

The Philippine Craftsman

VOL. 1

OCTOBER, 1912.

No. 4

BAMBOO AND RATTAN FURNITURE.

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ALL through the Orient there is to be seen handiwork in bamboo and rattan, the conspicuous qualities of which are its utility and attractive design. Entire houses are constructed of the former material, and they are often equipped with furniture made from one or both, while many of the ornamental articles of use in the home are fabricated from a combination of the two materials. The Japanese exhibit exceptional skill in applying them to the greatest number of uses, in many of which the work partakes of the finish and excellence characteristic of the best cabinet work of Europe and America. By subjecting the bamboo to different mechanical processes, such as clouding, lacquering and etching, its artistic qualities for the finer kinds of work are greatly enhanced. It also lends itself admirably to the skilled touch of the carver in alto- and bas-relief effects.

In the making of furniture of occidental design from these materials, the Chinese are especially proficient. A very great part of the wicker furniture in use in residences and hotels along the China coast and in the Philippines is made in Hongkong by Chinese workmen. The distinctive value and merit of furniture of this class for this climate will be apparent to any one who reflects on the subject for a moment: (1) It can be inexpensively made; (2) it may be transported at slight expense and trouble and with small chance of breakage; and (3) it is the most appropriate for this country in view of the prevailing climatic conditions and the manner in which houses are here constructed to permit of a semi-outdoor existence.

With respect to the average Filipino home the scarcity of suitable furniture has been commonly noted. A long bench or two, a pillow rack, and a semi-reclining chair generally comprise its furnishings. Convenience and comfort in home life and a proper consideration of health conditions require that these be

more ample and better adapted to the needs of a progressive people. There can be no question that the Filipino home would become much more attractive and livable were it better supplied with suitable furniture; similarly, there can be little doubt that the health and happiness of its occupants would be greatly increased were this improvement effected.

Our present plan of industrial work in the public schools at least suggests that the time is ripe for a serious effort in directing the interest of teachers and pupils into this field of work, in which to date only partial and transitory results have been obtained. In the schools of a number of provinces some very good pieces of bamboo and wicker furniture have been made and various of these have been shown at recent expositions of the Bureau of Education. Conditions now appear to favor emphasizing this line of school industrial work after some systematic, orderly plan, in order that two ends at least may be secured: (1) Equipping the Filipino home with more and better furniture; and (2) developing a line of school industrial work, the profit and utility of which to the student will be inestimable, both as a possible source of income and in its influence on his home life. As a preliminary step in spreading information on the construction of bamboo and rattan furniture and in encouraging its wider use and manufacture, the following brief course is offered. It is not so complete as it should be, but if teachers and others interested in this line of work will supplement it with new and additional pieces, it will be a matter of only a few years until a comprehensive text on the subject may be issued in place of this elementary one. It is hoped that this may be done, and that drawings, photographs and descriptive matter relating to furniture of this class made in school shops will be submitted to the Bureau as the work develops during the next few years.

In a recent circular of the General Office (No. 97, s. 1912) particular emphasis is placed upon this line of work, and it is expected that many primary shops will do a considerable amount of construction work with these materials, in duplicating the pieces there outlined as well as in working out new designs and additional pieces.

BAMBOO AND RATTAN.

KINDS; WHEN GATHERED; HOW TREATED AND PREPARED FOR USE.

The two ordinary kinds of bamboo found in the Philippines may be distinguished from one another by the lengths of their joints. Either may be used in the construction of the furniture

here described, though the long-jointed will be found preferable where sawali matting is to be made, as for screen paneling, in view of the tendency of the fiber at the nodes to fray when split into thin strips. The success in the use of either will depend largely on securing pieces of even diameter and on the careful matching of those to be used in the construction of a given piece of furniture.

Giant and ordinary rattan are the two kinds used in furniture work—the first for framing and the second for wrapping and covering. The diameter of the former is usually about 3 cm., while that of the latter is from 0.5 to 1 cm. Both of these are climbing vines and are to be found in nearly all mountainous districts of the Philippines.

Bamboo can be worked at any time of the year, though native users of this material consider it more satisfactory if the supply is cut and gathered after the close of the rainy season, in November and December.¹ It is then less liable to attack and injury from the small beetles ("shot hole borer") which are likely to honeycomb it both when standing and cut. Bamboo that is at least two or three years old should be selected where possible since younger shoots have a greater tendency to split and crack when being worked.

The sooner bamboo is used after cutting, the better it can be manipulated. If allowed to become dry, it can be bent only with difficulty, if at all, and it will also be more apt to split and chip when tools are applied to it.

Similarly, rattan should be used when fresh to get the best results. If it has become dry, its flexibility may be restored by soaking it in fresh water, though the rattan so treated tends to assume a darker color in consequence.

Joints of bamboo furniture are usually made in any of the following ways: By gluing; mortise and tenon joint, plain or pegged; dowel joint; miter joint; T-joint, plain or wrapped; and angle joint. For the first mentioned, white glue will be found the most satisfactory and care must be taken to properly rasp and scrape all joint surfaces if good joints are to be secured. Wherever possible glue should be used in connection with the

¹ In one province, Pangasinan, it is not only the practice to cut the bamboo during the dry season but "in the morning and before the north wind blows." The reason for this, particularly the two "requisites" included within quotation marks, is not altogether clear; but where scientific or other equally reliable information is lacking, it will generally be found practicable to follow local usage with respect to cutting and handling this material.

other joints as well, as a firmer and stronger connection is thus obtained. Wrapped T-joints are those usually found in Chinese-made wicker furniture. Briefly explained, this is but a T-joint held in position by a wrapping of split rattan passed through a hole bored about two or three centimeters below the joint, on the leg, and drawn over the cross piece and back through the hole, the operation being repeated three or four times, as here shown.

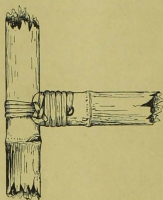


Fig. 1. A wrapped T-joint.

The other regular wood joints mentioned above, used in bamboo work, can be considerably strengthened by utilizing this method of wrapping whenever possible.

Bamboo and giant rattan may be bent in various ways. This fact should be specially noted, as curved parts are essential in the making of the more advanced types of bamboo and rattan furniture. Among the most usual modes are the following: By the blow or spirit lamp; by hot water; and by steaming. The simplest and quickest method will be found in the benzoline

or kerosine blow-lamps, such as are now in use in nearly all trade schools and many school shops of the Philippines. They can be obtained at a cost of approximately ₱6 in any of the principal hardware stores of Manila, or through the Bureau of Supply. The manner of using them is described later in the text. If hot water is used, some long receptacle of bamboo, wood or metal, must be provided, to contain the boiling water into which the piece to be bent must be immersed. Giant rattan can be bent very satisfactorily by this means, and a large shoot of bamboo from which the inner node sections have been removed makes a very suitable container for the hot water. It is generally necessary to leave the piece in hot water for at least half an hour, and in case the boiling water cools down appreciably before the expiration of this time the supply should be renewed. As it is deemed improbable that steam will be used to any extent for the present in connection with this work, in view of the difficulty of installing proper facilities for it, this method will be but summarily described. A chest or long box with air-tight joints is first prepared; into this the piece to be bent is placed. To this box or chest there is an intake pipe by which is admitted the steam which acts on the piece until it is sufficiently pliable for the purpose for which it is to be used. This method is one of the

best known and will be found very effective when the means for installing it can be secured.

In case the blow-lamp is used for bending the bamboo or rattan, either one of the two simple devices which appear in the accompanying sketch will be found helpful for holding the pieces to which heat is to be applied.

The piece of bamboo is slipped through the iron ring, with an end extending under the edge of the table, so that it may be held in place; or if preferred, the hole bored slantingwise through the thick table top may be used instead. With the piece so placed the flame of the blow-lamp is made to move along its under surface, back and forth, care being taken to keep the flame in steady and even movement, otherwise the surface may be badly charred if the flame is held too long at one point. During the application of heat which the piece is undergoing, tension is applied at the free end by drawing steadily and slowly downward all the while until the desired curve is obtained. The operation may take half an hour or more, depending on the diameter of the piece being bent, the curvature wanted, and the power of the blow-lamp. As an aid in bringing the piece so treated to a state of rigidity, cold water may be applied to the surface

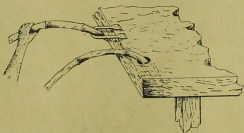


Fig. 2. Device for bending bamboo and rattan.

previously subjected to the flame. In place of the blow-lamp, the spirit lamp of alcohol may be used in the same way, but this will be found much slower.

As a protection to the piece to be bent, in case it is very thick and the operation consumes much time, it may be covered with a thin wrapping of banana leaves. This will prevent it from being charred or burnt by the flame.

The appearance of bamboo furniture will be decidedly improved by a coating of shellac after the piece is completed. This may be prepared and applied in the following manner:

To 450 grams of shellac flakes, orange color, add 50 grams of denatured alcohol. Stir well and see that the shellac is thoroughly dissolved. Before applying, all parts to be shellacked should be well sandpapered, first with No. I and then No. O sandpaper. The shellac may be put on with cotton waste or a clean piece of flannel, or a woolen cloth free from starch; it should be rubbed in well. After the shellac has set on the bamboo and becomes

dry, the surface should be treated again with cotton waste slightly saturated in alcohol, so that the shellac will lie even over all the surface which has been previously treated.

BAMBOO CLOTHES HANGER.

(Plate No. 1.)

This is a piece of simple construction and can be made by any 3rd or 4th grade boy in the school shop. The cross pieces should be of material from 2 to 2.5 cm. in diameter and the pegs of slightly smaller stuff. The outer end of the peg may be a node of the bamboo, so as to form a sort of knob at the extremity. The distance at which the pegs are set into the framework of the hanger may be seen by reference to the drawing. If care is

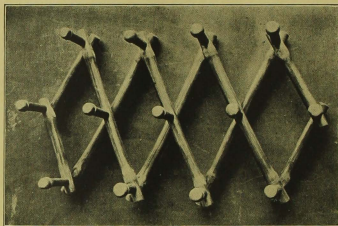


Plate No. 1-A. Bamboo clothes hanger.

taken in selecting pieces of even diameter for the frame, the pegs will fit into the frame evenly and it can be made to open and close easily and smoothly.

SPLIT BAMBOO STOOL.

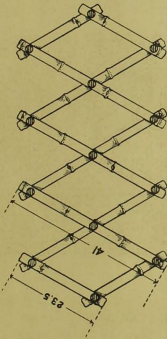
(Plate No. 2.)

This is a very practical and useful piece of furniture for any home. It is very substantial in make and will bear a great deal of hard usage. The material used is split bamboo, cut from "stock" of 8 to 10 cm. in diameter. As shown in the drawing, the braces are nailed into the legs after these have been notched to receive the ends. The cross brace joining the legs at the point of union is mortised into the legs and nailed. The mat

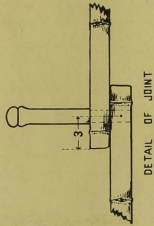
BAMBOO CLOTHES HANGER

DIMENSIONS IN CENTIMETERS

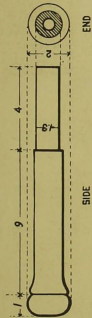
SCALE 1:5



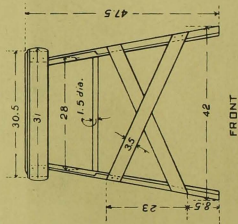
FACE VIEW



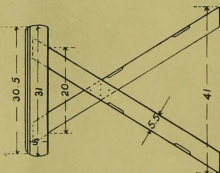
HOOK



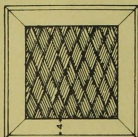
SPLIT BAMBOO STOOL
 DIMENSIONS IN CENTIMETERS
 SCALE 1:5



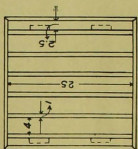
FRONT



SIDE



FINISHED SEAT



FRAME OF THE SEAT

for the seat top should be made of heavy sawali, in the diagonal weave, in order that the under ribs of the seat may not be felt when the stool is in use.

BAMBOO FOOTSTOOL.

(Plate No. 3.)

A low footstool is a very serviceable article for the home and can be put to a variety of uses. The model here shown is made of bamboo of 2.5 cm. in diameter, with wrapped T-joints. For the triangular bracing and rings inserted in the sides of the frame, between rails and legs, small rattan or bamboo of about 1.5 cm. can

be used. If wound with split rattan, as here shown, the appearance of the stool will be improved. The pieces are fastened to the frame with finishing nails, though this can be done by

wrapping if desired. An ornamental weave to the sawali top will also add much to the attractiveness of the piece. Designs in color may be used in this connection. After the sawali top has been adjusted to the seat frame and made to fit firmly on the seat strips, it may be attached by a thin bamboo or rattan molding placed about the inner side of the seat frame and fastened with brass brads.

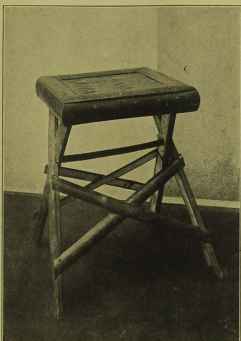


Plate No. 2-A. Split bamboo stool.

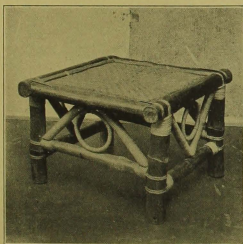
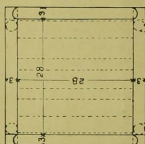


Plate No. 3-A. Bamboo footstool.

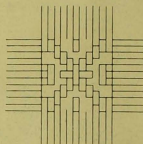
BAMBOO FOOT STOOL

DIMENSIONS IN CENTIMETERS

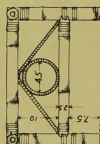
SCALE 2:10



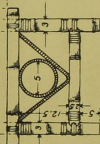
FRAME OF THE TOP



WEAVING OF THE TOP



SIDE



FRONT

BAMBOO STOOL.

(Plate No. 4.)

This is a piece similar in design and construction to that preceding. Legs and seat frame are of stock about 3.5 cm. in diameter. The right angle cross braces joining the legs are attached thereto by wrapped T-joints; at their intersection a wrapped cross lap joint is used. The circular braces are attached to the legs by round headed brass screws. The rest of the construction is much the same as that explained for the bamboo foot-stool.

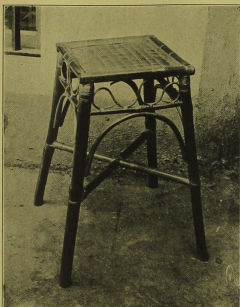


Plate No. 4-A. Bamboo stool.

BAMBOO CHAIR.

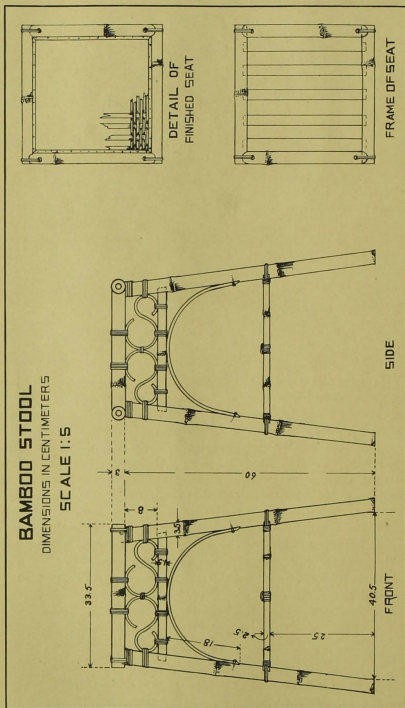
(Plate No. 5.)

This companion piece to the split bamboo stool is made upon much the same lines. It is begun by laying out the legs of split bamboo cut to dimensions; then the front is placed in position, with the rear and middle cross braces, and they are attached with nails after the legs are notched to receive the ends of the braces. Next the materials for the back including the uprights are laid out and the cross-strips are fastened to them; then they are attached slightly to the lower part of the rear legs with the required slope as shown in the drawing. Before the seat frame is definitely attached to the legs, it should be tested with respect to the uprights to see that these come in the correct position as shown in the details of the seat. The back and side pieces of the seat molding will have to be fastened in place last of all. This chair is not the most ornamental that can be constructed of bamboo, but it is one of the best by reason of its strength and the comfort which it provides.

SPLIT BAMBOO TABLE.

(Plate No. 6.)

This piece is very similar in design and construction to those shown in Plates 2 and 5. To obtain strips that are fairly flat



BAMBOO CHAIR
DIMENSIONS IN CENTIMETERS
SCALE 1:5

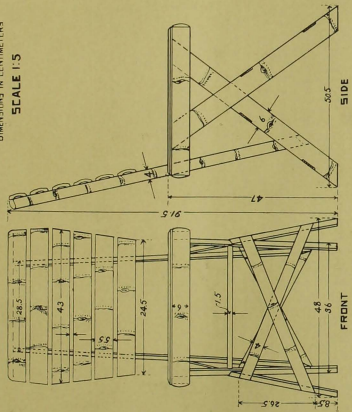
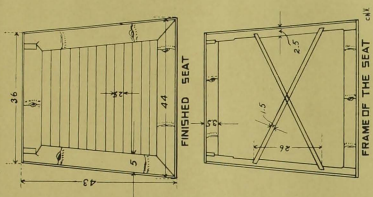
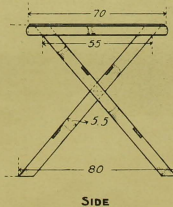
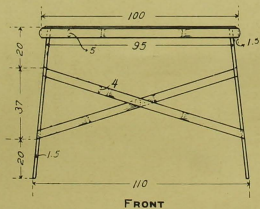
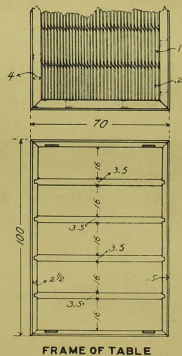


Plate No. 5.

SPLIT BAMBOO TABLE

DIMENSIONS IN CENTIMETERS

SCALE 1:10

**DETAIL OF SPLIT BAMBOO TOP**

for the legs, braces and molding for the table top, they should be taken from bamboo 8 cm. to 10 cm. in diameter. Cross braces are fastened to the legs as in the two pieces previously mentioned. The tops of the legs are notched into the inner frame of the table top and then nailed. This frame should be of stock 5 cm. by 2.5 cm. The cross braces in the top are mortised into the frame and also nailed. After the split bamboo top has been laid on and fastened to the cross braces by rattan binding similar to that used in native bamboo flooring, the side and

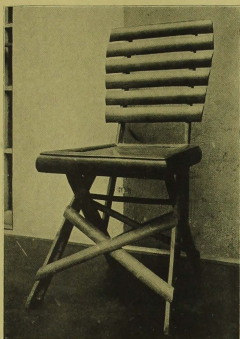


Plate No. 5-A. Bamboo chair.

top moldings are fastened in place with brads. A substitute method of fastening the split bamboo top to the frame is that of nailing to cross braces of frame. If this method is followed, it may be desirable to close up the spaces between the slats by laying adjoining strips in immediate contact.

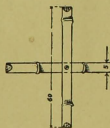
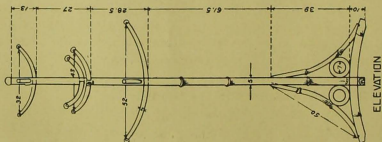
BAMBOO COAT AND HAT TREE.

(Plate No. 7.)

Every home should be provided with a piece of furniture on which garments, particularly coats and hats, may be hung when not in use.

Stock of from 4 to 5 cm. should be employed for the pedestal. Straight pieces should be bent at about the curvature shown in the drawing and fastened by a cross-lap joint and a lag screw running up into the upright previously plugged at the lower extremity. The cross-arms are to be similarly bent and holes of the proper diameter bored in the upright to receive them. To heighten the artistic finish of the piece, the hard shells of the mabolo fruit may be attached to the ends of the

BAMBOO COAT AND HAT TREE
 DIMENSIONS IN CENTIMETERS
 SCALE 1:10



cross arms. Similarly, to the top of the upright a sectional knob made of bamboo may be added; it should be glued in position.

BAMBOO WASHSTAND.

(Plate No. 8.)

Considerable care will have to be taken in bending the legs of this piece, in order that the same general curvature may be obtained in all three. This is necessary if a piece of harmonious, pleasing lines is to be secured. Some testing will have to be done before this can be satisfactorily accomplished. By setting up the framework and provisionally tying the under ring in position and the legs together, the general effect can be observed and any under- or over-curving corrected before parts are joined together.

The ring for the basin and the molding running around it to hold the soap dishes are of thick rattan, the latter a half section split lengthwise at points of contact with the basin ring and fastened to it by round headed brass screws. The legs and upright are of bamboo, as well as the cross piece forming the towel rack at the top of the upright. In the illustration and drawing a piece of sawali matting has been used for the soap receptacle, but a desirable improvement can be obtained by making an open-work netting of woven rattan that should hang down some four or five centimeters below the edge of the soap dish frame. It is suggested that this rather than the form here shown be used.

BAMBOO ARMCHAIR.

(Plate No. 9.)

Stock from 4 to 5 cm. is the most suitable for this chair. The pieces for the arms, and the rails for the back and the rear legs will have to be bent to obtain the required curves. Nearly all joints are doweled and pegged and those of the seat frame and lower rails are also wrapped. The seat may be of split bamboo

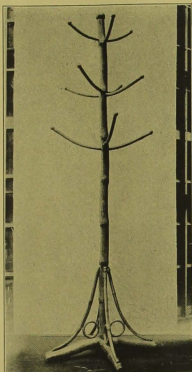
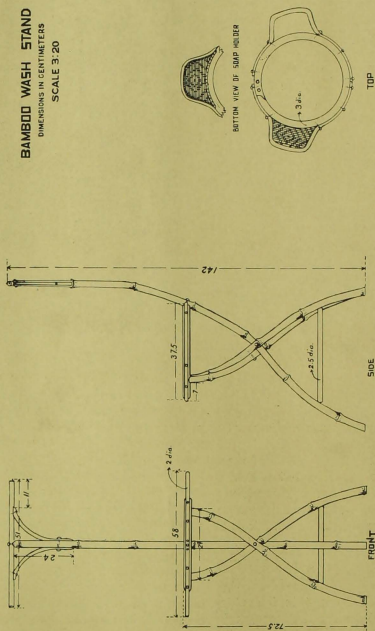


Plate No. 7-A. Bamboo coat and hat tree.

BAMBOO WASH STAND

DIMENSIONS IN CENTIMETERS

SCALE 3:20



or sawali matting, according to the taste of the maker, the degree of perfection desired and amount of time he wishes to spend upon his work. Bamboo of even, regular dimensions should be chosen to obtain a satisfactory chair of pleasing appearance.

BAMBOO BED.

(Plate No. 10.)

Reasons of health and personal comfort render it desirable that the body when at rest recline on a springy, yielding substance. The custom so frequent in this country of sleeping on the floor should be abandoned, as many classes of illness, particularly colds, catarrhs, and pulmonary troubles, may be contracted in this way. If a corn-husk mattress, similar to those which have been made by the municipal schools of Nueva Ecija Province, be fitted to the bottom of this bamboo and rattan bed, a sleeping place that is nearly equal to the ordinary iron bed may be had.



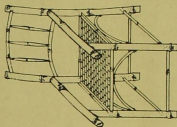
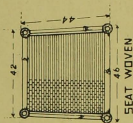
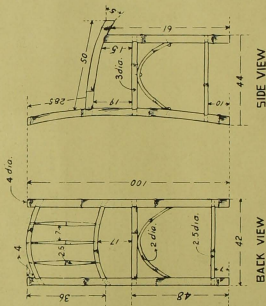
Plate No. 9-A. Bamboo armchair.



Plate No. 8-A. Bamboo washstand.

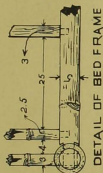
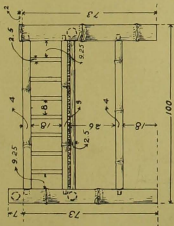
Considerable care will have to be taken in selecting stock for the bed frame and rails, because of their length. They should be straight and of even diameter, in order that the appearance and finish of the bed may be the best. The joints of the bed frame and rails may be doweled, or a double mortise and tenon joint may be used, as shown in the detail of the joint in this plate. In case the latter is used, it should also be pegged or nailed from the side, in order that the joint may be firmly held together. Or, if preferred, the joint may be wrapped as

BAMBOO ARM CHAIR
 DIMENSIONS IN CENTIMETERS
 SCALE 1:10

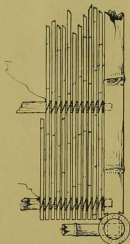


CABINET PROJECTION

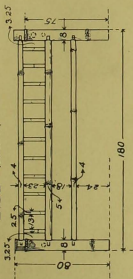
BAMBOO BED
DIMENSIONS IN CENTIMETERS
SCALE 1:15



DETAIL OF BOTTOMING



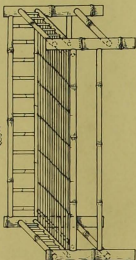
SIDE (SCALE 1:10)



DETAIL OF JOINT



CABINET PROJECTION



FRONT

shown in Plate 4. The stiles should be set into the rails and frame by a mortise and tenon joint; the cross braces of the bed frame are similarly joined to the sides of the frame. These braces are 3 cm. wide and 1 cm. thick. The strips for the bottom of the bed are 1 cm. wide by 0.3 cm. thick and are fastened to the cross braces in the same manner as indicated in the split bamboo table.

BAMBOO CHAIR, ORNAMENTAL.

(Plate No. 11.)

Stock of 4 to 5 cm. in diameter should be selected for the legs and seat frame of this piece and from 2 to 3 cm. for the rails and braces. Both front and back legs should be bent according to details shown in the illustration and drawing; the back legs may be made to flare somewhat more at the top if desired. All the joints are doweled, glued and pegged. The sawali matting for the seat is attached in position by a molding of thin bamboo strips fastened to the side of the seat frame by brass brads. Before the sawali paneling is placed in the back, the pieces to hold it should be channeled about 1 cm. deep. The paneling may be of double thickness supported by thin cross pieces between the two layers.

BAMBOO SCREEN.

(Plate No. 12.)

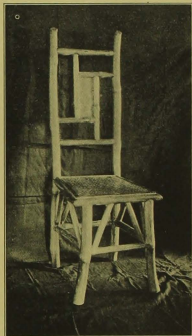


Plate No. 11-A. Bamboo chair, ornamental.

This screen consists of four leaves, though the number may vary. The circular piece at the bottom and the pieces at the top are of heavy rattan; uprights, rails and stiles are of bamboo. Stock of from 3 to 3.5 cm. will be found most satisfactory for the framework. All joints are doweled, glued and wrapped. The paneling is of bamboo sawali of under and over weave, set into channels made in the inner side of the frame and held in position by a bamboo molding extending completely around it both at the front and back. Round-headed brass brads (escutcheon pins) clinched, or rattan binding may be used to hold

BAMBOO CHAIR, ORNAMENTAL

DIMENSIONS IN CENTIMETERS

SCALE 1:10

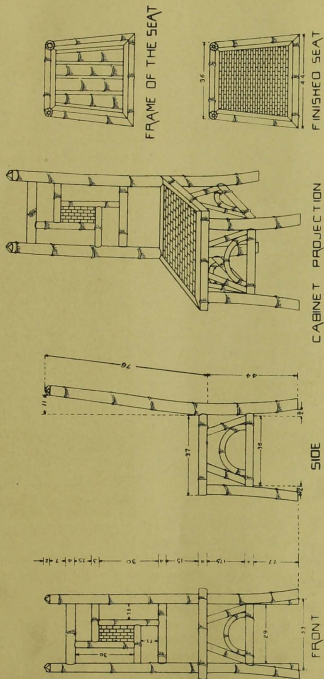


Plate No. 11.

the molding in place. An attractive and ornamental weave for the panels will add greatly to the beauty of this piece. This should be done preferably in one of the different geometrical designs common in sawali weaves, and in harmonious colors. Suggestions and helps along this line will be found in the *Industrial Studies and Exercises, Teachers' Edition*, page 112.

The leaves may be joined together in one of two manners: by thin metal plates of iron or brass in shape of a figure 8 to fit the outline of adjoining uprights, both at top and bottom, as shown in detailed drawing, Plate 10; or by rattan rings encircling adjoining uprights at points just below and above where top and

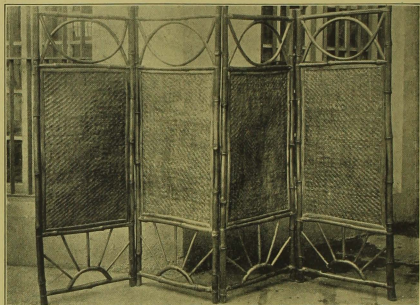


Plate No. 12-A. Bamboo screen.

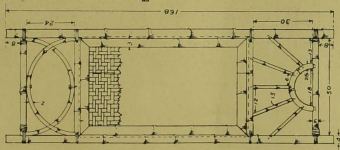
lower rails meet the uprights. (See p. 109, *Ind. Stud. & Ex., Teachers' Ed.*, for illustration of this method.) In case the first method is used the ends of the uprights should be plugged, so that the screws countersunk into the metal may secure a firm hold.

WARDROBE.

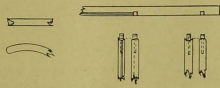
(Plate No. 13.)

This piece is made of bamboo with the exception of the rattan bracing between the lower rails and legs, and the elbows, rings and circular braces at the top of the back and sides. All joints are doweled and pegged. Sides, front, back and shelving are

BAMBOO SCREEN
 DIMENSIONS IN CENTIMETERS
 SCALE 1:10

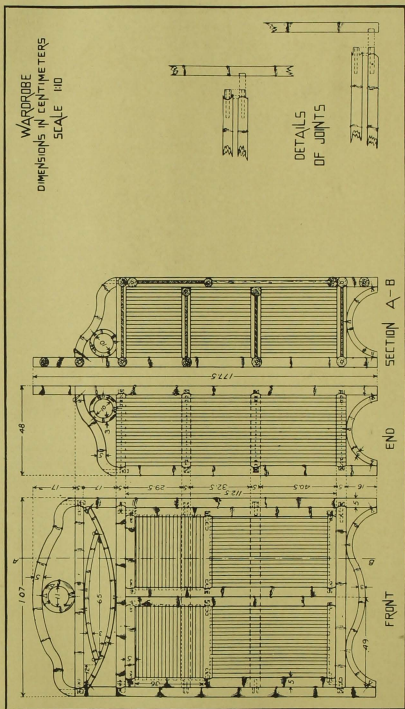


ELEVATION

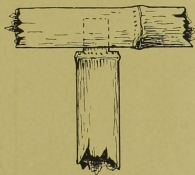
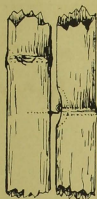


DETAILS OF JOINTS

Plate No. 12.



made of thin bamboo strips (the long jointed variety), carefully matched as to thickness and width. The shelving should be supported by cross braces extending from the inner front to the back rails, at a distance sufficient to prevent the shelves from sagging when they are weighted. The doors may be hung in one of two manners: By use of the hook and eye as here shown, one being placed toward the top and another near the bottom of the outer stile of either wing of the door, care being taken to plug the opening which may have been made

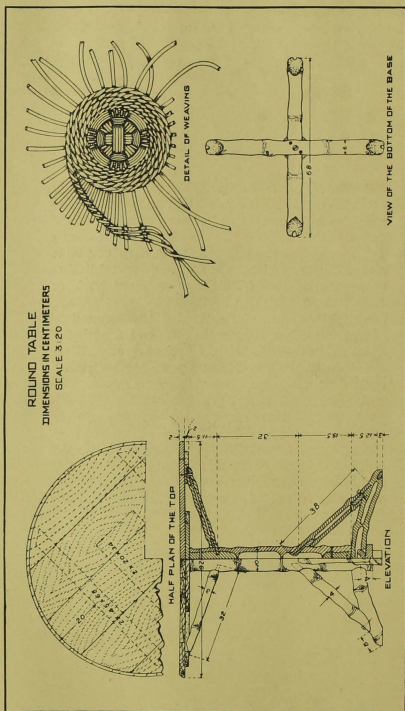


at the back of the ring chamber should this have been cut sufficiently deep to penetrate the hollow inner tube of the bamboo; or by a knob or round tenon left projecting at the ends of the door stiles and set loosely into a socket made in the upper and lower front rails of the wardrobe in the manner shown.

ROUND TABLE.

(Plate No. 14.)

This is perhaps the most difficult to make of all the pieces here described, but it is one of the most pleasing and satisfactory, if directions are carefully followed. A thick walled piece some 10 cm. in diameter should be selected for the pedestal and pieces about 6 or 7 cm. for the feet. The method of attaching these to the pedestal is as follows: First the cross pieces forming the feet are bent to the desired curve and fastened by cross lap joint. Then a section at the lower end of the pedestal is sawed off some 5 cm. from the extremity and the feet are fastened in position by a lag screw extending into the pedestal which has been previously plugged. The cap which has been removed from the lower end of the pedestal can then be replaced and glued in position. The view of the bottom of the base shows the feet attached to the pedestal with the cap yet to be fixed in place. The leg braces are fastened by mortise and tenon joints at the top and screwed at the bottom. Similarly, the bracing for the board undertop is fastened by mortise and tenon joints and screws, as shown in the



elevation drawing. The detail of weaving illustrates the method of starting the weave for the table top. The spokes are of oval rattan and the weavers are round, each about 0.03 cm. in diameter. The style of weaving is that known as triple weaving, from the fact that three weavers are used. As the weaving progresses, additional spokes should be inserted, as is customary in circular mat weaving of rattan. When the table edge is reached the spokes should be bent downward and under the table edge from 1 to 1.5 cm. and the weaving continued so as to allow a lap or short skirt to hang some 5 or 6 cm. beneath the table edge.

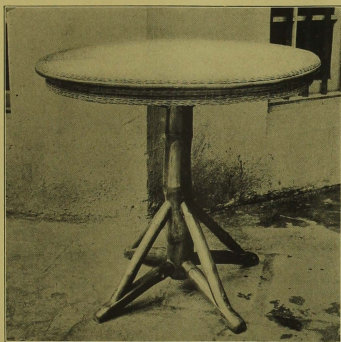


Plate No. 14-A. Round table.

One or two rounds of nito may be inserted in the lap or edge for ornamental purposes. Small brass brads should be used to fasten the rattan covering to the wooden undertop, so as not to show, and the edge of the covering should be finally held in place by a semi-circular piece of rattan running around the entire border and similarly fastened. This adds considerably to the artistic finish of the piece.

NOTE:—(1) Texts and Catalogues to be consulted and the purchase or acquisition of which is recommended:

Bamboo Work, by Paul N. Hasluck.

Industrial Studies and Exercises, Teachers' Edition (Appendix), by the World Book Company.

Bilibid Catalogue of Wicker Furniture, last edition.

(2) Nearly all these pieces of bamboo and rattan furniture have been worked out and successfully made by various primary shop teachers of Pangasinan province; to the same teachers should be credited the original working drawings accompanying this course.

(3) IMPORTANT.—When the actual work of construction is undertaken, teachers will find it desirable to have working drawings made from the plates previously shown in this article; each individual pupil needs the guidance and explicit working directions which such drawings contain.

The *Outlook* for August 17 contains an interesting article on "The New School-Boy," by Jane E. Robbins. The article is brimful of the most advanced thought and common sense ideas relative to what should be the trend of the child's education. Every child has latent talent in some line and is good for something; and it is the duty of the school to furnish him at first with such diversified lines of instruction as may afford the teacher the opportunity of discovering along what special line the child's natural bent lies. Then when this has been discovered, cater to it and develop it. Constructive work—manual training (in the broad sense) leading to manual labor and invention—as the preparatory step to any vocation in life, technical or professional, is one of the key-notes of the argument. The cry of city-bred children for something to do—for an opportunity to engage in constructive labor of some sort—is beginning to be heard; and "boys are now to be found after school hours in shops and science rooms toiling gladly over their pet inventions."

"We have had with us for some time," the writer says, "the boy who longs to have his dinner pail and go to work; and he is at last coming into his own. [But even] if the boy who has done good blacksmithing and has learned the ways of a dynamo before he is sixteen should become, later in life, a lawyer or professional man instead of a blacksmith, he still has the advantage of understanding something of the physical world and of the feelings of a good workman. He carries into his new profession the moral training which comes from doing a bit of plain work in honest fashion, and his experience with machinery of the school shop keeps him from the ignorance of modern conditions expressed by the literary college graduate who said that he supposed ampères were bought by the bushel."—J. D. D.