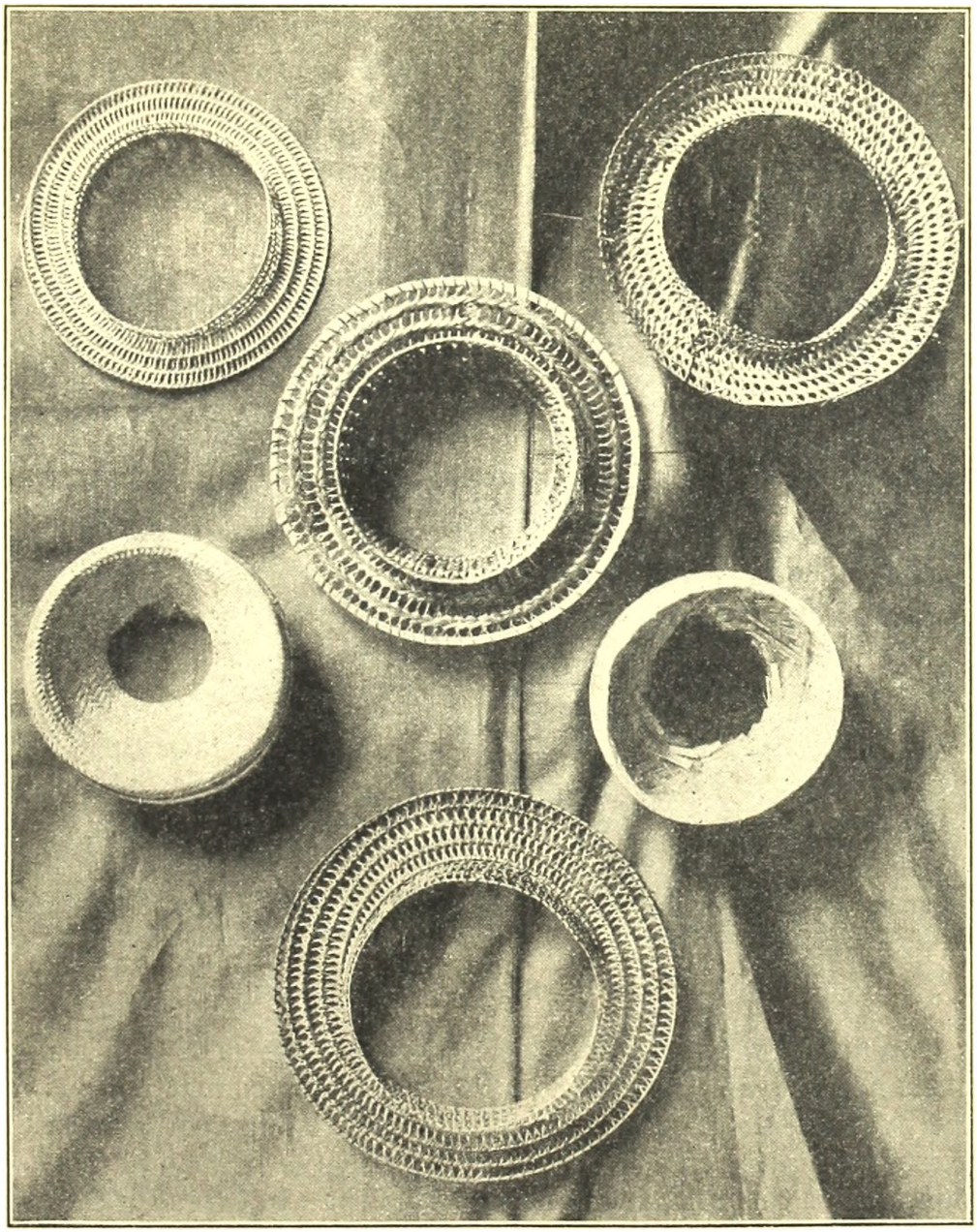


Plate VIII. Types of headpieces.

these hats are determined by the quality of material used. The one in the center is of unique interest on account of the outer layer being made entirely of nito. This type is also made of bamboo or rattan as are the others.

A third kind of salacot is made of slabs of a single thin ma-

terial. Split bamboo, the sheaths found over the nodes of a kind of bamboo, broad palm leaves called "anahao," and narrow palm leaves are used. The slab hat is the cheapest of the salacots, the price ranging from 15 to 30 centavos. Plate VII shows the common types of slab hats; that is, those made of a single unsupported material. This style of work is found in many parts of the Islands, though the shapes shown are typical of particular localities. Plate VIII illustrates the several types of headpieces used in the salacots. None of these is designed for a special type of salacot, but the style of headpiece is often peculiar to a certain locality.

Plate IX. Articles in which salacot weaves are employed.

The art of hand weaving with soft materials finds encouragement not only in the making of soft hats for commerce, but in the production of mats for domestic use. The rapid growth of these industries renders it unnecessary for the Bureau of Education to give them much attention, other than to extend the work to a larger field, and to endeavor to secure a better market.

A native industry allied to that of weaving stiff hats is basketry. Baskets show still wider variations in material and workmanship than do the salacots, though none exhibit the finer points in the weaver's art to such good advantage. The motifs in many of the Bureau of Education designs for baskets have been secured from salacot models. Plate IX exhibits several

types of hand-woven articles fabricated by the same methods of craftsmanship as are required in the production of salacots.

The unique and valuable handicraft represented in the making of salacots might become obsolete with the hats themselves, were it not for the efforts of the Bureau of Education. It is one of the purposes of the Bureau to preserve this style of art by making it commercial, diverting the skill required in this peculiar weaving, to the making of baskets.

THE CARE OF LACE IN THE MAKING.

Everything pertaining to the weaving of lace must be kept clean. The children should wash and wipe their hands dry before beginning work. Those whose hands perspire excessively, should wash the hands often or have a clean handkerchief to dry them.

Pillows should be kept as clean as possible. This can be done by using double pillow cases, one of which can be removed and washed when it is soiled. There should also be a pillow cover of white cloth, preferably cotton, long enough to cover the entire pillow and to protect the bobbins and lace from dust. Between this cover and the lace, a clean paper should be placed to keep the lace from taking any possible dust from the cloth. Colored cloth should never be used even for the string that binds the bobbins. The dye in the cloth frequently comes out and is likely to stain the thread and lace. The pillows left at school should either be hung up or laid on racks in a scrupulously clean room, away from all other industrial articles.

Pupils should be instructed to hold the bobbins correctly, so that the thread will not become soiled by constant contact with the fingers. Bobbins ought to be uniform and smooth; otherwise they make the thread rough. Smaller bobbins should be used for valenciennes than for coarser laces; if too heavy they break the thread, and knots impair the quality of the product. It is well to put new bobbins into boiling water for a short time to kill possible weevils.

Each day the work should be closely inspected to see that the patterns are being followed accurately. Children should not be allowed to take their work home, especially during the rainy season. With the thread or bobbins once damp, the original fresh and glossy appearance cannot be restored to the lace. (C. F. H.)

DESIGNS AND MATERIALS IN EMBROIDERY.

By Mrs. FLORENCE C. MORGAN, General Office.

The large and growing demand for Philippine embroideries in the United States has necessitated the giving of much attention to designs. The Bureau of Education is making every effort to eliminate out-of-date patterns, and each year the designs for the preceding year are carefully gone over. New ones are substituted for those that do not coform to prevailing fashions. To catch the eye of the buyer and to be effective, a design must not only suit the garment but the material. Heretofore, embroidery workers had no idea as to what designs were best suited to a garment. A baby-dress design might be embroidered on heavy nainsook with a design large enough for a gown. A luncheon set might be exquisitely embroidered with an arrangement of grapes combined with roses and large sections of calado. Handkerchiefs were sometimes embroidered on pearline or nainsook when the sheerest of linen should have been used.

Changes in fashion demand new materials, and novelty work, such as embroidery on net, chiffon and silk crepes, should increase for export purposes. The fine work so long done on piña should make embroidery on net or chiffon easy. White and colored net has been one of the most popular materials for frocks during the past year. It is especially adapted to wear in a warm climate. Excellent embroidering has been done on net. Dainty, lacelike designs should be used for such work.

The present great shortage of textiles has often made it difficult to secure the fabrics needed for some articles. If the material specified by the General Office cannot be secured, a substitution should not be made unless authorized. Not long ago two waists were received, the embroidery on each of which was easily worth ₱5, but it was done on such poor material that the garments had to be returned to the maker.

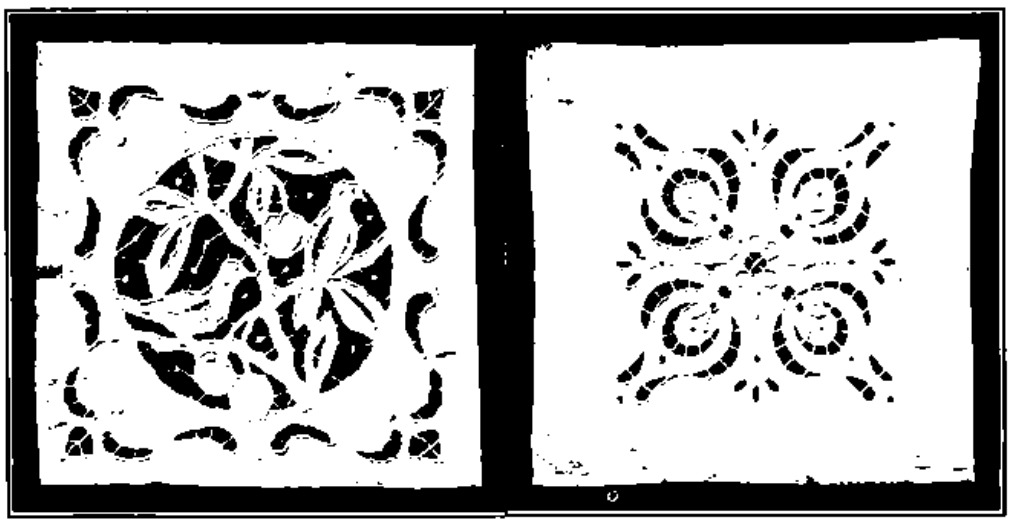
There is always a ready sale for infants' dresses and undergarments. Very little change is noted in the style of infants' clothes, although the kimono sleeve has lost some of its popularity, the set-in sleeve being preferred.

Baby pillows change very little in style and make-up. The Bureau of Education has a large assortment of various designs. Some of these with filet drawnwork are most attractive, and the

heart-shaped pillows with basket or small trailing flower designs, are very good. Hemstitching as part of the design is used very effectively in pillows.

Clothes for children from a year old and upwards, change as do the fashions for grown-ups. Smocking has again come into vogue and is being used extensively on children's frocks. The small skirts are wide and full, the waists reaching the waist line, and being made broad across the shoulders. Small dainty designs should always be used on children's clothes.

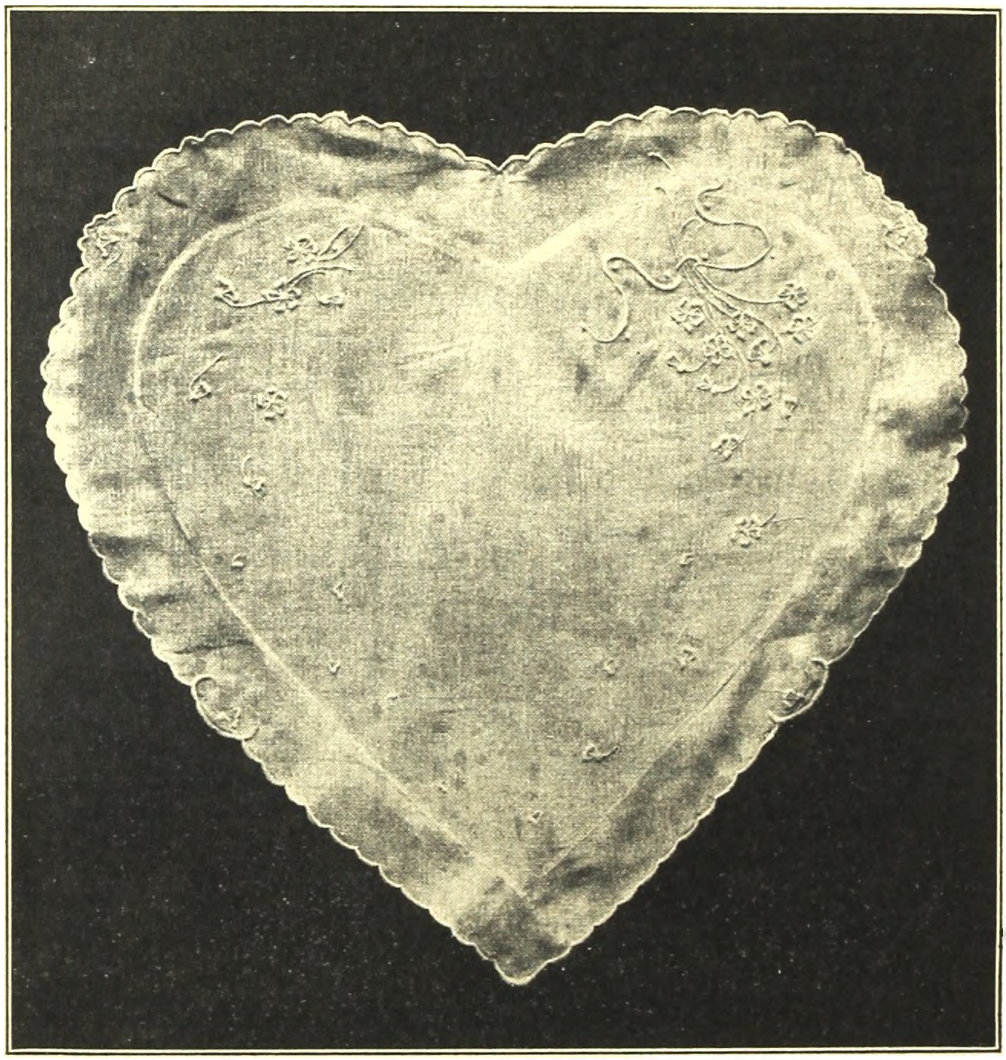
The kimono-style gown is still popular, and comes in many variations. For the empire effect, the eyelets for ribbon can be made just below the embroidered design. A great many are made sleeveless; and on one of the prettiest models seen here,



Italian cutwork models made at the General Office.

valenciennes lace was extensively used throughout. The Bureau has sent out an attractive empire-gown pattern. The yoke, which is joined to the gown with 1-inch simple eyelet beading, adds much to the appearance. One of the most popular ways of making the chemise, corset cover, slip or envelope chemise, is with a straight top better known as the "ball top." This is made without the shoulder straps, and eyelets are made for the ribbons which go over the shoulders. The soft, transparent fabrics so much in vogue at present, demand heavier materials to be used for part of the lingerie. Some beautiful garments shown in Manila are made of washable silk crepes, taffetas and satins. Very good work has been done on the silk crepes, both white and colored, the embroidery being done with silk floss, no padding, and with longer and looser stitches than are ordinarily used.

The large collar and cuff designs being sent out by the Bureau this year, are most attractive when used on plain silk crepe or batiste negligee. The plain, smart-looking blouses now worn, need some form of decoration. This accounts for the popularity of the collar and cuff sets, and the return of the jabot and fichu. The patterns being sent out by the Bureau



Baby pillows such as this have met with a good demand.

this year are all advanced models for 1917. Eyelets, dots, and small conventional flowers, are used in the designing. One unique design has a square scallop effect, with the calado nearly an inch deep on the inside edge. Any neckwear to look well must be fresh and crisp, and the best material to use is organdy. A very good quality can be purchased locally for ₱1 a meter.

Skirts are made short and lined with embroidered floucings in all widths and lengths, as there is no end to the present fad for

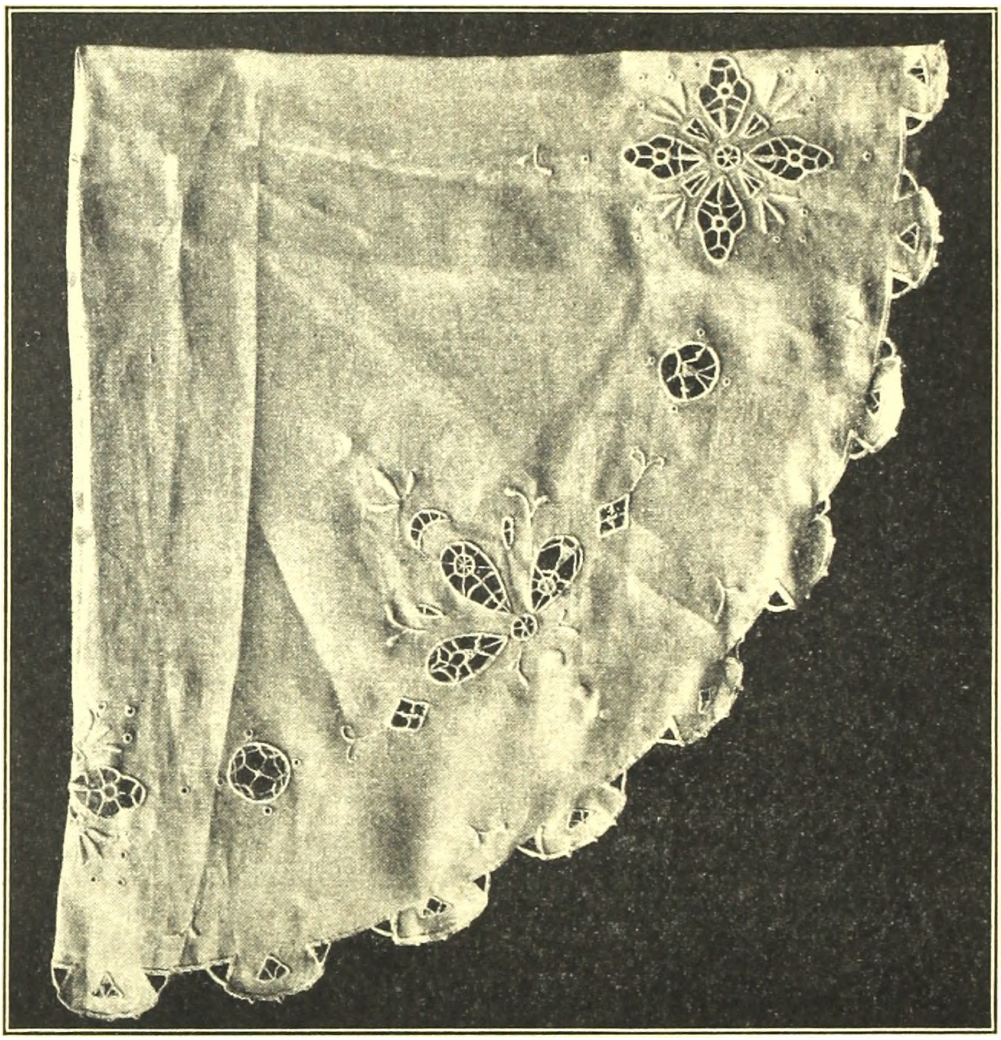
ruffles. Flouncings are made on fine batiste or pearline, with designs rather large and sprawling. Handkerchief designs follow the trend of fashion, and the new ones show a hem about 2 millimeters in width. Care should be taken in stitching these narrow hems, especially at the corners. Small corner designs and scalloped hems are probably the best sellers. A well-designed and well-made handkerchief is always salable. The newest household linens are very elaborate in design. Filet drawnwork combined with mosaic and Italian cutwork are among some of the patterns shown. Flower baskets and conventional designs are more appropriate for linen adorned with filet drawnwork.

One of the best kinds of work for elementary schools is Italian cutwork, designs for which are being sent out by the Bureau. The patterns are small, with motifs in flowers, birds, fruits, and conventional forms. They are used in making up pillows and pincushions, and as insets in linens. Some very elaborate linen dresses in this work have the design around the skirt just above the hem. All the Italian cutwork is done with the slip stitch along the cutting edge. A running stitch following the design is sufficient for padding. The cutting should all be done after the design is embroidered. Runners, centerpieces, and towels with Italian cutwork on the edges are most attractive. Work very similar to the above is the hedebo of Danish origin, seen on centerpieces and runners. It is attractive when done on soft novelty linen with very coarse mercerized thread.

The most difficult of the embroidery comparatively new in the Islands, is the mosaic. The delicacy of mosaic work is best expressed on the edge of articles. Centerpieces and tea or luncheon napkins, are some of the articles for which the Bureau of Education is sending out mosaic designs. The threads drawn in mosaic work must follow the lines of the design, and all squares must be made with well-defined corners.

The French-stem, satin, and slip stitches are of most importance in commercial embroidery. Some excellent designing which is done locally requires the old stitches. Chief among these is the calado, exquisite examples of which are found in old pieces of piña. Calado had to be simplified for commercial purposes and is called punch work. The punch work can only be done on sheer materials. Threads are drawn one way when it is used on heavy goods. Philippine ladder work with the running stitch on outer edges, instead of the French stem stitch as in the Swiss, is very effective when used on garment and handkerchief designs. The bamboo stitch for making the bodies in bug and

butterfly designs, is pretty if combined with the satin stitch in working plain letters or monograms. The weaving, damask, and rope stitches, are also used as mentioned above. It is sin-



Cutwork is very popular in table linens.

cerely hoped that the rapid commercialization of embroidery which is taking place in the Islands, will not do away with the large variety of old and beautiful native stitches.

Savings banks have been established in 1,325 schools in 280 cities of the United States, and the movement is growing. More than 900,000 pupils have deposited in excess of ₱3,500,000, and 105,000 children have transferred their accounts to regular savings banks.

THE DEVELOPMENT OF BASKETRY IN THE PUBLIC SCHOOLS.

By G. GLENN LYMAN, Principal, Industrial Department, Philippine Normal School.

There is a wealth of basketry material available in the Philippines for either collection or study. The different kinds of baskets; the various localities from which they come; the people who make them, the significance of the designs employed; and the importance of ordinary baskets in the domestic economy of the people, combine to make this a unique and fascinating study. Nearly all of the native baskets are artistic, bold in conception, excellent in workmanship, simple and effective in design. These qualities are generally secured without a sacrifice of utility.

The ordinary baskets of the Philippines are similar in type to those of other Malayan lands. The household baskets generally used by the Christian Filipinos and the so-called non-Christians, resemble each other closely. This is an indication that the difference in the present advancement of these people is not due to racial distinctions, but to the peculiar social and economic conditions under which they have lived and developed.

While the native baskets common to the different sections of the Archipelago show considerable variation in shape, size, decoration and finish, there is but little real difference in the methods of construction. Most of these baskets are made in sawali weaves. Several kinds of coiled baskets also are common, and a few baskets woven of soft platted fibers are found.

One of the distinguishing characteristics of native Philippine basketry is the almost total absence of the usual ribbed forms. Nearly all of these baskets are fashioned of flat splints woven tightly together at right angles, in over-and-under weaves, or arranged diagonally in looser hexagonal weaves, the use of the splints as ribs or spokes in both cases being entirely incidental. Many baskets are so well woven that they will hold water. The stitches utilized in making coiled baskets are similar to those used by the American Indians and the Chinese. The stitch employed in any particular basket is determined generally by the kind of material available, the size of the finished article, and its purpose.

The development of modern basketry in the Philippines is most interesting. The present high standard of excellence is due to the efforts of the Bureau of Education. Ten years ago,

baskets such as are now made in practically every primary and intermediate school were undreamed of. Sieves, strainers, fish traps, and rice, egg, fish, clothes, chicken, shipping, and winnowing baskets were about the only ones to be seen. Baskets such as these were ordinarily made by the people of the barrios located near the mountains where materials were plentiful, and they were sold to users in other parts of the towns. A few were shipped from one locality to another. This was especially true in the provinces around Manila; but production was small and the sales were limited.

As early as 1904, it was determined to make industrial instruction, including basketry, a part of the curriculum in Philippine schools. Before that time, many teachers had given considerable attention to the subject. An extensive exhibit of school-made articles at the Louisiana Purchase Exposition attracted much attention. While the baskets displayed at St. Louis seemed marvelous at the time, they would not evoke favorable comment if contrasted with those shown at the Philippine Normal School during the last teachers' vacation assembly.

The baskets made in the schools during those earlier years were practically the same as those used in the homes from which the children came. A few teachers who had received training in basketry before coming to the Islands, and others who were able to secure books treating of the subject, attempted to make baskets in their classes. Most of the books on basketry available at that time dealt with Indian basketry, and it was not long before the designs, shapes, and methods of workmanship set forth in these were widely copied. This was especially true of coiled basketry. Other teachers attempted to make reed or stem baskets.

Most of the teachers were untrained. The value of the careful selection and preparation of material in accordance with definite specifications was not understood. Pupils were usually allowed to follow their own inclinations in the choice of design, the determination of size, shape, and color, and in the selection of material. Naturally, no two baskets made under such conditions were alike. The colors most in evidence were gaudy—scarlet, yellow, purple, lavender, and bright greens and blues being special favorites. Models were seldom seen, and the use of diagrams, blue prints, blocks and forms was unthought of. The baskets were often "fearfully and wonderfully made."

Until about the year 1910, basketry made slow progress in most schools; but a number of experiments were made, and

several valuable discoveries resulted. The use of natural-colored material for polangui basketry was introduced. The suitability of abaca, maguey, raffia, nito, and split rattan for coiled work was demonstrated. Attempts were made to utilize buntal, midribs of different kinds, and bamboo, as basketry materials. It was not until two years later that beautiful and durable baskets, other than those of ordinary utility, were made from bamboo. Now most baskets are made of this material.

It was soon apparent that no industrial instruction could be really successful unless uniform methods, and standardization of output were secured. During the school year of 1910-11, marked progress was made. Circulars and bulletins were issued; several Insular supervisors of industrial instruction were sent to inspect schools and to report on the instruction given; a few provincial industrial supervisors were appointed; industrial exhibits were held, the most important being that at the Philippine Carnival. For the first time, pensionados were appointed to specialize in industrial work at the Philippine Normal School.

By 1914 production was no longer a serious problem, but the disposal of finished articles demanded attention. Emphasis was needed on the commercial side of industrial work. THE PHILIPPINE CRAFTSMAN was established to supply much needed information to the field, the results being higher standards of workmanship, and greater uniformity in design, shape and color. Blue prints giving definite specifications for all baskets were provided, correct models were furnished, and emphasis was placed upon the use of blocks, patterns and forms. Great attention was given to the training of basketry teachers in the teachers' vacation assembly and at the normal institutes. Increased production and still higher standards of workmanship were secured.

Twelve distinct kinds of basketry are now taught in the public schools, the more important being known as native or household types; export bamboo-rattan, developed from the preceding; polangui, made from various stems and fibers in natural colors; vetiver, woven from the roots of moras grass; buntal, generally used in small trinket baskets; stem, made from air roots or rattan; coiled, of three general types—wrapped with strips, stems, or fibers. These baskets have all been standardized as to design, size, shape, methods of construction and price. They have been grouped into classes according to difficulty of construction, and they are prescribed for work in the grades best able to make them. Some of the simpler forms are suitable for second-grade pupils; but it is from the third, fourth and fifth grades, especially the latter two, that most of the commercial

baskets come. Practically all of the school-made baskets are the work of boys. Many of those used in the homes are made by girls and women.

Two points in connection with the development of basketry in Philippine schools deserve particular attention. One is the care given to the selection of designs, and the other is the emphasis placed upon commercial work. A special effort is made in the selection of designs, to preserve the old decorative units and motifs peculiar to primitive Filipino basketry. Only such modifications as seem necessary in order to meet the demands of commercial firms are made.

Act No. 2629 of the Philippine Legislature, created a sales department, under the direction of the Bureau of Education, to aid in the disposal of articles made in the public schools. This act marks the latest, and in many ways the most important step in the development of industrial work in the schools, and it paves the way for increased production and greater profits.

THE DORMITORY AS A PRACTICAL AID IN THE HOUSEKEEPING COURSE.

The Leyte girls' dormitory is a pleasant home, and it makes much of the instruction in the domestic-science course practical. Each day the girls find themselves in situations which require a knowledge of housekeeping. They make beds, dust and tidy their belongings, and care for their dress.

There are the regular dances and teas which call for the preparation and serving of refreshments, the decoration of halls, and the writing and designing of invitations and dance programs. These give the girls opportunities to employ much of the skill that they have acquired. A friendly rivalry makes them eager to develop their best traits, thus fitting them the better for home making. (V. de V.)

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Provincial industrial schools classified as agricultural, commercial, or technical have been established in Korea. In addition to these, the central government conducts schools that give more advanced instruction, and in which most of the students are supported at public expense. There is a model agricultural school; also an industrial school which offers advanced training in metal work, weaving and dyeing, and higher chemistry. Courses in nursing, midwifery, and medical training proper are given at the government hospital.

THE INFLUENCE OF SCHOOL ENVIRONMENT.

By BERTRAM S. TEN HAGEN, Supervising Teacher, Capiz.

The most lasting impressions are those gained in early youth, and the sentiment of manhood almost always transforms the scenes of childhood memory from the commonplace into the beautiful. The influence of early environment on character and attitude toward life is incalculable, and therein lies the opportunity and the power of the schools. Schools should do their utmost to make possible a pleasant retrospect for every pupil. The atmosphere of the schoolrooms and of the surroundings of the buildings should be such as will tend to fix in the minds of the young a sense of the value of order, and to develop a capacity for the appreciation of beauty.

Even in America, too little attention has been given to the beautifying of school grounds, but in most of the States there is some excuse because of the long winter months. In the Philippines, it is different: here the climate is ideal, and any school where no effort has been made to improve the site deserves criticism. The situation may be due to lack of definite plans, or inability on the part of the supervisor to give the necessary time to the project. Most frequently it is due to the inability of teachers and pupils to grasp the idea of improvement, and so to enter upon the work with understanding and zeal.

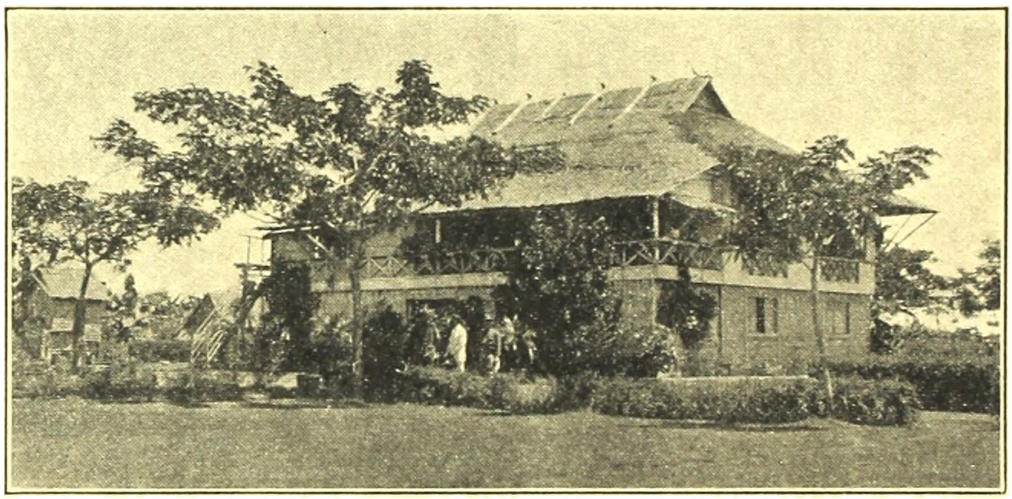
In the past, the people have generally accepted a style of landscape gardening perhaps derived from the Spaniards. The plan consists in the removal of every blade of grass in the tract to be beautified, and the laying out of numerous paths and flower beds. The borders are indicated by a very symmetrically arranged array of up-ended bottles, buried until an inch or two of the bottoms protrude. Shrubs and flowers are planted with little regard to arrangement, form or color; and if the finances of the owner permit, the area is inclosed with a high and extremely plain adobe-stone wall.

But the idea is taking hold among the people that there is beauty in restful grass plots, in paths laid out for a purpose, in carefully trimmed hedges, in the use of vines for hiding that which is unsightly, and in well-chosen foliage, placed to give tone to a scheme of decoration, rather than to form the whole design.

All over the Islands commendable work has been done, and

great credit is due to the early American officials, especially the teachers. By precept and example, they started movements for beautifying school grounds and plazas, arousing school spirit and civic pride among the people. The results were seen not only in improved grounds, but in well-organized schools, efficient corps of teachers, good discipline, winning athletic teams, and, most important of all, in a willingness on the part of private citizens to donate money, land, and time, to the furtherance of school activities.

Among the first to follow the new example were the more progressive provincial and municipal officials. Where such men have been in office for several years, there are well-ordered plazas, graded streets, shade trees of several years' growth, and



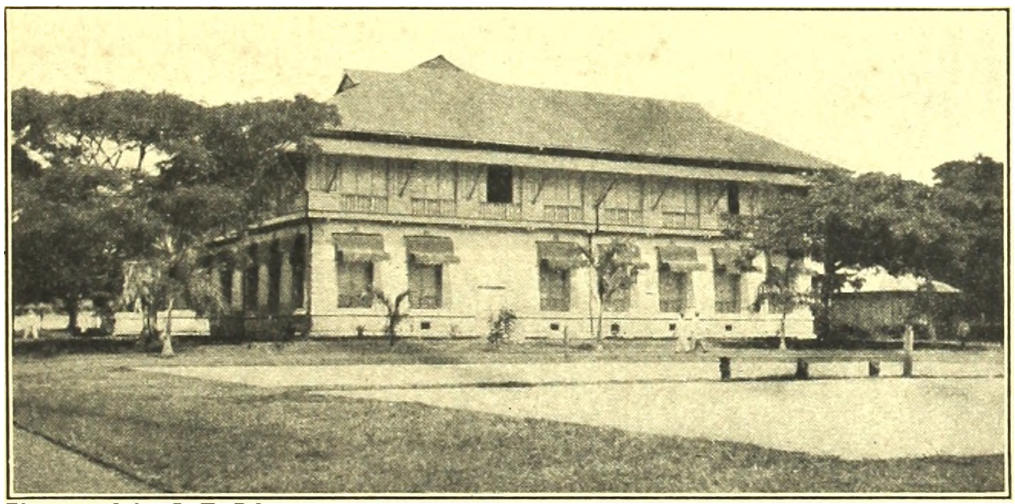
A private home in Capiz.

a general atmosphere of cleanliness and order. In towns where the municipal officials are backward, the schools should take the initiative in arousing interest. Where that fails they should, if possible, do the work desired with school-ground improvement classes.

There has been improvement in the manner in which home grounds are kept up, not only among the more well-to-do classes, but also among the poor who have children attending public schools. The most serious obstacle to the improvement of yards is the old custom of building houses as near to the street as possible. The front yard, the object of so much pride in America and Europe, has in the past been practically unknown to this country. The teacher has often been the first in a town to appreciate the benefits of an open space in front of the house. Many municipal councils have passed resolutions determining

the number of meters that houses must be set back from the street. Such action means the ultimate passing of unsightly towns.

School sites should be chosen on ground high enough to allow good drainage; they should be large enough for all school activities; and preferably they should be in the center of the town. The location of the buildings will depend on the shape of the site. The main building should be located at such a distance from the street as is needed to give it dignity proportionate to its size. Accessory buildings should be located conveniently behind the main building in such positions as to secure symmetry in the whole group. Where possible they should be of the same material as the main building. The situation of lawns, walks,



Photograph by G. T Schoens

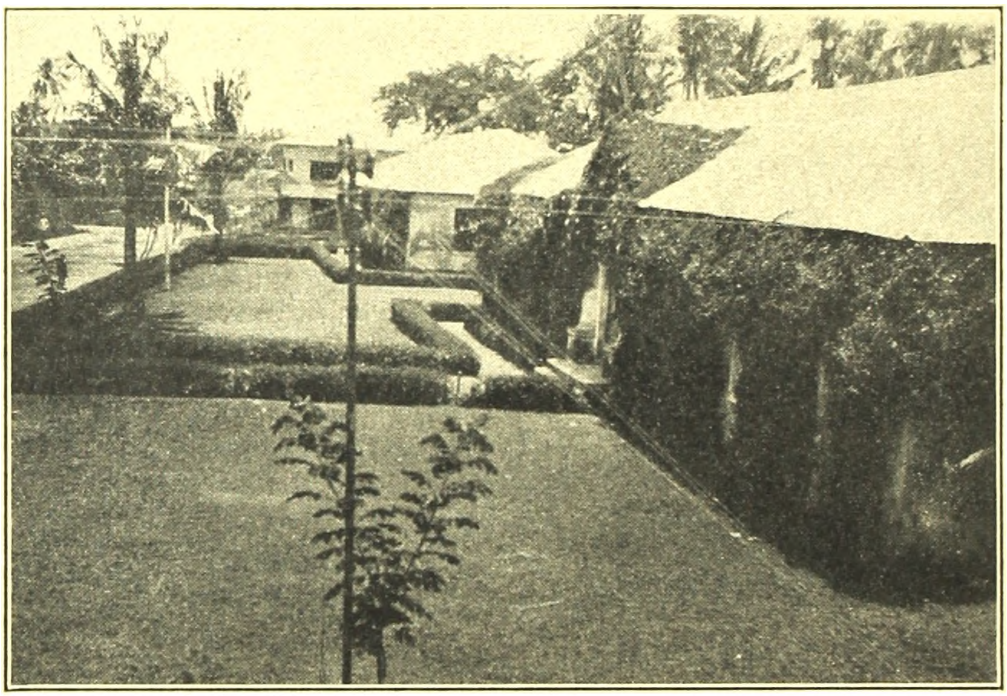
Well-kept grounds, Balanga High School.

playgrounds, gardens and nurseries, trees, hedges, vines, wells, and fences, must be determined according to the topography of the school site. Some grounds are very uneven, and in extreme cases terracing is required. One of the most beautiful school sites in the Philippine Islands, that of the intermediate school at Romblon, is an effective example.

Lawns, planted with Bermuda grass, should be level and unbroken by foliage. They should not be cut up by more walks than are absolutely necessary. The playground should be smooth and of adequate size. The garden and nursery must be well fenced to keep out animals. They ought to be so located that passers-by can observe the results. Small trees may be grouped around accessory buildings, and larger ones along the outer edge of the site. As a rule they should not be scattered throughout the grounds as they tend to break the symmetry of the general

scheme. Hedges and vines may be used in many ways with pleasing effects. A deep well, and a strong and attractive fence around the whole grounds, are necessities. The most important thing is care. Lawns, hedges, and vines must be trimmed frequently, and the principal features of the grounds should be maintained in their improved condition.

The experience in beautifying grounds has an enduring effect upon pupils. They learn the necessity for the subordination of their own ideas, and they observe the results of well-directed labor. The habits of exactness and industry acquired in the



Central School, Capiz, Capiz. This shows what can be done to improve the appearance of the old Spanish type of school buildings.

work, are permanent assets to pupils. Through pride in achievement they gain confidence for the serious work of later life. The effect upon the teachers who in most cases are young and impressionable, is nearly identical with that upon pupils. Moreover, attractive environments increase their pride in school work, and make them more satisfied.

The effect upon parents is slower but no less potent. What is of vital interest to the child is always of interest to the parent, and improvements suggested by a child who is qualified to help in carrying them out, are quickly adopted. The lessons of sanitation as illustrated in the practical examples of the closet and well, and in general cleanliness of the premises, have a marked effect upon home hygiene. Although the people as a rule cannot

afford the more expensive sanitary devices, the pail system for closets is becoming more common.

Where new school sites are improved at some distance from the central barrio, the surrounding land rises in value, and is soon built up with houses. While this is due largely to convenience, it still shows that beauty and cleanliness have their influence.

The continuous association, not only of children but of adults, with that which is orderly, clean, and beautiful, tends to bring out similar qualities in their own minds and characters. It strengthens them in their aspirations after all that is good and beautiful.

Forms 80-84 go to the field on December 5, this year. Last year they were issued about March 1.

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Technical and industrial schools in Ceylon give instruction in plumbing, sanitary engineering, railroad shop work, telephone and telegraph inspection, shorthand, typewriting, pharmacy, medicine, chemistry, and physics. Thirty-nine schools give instruction in carpentry, printing, bookbinding, shoemaking, tailoring, blacksmithing, lace making, dressmaking, embroidery, cooking and gardening. Nearly all of these schools teach lace making, but cooking is taught in only two, masonry in one, gardening in one, blacksmithing in one, and shoemaking in two.

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In answer to a query from Nueva Vizcaya as to how to rid settlement farm school dormitories of cockroaches, without danger of killing the chickens about the premises, the Bureau of Health offers the following:

"It is believed that these insects may be safely disposed of by penning up the chickens and then placing rice soaked or boiled in a solution of Paris green, where the insects can get it. It is also recommended that metal receptacles with tight covers be provided for the food, and that precautions be taken to see that no scraps of food are left undisposed of. It would also be advisable, if there are stables near the dormitories, to remove these to a distance of 100 meters or more."

MACHINE SEWING.

By Mrs. EMMA E. WESTON, Teacher of Sewing, Philippine Normal School.

Most of the directions issued by manufacturers of sewing machines deal only with the manipulation of their particular models. The general instructions on machine sewing which have been applied in the classes at the Philippine Normal School are here given, and it is believed that they will be found helpful.

I. PARTS OF THE MACHINE.

The names of the parts listed below are the most important for the beginner to learn. These names should not be taught in a separate lesson, but they may be given as occasion arises.

Presser foot.
Feed.
Throat plate.
Belt.
Stop-motion screw.
Shuttle.
Bobbin.
Spool pin.
Tension.
Needle shank.
Thumbscrew.
Bobbin winder.
Needle bar.
Arm.
Treadle (foot power).
Drip pan.
Cover.
Table.
Handwheel.
Shuttle race.
Shuttle slide.
Pitman (foot power).

II. CAUTIONS FOR THE BEGINNER.

The following cautions should be given before the pupil is allowed to use a machine:

1. Keep your fingers from the wheel and from the needle.

2. Never let the presser foot rest on the feed without having work between them.

3. Never pull the cloth when sewing or when removing work from the machine, or you may bend or break the needle.

4. Never sit at the machine when doing hand sewing, for ravelings or loose threads may become entangled in the wheel or under the throat plate, and make it impossible to turn the wheel till they are removed.

5. Never turn a threaded machine without using care that looped threads do not enter the throat and form a tangle just below the feed.

If these rules are carefully followed they will prevent injury both to the pupil and the machine.

III. STEPS IN TEACHING A BEGINNER TO SEW.

With the exception of Nos. 1, 5, 6, and 8, the operations outlined below apply to the hand sewing machine. They may be taught in one lesson.

1. Remove the belt.
2. Raise the presser foot.
3. Take out the needle and the shuttle.
4. Now practice running the machine till the power to maintain an even motion is attained.
5. Practice running the foot-power machine with the feet in different positions, so as to exercise different sets of muscles.
6. Slip on the belt.
7. Tighten the stop-motion screw.
8. Practice running the machine again till it can be started and stopped without any reverse motion.
9. Insert a scrap of cloth and lower the presser foot.
10. Practice guiding the work.
11. Insert an unthreaded needle and try to follow a line penciled on the cloth.
12. With the needle threaded, replace the shuttle, and practice on scraps of cloth.
13. Make such articles as dust cloths before beginning to sew on the simplest garment.

After the pupil has acquired a general knowledge of the machine by means of the exercises given above, the operations should be explained in detail. It is suggested that the order indicated in the following outline be observed in explaining these matters to the class. This work may cover several lessons.

Threading the machine.—As all machines are threaded differently, no general explanation is here given.

The manner of filling the bobbin and threading the shuttle depend entirely upon the make of machine.

Caring for the machine while in use.—Apply the power gradually and release it gradually, for a jerky movement injures the machine at every point where one part moves on another. A machine should be carried, never dragged. Dragging jars and injures every movable part, and may break the supporting framework.

Pulling a machine across the floor or in any way jarring it, injures the delicate mechanism.

A machine is injured more by sudden starts and stops than by hours of uniform motion.

Have nothing on the machine when you are sewing, except the part of the garment on which you are working.

Never lower the presser foot without having a piece of cloth under it, or you will dull the feed.

Keep ravelings and loose threads away from the machine, or they may get wound around the wheel and cause the machine to stop.

Pupils should not alter the stitch or tension, except under the direction of the teacher.

Never try to alter any machinery without knowing what is wrong and the remedy. An ignorant person may in a few moments ruin a good machine.

Never run the threaded machine without cloth between the shuttle and the needle.

Keep the shuttle slide closed.

A machine left open near a window may have the tension rusted in a few hours, and a rusted tension cuts the upper thread. This fault is not easily remedied even by a skilled workman.

When working on heavily clayed or dirty material, the dirt that collects in the bed of the machine should be wiped away often, or it will be fanned into the shuttle by the movement of the machine.

Never remove or open the back shuttle slide. If this is done frequently the grooves become worn, and the slide will come out while one is sewing, causing a serious accident. If the machine bed plate is turned back and this slide is partly out, some part will break—either the groove, the slide, or the hinges.

Use wax, soap, or candle, on heavy seams in order to reduce friction. Rub the wax between the pieces of cloth or on the wrong side, so as not to spoil the appearance of the work. If the seam is heavy the needle is apt to be broken, unless the work is well waxed.

Cover the machine after using it. Unless the cover is carefully adjusted the machine will collect dust or dampness. Dust and rust are its worst enemies.

Throw off the clutch or loosen the stop-motion screw before leaving the machine, else an accidental movement may break a needle, or a meddling child may hurt its fingers.

Changing and setting the needle.—Raise the needle bar as high as possible.

Loosen the thumbscrew and remove the needle that is not wanted.

Hold the new needle in the left hand, with the flat side of the shank turned toward the wheel of the machine.

Push the needle into the needle clamp as far as it will go. Tighten the thumb-screw.

In choosing a needle, remember that one that is too fine will break the thread or be broken itself, while a needle that is too coarse cuts the cloth and weakens the garment.

Table showing the proper size of needle and thread to use with different materials.

Material.	Thread.				Needle.		
	Cotton.	Silk.	Linen.	Silk twist.	White.	Singer.	Hand sewing.
Thin muslin or linen	100-150	30			00	0	12
Fine calico or fine silk shirting	80-100	24-30		00	0	B	10-11
Shirting and muslin sheeting	60- 80	20-24		0 or A	0 or 1	1 or 2	8 -9
Heavy calico, light woolen, heavy silk, and seams requiring strength	50- 60	16-18		A or B	1	1	7 -8
Drill ticking	24- 50	10-12		C	2	2	6 -7
Heavy woolen, trousers of heavy cloth, and bags	20- 24		60-80	D	3	3	5 -6
Extra heavy cloth of all kinds			40-60		4	4	1 -5

Colored thread is coarser than the corresponding numbers in white, and requires a coarser needle or the use of a higher number of thread.

Adjusting the tension.—The upper tension is regulated by a screw located near the needle bar just in front of the worker. Turn the thumbscrew to the left to loosen the tension, and toward the right to tighten it.

The lower tension is regulated by a small screw located in the upper side of the small end of the shuttle. This seldom needs to be changed, the tension being regulated from above in almost every case. The lower tension should not be changed by the pupil who is not an expert.

Determining the length of stitch.—A stitch of machine sewing viewed from above should look like an oblong, never like a square. The common fault is to have the stitch too short. It is better to have the stitch too long than too short, too loose than too tight.

A stitch that is too short is hard to rip if ripping becomes necessary, and it weakens the garment; besides it takes a longer time in the making.

Six or seven to the centimeter is a good length of stitch for ordinary work with No. 70 thread. Where beginners are frequently required to rip the work, a stitch five to the centimeter is better. Seven or eight to the centimeter is a good length for No. 80 thread. The length will vary slightly with the thickness of the seam, a thick seam requiring a longer stitch.

A stitch that is too tight breaks when the garment is being worn. It pulls up when washed. It is well to try the machine

on a piece of cloth. A quick pull that stretches the trial seam causes the thread to break when it is too tight.

A large thumbscrew upon the arm of the machine near the bobbin winder is turned to the left to shorten the stitch, and to the right to lengthen it.

How to avoid breaking the needle.—See that the needle is heavy enough for the work. Do not pull the work, as this will bend the needle causing it to strike on the throat plate instead of passing through the opening.

How to avoid breaking the thread.—The upper thread breaks when the needle is not properly set, the machine is not correctly threaded, the upper tension is too tight, the tension is rusted, the thread is weak or not smooth, the needle is too small, the eye of the needle is too sharp, the presser foot rubs the thread as the needle passes it, the spool is full and the thread tangles around the spool pin, or when the motion is reversed.

The lower thread breaks when the shuttle is not threaded correctly, the shuttle tension is too tight, or when the bobbin is too full or not evenly filled and the thread slips over the end of the bobbin.

How to avoid cutting the fabric.—The fabric will be cut and weakened by sewing with a needle that is too coarse, a stitch that is too short, or with a needle that is blunted by striking the throat-plate.

How to avoid skipping stitches.—The machine skips stitches when the needle is bent, or when the needle is not exactly in the right position.

How to avoid making uneven stitches.—The stitches are uneven when the work is pulled while passing through the machine, the needle is too fine, the thread is too coarse or is uneven, the feed is too low or is old and worn, the presser foot is not set correctly, or when the bobbin is not evenly threaded.

Beginning to sew.—Hold the end of the upper thread while the needle is lowered and raised again. This will bring the lower thread up through the hole in the throat-plate. Lay both threads back on the presser foot.

Place the material under the needle. Lower the presser foot. Start the machine, turning the balance wheel in the proper direction. A reverse motion will cause the thread to break.

Turning corners.—Stop the machine while the needle is in the material and with the presser foot raised, turn the work on the needle as a pivot. Lower the presser foot and continue sewing.

Removing the work.—Stop the machine with the thread take-up raised. Raise the presser foot. Draw the cloth back and to the left 5 or 6 centimeters. Cut the threads, leaving enough to tie if necessary. Keep the ends under the presser foot. The thread cutter should be used in cutting thread. It saves time and prevents a tendency to break the threads. If the main part of the work passes under the arm, the work is pulled diagonally toward the right instead of to the left.

Using the attachments.—The use of attachments is fully explained in the instruction books supplied with the various kinds of machines.

Oiling the machine.—Put a drop of oil in each oil hole. Oil the ends of the treadle and all other parts below the table wherever friction is found. Oil the bobbin winder, but not the tension unless it is rusted. The tension acts automatically.

Oil every place where one moving part touches another.

Raise the needle bar and put one drop of oil on the highest point.

Oil the machine daily when it is in constant use.

Use only the best oil, as poor oil deposits sediment in the bearings.

Carefully wipe away any excess of oil, for it causes the machine to collect dirt. It soils the work and injures the machine.

Keep the drip pan free from dust, or dirt may get into the shuttle and keep the bobbin from working properly.

After oiling the machine try it on a practice piece, as any surplus oil makes a stain that is not easily removed.

If the machine now runs hard, the oiling of some part has been neglected.

Storing the machine, and again preparing it for use.—Before putting the machine away for vacation, clean it thoroughly and oil every part. Stop any cracks in the bed where dust or damp might enter. Wrap a dry soft cloth around the machine body and cover it carefully. Adjust the cover and lock it. Store the machine in the cleanest dry place you can find.

The machine should be throughly cleaned and oiled, before it is used following a long period of idleness. After removing the shuttle pour a little petroleum or turpentine into the bearings. Wait a few minutes. Run the machine rapidly, to warm the part and to loosen the dirt. Pour in a little more petroleum to wash out the dirt. Wipe all the parts till clean and dry.

Oil all parts with the best machine oil, using only one drop of oil at each place.

Carefully remove any surplus oil. Silk, linen or any soft

cloth that is free from dirt and lint, makes a good cloth for use in wiping the machine. A feather may be needed to reach some parts. Be sure that there is no dust in the shuttle tension.

IV. SUGGESTIONS.

Keep the leather belt just tight enough so that it does not slip.

The machine, unthreaded, may be used to mark a line for hand sewing, saving much time in gauging tucks.

With a loose upper tension, a long stitch and a coarse thread below, gathering may be done without any attachment. The fullness can be regulated as in gathering by hand.

The hammer can often be used to advantage in felling long seams.

When joining a bias piece to a straight one, the straight material should be above, so that the teeth of the feed may force the bias piece along. If the bias is above, little folds are likely to occur.

When joining a gathered part to a band, the gathers should be next to the feed, so that the teeth of the feed may pull them along. In this way one can follow a warp thread of the band in stitching, and get a perfect line.

On a gore the machine works best when sewing from the widest to the narrowest part, so the rule is to begin basting at the top, but to begin stitching at the bottom.

All work should be carefully basted. The basting is the most important part and should have much weight in the grading of pupils.

Some experts pass the larger part of the work under the arm of the machine. It is preferable not to do so, as the work is likely to become soiled and wrinkled. There should be no changing from one way to the other, or the seams will vary in width.

V. DEFINITIONS.

The feed is the roughened surface that pushes the work along when sewing is done.

The needle bar is the long bar in the head of the machine to which the needle is attached.

The thread take-up lever draws up the excess of thread when the needle is raised to its highest point.

The drip pan catches the excess of oil when the machine is cleaned.

The belt is the leather band that connects the wheels of a foot-power machine.

The band cover or dress guard keeps the clothing away from the belt.

The treadle is the part on which the feet rest when applying power to the machine.

The presser foot holds the cloth in place while one is sewing.

The tension-releaser or presser foot releases the material.

The shank of the needle is the upper flattened portion that is attached to the needle bar.

A thumbscrew on the side next to the wheel, holds the needle in place.

The shuttle is the boat-shaped device which holds the bobbin.

The bobbin is the metal spool on which the lower thread is wound.

The bobbin winder is the attachment on the right of the machine for filling the bobbin.

The throat plate is the part through which the needle passes to reach the shuttle.

The shuttle race is the space in which the shuttle works.

The shuttle slide covers the shuttle race.

The back shuttle slide is the slide away from the worker.

The stop motion is the large screw that is turned to throw the power on or off.

The needle clamp is the place where the shank of the needle rests.

The tension is an attachment located near the needle bar. It regulates the looseness of the thread.

The stitch regulator is an attachment usually located near the bobbin winder. Its work is to regulate the length of the stitch.

The thread cutter is fastened to the tension releaser.

The shuttle tension is regulated by a small screw in the upper part of the pointed end of the shuttle. It seldom needs adjustment.

The slot is the hole in the throat plate through which the needle passes.

VI. SUGGESTIVE TEST QUESTIONS.

What causes the thread to break?

What is the probable cause of uneven stitches, or skipped stitches?

What injury is done by a blunt needle?

Tell how to regulate the tension.

Tell how to change the needle.

What usually causes a needle to break?

How is the length of stitch regulated?

Which is the worse, a stitch that is too long or one that is too short?

Give reasons for your answer.

How often should a machine be oiled?

Tell fully how to proceed in oiling a machine.

Give some cautions for beginners in machine sewing.

Give cautions for more advanced workers, and the reasons for them.

What are three disadvantages of too much oil?

What are the results of failing to oil a machine frequently?

What evils result from pulling the work?

What defect in the work comes from a bobbin not properly wound?

Why should one not sit at the machine to baste or to do other hand sewing?

Tell fully how to clean a dirty machine.

Tell how to care for the machine when it is not to be used for some time.

Tell how to regulate the tension.

Tell where to oil the machine.

What trouble arises from filling the bobbin too full?

Name and define ten of the most important parts of a machine.

What determines the size of needle to be used? The size of thread?

How do you decide the length of stitch to be used?

Professor G. J. Niewenhuis, of Java, recently visited these Islands to study our educational system. In many matters he noticed marked advance over other countries of the Orient. But in crop raising we could well afford to take lessons from some of our neighbors, he remarked, according to The Philippine Observer. In Java the Dutch have found that rice stools out better and yields more when planted in rows than when set out in the haphazard way prevailing in the Philippines. With rice in rows the farmer can quickly detect and replace defective plants.

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The keynote of our school system for the Eskimo is its direct relation to the village life. Thus the school republic becomes the village council, the school garden soon becomes the village garden, the cooking class becomes the bread-baking class for the village, the clean-up of the school ground becomes the village clean-up, the bench work for the boys' class becomes the boat- and sled-building center for the village. And most striking of all, the schoolboy who is sent to the reindeer herd as an apprentice, in four years becomes the trained herder, the supporter of his family, and a future leader of his people.—The Eskimo.

DESK BASKET, B. E. DESIGN No. 1099.

By Miner F. Smith, Division Industrial Supervisor, Capiz.

The vine called pamago abounds in Capiz and the subprovince of Romblon. The stem is very flexible and possesses great durability—qualities which suggested its use in a desk basket to be modeled after those made in wire. The industrial supervisor was instructed to devise such a basket, if possible.

In the first experiment, the simple over-one-under-one open weave, copied from a wire basket, was employed in the bottom, and the "diamond" weave was used in the sides. The spokes were so arranged that they would brace each other, and they were held together by bands running around the sides of the baskets, bands and spokes being combined in a hexagonal weave.

The size, shape, weave and design were easily worked out and a good looking basket was produced, but it lacked strength. To overcome this difficulty the bottom weave was made more firm, and two transverse braces of bamboo were placed diagonally across the bottom. It was found that the basket would now hold any ordinary load of papers, and that it could be shifted from one side of a desk to the other with no more care than is taken with the wire article. This made the basket serviceable and it at once attracted the attention of government officials as a desk convenience.

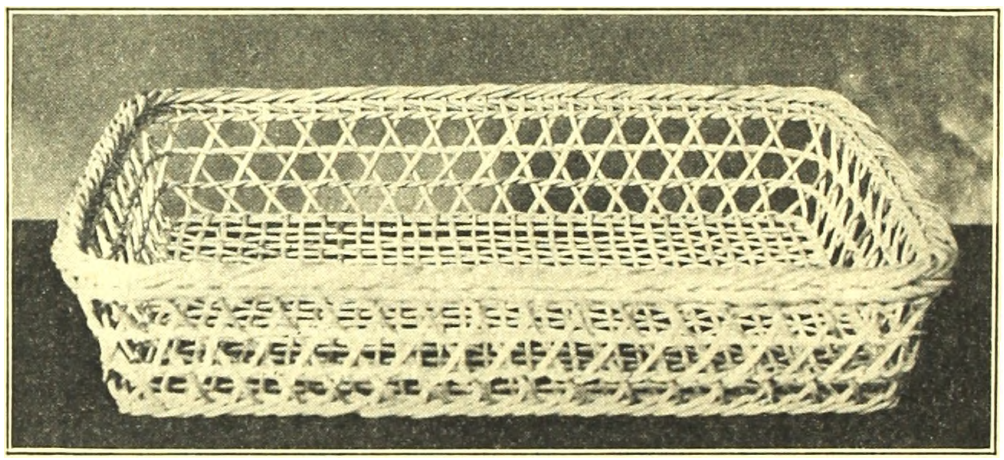
In weaving the bottom of the basket it is necessary to have an extra board the size of the bottom of the form, to be used simply as a vise to hold the spokes in position. This board can be held to the bottom by means of two bolts at each end. The spokes are so placed as to secure 1-centimeter squares in using the over-one-under-one weave. This sievelike arrangement is then placed on the bottom of the form, and the extra board is brought down firmly against the spokes by means of the bolts at each end.

With the spokes in their proper position the quadruple weave is run along the sides, while the spokes are bent down toward the top of the form. The basket is taken out, and the first band is woven three centimeters from the middle of the quadruple weave. Then the basket is again placed in the form and the other bands are added. They should be woven in opposite directions, one being run one way around the basket, and the

next one in the opposite direction. Otherwise the basket will tend to curl up and will not set level on a desk. This method should be followed in weaving the rim also.

In applying the bands, it should be kept in mind that these and the spokes must form a hexagonal weave. The spokes themselves make a diamond weave. After the bands are finished, the basket is taken from the form for the last time and the rim is woven, using the extended spokes and the quadruple weave.

The workmanship is simple, yet demands the taking of pains to avoid leaving weak places. The basket may be made in any grade weaving other baskets. After some experience, a fifth-



Desk basket 1099—One of the successful baskets of 1916.

grade boy using proper forms can make a desk basket in five hours.

The dimensions of the first pamago baskets were the same as those of the ordinary wire baskets for receiving letters—top 37.5 by 27 centimeters; bottom, 33.5 by 22.5 centimeters, height 8 centimeters. The two larger sizes in wire baskets have been copied also, one or two bands being added to secure the additional height.

The basketry materials are gathered by the pupils after school hours and on Saturdays, the only expense being in their preparation. Sodium peroxide is best for bleaching pamago, but the high cost practically prohibits its use except on an extensive scale. The material is prepared in large quantities. It is first boiled. After that the bark is removed, and it is placed in the sun for a few hours.

The pamago basket offers several advantages over the wire

desk basket. There is no danger that it will scratch the polish of an office desk; being free from rust, it will not soil the fingers, nor stain papers; it can be made and sold more cheaply than the wire product. Orders for the new basket have come in steadily, and it is believed that there will be sale for all that can be made this year.

THE PROPER WAY TO HANG UP EMBROIDERY FRAMES.

Improvement in the arrangement of equipment in industrial classrooms is a matter that needs attention in many schools. The following matter taken from Circular 92, s. 1916, division of Iloilo, is timely:

"The disposition of embroidery frames during academic periods is one of the problems not yet satisfactorily solved by all teachers. Frames piled in the corners and irregularly hung about the walls of the schoolroom are unsightly.

"The most common mistake is to attempt to hang a frame over the nail, instead of suspending it by a string. If nails are close together and frames are hung over them, it is often necessary to move four or five frames to take down a particular one. If they are suspended by strings, no matter how close the nails may be, any frame can be taken down without disturbing the others."

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Certain export embroidery houses have ordered embroidery samplers from the Bureau of Education for the purpose of helping to standardize the work.

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No articles sent to the 1917 vacation assembly industrial exhibit will be sold to private individuals. The exhibit will remain intact until the close of the assembly, when the sales department will take all of it over.

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There are now thirty-six States of the Union which plan to provide teachers' cottages in connection with each rural school. The three States that lead in this movement are Texas with 167 cottages, Washington with 108, and Minnesota with 52. The idea originated in Washington.

SCHOOL GARDENS AND GROUNDS IN BOHOL.

By Gilbert S. Perez, Division Industrial Supervisor, Bohol.

In order that the work accomplished by the industrial classes of the schools of Bohol might be summarized for reference purposes, a number of statistical reports were required of supervising teachers and principals toward the end of last year. Some interesting conclusions may be drawn from the data secured on different phases of the work in gardening and school-ground improvement. Of the eleven intermediate schools, there were only two which did not have adequate garden sites. Each of the central school gardens except one, had an area of more than 298 square meters. There were 2,468 home gardens, making an average of seventy for each municipality. The town of Jagna led with 217, Dimiao being second with 132. The worst showings were made by Anda with only eight gardens and Carmen with none.

The number of tools reported shows that the garden work in all of the towns except those having intermediate schools is being done with native implements. There are only 1,169 garden tools belonging to the schools. Several years ago a large number of inferior tools were purchased, and in a few schools may still be found the remains of what were once rakes and hoes. During the last two years where the municipalities could not secure the very best tools, they were not allowed to buy any.

The statistics on lawns and hedges show that considerable work has been done, as there were no hedges and no lawns in the province previous to the year 1913. Of the 238 schools in the division, only 21 are without toilets. While these figures show that there is much to be desired, it is well to note that improvement is being made in all phases of the work in gardening and school-ground maintenance.

The most important feature of the garden work during the year was the garden days. These were observed in all municipalities in the province. Thirty-four were held in the central barrios, and 90 in the barrio schools. In Loay, Dimiao, and Tagbilaran garden days were held in every barrio, the series ending with a grand celebration in the central school. The exhibits consisted not only of vegetable products, but also of general industrial articles.

The Duero garden day and carnival was the best in the province, although the garden days in Tubigon, Loay and Guindulman were good. The grounds at Duero were laid out in a form similar to that of the Manila Carnival. In the center of the grounds was an information booth and rest room, while all around were placed industrial and agricultural booths. One gate led into the athletic field, another to the road, and still another to the central school building. In the agricultural section there was a very good display of farm products. The domestic-science exhibit consisted of a working demonstration in which cooks, seamstresses, housekeepers and embroiderers took part. The celebration ended with a confetti battle and a masked ball.

Summary of data.

SCHOOLS.

Intermediate	11
Central	34
Barrio	193

GARDENS.

	Number.	Total area.
		Sq. meters.
Intermediate	11	24,593
Primary	34	8,841
Barrio	193	40,810
Home	2,483	42,951
Total	2,721	117,195

Garden tools belonging to the schools		1,169
Plows or cultivators belonging to schools		2
Central garden days held		34
Barrio garden days held		90
Agricultural clubs in schools		1
Corn exhibitions held		29
Corn exhibits sent to Tagbilaran		41
Corn contestants		635
Seeds saved	kilos	185
Farm and garden products harvested	do	15,354
Trees growing on school grounds		1,630
Trees planted on school grounds on arbor day		650
Hedges growing on school grounds	meters	4,378
Lawns on school grounds	square meters	13,399
Schools not having outhouses		21
Schools having unsatisfactory outhouses		181
Schools having standard outhouses		46
Schools having wire fences		6
Schools having temporary fences		91
Schools provided with drinking water tanks		111
Schools provided with pails and towels		68

A PRACTICAL BARRIO SCHOOL GARDEN.

By HILARIO SANSANO, Supervising Teacher, Tubao, Union.

A standard primary school site, having an area of 5,412 square meters, was donated by three of the residents of the barrio of Anduyan, Tubao, La Union. Under the guidance of the teacher the pupils worked hard at the improvement of this site, and in two and one half months from the beginning of school in 1912 the site was fenced. The smaller boys and all of the girls brought fencing materials. Most of the work was accomplished during industrial hours, but some of it was done on Saturdays.

It was decided to plow the entire field set aside for gardening purposes. Boys brought carabaos, plows, and harrows. The teacher plowed, while the larger boys harrowed. The smaller boys removed the rubbish found in the fields after the harrowing. After the land had been plowed and harrowed several times it was divided into plots.

As the soil on this site is rich and easy to work, it was decided to maintain communal plots in addition to the regular-sized plots. Twenty-seven of the boys were assigned as gardeners. An area of about 160 square meters was set aside. Besides this, communal plots of from 100 to 200 square meters were provided for each of the following plants: sweet potatoes, camoting cahoy, sincamas, and peanuts. Since the pupils had to go nearly 400 meters to get water for the garden, such plants as required the least moisture were selected. Those chosen were radishes, pechay, mustard, lettuce, eggplant, turnips, tomatoes, and peppers.

Most of the planting was finished by the latter part of October, which was in good season. The corn, camoting cahoy, and peanuts were planted within the first ten days of October, but the sweet potatoes and sincamas in November. Ampalaya, patola, patani, squashes, pole beans (native), and cardis were planted along the fences, and were properly cared for throughout the year. Gabi failed entirely on account of lack of water, but with this exception all of the plants did well. Before school closed for the Christmas vacation, some of the vegetables had matured.

When the corn was ready for use it was prepared as food and sold while green, as the people are very fond of stewed green corn. Better returns could be secured in that way. The girls

brought stewpots and vessels for drinking water. The boys constructed two stone stoves. The girls stewed the green corn. Six pupils came to work with the teacher during two successive market days. They sold the corn quickly, especially when it was still hot. They could have sold all of the corn, but they saved a few of the best ears for seed. As the camoting cahoy, peanuts, and sweet potatoes were harvested, they were disposed of in a similar manner. Practically all that had been prepared met with ready sale; but that which could not be sold was taken home for use by the pupils. The sincamas were harvested and sold during the last two weeks of March.

The teacher secured the approval of the supervising teacher and of the pupils for the creation of a garden fund. In this was to be deposited one half of all money secured from the sale of garden products, while the other half was to go to the pupils. All money from the sale of the product of the communal plots was also deposited in the fund until there was an amount sufficient to buy barbed-wire fencing for the site. After it was permanently fenced one half of the proceeds of the sales went to the gardeners, and the other half was deposited in the fund until there was enough money to secure a few of the most essential garden tools; thereafter, all proceeds went to the pupils.

During the school year 1913–14 it was deemed advisable to increase the area of the garden. Practically the same procedure was followed as during the preceding year in regard to planting and maintaining the school gardens and communal plots. The school was awarded first prize at the garden day held for the town, and it stood well at the district garden day and general farm exhibition held at Agoo, La Union.

During the year 1914–15 the permanent wire fence was completed by the pupils. They also dug a good well which provides all the water needed throughout the year. The school raised at least three hundred good cabbages and a large quantity of watermelons, cucumbers, and big imported "celestial" peppers that attracted considerable attention.

This school was awarded first prize in the annual town and district garden exhibitions held in Tubao. A commendable corn campaign was also carried on. On December 20, 1914, the school, with the assistance of the domestic-science teacher and eight girls of the housekeeping classes of the Tubao Intermediate School, held a successful corn demonstration. Five hundred persons were served. The estimated attendance was 700. Most of the teachers in the district, and a good representation of the most prominent people of Tubao attended the demonstration.

EDITORIAL.

HANDICRAFTS IN THE ORIENT.

A machine-made article never appeals to the discriminating purchaser as does the handiwork of a cunning artisan who delights in his work, and who invests it with something of his own individuality. There is as much difference between the two products as there is between a well-made lithograph and the original painting from which it was copied. But steam and electricity have transformed the industries of Europe and America, and to a lesser extent, those of Japan and British India. Great numbers of household workers have left their scattered dwellings to live in crowded industrial centers, and the skill of their hands has been supplanted by the processes of complicated machinery.

While the Orient has been affected to some degree by these changes, the fact remains that the patient craftsmen of the Far East, working in their own homes, still produce in large quantities beautiful and costly specimens of lacquer work, textiles, ceramics, carvings, laces and embroideries; and these command remunerative prices in the markets of the world.

In the economic development of a country, it should be the policy to foster those industries to which the workers are particularly adapted, and which will bring them the largest net returns. It is important that the inherited skill and instinct peculiar to the producers of artistic handicrafts be not allowed to degenerate or disappear. The present revival of household industries in the Philippines promises their preservation as national assets, and points to a higher state of well-being for the Filipino people in the future.

THE TIMING OF INDUSTRIAL WORK.

Every industrial teacher should know the value of time records and the need of accuracy in keeping them. Yet there are many places where good records are not kept, and in many an industrial class there is neither clock nor watch.

There is no way to determine positively what designs are the most profitable without keeping time records. If there is not a timepiece in an industrial classroom, the teacher can do

his pupils—and workers elsewhere in the Islands—no better service than to take steps to secure one at once, and thereafter keep accurate records for all work. A clock from which the time can be read in all parts of the room, is to be preferred.

No school is so poor that it cannot afford a watch or a clock in every room in which industrial work is being carried on; no school is so rich that it can afford to have its industrial classes work without scrupulous regard to time.

PERFORATED DESIGNS VERSUS TRACINGS.

Why an embroidery teacher who has learned how to use a perforation should continue to trace the design with a pencil, is hard to understand; yet some of them do follow the older and slower method. This is probably due to habit.

Perforated designs for embroidery have long been in use in the United States and in Europe. They are employed because they save time and labor. The lines left in transferring are not always so clear as if made with a pencil, but when they are not continuous the pencil may be brought into service. Since there is so much work to be done in embroidery classes, any method that tends to increase speed in production, should be promptly adopted.

CONSTRUCTIVE CRITICISM.

In a recent report of an industrial supervisor, only this statement was made concerning a particular school garden: "It is not up to standard." The report was generally helpful; but no qualifying remarks indicated in what respects the garden was defective, nor were suggestions made as to how it might be improved. Supervisory officials cannot be too careful to offer some assistance in every case where criticism is made in their reports.

BACK COVER DESIGN.

The decorative design on the back cover of this issue was furnished by Mr. James P. Cooley, formerly supervising teacher at Bongao. It was copied from a typical Moro stone carving from the island of Bongao at the southern extremity of the Archipelago. The similarity of the designs used by the Moros, to those originating among other Mohammedan peoples seems significant.

INDUSTRIAL NOTES.

BATAAN.

About 30 girls are working in the household center at Balanga. Fifteen of these girls are graduates of the School of Household Industries. All have promised to work in connection with the center in Balanga for at least one year after they have learned how to embroider.

Several girl graduates of the Balanga Intermediate School are engaged in embroidery work, sometimes helping to fill orders received from the Bureau of Education. Their work is done at home, but it is frequently submitted to the embroidery teacher for comment.

Industrial contests in the division were held in connection with academic and athletic meets during September and October. Contests in basketry, plain sewing, embroidery, and cooking were judged according to quality, speed, and economy of materials used in making articles.

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POTATO RAISING IN BATANES.

Owing to the difficulties in transportation, climatic conditions, and the customs of the people, most of the food supplies for Batanes should be produced within the islands. Rice, sugar, beans, and canned milk and meat, are imported at very high prices. The schools have started a movement to encourage the production of more food locally. Incident to this, an interesting experiment has been made with potatoes.

Last year, a part of a crate of imported potatoes was bought for ₱1.65. From these, 326 slips were secured, and they were planted in the school garden on January 19. The crop harvested April 12, 1916, filled more than three crates. These were readily sold for ₱8. The net profit from this crop alone was ₱6.35. Although the area planted was small, the test indicates that potato growing can be made to pay. (M. L.)

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BATANGAS.

Agricultural clubs are being formed throughout the province, and considerable interest is displayed in the organization of pig and chicken raising contests.

The continuous heavy rains during the past two months have been rather discouraging to gardeners, as the plots have had to be remade a number of times.

Garden day will be held in each municipality on either February 17 or 24, at the discretion of the supervising teacher. One feature of the exhibitions will be seedlings from fruit and shade trees. These should be shown in great numbers as each boy taking gardening has been required to raise ten trees.

Three districts in two and one-half months have completed 500 pairs of sedge slippers on an order from the Bureau of Education.

The hanging baskets, design No. 1042, are well adapted for barrio school work. Many are being made in this province.

Every supervising teacher in Batangas is now provided with a small safe costing ₱60. A strong box has been ordered for each principal of a central school. The box will be of such size that it can be placed in the safe of the municipal treasurer. With this equipment, it is believed that pupils' industrial and athletic funds will be well accounted for. (G. T. S.)

BOHOL.

A successful hog raising contest has been organized among the boys belonging to the agricultural club of the Loay Intermediate School.

The Bermuda-grass lawn made by the school-ground improvement class at the Loay normal institute is kept in perfect condition by the pupils of Loay. It is an improvement on the one made last year. The parfaita hedge is doing well.

The barrio schools of Dimiao are specializing in cincamas culture. Dimiao and Tubigon will be the centers for these vegetables.

Special efforts are being made to put the ticug industry of Talibon and Ubay on a sound basis, and big orders are being filled. Ubay offers a good example of specialization in industrial work.

In the Tubigon District, when pupils have completed the course in hand weaving they make buri school bags and covers for their books. Thereafter they make either B. of E. design No. 1603 or 1604.

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CAGAYAN.

Gardening is receiving much attention. Nurseries and field plots were established at every school before the close of September, and all districts report the establishment of agricultural clubs.

In the daily programs for the primary schools of the province, uniform industrial periods have been fixed. The last period in the morning is given to industrial work in the first and second grades, while the last period in the afternoon is devoted to industrial work in the third and fourth grades. This allows the assignment of the maximum number of teachers to industrial instruction.

The boys of the Sanchez Mira Intermediate School have completed a substantial domestic-science building without aid from the municipality. (J. C. S.)

CAMARINES.

Few changes have been made in the corps of industrial teachers, or in the lines of industrial work prescribed for this school year. The number of industrial courses has been reduced, and more emphasis given to white embroidery, lupis basketry, and rattan and bamboo furniture.

The opening of primary and barrio schools was marked by a general clean-up movement. Schoolhouses throughout the province are now distinguished by their neat appearance and clean yards.

Mrs. Felisa V. Badong, principal of the domestic-science department of the provincial high school, is teaching her pupils table manners in an original way. The class prepares an ordinary lunch during the class period, and when 12 o'clock comes they sit down to an actual meal. Throughout the meal the rules of good manners and right conduct are observed with the teacher present to criticize any mistakes and to make suggestions.

A special filing case for use of justices of the peace was designed and produced by the provincial shop, during the long vacation. Four of the cases were completed and sold at ₱60 each. More are being constructed as they are very satisfactory and command a ready sale.

The domestic-science department of the provincial high school has organized a cooking class on a commercial basis. A few of the girls cook some toothsome delicacy each day and dispose of it to the rest of the student body. The profits thus far have been small but regular. (B. L.)

Miss Merced Meliton, a recently returned scholarship teacher from the Philippine Normal School, has been assigned to the Iriga Inter-

mediate School as teacher of domestic science.

The provincial trade school building, which was destroyed by the typhoon of October 26, 1915, has been reconstructed on a modified and better plan. (J. M.)

At the beginning of the present school year, candy and cake peddlers made many sales to pupils of the Camarines High School. The articles sold were not always wholesome. So a cooking club was organized by the girls taking the housekeeping course. Funds were secured through voluntary contributions by the members.

In order to distribute the work uniformly, the club is divided into groups with a leader directing the work of each. Two members assist her. The leader buys materials, and when articles are sold she turns the money over to the treasurer. Each group is given an afternoon to prepare and sell cakes and candies. Cooking is done under the supervision of the teacher, during vacant periods and before the afternoon session. Sales are made during recess in the morning, and after school in the afternoon.

Even though the girls do not share in the gains, they are performing the work earnestly and faithfully. Every member is trying hard to increase the profits as well as the reputation of the club. The fund is growing larger day by day, and the pupils are taking greater interest in the work. They expect, after a while, to add a good sum to the pupils' fund. (F. V. B.)

In the Daet district in Camarines a "busy work" envelope is used in the schools. This consists of a long envelope divided into three parts by stitching on a machine. The compartments contain colored matches, palo-maria seeds, and fire-tree seeds, respectively. As the pupils often forget to bring their "busy work" material with them, the teachers take up the envelopes at the close of each session. Each envelope bears the pupil's name. They are collected and distributed by one pupil who is assigned to the work.

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CAPIZ.

Romblon district has organized poultry and pig clubs. A pig raising contest has been organized at the provincial school.

Many orders have been placed with the provincial school shop, mostly for furniture. The school is also making desk baskets and polangui wastebaskets for which there is a great demand this year.

The domestic-science girls are preparing lunches for sale at the provincial school, quite a few outside persons being served. They are renting a foot-power sewing machine, and many girls are doing their family sewing on the school machine.

A campaign is being made to secure suitable domestic-science quarters for the primary schools. In the Dao district new houses for this purpose will soon be completed at Dao, Cuartero, Sigma and Mambusao.

The Capiz provincial school shop has a large stock of lumber, and has increased its tools and equipment. Orders for several months' work are booked, and a most successful year is promised. The provincial treasurer, Mr. Allorde, has given the schools his enthusiastic support. (H. W. B.)

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CAVITE.

The wire fence around the Rosario Business School has been completed at a cost of more than four hundred pesos.

On the evening of August 12, a benefit ball was given by the Rosario primary teachers.

Miss Felipa Virata, the principal at the Rosario primary school, and the teachers there, are working hard to improve the school building and grounds. The pupils inclosed the site with a temporary bamboo fence, the money required being taken from the pupils' fund.

All school gardens in the province are being fenced. Some have been planted, while others are ready for planting as soon as the weather permits.

Agricultural clubs are being organized in all schools where the requirements can be met. (R. G. McL.)

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CEBU.

The summary of industrial sales for the school year July 1, 1915 to June 30, 1916, shows that for the quarter ending March 31, the sales were nearly fifteen times those of the first quarter ending September 30, while those for the second quarter were about three times those of the first.

The total sales of the primary schools in 46 towns were ₱3,056.04, as against ₱2,484.36 for the intermediate schools in the 16 towns.

It may be of interest to know in this connection that there were enrolled last year in the primary schools of Cebu Province 31,935 children and in the intermediate schools 2,259 children.

Outside of Cebu, the largest primary-school sales are credited to Bogo and Carcar with ₱321.50 and ₱241.34, respectively, while for intermediate schools Bogo stood first with sales of ₱293.93 and Argao second with ₱106.40. The provincial-school sales amounted to ₱1,505.31.

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ILOCOS NORTE.

Mr. Claude E. Andrews, principal of the Laoag Trade School, has resigned under the provisions of the Retirement Act. Mr. Andrews was appointed teacher in the Bureau of Education on January 20, 1902, and has served continuously since that date. He left Laoag on July 22 to devote his attention to the agricultural interests which he has in the province of Cagayan.

Mr. Charles S. Crowther, formerly of Samar, has been assigned to the principalship of the Batac Farm School. Mr. Crowther recently returned from a leave of absence in the United States.

Miss Eulalia Madamba has finished her preliminary work with the class at the household center in Laoag. Fifteen members are able to produce good valenciennes lace in design No. 111.

On September 30, an industrial exhibit and sale was held in the division salesroom. Mr. Gil Raval, who was in charge, was assisted by teachers from the intermediate and central schools. They were kept very busy from 8 a. m. to 2 p. m. (H. S. M.)

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EXTENSION OF POULTRY RAISING.

Sixteen months ago Fermin Aquino, a farmer from Narvacan, Ilocos Sur, bought 10 hens and 1 cock of Cantonese breed from the Santa Maria Farm School. He devotes most of his time to poultry raising, and in the care of his chickens follows the methods used at the Santa Maria Farm School. His two sons of 10 and 12 years assist him when they are not attending school.

From over 50 laying hens he gets about 30 eggs a day. In spite of diseases which have killed some of his chicks, Mr. Aquino has raised 680 chickens since he went into the poultry business. Some of these he has sold at ₱1 each. He sells eggs at 10 centavos apiece, and he is increasing the number of laying hens of Cantonese breed in order to supply the demand.

Last November a pair of 2-month-old Cantonese chickens were given to Juan Reyna, a teacher at Angaqui in Mountain Province. Before the opening of the teachers' convention at Baguio in June he spent three days at Santa Maria, mainly to study the methods used in poultry raising. He reported having 70 chickens besides small chicks, all the offspring of the first pair. (J. A. R.)

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ISABELA.

An order from the General Office for 4 dozen tray cloths, B. E. Design No. 15–1203, has been accepted by the division. The greater part of the order will be made in the high school and in the intermediate school of Cabagan where the more competent workers are found.

The domestic-science teacher of the high school last year, Miss Ana Alcabedas, has been transferred to Cabagan Intermediate School and Miss Dominga Palattao, a recent pensionada from the Philippine Normal School, has taken her place in the high school.

Mr. Francisco Ramirez, a graduate of the Normal School, has been appointed supervising teacher of the Cauayan district to succeed Mr. Dionicio Mina who is pensioned to Los Baños this year.

The new farm school at Cabagan, of which Mr. Stanley E. Mavity is the principal, is now well under way. The farm covers about 14 hectares of good land, a large portion of which is covered by the annual flood which renders it rich for tobacco. The boys have built a permanent fence around it. The construction of a standard plan No. 4 school house will soon be started, and gravel and sand are now being hauled. Of all the activities of the Bureau of Education in this province, there is none for which the people of Isabela have more cause to be thankful than the establishment of this farm school, for they see in it a key to what is in store for them in the large tracts of rich soil now lying untouched. (L. F. P.)

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HOW THE ILAGAN HIGH-SCHOOL GROUNDS WERE FENCED.

The sum of ₱800 was appropriated for the construction of 1,200 meters of permanent fence over very irregular ground. As it was deemed impossible to pay any labor without exceeding this amount, pupils assisted by prisoners, undertook the work. Thirty logs of first-group timber, each 4½ meters in length and with a minimum diameter at the tip of 20 centimeters, were delivered on the ground at a total cost of ₱81.85. The cost of dividing each of these logs into eight posts amounted to ₱36.38. The wire, staples, stretcher, and gate cost ₱407.27; cement, tar and gravel, ₱27.70; and transportation from Manila, ₱33.89. The cost of the completed fence was ₱553.11.

Trees were found at two corners which served as corner posts, but it was necessary to put in two gate posts and three corner posts. Logs 3½ meters by 30 centimeters were used for this purpose. They were set 1.33 meters in concrete and well braced. The lower ends of the braces were also set in concrete. All other posts were set 5 meters apart and 0.75 meter in the ground with the lower ends well tarred to prevent damage by water and anáy. Two drums of cement and two of tar were used in this way.

Care was taken to have the ground between the posts well graded in order to prevent the buckling of the wire or the making of holes under the fence. Posts placed at the bottoms of the ravines were anchored. Dap-dap was planted near all anchored posts and on all fills. This

is expected to prevent washing and to furnish a permanent place to fasten the wire later. Some suitable fruit or shade trees will be planted between all posts as soon as possible and should be large enough to support the wire before the posts give way.

This preliminary work was all done by pupils. Prisoners stretched the wire as the work was considered too dangerous for pupils, unless very closely supervised. A Lott stretcher which slipped at first was used. A strip of green hide tacked to one of the gripping surfaces corrected this. For stretching barbed wire a come-along was borrowed of the local postmaster. If the barbed wire is unrolled faster than it is used it becomes looped and is liable to break as the loops straighten.

Woven wire 110 centimeters in height was purchased through the Bureau of Supply. Above this three strands of barbed wire were placed at intervals of 7, 12, and 16 centimeters. At two places between every two posts small wires were fastened to the top strand of the woven wire and wrapped around each strand of the barbed wire, making it impossible for anyone to separate the wires and crawl through. (S. E. M.)

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LAGUNA.

Miss Perfecta Almonte, the teacher of embroidery at Lilio was recently married to Mr. Pirante of the same town.

Miss Encarnacion Francia passed the junior industrial teacher examination in June and has recently been appointed as Insular teacher.

The town of Nagcarlan has completed the construction of an intermediate-school shop for wood-working classes. The building will also be used for basketry and drawing classes. The work was done largely by pupils. The parents furnished some materials and rendered assistance.

The Nagcarlan housekeeping and household arts classes are paying the rent for the domestic-science house from their profits in serving lunches.

The domestic-science class of the Santa Rosa Intermediate School made a net profit of ₱5.39 in September. The boys of this school sold articles to the value of ₱31.45. They are now busy making tables for the teachers in the primary school.

The division is filling an order for 520 coir doormats. Bureau orders for basketry, embroidery and lace to the amount of about ₱500 were received during the month of September and October.

The Biñan intermediate school shop is turning out some excellent pieces of furniture for the schools in that supervising district.

The intermediate school at Santa Rosa reports that as there was not enough lumber to begin work, the boys repaired broken desks, replaced the broken shells in the windows of the primary school, and improved the school grounds. They will do repairing wherever necessary. By this method they are not only learning how to work, but they are practicing to become useful in the future. Materials used in plain sewing are purchased from local dealers and are paid for from the pupils' fund.

Mrs. Eva E. Campbell, who is in charge of the domestic-science class of the provincial high school at Santa Cruz, writes that the work in embroidery has been aided very much by Miss Maxima del Rosario, a traveling embroidery instructor. The elementary sampler was used as the basis of instruction. An order from the General Office for embroidering 6 dozen tray cloths has been undertaken. The work in plain sewing has been confined to the making of uniforms. Each fifth-grade girl makes for herself the

complete uniform including apron, cap, towel, and two holders. The sales from this department have consisted almost entirely of products of the cooking classes. As there is a great demand on the part of the pupils for these products at recess, an effort has been made to meet this demand. The sales so far have been very good. (H. M. W.)

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LEYTE.

The girls in Tanauan, working in regular school periods, are averaging thirty inches a week in valenciennes lace, designs 102B and 106A. A standard of one yard a week for each worker, has been set in this division. It is not proving a hardship, and is greatly increasing the output. Some of the girls have already passed the standard.

At Hinundayan the boys have constructed a neat garden house. They are divided into groups of four, each group staying in the house for one week while caring for the garden.

The school at Maasin maintains a most successful nursery. Not only has the local need for trees been supplied, but trees have been sent to other towns where they were badly needed. (S. O. D.)

THE CARE OF THE HIGH SCHOOL PREMISES.

For the improvement of the grounds of the Leyte High School, the male students have been divided into groups by classes. The area to be cared for has been apportioned, and each class is in charge of one section during the entire school year. Some groups are divided into squads which take turns by the week; and some class plots are divided into smaller sections, each pupil being assigned to one of these. The care of trees, shrubs and roads is given to the boys taking the gardening or farming courses.

A banner, donated by the provincial governor, is awarded annually to the class that has kept its plot in the best condition throughout the year. Interest in this competition is general, different groups having been winners since the time when the banner contest was started.

Formerly the high-school grounds were typical brush land. Cogon grass abounded. The improvement campaign has transformed the premises at practically no expense to the province. The school is now adequately provided with grass plots, shade trees, ornamental palms, and shrubs. Coral-surfaced drives and walks connect the different buildings, which are hedged in by violetas (Barleria cristata), carefully trimmed.

The daily care of the school grounds has instilled in many young men a sense of beauty and symmetry, which has brought about marked changes in their home surroundings. (J. P.)

PARENTS' DAY.

The High School has celebrated its first "Parents' day." In order to overcome the natural reluctance of the average parents, invitations in the local dialect were sent to the father and mother of each pupil in school, about a month beforehand. Nearly three hundred parents, besides officials and friends, came from all over the province to visit the school on the appointed day.

The program began with an assembly on the school grounds. Music was furnished by the school orchestra and glee club, and addresses of welcome were made. After this, two hours were devoted to regular recitations so that the parents might see their children at actual class work. A reception committee, consisting of students from the different municipalities, showed the visitors over the buildings and grounds. At eleven o'clock a luncheon was served. For

this purpose a beautifully decorated pavilion had been erected near the domestic-science kitchen by the farm boys.

The afternoon was devoted to athletic games. In the evening the annual intersociety debate was held in connection with a musical program.

Parents, teachers, and pupils received inspiration from this parents' day, and many a father returned home with the determination to have his son or daughter continue in school for a longer period. (F. E. H.)

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MINDORO.

Recent circulars from Mindoro state that 18 industrial courses are being given this year in the various schools of the province.

Last year ₱947.54 worth of industrial articles were fabricated in the schools of eight municipalities. The aim for this year is to produce three times this amount.

An effort will be made this year to have every pupil in the division plant 10 fruit trees.

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MOUNTAIN PROVINCE.

Miguel Nebrija, teacher of basketry in the Baguio Central School has been assigned to teach basketry to one class of first year boys in the provincial high school.

Mr. George W. Stocking, formerly principal of the Baguio Industrial School has been forced to resign and return to America on account of ill health. The school gave him a despedida on the night before his departure.

Lace making has been introduced in many Benguet schools this year. The classes at the Baguio Central School are now on a firm footing, and a large amount of salable lace will be made this year.

Home weaving among the girls who formerly took loom weaving in school, is being given special attention.

A large firing kiln has been completed at the pottery plant of the Daklan School.

The shop boys at Tagudin will earn considerable money during the present year by shoeing horses and cattle.

The school at Ambuklao had a large harvest of papayas. They were disposed of at the Baguio market. About 5,000 coffee seedlings were recently distributed from this school. A large number of papaya, ates and orange seedlings were also sent out. Suckers from good varieties of bananas which were planted at this school last year, will soon be ready for distribution.

The Bureau of Agriculture has given over to the Bureau of Education the entire experiment station and stock farm in the Trinidad valley. A large fifth-grade class of Igorot boys from the Baguio Industrial School, has been transferred to the new site. It is planned to move the entire school as soon as suitable buildings are erected. The farm contains 400 hectares, much of which is suitable only for grazing. The class at Trinidad expects to supply the teachers' camp with all of the vegetables needed during the vacation assembly next summer.

Nine of the fifth-grade boys in the Baguio Industrial School could not be moved conveniently. They are taking the regular farm course, and are getting practical experience in the Japanese flower garden at the teachers' camp. It is believed that flower growing can be made very profitable.

Fern-wood flower vases, pencil holders and picture frames have been fairly profitable, and the central school has as many orders as it can supply. The pupils furnish the material for this work, and they receive half of the proceeds. (S. R. M.)

NUEVA ECIJA.

Miss Fernanda de Guzman, formerly teacher in the central school of Peñaranda, has been appointed assistant to the division industrial supervisor. She will be expected to organize and direct centers of household industries and supervise girls' handicrafts. The experience and training of Miss de Guzman render her services in this new department of special value.

Lace and embroidery have been extended as household industries in the towns of Cabiao and San Isidro. Mrs. Brigida Wy-Coco, an expert lace maker of long experience, has charge of lace making in Cabiao; Miss Consolacion Elviña, domestic-science teacher in the provincial high school, has charge of embroidery in San Isidro. Several other towns will be added to the list in the near future.

The boys of Santo Domingo have become expert in the extraction of buntal fiber. Last term, they were able to supply all demands for this material within the district. All the buntal fiber used at the last division normal institute was secured in Santo Domingo. This year, it will no longer be necessary to order buntal fiber from Manila for any school in the division, as the boys are able to fill all demands and supply an excellent grade of buntal. (J. C. D.)

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NUEVA VIZCAYA.

COOKING AND EMBROIDERY.

Upon the establishment of the course in housekeeping and households arts, at Bayombong, girls who left school five years before reëntered because of their interest in the new course.

The girls make cakes, candies doughnuts and sandwiches; they also follow some Filipino recipes. The products of their kitchen are bought by the people of the town. When there is an entertainment, the girls prepare the refreshments under the direction of the teachers.

Every Friday afternoon there are tea parties to which outsiders as well as pupils and teachers are invited. The girls play musical instruments and sometimes they sing for the entertainment of the visitors.

Doilies, napkins, tablecloths, baby dresses, nightgowns, ruffles, baby pillows, and handkerchiefs are embroidered. All work that is completed can be sold in the province at any time; besides there are orders from the Bureau of Education. (F. A.)

THE PROVINCIAL FLOWER.

On September 15 a vote was held for the adoption of a provincial flower for Nueva Vizcaya. One thousand and six ballots were cast for calachuchi, 411 for gumamela, 494 for rose, and 250 for runo.

The calachuchi, having received a plurality will be the provincial flower until the next election. Particular attention to planting this tree was given on arbor day. The following instructions for planting have been prepared by the industrial supervisor:

Cuttings should be selected from branches growing vertically. They may be cut from 1 to 2 meters long. All leaves on cuttings should be removed before planting. The holes must be about 35 centimeters deep and their diameter must be 10 centimeters greater than the diameters of the cuttings to be planted. (C. E. H.)

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OCCIDENTAL NEGROS.

From Division Circular No. 42, s. 1916, it would appear that Occidental Negros is planning to make a beginning in mango culture.

According to the circular, this division has placed an order with

the Bureau of Agriculture for 1,550 mango seedlings to be set out by the pupils of its 22 towns.

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ORIENTAL NEGROS.

BAIS.

Miss Juana Villamil, principal of the Bais Central School, reports that the men teachers of that district are doing better work in plain sewing in Grades I and II than did the women teachers. Because of the fact that the pupils in these grades furnish their own materials, there is less carelessness and not so much material is wasted. The grounds about the building have been improved and cleaned by the fifth-grade girls who have started flowers and hedges.

TRADE SCHOOL.

According to a report from Mr. Teodoro Senador, principal of the provincial trade school, Oriental Negros, ₱2,287 worth of work was turned out by the pupils of that school during the long vacation. Below is given a detailed report showing the jobs completed and the value of each:

Name of article or services.	Quantity.	Value.
Wardrobes	4	₱121.00
File stands	4	28.00
School desks (large)	185	440.00
Cedula boxes	20	10.00
Tables	28	130.60
Dining table	1	10.00
Typewriter tables	7	21.00
School desks (small)	120	264.00
Blackboard frames	20	20.00
Bookcase	1	14.50
School desks (medium)	34	74.80
Planing lumber	1	3.62
Repair of domestic-science building	1	92.23
Domestic-science and shop buildings combined	1	1,057.33
Total		2,287.08

All schools are working hard to have good gardens this year. Corn, peas, and native vegetables are grown, as well as plants of the Bureau seed distribution. On Siquijor Island there is difficulty in securing suitable garden locations; yet only five or six of the barrio schools are without gardens. Native implements are used to a great extent. Some schools are solving the problem of water supply by digging wells in the gardens.

Bacong is handling a large order for lace, while San Juan leads the division with 139 girls doing lace work. The second-grade girls at these schools are permitted to devote a small part of their time to learning lace, on condition that they do not neglect their work in sewing. Some of the barrios with three grades, as Cabulihan, are making lace.

Bamboo is becoming expensive in some localities, and the classes in hard strips will perhaps begin substituting coconut petioles.

Many pupils in the first and second grades are furnishing their own materials for plain sewing. The Larena Intermediate School has some pupils who take orders for plain sewing.

The school premises at Guijulngan, Tanjay, Ayuquitan, Sibulan, and Dumaguete are well kept up, the pupils being eager to improve the grounds.

There has been a steady demand for slippers, in the production of which Tanjay and Dauin lead.

Siquijor Island leads the division in the making of the Zambales barrel-shaped wastebasket, B. E. design No. 1080. Sappan is used for coloring, although teachers are being urged to use the Zambales blackening process.

Siquijor produces all of the coir mats in the division. Mats of the old style have sold well, even at an advanced price.

RATTAN FURNITURE.

Of all the industrial courses, rattan furniture is one of the most important. It touches the home life of pupils and parents to as great an

extent as does cooking or gardening. It not only gives opportunity for development of skill and good craftsmanship, thus being educational; but it is also practical and useful. The boys have an opportunity to make some money during their vacations, and of learning a paying trade.

Then too, the articles produced always find a ready market. People come to the division salesroom and wish to have rattan chairs marked sold, and get them at a more convenient time, thus insuring their getting the chairs. When the teachers left the normal institute, they had many opportunities of selling their models. One captain of a steamer has asked for a set of chairs. One man ordered two dozen chairs for his own home. A woman in a large city of a neighboring province has ordered chairs. There is also some demand for baby chairs; but only the best are desired. In the division salesroom at Dumaguete are two chairs of slightly inferior quality that have been rejected a number of times, even at a reduced price, the customers preferring to wait for articles of the best quality to be made.

The people in the towns where the course is being taught like it, in many instances, better than any other course of the industrial program. The utility of the article produced appeals to the people. A large, commodious chair goes a long way toward relieving the fatigue of the day's toil. In one town the people asked the pupils to keep the rattan beds for them after they were finished.

In some instances people who are not in school make this kind of furniture. All that they can not sell in their home town they carry to the provincial capital. Sometimes they carry these articles fifteen kilometers on bamboo poles, and sell them for perhaps only one third of the price of similar articles made in school. But the school product is always preferred, even at a higher price. Various reasons are given for this: the articles produced in school are cleaner, or better finished; but the principal reason is the strength and lack of flaws in the school products. (C. S.)

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PANGASINAN.

A method for developing efficiency in large hand-weaving and plain-sewing classes has been recommended to the teachers of industrial work. It consists in dividing the class into sections. In section A, all of the best and fastest workers are seated; in section B are put the next best workers, and so on. This places all slow or poor workers together, where the teacher can give them attention with the least loss of time. A captain selected from each section can aid the teacher in inspecting his group. As soon as the required exercises of a course have been finished, the making of usable or salable articles is taken up. The whole year is not frittered away on exercises done inefficiently.

In San Fabian the girls at a small cost have had crochet needles made from the steel ribs of old umbrellas.

The barrio schools of the Rosales district are making bamboo desks for their own use.

The pupils of Grade III in Urdaneta, Asingan, and Binalonan are working on an order for 1,050 pairs of sedge slippers of an improved type.

It is planned to develop work in native baskets, sedge slippers, and coir mats. This will give employment to the pupils of barrio schools which have hitherto scarcely counted in the industrial program. A large majority of the workers are found in Grades I, II, and III. If commercial work can be developed so that the thousands who are available in these grades can be profitably employed, the value of the industrial

department in the schools will be greatly increased. (A. W. C.)

It is recognized that a process, such as sewing, planing, or chiseling can be learned just as well by working on the school desks, for example, as it can by working on a piece of wood which must later be thrown away. Wherever possible, the exercises in the school shops are made in such a way that the product is an article that can be used in some piece of furniture needed by the school.

The class in coir mats in Asingan is using a simple rope twisting machine for making coir for the mats.

The Province of Pangasinan stands second in the Islands in the number of coconut trees grown. This fact forms the basis for the establishment of coir mat making, and this subject is being given attention in several schools this year with a view to preparing the pupils in making mats as a home industry from the material that is now wasted.

A number of school shops in this division are engaged in making bamboo desks, where wood is not obtainable, for use in the barrios. It is the desire of the division office to have every pupil comfortably seated before the end of the school year.

Last year, Hispicio Tugarde, an Alaminos seventh-grade pupil, raised in his home garden 5½ cavans of mongos which sold at ₱5 a kerosene can full. In addition he produced a good crop of corn and a quantity of vegetables.

The value of orders accepted and now being fabricated in the schools of Pangasinan amounts approximately to ₱3,000.

The high cost of materials and difficulty in obtaining thread and cloth are retarding the needlework in the division.

In Alcala and Villasis, a number of girls who have graduated in the past from the seventh grade and who understand embroidery are working in the schools under the direction of embroidery teachers on orders received. In the district of Bayambang the same plan is being tried.

In every school a record is being kept of the money value of all industrial work done, excepting such exercises as hard strips, where the product is not salable. A study will be made to determine the relative values of the various industrial courses. Reports for the first quarter show that articles to the value of over ₱1,300 have been made in the eight districts heard from. During the same period, the sales for the division approximated ₱500.

In Calasiao a class of 26 second-grade girls, made 206 hats and disposed of a part of them at ₱150.96. This record is well ahead of that set by the class in hat-making in Baliuag, Bulacan, as given in THE PHILIPPINE CRAFTSMAN for August, 1916.

In the district of Binalonan, a home garden campaign has been started. A prize of ₱25 goes to the boy who raises the greatest quantity of vegetables, and another prize of ₱10 is offered to the most successful girl gardener.

On a holiday late in August, 252 boys brought 63 carretons. They hauled sand and gravel all day to make walks from the Agno River to the central school of Tayug.

The shop boys of Tayug are engaged in making a hundred school desks for the first-grade classes.

Noticeable progress is being made in the towns of the Tayug district in fitting the schools with standard furniture, and in putting the buildings and lawns in shape. Tayug is to be a well-shaded town. Each male teacher has been assigned to take charge of one street in the center of the municipality. He will per-

sonally direct a class of boys in setting out shade trees according to a uniform plan. Every boy will care for one or two trees during the entire year. Their condition will be taken into account in determining each boy's industrial grade for the school year.

The demand for pomelo, lemon and orange trees in Tayug is larger than the supply. Nurseries are being established on the school grounds, and as soon as seedlings are ready for distribution they will be given to the pupils for planting.

In the Rosales district a campaign is on for fitting up all schools with desks of either wood or bamboo, and headway is being made. On August 11 and 12, 50 barrio people went to the school at Anulid, Alcala, to make bamboo desks. All materials were donated by the people, and in two days the school was fitted up with strong and well-made desks.

In the campaign for pupils' model homes, Alaminos leads with 40 girls and 40 boys listed as eligible for the red star. In the seven districts reporting, 171 girls and 133 boys are given credit for having model homes.

Forty-four agricultural clubs with a total membership of 1,218, have been established in the division. The pupils are enrolled in various contests as follows: Tree planting, 532; poultry raising, 219; pig raising, 116; corn growing, 93; vegetable raising 258.

Five districts have fixed the dates for their garden days to be held during January and February, 1917.

An order for the making of 500 envelope cases according to division design D-4, has been accepted.

The industrial classes of Urbiztondo are making many useful articles from the buri of that section.

Ninety-five boys in the Dagupan schools are engaged in filling an order for coir mats. It is planned to develop this work to commercial proportions.

On October 1, Mr. W. W. Walker, instructor in the Pangasinan High School, was transferred to the principalship of the trade school at Bacolor, Pampanga. His place here has been taken by Mr. Quince E. Richardson.

There are 21 industrial courses taught in the schools of Pangasinan, counting gardening, plain sewing and woodworking each as one. Fourteen courses are given in each of three towns; two offer as few as 5, while the average number is 10. The following courses are taught in practically all towns: plain sewing, elementary weaving of hard strips, native basketry, export bamboo basketry, and gardening. One seventh of the towns offer no form of fancy-work for girls. (L. P.)

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RIZAL.

A large number of Dumagats from the Limutan River, on the borders of Tayabas, have recently migrated across the mountain range into the valley of the Lanating. They are now living at Santa Inez and sending their children to the school at that place.

The Santa Inez school is of the settlement farm type. It was established and is maintained for the benefit of the Tagalog *remontados* and of the Dumagats. This school has long since reached the point where every pupil carries home with him every day a ration sufficient for his maintenance; and it is hoped that this can be kept up every day of the year and of the years yet to follow. This seems to be appealing to the ill-fed Dumagats, who at first showed no interest in the school.

A considerable increase in the work in agriculture in connection with the Pasay Central School is undertaken this year. A tract of one and a third hectares is being fenced and prepared for this pur-

pose, and the Director of Education has authorized the assignment of all the boys necessary to this work, excusing them from all other industrial courses.

The transfer, with subsequent retirement, of Mr. Russell Trace, former industrial supervisor of Rizal, caused some little confusion in the work. However, the new industrial supervisor, Mr. Mauricio Santiago, aided by the general industrial supervisor, Mr. Herbert D. Fisher, is fast getting the work into satisfactory condition again. (H. S. T.)

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SORSOGON.

A fair was held at Irosin, Sorsogon, from September 1 to 3, 1916. There were exhibits of locally made pottery, cloth and rope, and there was an excellent display of farm and garden products.

School exhibits attracted many people, and there were large sales of baskets, handbags, and baby garments. The domestic-science classes conducted a profitable lunch counter.

Girls belonging to sewing classes in the Masbate sub-Provincial School have made cloth hats for the members of the athletic teams. These hats are admirably adapted to the use of players. They fit the head snugly, shade the eyes, and are easily laundered. The shop class has completed several book and magazine stands for the school library.

Pupils of the Aroroy and Cataingan central schools have built fences for their gardens without aid from the municipal school funds. The domestic-science girls furnished lunches, while the boys went to the near-by swamps and cut the poles necessary for the fences.

The Bureau of Agriculture recently furnished a large number of fruit trees which were distributed among the schools of the division. In the provincial school orchard there are more than 100 choice fruit trees; besides 75 coffee trees which were imported from Java. The barrio school of San Roque, Bacon, has the second best orchard in the division. The teacher and pupils have planted about 50 fruit and 50 coffee trees, also a large number of Hawaiian pineapples. (W. B. B.)

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TAYABAS.

In addition to the regular industrial work, the division superintendent of schools for this division has inaugurated a school-ground improvement campaign and has offered two prizes valued at ₱15 and ₱10 to be awarded to the central school and barrio school which carry out the school-ground improvement program of the Bureau of Education in the most satisfactory manner. Ten central schools and three barrio schools, not including the Lopez and Lucban districts, have entered into the contest and a very close and interesting contest is assured.

Mr. Mariano Rosales, principal teacher of the Gasan schools, has obtained a Bureau of Forestry license to gather forest products and has taken the pupils of the rattan-furniture class to the forest. A sufficient amount of giant rattan to supply the class for the greater part of the year was gathered.

The industrial enrollment in the school district of Boac at the opening of the present school year stood as follows: Course 7A and B, plain sewing, 591; 7C and D, plain sewing, 295; advanced plain sewing, 68; advanced embroidery, 15; 1A, elementary embroidery, 66; 1C, elementary Philippine textiles, 22; 3, tatting, 68; 6, cooking, 213; 8B, hard strips, 733; 20A, slippers, abaca, 171; 23A, woodwork, 165; 26, gardening, 269; 23B, bamboo and rattan furniture, 41; 9D, coir door mats, 10; 18B, coiled fiber baskets, 21; school premises, 98.

An effort is being made to organize twelve strong agricultural clubs in this division. The fruit-growing contest arouses much interest.

Mr. Florida, teacher of rattan furniture in Lopez, has solved the problem resulting from the unraveling of the rattan wrapper at the end of table and chair legs, by covering the ends of the legs with a shoe. This shoe is easily made, and adds to the appearance of the furniture. Any flexible material may be used, lukmoy and rattan core giving excellent results. Lukmoy strips 25 centimeters long and 3 millimeters in diameter are nailed 5 millimeters apart, around the entire leg. They are attached about 8 millimeters from the end of the leg, the free ends extending beyond. The weaving is done from left to right, placing spoke No. 1 under spoke No. 2, spoke No. 2 under spoke No. 3, until twelve circuits are completed. The spokes are now brought down by reversing the weave, going from right to left until five circuits are placed on top of the twelve circuits first completed. The weave is again reversed, the weaving being from left to right, over-two-and-under-one until a braid is formed. The ends are then placed under the second circuit and trimmed. A shoe is secured that cannot be pulled off and will not unravel.

Course 1C, embroidery on Philippine textiles, which has been introduced into the schools of Marinduque is finding great favor with pupils and people. Marinduque is noted as a center for the weaving of fine sinamay cloth, and it is hoped to build up an industry for the embroidering of this cloth.

Most gardens in the division have been planted, and some crops have been harvested. Mr. Peñamora, teacher of gardening in the Lucena Central School, has contracts with Lucena merchants for the sale of the crops for the whole school year.

All municipal woodworking shops in the division have more orders than they can fill.

The market opened by the general sales department of the Bureau of Education has given a big stimulus to industrial work and all schools have increased their output.

The school-ground improvement contest is causing a marked change in the appearance of school premises. Lucban has erected large, ornamental concrete gateposts at the main entrance to the school grounds. All walks and driveways have been planted with hedges, and work has been commenced on grading the athletic field. The Lucena Central School is tiling and filling a large ravine that runs through the center of the grounds. Since the opening of school the pupils have moved more than a hundred cubic meters of dirt in filling this ravine. (J. J. C.)

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GARDEN DAY IN TARLAC.

The date for garden day in each municipality of Tarlac was determined with reference to the condition of the school gardens. Two towns observed the day in connection with the local fiestas. Larger crowds were thus secured; but in those places where garden day was separately celebrated, the attendance was very satisfactory, and the interest in exhibits was more keen.

Everywhere school exhibits and farmers' exhibits were kept separate. All barrios were represented in the school sections, and some of them displayed as many as fifty varieties of vegetables. At Dicolor, Gerona, seventy farmers took part. Exhibits from the central schools were generally superior in variety, quantity, and quality, to those from the barrios. Among products remarkable for size and quality were displayed pepper, calabasa, ubi, cab-

bage, eggplant, lettuce, pechay, condol, squash, opu, endive, and papaya. There were also some very large tomatoes and beets.

Most of the vegetables were produced from seeds preserved by pupils from one year to the next. Excellent dry-seed exhibits were made in Gerona, Camiling, Moncada, Victoria and Paniqui. In the last town, 26 varieties were shown. The municipality of Camiling exhibited garden products valued at ₱200. Practically all articles were sold immediately after the exhibits were closed.

One of the best showings of farm products in the division was that of Mr. José Zamora, a graduate of the Philippine University. His display of sugar cane and rice bore placards showing the area of cultivated land from which the exhibit was taken, the total harvest from this area, the yield per hectare, and a carefully prepared statement of the analysis of the soil. With the sugar cane there was an analysis of the saccharine contents of different exhibits compared as to soil, time of planting, cultivation, water, and time of harvest.

In different towns there were interesting poultry, live stock and nursery exhibits. At Gerona there was a demonstration class in cooking, and at Camiling there were demonstration classes in embroidery, sewing, basketry, and hat weaving.

Prizes were given in all municipalities: in some towns, for the best exhibits by individuals; in others, for the best exhibits by schools. The prizes were widely distributed, and the barrio schools secured many of them. (G. McE.)

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UNION.

Bauang and Naguilian are the only towns making lace in La Union. An order for 5,500 yards has been received for this school year. The number of designs is limited to four. This will permit the making of a thorough test as to whether or not a pupil can work more rapidly when she makes one design only. Accurate time records will be kept for each piece fabricated.

Luna.—The new school site is located in the western part of the town, near the beach. It is high and sandy, and is easily drained. It is purposed to plant a double row of coconuts in the form of an equilateral triangle on the western side, acacia trees along the eastern side, and a mango tree at each side of the entrance. These trees will all be protected by heavy bamboo tree-guards. The site was bought from the municipal school fund for ₱600. A standard plan seven-room building is to be erected on it.

Union Province is this year specializing on jardiniére baskets, B. of E. design No. 1020. Special emphasis is placed upon perfection in finish. Every basket must conform to the blue print in measurements and color scheme, before it is accepted for entry on Form 151. Because of a scarcity of black nito of uniform color, an effort has been made to secure substitutes. In one model basket the superimposed spokes were made of old darumaca and the binder of brown nito and coconut roots. Very pleasing shades of brown were secured. The model was sent to the General Office with the request that this division be allowed to make such baskets.

The girls of the Tubao and Rosario intermediate schools are doing satisfactory commercial work.

The rice planted by the four barrio schools in Tubao has headed out and is in good condition. It is planned to give a practical demonstration in seed selection at the harvest. The parents of pupils will be invited to attend. The seed selected will be carefully marked and kept for next year's planting.

A household industry center has

been in successful operation at San Juan since September 25. It began with 8 members, and now there are 16, the average attendance being 12. Forty-two work hours a week are required of each member. The class is quartered in a private house.

The intermediate and primary schools of San Fernando gave a cinematograph entertainment on September 19. They made a net profit of ₱43.45 and this sum will be added to the library fund.

Nearly all of the school gardens at Tubao and Rosario are now planted, and in some of them pechay and radishes are already mature. Most of the home gardens are well under way. Agricultural clubs have been formed at Tubao and Rosario.

At Agoo, the fifth-grade class in basketry is working on the combined lamp stands and shades, B. of E. designs 1077 and 1078. A few of them are almost completed, and the class expects to turn out 50 during the school year. An order for 40 has been received from the sales department.

The gardening class at Aringay is interested in the propagation of chicos. There is one tree in the town and the consent of the owner has been secured for the making of at least ten marcottages.

The household industrial center is developing into a real school and is taking its place as a business institution at S. Fernando.

There was a time that some of the girls complained that they were not able to make more than 20 centavos a day at this work and as no time records were then available their complaints could not be answered. Now, however, there is being kept an accurate record of the number of hours a day that each girl works. The first garment that was finished under this system showed that the girl received ₱2 for eighteen and one half hours' work, or an equivalent of 80 centavos for seven hours' work—that of an average work day. The lowest wage that any girl made was 29 centavos for seven hours' work. As a result of having kept accurate records and having proved to the workers that they are able to earn more at embroidery than at teaching, there are no more complaints. (L. M.)

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ZAMBALES.

Mr. Anselmo Joaquin, the industrial teacher of the San Antonio Central School the past year, has been promoted to the principalship of the San Felipe Central School. His place is filled by Mr. Juan Santos, originator of the Zambales barrel-shaped wastebasket, and until recently traveling industrial teacher of the Bureau of Education. The assignments of these teachers are based solely upon their efficiency, and with such a foundation to start with, the district hopes to achieve results worthy of its motto, "Growth."

Mr. Adolfo Datago, formerly industrial teacher for Palauig Central School, was transferred to the barrio of Amungan, municipality of Iba, as principal and at the same time to act as industrial teacher. The place vacated by him was filled by Mr. Pedro Santos, a teacher from the barrio of Bato, Palauig.

Miss Esperanza Venzon and Miss Felicisima Garcia, both ex-pupils of the Zambales Provincial High School, received appointments as temporary municipal teachers in the Iba Central School. Miss Venzon has charge of the embroidery work and Miss Garcia, the lace. Mr. Jose Crisostomo, formerly a teacher at the Olongapo Central School, is in charge of the elementary basketry.

One of the means by which athletic funds are being raised in the Castillejos Central School is the selling of cooked products prepared by the domestic-science girls. This

practice is found to be both instructive and profitable. The girls are given a certain amount of money from the regular athletic funds to be used as capital. With this money raw materials are purchased, which are prepared in different ways and sold to the public as well as to the pupils. The pupils are the better buyers.

Girls entering the intermediate grades in Zambales this year show marked improvement over those of previous years in their domestic-science work. Especially is this true of those near the provincial capital where the provincial domestic-science supervisor has been able to watch their work more closely.

Miss Demetria de Leon, for the past three years teacher of domestic science in the provincial high school, has been appointed supervisor of girls industrial work for the division. Her place in the high school has been filled by the appointment of Miss Aniceta de Leon. Both teachers are well qualified for their new positions.

The following orders have been placed with this division for the year by the general sales department:

Bobbin lace, 3,400 yards	₱554.00
Napkins, 6 dozens	43.20
Handkerchiefs, 48	24.00
Baby bonnets	75.00
Bridge sets, 3	18.00
Total	714.20

The place made vacant in the Yangco Intermediate School by the promotion of Mr. Mauricio T. Alba to the place of supervising teacher at Iba, has been filled by Mr. Desiderio Hebron. Mr. Hebron has taken up the work in gardening and is making progress in it.

Miss Maria Fontelera, girls' industrial teacher in the central school, Candelaria, has resigned. Her place has been temporarily filled by the appointment of Miss Natividad de la Llana.

Heretofore the rims of ordinary egg baskets have not been securely attached to the bodies. This defect has been overcome by Mr. John Dimaano, teacher of basketry at Botolan Central School. In his method, the correct height and shape of the basket is first secured; before the upper rim is fastened the ends of the weavers are turned over the rim, and the rim is then woven in place.

An agricultural club has been organized at the Iba Central School. There are 29 members, 23 of whom are boys, and 6, girls. Eleven took up the vegetable growing contest; 6, fruit growing; 5, corn growing; 5, chicken raising; and 2, pig raising.

The method of attaching handles to the rims of baskets, which was suggested by Mr. Simeon Vengua, and which was made the subject of Technical Bulletin No. 48, has now been adopted in all school basketry.

This year 50 or more of the home gardens in Zambales will be cultivated with plows and carabaos.

In 1914, Candelaria led the province in basketry and took first prize; last year San Narciso led; this year Iba holds first place so far.

Mr. Eulogio Recio, garden teacher at Iba, was granted a year's leave of absence. His place is filled by Mr. Jose Agana who has completed a two-year course in the Agricultural School at Los Baños.

The intermediate girls in the provincial high school for their first quarter's work have finished, laundered and tagged 71 articles. In addition, they have worked daily on 86 articles for the General Office.

During the past month, the members of the fifth-grade cooking class have taken turns in preparing and serving full dinners.

About 40 school desks, 60 low hurdles, and several chairs, tables and picture frames have been completed by the fifth and sixth grades of the provincial trade school during the past month.

Several secondary girls volun-

tered to do embroidery work. They have been assigned to make part of tne articles ordered by the General Office.

The boys of the provincial school have constructed an excellent 440-yard circular track. They took delight in the work and are now proud that they have the best athletic field in the province. The girls encouraged the boys promising them a "bucayo" party as soon as the work was finished. The confection was prepared and served by the domestic-science class.

Mrs. F. B. Fickes, domestic-science supervisor, who has been on leave of absence in the United States since April 1, has returned and begun her work anew. (W. S. F.)

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MANILA.

During the month of September, orders for lace, doormats, and desk baskets to the value of over ₱200 were received from the Bureau of Education.

The intermediate schools of the city are planning to unite in the celebration of garden day some time during the latter part of the month of January. The exercises will probably be held at the Tondo Intermediate School. It is expected that a number of different bureaus and several commercial houses will cooperate in the celebration.

At the Paco and Tondo intermediate schools, Moro corn planted early in the school year matured well.

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PHILIPPINE NORMAL SCHOOL.

There have been but few changes in the assignments of industrial teachers at the Philippine Normal School for the present school year. Mr. G. Glenn Lyman, formerly industrial supervisor of Bulacan and Cavite, has succeeded Mr. H. E. Cutler as principal of the industrial department. Miss Maria Gutierrez of Angeles, Pampanga, has been assigned as teacher of lace making to take the place of Miss Petrona Gonzales who resigned. Mr. Jose C. Velo remains in charge of industrial-training classes.

Under a new arrangement effected at the beginning of the year, all girls enrolled in the fourth and intermediate grades of the training department receive instruction in plain sewing and cooking, and in either lace, embroidery, or crochet throughout the year, in the same manner as pupils enrolled in other primary and intermediate schools of the Islands.

Articles made by students may be purchased by them at the Normal School. Practically all other industrial products will be sold through the sales department of the Bureau of Education.

Orders for more than ₱500 worth of embroidery were received from the General Office at the opening of school, and later a blanket order for all lace, crochet, embroidery, baskets, hats and slippers, was placed. Although the number of students enrolled in the industrial courses is somewhat smaller than last year, delivery on these orders has already begun.

Student teachers are being required to prepare the industrial materials used by the pupils of the first, second, and third grades before attempting to teach them. This is resulting in an increase in the amount of work accomplished, and an improvement in its quality.

On September 1, Mrs. Mary J. Thomas, domestic-science teacher, resigned from the service under the provisions of the Osmeña retirement act. Mrs. Thomas was one of the original "Thomasites," and completed fifteen years of faithful and efficient service with the Bureau of Education. Most of this time was spent in the Provinces of Misamis, Bohol, and Sorsogon, and in the Philippine Normal School. (G. G. L.)

THE "TANGAL" TREE FOR DYEING AND TANNING PURPOSES.

Tangal is the name of a local tree in Camarines, the bark of which is used for dyeing sinamay and for tanning leather. The bark takes the place of sibucao.

This tree grows along the banks of the Bicol River and along the streams of Tinambac and Caramoan. It is about 12 to 18 meters in height, and the trunk is approximately 30 cm. in diameter. The green leaflets resemble the common guava leaves, but no veins are perceptible. The fruits which are arranged in clusters are red, and are covered with soft, hairlike projections. The bark is somewhat brownish in color and is similar to the bark of the acacia tree, the only difference being that on the former there are lenticels. The juice is reddish and sticky.

People of Camarines employ the tangal bark for dyeing and tanning purposes, as the tree can be found plentifully in almost any locality in the province. The bark which is peeled or chopped from the trunk, is boiled in water for twenty-five minutes, after which the liquid is allowed to cool. At this stage a sediment is formed at the bottom of the container, leaving a clear, brownish solution on top. This fluid is separated from the sediment and is used for dyeing or tanning purposes. If sinamay is to be dyed, the material is soaked or rather submerged in the solution three times, a deep mahogany color being produced. If leather is to be tanned, the skin is allowed to remain in the liquid for five successive days. (R. M.)

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A PREPAREDNESS PROGRAM.

There is now a prevailing industrial class which is engaged in building, cabinetmaking, blacksmithing, and machine work, and which is composed of people from the old school. If this class is to be supplanted by another which will be composed of younger Filipinos who are better informed and in addition are more reliable at the polls, it is quite necessary that every trade school should subscribe to illustrated standard magazines and newspapers. It was with this idea that the Occidental Negros Trade School added to its reading room materials, eight magazines, in addition to the five already furnished by the Bureau of Education.

After fourteen months' experimenting, it can be said that, while the reading matter in some magazines cannot be understood unless the pupils frequently consult the dictionary or the academic teacher, the boys gain much pleasure and knowledge from the illustrations. They even make use of the cartoons in certain of the magazines and try to interpret them, with or without the aid of the teacher of English.

The complete list of publications to be found in this reading room, given in the order of ease with which they seem to be understood by the average pupil of this school, is as follows:

1. Popular Mechanics.
2. Iloilo Enterprise-Press.
3. Popular Science Monthly.
4. Philippine Craftsman.
5. Popular Electricity.
6. Boys' Magazine.
7. Manual Training Magazine.
8. Scientific American.
9. Travel Magazine.
10. Filipino People.
11. Review of Reviews.
12. World's Work.
13. Current Opinion.
14. Literary Digest.

The motto of this preparedness campaign is to cultivate the reading habit among the young men who may some day be called upon to finance or operate industrial enterprises. The industrial class of tomorrow will read or study at night instead of engaging in less profitable amuse-

ments, and will help to form public opinion. (C. M. A.)

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AMOUNT OF INDUSTRIAL WORK TO TURN OUT DURING A YEAR.

A teacher's success in industrial work is based upon two points, the quality and the quantity of work turned out. Both are essential to success. Below are offered a few suggestions as to how to obtain the best results in amount of work accomplished.

The duties of the teacher are: First, to provide himself with a complete set of equipment and see that each pupil is properly equipped; second, to see that each pupil has a sufficient amount of materials on hand before beginning work on an article; and third, to direct the actual work of his class. This last duty is where the real test comes. He has all grades of workers—the slow, the indifferent, the fair, the good, and the excellent. He has to use discretion in assigning work. He usually assigns to the slow workers articles requiring the least time to make and to the good workers the more difficult articles and those requiring the most time to complete. If he succeeds in getting all to complete the minimum amount of work required, he probably has a speed standard to work by. He frequently checks and measures the work of each pupil, and requires those who are behind to do overtime in order to bring their work up to date.

Below are two tables, which might be of some help to teachers of coiled basketry. They show what should be accomplished in a year by a fair worker, a good worker, and by an excellent worker. The first table shows the design number, the number of baskets to complete, and the approximate number of centimeters of coil to wind daily. The second shows the design number, the number of baskets to complete in one year, the number of weeks necessary to complete one, and the number of coils to be completed at the end of each successive week until the basket is completed or to the end of the eleventh week. The letter "C" is used to signify the completion of the basket. Counting out one month for the provincial normal institute, all school holidays, and three days for final examinations, the present school year has 170 working days or 34 weeks which is the time basis used in these tables.

TABLE 1—*Outline of a year's work for one pupil in course 18B.*

Design No.	Fair worker.		Good worker.		Excellent worker.	
	Baskets to complete.	Coil to wind daily.	Baskets to complete.	Coil to wind daily.	Baskets to complete.	Coil to wind daily.
		Cm.		*Cm.*		*Cm.*
1402	2	30	3	45	4	60
1403	3	27	4	37	6	54
1405	3	25	5	41	7	58
1410	1	19	2	38	3	57
1411	1	19	2	38	3	57
1418	2	27	3	41	4	54
1420	4	29	6	46	8	58
1429	6	30	9	45	12	60
1434	4	29	6	45	8	58
1436	2	31	3	46	4	62
1438	3	33	4	43	6	65
1439	4	32	6	47	8	64
1443	3	29	4	38	6	58
1446	2	24	3	36	5	60
1447	3	25	5	42	7	59
Any number		25	(*)	(*)		

* For beginners.

TABLE 2.—*Outline of year's work for one pupil in course 18B.*

Design No.	Baskets to complete in one year.	Weeks to complete one.	Number of coils to be completed at end of—										
			First week.	Second week.	Third week.	Fourth week.	Fifth week.	Sixth week.	Seventh week.	Eighth week.	Ninth week.	Tenth week.	Eleventh week.
1402	2	17	11	16	21	24	27	30	33	36	39	41	43
	3	11	14	21	26	31	35	39	43	46	49	52	C
	4	8	16	24	30	36	41	46	51	C			
1403	3	11	11	16	20	24	27	30	33	36	39	41	C
	4	8	13	19	24	28	32	36	40	C			
	6	6	15	22	28	33	38	C					
1405	3	11	8	12	15	18	20	22	24	26	28	30	C
	5	7	11	16	20	24	27	29	C				
	7	5	12	18	23	27	C						
1409	3	11	11	16	20	23	26	29	32	34	36	38	C
	4	8	13	18	23	27	31	34	37	C			
	6	6	16	23	29	33	37	C					
1410	1	34	9	13	17	20	23	26	28	30	32	34	36
	2	17	14	20	24	28	32	36	39	43	47	51	54
	3	11	17	24	30	35	40	45	50	C	17	25	C
1411	1	34	9	13	17	20	23	26	28	30	32	34	36
	2	17	14	20	24	28	32	36	39	43	47	51	54
	3	11	17	24	30	35	40	45	50	C	17	25	C
1418	2	17	12	17	21	25	28	31	34	37	39	42	45
	3	11	15	22	28	33	37	40	44	49	C	14	C
	4	8	17	25	31	37	43	49	57	C			
1420	4	8	12	18	23	27	31	35	39	C			
	6	6	14	21	27	32	37	C					
	8	4	17	26	34	C							
1429	6	6	12	18	23	27	31	C					
	9	4	16	23	29	C							
	12	3	19	27	C								
1434	4	8	5	8	11	14	16	18	20	C			
	6	6	6	10	13	16	19	C					
	8	4	8	13	18	C							
1436	2	17	10	14	17	20	23	25	27	29	31	33	35
	3	11	12	18	23	27	31	34	C	12	18	23	C
	4	8	15	22	28	33	C	14	20	C			
1438	3	11	9	13	16	19	21	23	25	27	29	31	C
	4	8	11	16	19	22	25	27	30	C			
	6	6	12	17	21	25	29	C					
1439	4	8	13	19	24	28	32	36	40	C			
	6	6	15	22	28	33	38	C					
	8	4	18	27	35	C							
1443	3	11	11	16	20	24	27	30	33	36	C	10	C
	4	8	13	19	24	29	34	C	10	C			
	6	6	14	21	27	33	39	C					
1445	2	17	9	13	16	19	22	25	27	30	33	C	9
	3	11	11	16	20	23	26	29	32	C	11	17	C
	5	7	13	20	25	30	C						
1447	3	11	10	14	17	20	22	24	26	28	30	32	C
	5	7	12	17	21	25	28	31	C				
	7	5	15	21	26	30	C						

(H. A. W.)

LETTER BOX.

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

1. How can buntal be dyed a fast black without much boiling?

Answer.—No such method has yet been found; but the following formula is suggested as the most convenient:

Dissolve 1 kilo of campeche together with one half kilo of iron sulphate in 10 liters of water, and set the mixture on the fire until it boils; stir constantly. The material to be dyed is plunged into the boiling solution and left there for about fifteen minutes. The bath is removed from the fire and allowed to cool for twenty minutes after which the material is ready for rinsing. To secure a pure coal black, place the material in a solution of soda carbonate for half an hour. For further information see page 76 of THE PHILIPPINE CRAFTSMAN for July, 1916.

2. How many times should a pupil be required to make an embroidery sampler?

Answer.—Once is quite enough, provided that practice on each exercise is required before the pupil executes it on the sampler.

3. Should the elementary weaving exercises be of any fixed sized? Why?

Answer.—Certainly. They look much better when of uniform size; and the child gets much better training in following definite specifications, than in doing the exercise as he may see fit.

4. Should a teacher be allowed to handle a class in basketry or in another industrial subject, if he has never made a basket?

Answer.—He should not; but it sometimes happens that a basketry class is left without a teacher, and none with training is available. In such cases an inexperienced person will have to carry on the work, but during the first week he should make the model on which the class is working.

5. How may blue prints and perforated patterns be filed so that they can be easily removed from, or returned to, the file?

Answer.—Blue prints should be bound in folders whenever possible, and they should not be removed therefrom. Where it is necessary to carry individual prints around a good deal, it is best to roll them carefully and paste a label on the outside to indicate the design contained. The loose-leaf system seems unsatisfactory for perforated patterns of such size that it prevents their being laid out flat. These should be rolled; otherwise the paper is likely to break at the perforations.

6. What is "make-up" when used with reference to embroidered articles?

Answer.—The make-up of an embroidered article refers to its being put together for use. For instance, if make-up is called for in an order for baby pillows, the backs are joined to the fronts, and the openings are finished according to the directions given.