Simple Art Applied to Handwork II.

H. A. Rankin
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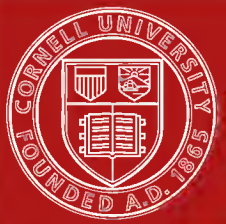

A DESIGN. [*Frontispiece*

SIMPLE ART
APPLIED TO
HANDWORK

BY

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VOLUME II

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PREFACE.

At the present time there appears to be a tendency for Handwork somewhat to displace Art, as such, in schools. Undesirable as this may at first seem, further consideration shows that it is merely the substitution of a real, actual form of art for a somewhat artificial one. Certainly, drawing and colour as commonly taken, viz., totally divorced from actual life and things, is a *kind* of art, but a very abstract and artificial form to say the least. The old craftsmen commonly made the articles they decorated, with the eminently satisfactory results so well known; and if following their example the children of to-day decorate the things they make, one has an excellent precedent; and, whether good, bad, or indifferent results are achieved, the modicum of art involved is at least first-hand and real.

The bias of all the recent art educational schemes was in the direction of the purely fine arts, such as drawing and painting. Neither appeared to have any connection with the ordinary affairs and things of life. The production of a picture appeared to be the sole aim. The final phase of brushwork is a case in point. Beginning with the formation of patterns, and appearing to have as its natural aim and end the cultivation of decorative taste in both form and colour, it has been warped back (Who was responsible?) into the old academic channel of the purely fine arts, and now appears as painting, devoted solely to the production of more or less realistic copies of common objects—sprays of flowers and sprigs of foliage.

That such is deceptive and has little fruitage of correct taste in after life, few who have witnessed it in operation will deny; for, when any application of the same to actual objects, such as utensils and fabrics, is required, the result is not only barren of correct taste, but errs on account of its extremely inartistic naturalism. This, however, is to be expected, for the question of appropriateness to material and purpose does not enter into the brushwork of to-day. Much skill is obtained, much nice work is done, but—*cui bono?*

In the limited time at the disposal of the ordinary elementary school pupil, the applied arts appear to the authors to be decidedly more desirable than the fine arts, as more directly affecting the actual subsequent life of the pupil. "Art for art's sake" may be, and is, a good motto, and furnishes as logical an excuse for spending time

as any other to those who can afford to neglect ordinary mundane affairs, but, applied to children who will have to fend for themselves, the discipline and training of mind fostered thereby are surely not those most helpful to them in their future life or most conducive to the happiness of at least the vast majority of them.

The necessary deftness, skill, adaptability, and foresight which the common applied arts require and engender are surely infinitely to be preferred for our pupils, touching as they do the real and the concrete, and presenting in an attractive form replicas of the actual problems of life.

Some such thoughts and aims may possibly have been in the minds of the framers of the first drawing scheme for elementary schools, though they certainly approached the subject from an opposite pole, the form of the decorative units being their first consideration (*i.e.*, the old freehand copies), appropriate application being left to take care of itself, or perhaps reserved for future development. Unfortunately, although this scheme was in operation for many years, it never generally reached the applied stage. Perhaps examinations helped to fix the original scheme and denied it development. Possibly, also, the class conditions that held in those days, when each school was a barrack containing classes of from sixty to ninety as a usual thing, more than helped to crystallize and preserve its original shape. Handwork of any kind was then practically impossible, owing to this unwieldy size of classes ; so a short cut was tried, leaving out the necessary craft work and getting at once to the purely art work.

Still, however much we are in agreement with the possible aims of the original scheme, it must be admitted it was a sad failure. At the present time, we are consequently wiser in the respect that we recognise that decoration should be a part of, or at least appropriate to, the object, or the tool that produces it, not something abstract or apart from it. Naturally, it follows that the two should not be separated.

The first thing that would appear to hold in decoration is that the decorator should know something of the thing to be decorated. Otherwise the ornament is likely to resemble that of a Christmas tree—something affixed to the object, not an integral part of it. Herein lies the good that handwork is likely to have on applied art and on the child mind. The construction of the object or surface to be decorated gives a sound idea of the possibilities and appropriateness of the decoration. The maker of a book or box or metal cup will, *ceteris paribus*, more certainly know the kind of decoration that is fit and proper, as well as convenient, than he or she who has had no connection with its construction. The tools that are used will produce naturally their own conventions.

Most real art—and the decorative, not the pictorial, is the

natural art of the masses—springs from such sources, not from the purely academic work of the art school or drawing lesson.

The humblest results of the child from the decoration of his own work are truer art than any pictorial representation, or even any pattern or design arbitrarily applied.

The present manual is an attempt to outline for teachers the lines on which the decoration of many of the articles now made in the handwork lesson may be carried out. That the previous work in other directions should be used as the starting-point appears the natural thing. Geometry, *although this is not always taught on very intelligible or practical lines*, is accordingly used as the starting-point. Indeed, as will be shown, it is the logical basis of all decoration. Elementary needlework is almost purely a question of geometry. The brushwork of former days (some is still done, although reckoned old-fashioned and consequently often derided) forms an excellent method for schools, leading naturally to such processes as gesso, stencilling, and fretwork. The first volume included the decoration of handwork by means of the following processes—

(1) Geometrical work and interlacing patterns.
(2) Brushwork Design.
(3) Stencilling.
(4) Needlework.
(5) Lettering with pen and brush.

The more technical processes suitable for older children, such as—

(6) Woodstaining.
(7) Pyrography.
(8) Gesso on Woodwork.
(9) Leather Work.
(10) Metal Work.
(11) Bookbinding, etc.,

are included in this, the second volume.

It will be found that colour is almost ignored in the following pages. This is intentional, for the manual on the *Teaching of Colour*[1] will be found amply sufficient for all needs arising herein, having been written expressly as a complement to the other works of the series.

H. A. R.
F. B.

[1] *The Teaching of Colour*, by H. A. Rankin. 4s. net (Pitman.)

CONTENTS.

LIST OF ILLUSTRATIONS.

SIMPLE ART APPLIED TO HANDWORK.

VOLUME II.

SECTION I.

WOODWORK AND ITS DECORATION GENERALLY.

THE great majority of the examples given in the first volume of this manual are rather artificial in respect of both their utility and their decoration. They can be looked on only as convenient make-shift exercises, preparatory to the educational treatment of the more solid and enduring articles commonly made in the later school-life of the pupils. The character of the work in the lower divisions of a school must of necessity depend on the age, the ability to be trusted with tools, and the surroundings of the scholars.

With Woodwork, however, we reach a stage where the objects treated are of a more final and first-hand nature, requiring the use of specific and less fluent tools and surfaces, and rendering desirable a keener appreciation of suitable ornament. In most cases these objects are identical with those *used in actual life*. Consequently, the real meaning of the term "convention" will be now practically illustrated. The latitude of treatment possible in the decoration of a paper or cardboard imitation of an object will be found to be considerably restricted in the case of wood. Whereas when dealing with those materials the utmost freedom was admissible, very little variety of treatment is allowable with more stubborn material such as wood or metal.

It may here be pointed out that the preparation of the woodwork and the educational matters appertaining thereto are outside our scope, the training of the artistic sense being the only aim we now have in view.

We do not seek to make professional craftsmen of our pupils. Possibly about one in ten thousand will actually come to be engaged in some art-craft or other as his life work. The remaining nine thousand nine hundred and ninety-nine will be buyers. Therefore, we teach the crowd; we train the taste of the buyers. The demand for good articles is bound to affect the supply. If some of our pupils continue their school work as a hobby, so much the better. A man

with a hobby is a man whose mind is kept sweet by occupation, especially if the hobby be instructive or artistic.

This part of national education is quite as important as, if not more important than, the training of a craftsman. The teacher, instead of mainly fostering the one or two talented individuals who pass through his hands, strives to upraise the general level of artistic taste. He boasts not of the geniuses he finds; indeed, he commonly finds none. His work passes almost unnoticed, yet it has its reward.

Concerning the decoration of woodwork, certain preliminary questions arise which the teacher should answer to the best of his ability. If, as suitable occasions arise, they can be presented to the pupils either directly or by suggestion, an important educational step will have been taken.

First and foremost comes the question—Should woodwork be decorated at all? Given a useful and shapely article, to add ornament may be no improvement to it in any respect whatever. It is superfluous—nay, mischievous—to paint the lily. If no advantage is gained, no useful purpose is served—especially if the decorated article is of a solid and enduring character. Yet there is the artistic education of the child to consider, and it may be that now and then decoration must be allowed on an unsuitable object in default of any other model. This question must be left entirely to the teacher's discretion.

Secondly, if decoration is allowable, why so? Though the discovery and analysis of the reasons may be beyond the powers of the pupil, they should not be beyond the powers of the teacher. A little mental exercise of this kind is greatly stimulative to the artistic powers, for the procedure is based on common sense; it is also highly interesting. If the teacher has not secured a definite foundation for his own work, the position of the pupils must be even more unstable.

Questions such as the following should be settled. Will the decoration affect the use of the article? Will it affect its apparent shape? Will it improve it? Will colour be admissible and an advantage? The answers must be left to the discretion of the teacher, for what is right here will often be wrong there.

If it is decided that decoration of some kind is needed, then another question arises. Where shall it be placed? The number of different objects that can be made by different kinds of handwork makes any general answer to this question impossible. It may simply be laid down as a rule that if decoration is applied it must not interfere with the use of the object; it should enliven the bare spaces and accentuate the shape.

The remarks appended to the illustrations will serve to show some of the ways in which these questions may be met, especially

with regard to the placing of ornament on the component parts of a model.

Suppose the last question has been settled. Then what shall be the character of the decoration and the medium employed for carrying it out? Shall the object be painted, or coloured, or stained? Shall the decoration be incised, or shall it be inlaid? Shall gesso be applied? Shall there be some simple form of carving? etc.

The answers must again be left to the discretion of the teacher. Some help, however, will be found in the remarks appended to the illustrations.

When the decoration should be applied depends largely also on the character of the model. In some cases the decoration is best settled and finished while the model is being made; in others it may be delayed until the construction and fitting together are complete.

SECTION II.

WOOD SHAPES.

I.

A SIMPLE MIRROR-FRAME AND SHELF-BRACKET.

(PLATE I.)

THE decorative form of this is plain and severe, being simply a combination of straight and curved lines. The corners were left circular when the sides were shaped. The top and bottom are different. The object is made so as to be slightly larger at the bottom than at the top in order to obtain an air of restfulness.

PLATE I.

II.

A HAT RACK.

(PLATE II.)

This again is very severe in treatment, the great length being relieved only by the curves of the central ornament.

Note the simple fretwork in the centre, with its ties giving strength and yet forming part of the pattern. Notice also how little cutting is required to express the shape adequately. The fretting may sometimes be designed so that the separate halves, side by side in the finished object, may be, for the purposes of working, placed one on top of the other and the cutting done in one operation.

PLATE II.

III.

A SMALL ORNAMENTAL TABLE OR FLOWER-POT STAND.

(PLATE III.)

This is more a study in proportion than anything else. There is very little elaboration, only the rails being varied.

PLATE III.

IV.

A WALL-BRACKET (I).

(Plate IV.)

This and the next are good examples of the decorative use of the shape itself, which is so pleasing that one feels little other decoration to be needed.

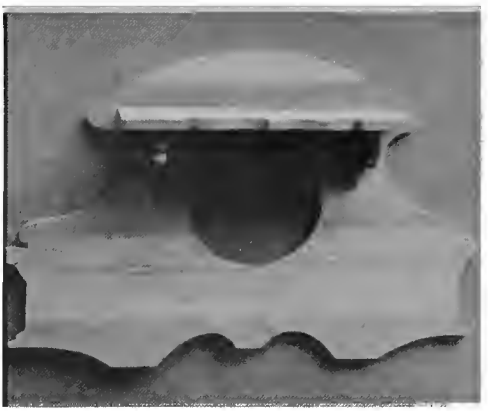

Plate IV.

It may be pointed out, however, that the lower portions of the edges of the back in this example are far too broken in line to be thoroughly satisfactory.

V.

A WALL-BRACKET (II).

(PLATE V.)

Though this is a little more ornate in shape than the preceding one, the same remarks apply to it with equal truth.

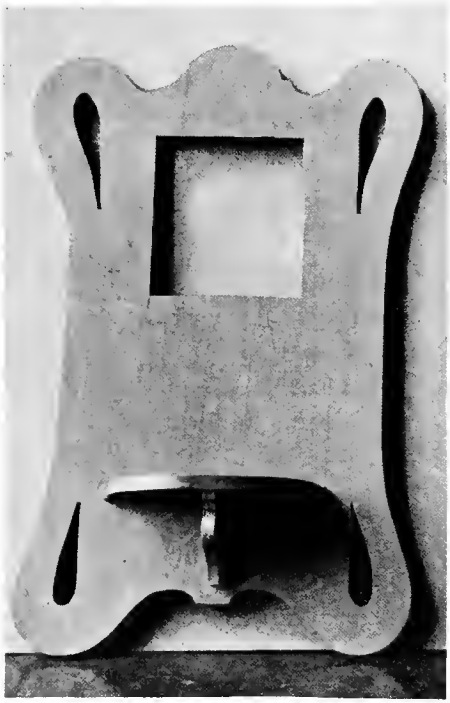

PLATE V.

Notice how simple the cutting is that is required to produce the shape.

The outline is simpler than, and not so "fidgety" as, that of the other bracket.

VI.

A SMALL FOOTSTOOL.

(PLATE VI.)

This is a very solid and substantial article, and the small amount of the alteration of the main shape produced by fretting the faces to form the legs detracts not at all from this solidity, and, in fact, lends a little variety to the scheme.

PLATE VI.

The pronounced inclination given to the supports or "legs" increases the sense of rigidity. The "heart shape" has been introduced to relieve the broad surfaces of the side-faces and give them a little interest.

VII.

A SMALL PICTURE-FRAME.

(PLATE VII.)

Its initial rectangular shape is not much departed from. Notice how the shape of the opening harmonizes with the resulting general shape of the frame.

PLATE VII.

SECTION III.

THE DECORATION OF WOODEN SURFACES BY STAINING, INLAYING, AND THE USE OF NAILS.

MANY of the articles made in the woodwork lesson may be beautified, or, at least, made more interesting, by the application of colour, but it requires a good deal of care and attention to obtain a satisfactory colour effect. Children delight in vivid colours, and the gratification of this must be checked judiciously. The woodwork lesson must not be allowed to provide such an indulgence in vivid colour as to produce that feeling of satiety which seems to be necessary before softer and more harmonious colour-effects are appreciated by children. The milder tones produced by various wood stains are almost all that should be allowed, though it is easy to imagine cases where the application of solid, vivid oil paint would be permissible. These cases, however, are rare.

A few easy methods of staining wood, together with illustrations of their application, are given here.

To stain the background of a pattern, the surface to be stained should be first smoothed with very fine glass-paper, and then with pumice-stone. It should then be cleaned, and rubbed well with a finishing rag. The cleaner and smoother the surface, the sharper will be the edges of any decoration afterwards applied to it. The pattern should then be transferred to the surface by means of carbon paper, which should not be too greasy. It will probably be found necessary to touch up and correct this tracing, as is the case with most transfers. This being done, the whole of the pattern should now be painted with a thin coat of shellac mixed with methylated spirit in equal parts, the background, of course, being left untouched. The whole is then allowed to dry thoroughly.

When ready, the stain of the proper colour is applied. Several applications may be necessary in order to obtain the right depth of tone, but their number can only be left to the discretion of the worker. The object is then again left to dry. When thoroughly dry, the entire surface is well rubbed with a pad of soft rag soaked in methylated spirit. Do not change the surface of the rag, but keep on rubbing steadily until all the shellac with which the ornament was painted has been removed. The whole is then finished with linseed oil well rubbed into the surface. In fact, this part of the process can hardly be overdone. This is the general method of staining wood.

It is essential for the wood to be nice and smooth, free from grease and dirt marks, and containing as few knots as possible. A little glass paper, No. 0, will generally remove dirt marks; if it fails, then rubbing the marks with a linen rag dipped in benzine should be effective. Sometimes the finished work turns out "spotty": this is due to the presence of grease on the surface. To remedy this, rub well with benzine, and finish off with a rag dipped in fine whiting.

Two weak applications of stain are better than one strong one, as the latter is apt to appear too opaque for stained work, whereas several coats of weak stain can be applied without obscuring the grain.

Various simple recipes to produce certain colours follow.

(1) TO STAIN WOOD PURPLE.

The wood is brushed over with a strong solution of logwood and Brazil-wood, made from the following recipe—

1 lb. Brazil-wood.
½ lb. logwood.
1 gal. water.

Boil for 1 hour or a little longer.

When the wood seems dark enough, let it dry, and then apply lightly a solution of 1 dram of pearl-ash in a quart of water. Use this carefully, and the colour soon changes from brown to a dark purple.

(2) TO STAIN WOOD BLACK.

A jet black may be produced by using the logwood solution and applying afterwards a solution of iron instead of pearl-ash. This is composed of 1 oz. of iron sulphate in a quart of water. A less intense black may be obtained by diluting the iron mixture with double the amount of water.

(3) TO STAIN WOOD RED.

A red colour may be produced by taking one pound of Brazil-wood, some rain or distilled water, a handful of unslaked lime, and two handfuls of pearl-ash. Soak all for half an hour and then boil. Pour the liquid into another vessel and add a little gum arabic. The wood to be coloured must also be "cooked" (that is, well soaked in alum water) and then brushed over with the preparation. The result is a splendid scarlet red.

If the wood is first grounded with saffron water, and if then a Brazil decoction be applied to it, the result will be an orange red.

If light-coloured woods be used, the colours of the stains will be correspondingly lighter and brighter.

(4) TO STAIN WOOD GREEN.

Paraffin oil and ordinary green oil paint may be used for this purpose.

(5) TO STAIN WOOD BROWN.

A large variety of prepared water stains may be obtained at oil and colour stores. The chief are mahogany, walnut, oak, and rosewood. They are simply applied by means of a brush.

A fairly strong solution of permanganate of potash will give a good, permanent brown stain.

It is less costly, and in many other respects more satisfactory, to prepare the stains oneself. If this course is decided upon, the following recipes will be found useful—

Mahogany.—Mix burnt sienna with stale beer and water mixed together in equal parts. Apply the fluid to the wood, and when it is quite dry use a coloured polish.

Walnut.—Mix Vandyke brown, or equal parts of burnt sienna and Vandyke brown, into a thin paste with liquid ammonia, and thin down to the desired tone with water.

Oak.—Mix half-a-pound of Vandyke brown with half-a-pint of ammonia and water.

Rosewood.—Boil one part of logwood in ten parts of water. The solution should be applied warm, and, in order to produce a good effect, the depth of tone should be varied from place to place on the surface stained.

(6) TO POLISH A STAINED PATTERN.

The process of wax-polishing is very simple and easy, and is, therefore, suitable for beginners in the art of polishing. To make the preparation, bees'-wax should be shredded as finely as possible ; if this is placed in the evening in sufficient Venice turpentine to make it of a creamy consistency, it will be ready for use on the next day.

Paraffin-wax may be used for white woods. It is made up in the same way.

In applying, the great desideratum is to have the polish evenly distributed, the manipulation of the " rubber " being of secondary importance.

As with all polishing, the required finish is obtained by friction, and with wax-polishing any amount of hard rubbing is needed.

The wood should not be damp : if it is, an effective polish cannot be obtained.

Three rubbers should be used : one for applying the paste, another for rubbing it up till it is fairly bright, and the third for finishing off.

(7) A PATTERN OF BLENDED STAINS.

A stencilled pattern may be executed upon the bare wood in deep, rich, varnish stains, blended in the course of the stencilling. This means that portions of the pattern are stencilled in with one colour, and, while still wet, the design is completed with another, dabbed and blended into the first. If this is done smartly, a beautiful effect is produced, showing all gradation of hue from one colour to the other. When this is dry, the whole surface may be stained with water stains.

(8) TO OBTAIN DIFFERENT DEPTHS OF COLOUR WITH WATER STAIN.

Proceed to stain the whole object with the lightest stain it is intended to use, and, when it is dry, cover the parts of the pattern you wish to remain of this colour with a coating of hard white varnish. Now stain the whole object with the next deeper stain, and, after drying, coat the portions of the work you wish to remain of this colour with a coat of the same varnish as before. Stain again with the next deeper stain, and varnish the parts which are left of this colour. Continue this until the whole of the staining is done. When the object is dry, remove the varnish by means of methylated spirit and a sponge or rag. Finally, varnish the stained surfaces, or, better still, polish them.

These methods can be extended further, or they may be worked in conjunction with others. Their scope is only limited by the inventive skill of the worker. As in all decorations, the choice of colour is important.

(9) TO PUT SOLID COLOURS ON A WATER-STAINED GROUND.

Coat the panel or other object with glue-size, a material which may be bought ready-made from any druggist or oil and colour man. When it is dry, decorate it in the desired manner, either by stencilling or by hand-painting, with opaque oil colours. When the decoration is quite dry, the size must be removed, washing it off with warm water, after which the object can be stained with a water stain. The stain which lies above the oil decoration is finally wiped off when dry with a wash-leather. If desired, the wood may be left plain, in which case the coating of size will not be removed, and the polishing may be begun as soon as the design is dry.

I.

A BOX TO HOLD DOMINOES.

(Plate VIII.)

Here the ornament was painted on with shellac and spirit, and the wood was then stained to the required tint or tone, as explained in the general directions.

Plate VIII.

II.

A SMALL CIGARETTE-BOX.

(Plate VIII.)

A strapwork of the interlacing pattern was worked on the wood in the same way as in the case of the Domino Box, the character of the strapwork being retained in the decoration used to fill the different shapes of the sides and top.

When putting on the shellac, care should be taken to leave a fairly wide space where one part of the strap must seem to go under another. This precaution ensures that the interlacing effect is retained, for the stain will now make the spaces as dark as the general background.

III.

AN INK-WELL STAND.

(Plate IX.)

This was worked in much the same manner as the cigarette-box which is described above.

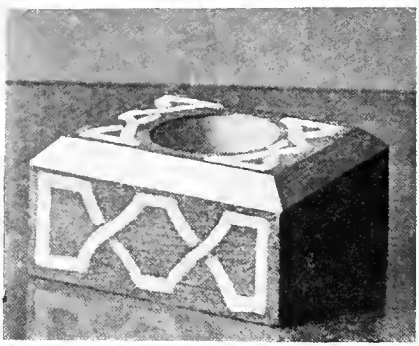

Plate IX.

IV.

A TRINKET-BOX WITH A TAKE-OFF LID.

(Plate X.)

The top only is decorated with a strapwork pattern produced in the same manner as the decoration of the cigarette-box described on page 28.

The box was finally polished with ordinary French polish. This French polishing may be done in most cases, but the best results are no doubt produced by careful and proper preparation of the surface, and a final finishing with linseed oil.

Plate X.

A good French polish may be obtained by dissolving about 5 oz. of *flake* shellac in a pint of methylated spirit. A white polish, especially useful when dealing with white woods and in cases where purity of tone is required, may be made from *white* shellac and methylated spirit, the same quantities being used.

V.

A WOODEN MATCH-BOX.

(Plate XI.)

The broad, conventional character of the decoration makes this an easy little exercise.

There are three tones in the ornament on the top face of the box.

The lightest parts of the pattern are simply of the natural colour of the wood, which is merely painted over with the shellac and

Plate XI.

methylated spirit. The whole face is then treated with a solution of permanganate of potash to the depth of the intermediate tone of the ornament, the darkest tone being produced by additional painting with the solution over the parts requiring it.

VI.

A WOODEN BOX, DECORATED WITH A REPEATING PATTERN.

(PLATE XII.)

This is an example in which the pattern is stained instead of the ground.

It is simply stencilled on with the stain. The size of the unit

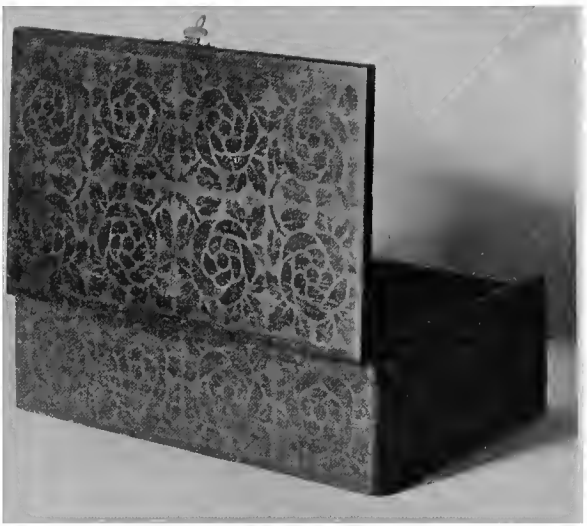

PLATE XII.

of repeat demands careful calculation, and the stencilling requires a comparatively dry brush, by repeated applications of which the necessary depth of stain is obtained.

VII.

A STOOL.

(Plate XIII.)

The top of this stool is decorated with an adaptation of a very ancient form of Greek design known as the *Palmette* or *Anthemion*. It is said to have been derived from the honeysuckle, though the petals employed are not always the same, either in shape or number. The reason for the continued popularity of this form of ornament probably lies in the fact that it illustrates all the main principles of design, and is balanced as well as pleasingly radiated. At the same time, the principles of Repetition and Contrast are neither of them lost sight of.

The lines which fill the spaces between the flowers on the top of the stool are adaptations of the stem of the honeysuckle and suggest its tendency to cling.

PLATE XIII.

VIII.

A SMALL COFFEE-STOOL: MOORISH STYLE.

(Plates XIV, XV.)

The decoration of the faces is composed of geometrical strapwork combined with a small amount of piercing.

Plate XIV represents the stool with the ornament as it appears after being painted on with shellac.

Plate XIV.

Plate XV, which shows only the top, gives the effect after the background has been matted, though not to a greater depth than about $\frac{1}{16}$ in. The strapwork is thus left raised, and the interlacing, where it occurs, has been given a richer and more interesting effect by slight carving.

PLATE XV.

IX.

AN INLAID WALL-BRACKET.

(Plate XVI.)

The simple shape of the bracket forms an excellent illustration of the remarks on page 14.

Inlays, such as the fan-like shape, give good exercise in carefnl and accurate workmanship.

Plate XVI.

X.

AN INLAID TEA-TRAY.

(Plate XVII.)

This exercise should be attempted only by experienced pupils who have shown considerable skill. It demands that the boundaries or outlines of the decoration should be composed mainly of straight lines and full curves; broken curves and intricate outlines should be avoided. Different coloured woods are, of course, used, but the selection must be well criticized by the teacher.

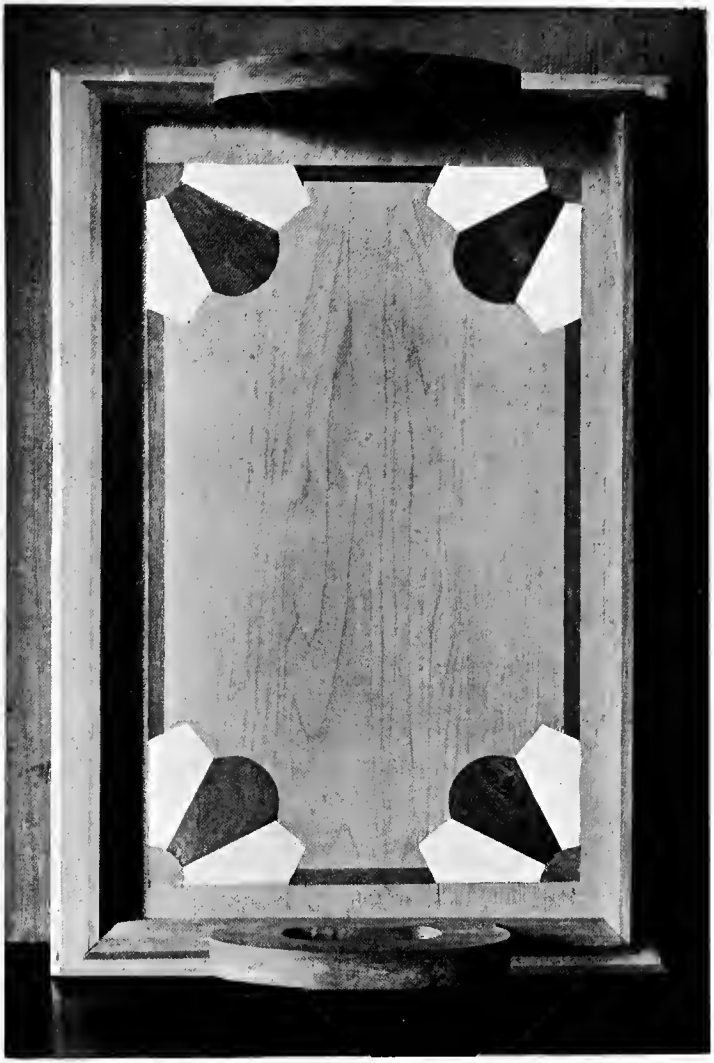

PLATE XVII.

XI.

A WOODEN MATCH-STAND DECORATED WITH BRASS NAIL-HEADS.

(Plate XVIII.)

This is an elementary exercise treated in an elementary manner. Knocking nails in wood is a favourite amusement of juveniles. Here it is put to some definite purpose. Ordinary brass-headed nails are used. Even in a simple exercise of this kind, some little taste and skill in arrangement are desirable. Note how the row of nails on the base forms an edging which serves to keep the loose match-ends from falling off.

There is scope for much variety in the treatment of a simple object like this. Boxes and many other articles can be used, and much ingenious and tasteful decoration evolved in a manner which is very interesting to children.

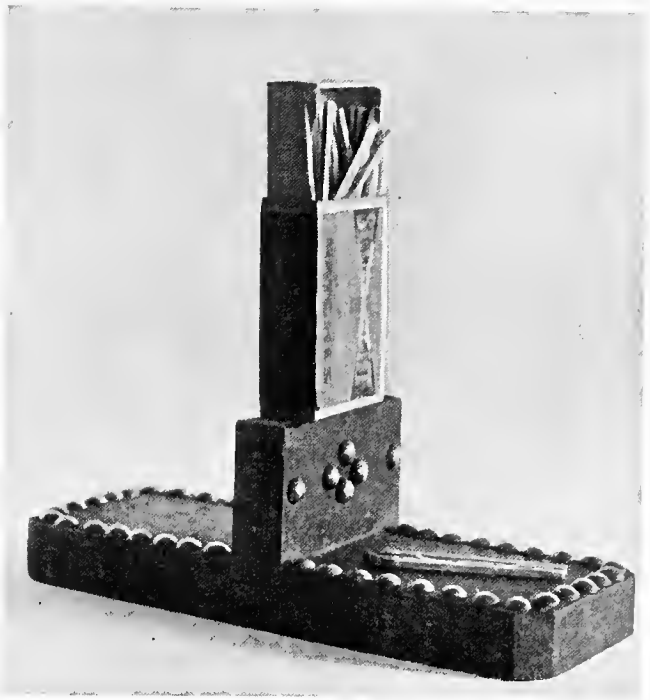

PLATE XVIII.

SECTION IV.

INDENTED WORK.

I.

BACK OF PING-PONG BAT.

(PLATE XIX.)

AFTER the pattern has been drawn (or rather, traced from the drawing of the design), the whole is outlined with the point of a wire nail inserted in a handle. With soft wood very little pressure is needed to produce a definite line, but a hammer is necessary when dealing with hard wood. In the latter case the tool may be guided along the line and lightly tapped with the hammer. The background is then filled in with dots formed by the same tool. The varnish afterwards applied fills in the hollows of the dots and lines, and serves to darken the dotted places.

When the wood is stained, the lines and dots will be further emphasized if the superfluous stain is quickly rubbed off the surface, some of it being left in the hollows.

PLATE XIX.

11.

TEAPOT STAND.

(Plate XX.)

This is worked in the same manner as the ping-pong bat. The very slight roughening of the surface does not detract at all from the usefulness of this article—indeed, the contrary is the case. Nevertheless, the same pattern *carved*, even if only a *little* deeper than it is here, would completely spoil it from the point of view of the purpose it is intended to serve.

Plate XX.

SECTION V.

SIMPLE POKER WORK.

By Poker Work is meant simple decoration worked on wood by burning with the ordinary common or household poker. To obtain variety of effect, other similar tools of different sizes are also employed, and the art is, somewhat grandiloquently, sometimes called Pyrography.

The very earliest known examples of decorated woodware, chiefly tools, weapons, and household utensils, were produced in this way. The common poker, of course, was not the instrument used, for the domestic hearth as we know it did not exist, its evolution accompanying that of the house. Any piece of metal of convenient shape that happened to be at hand was turned to account. That ancient examples are rare is due to the perishable nature of wood. Specimens of modern date are more plentiful, for many savage tribes still favour this mode of decorating weapons of war and the chase, as well as implements of peace. The ease with which it may be applied and the permanence of the result account sufficiently for its popularity among them.

There has been on sale for many years an instrument known as a "pyrographic needle." This is undoubtedly a very convenient tool, being a needle of steel which can be kept continuously at a red heat, so that all one has to do is to keep straight on at the pattern until the whole is done. The loss of time caused by continually having to re-heat the poker is avoided.

But we are not going to advise the use of this tool for schools. In the first place its cost is rather high; and in the second place, it does not seem to fit in with what is desirable in dealing with children. We prefer the old-fashioned way, and recommend the poker and a few other simple tools. The educational benefits accruing from the choice or making of the needful implement far outweigh the speed, which is a commercial consideration and the chief advantage of the pyrographic needle.

A good substitute for the needle is a thin, strong wire nail with the head filed off. This is inserted in a fairly long wooden handle, so that the point of the nail protrudes. It can be made red-hot fairly quickly by holding it for a minute or so in an ordinary Bunsen flame, or even in the kitchen fire. Work can be almost as conveniently carried on with it as with the more elaborate article, especially if three or four are kept going at once. For thin lines and small dots, of course, this instrument will be found most useful.

Larger dots may be produced by using the round head of the

same kind of nail. A small set of dotting needles may be got together with heads or ends ranging in diameter from $\frac{1}{8}$ in. to about $\frac{1}{2}$ in. Still larger masses may be expeditiously produced with the kitchen poker. These marks, of course, will not only be larger but also deeper. Rectangular masses can be made either out of a multiplicity of small dots, or by using an old file ground down so that its end section is rectangular. A little further consideration will suggest

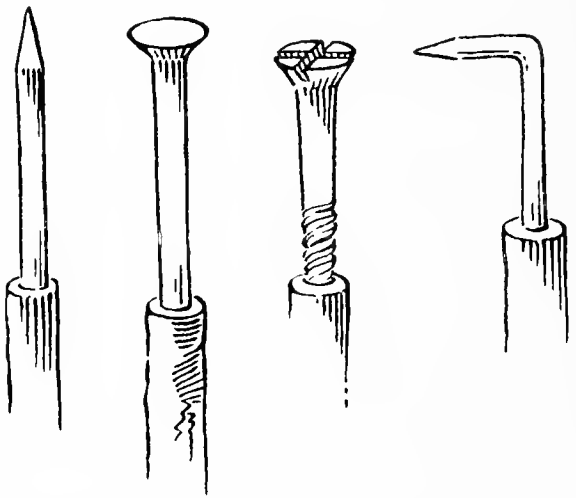

FIG. 1.

that a star-shaped mass can be produced by using a screw or nail-head filed into the correct shape. The educational value of all this is nearly as great as that of the application of the ornament. The invention of a convenient tool to perform a certain work is generally an essential preliminary to success.

Tools of other shapes are, of course, desirable, according to the work to be done; but we leave them to the teacher and child. The child should be allowed to make his suggestions without any prompting from the teacher.

Sufficient has now, perhaps, been said to act as a guide to the beginner. Fig. 1 is a representation of some of the tools used.

I.

SIX KEY-TAGS.

(Plate XXI.)

The decoration on these is produced with the point of a 2 in. wire nail, made hot in an ordinary Bunsen flame. The ornament and lettering are done by burning dots in the surface of the wood. Where masses are required these dots are placed so closely that they practically coalesce. The decoration is of a strictly geometrical type, and the pattern can be evolved by the children as well as worked by them. Needless to say, a fairly white wood on which the scorched marks will show well should be chosen.

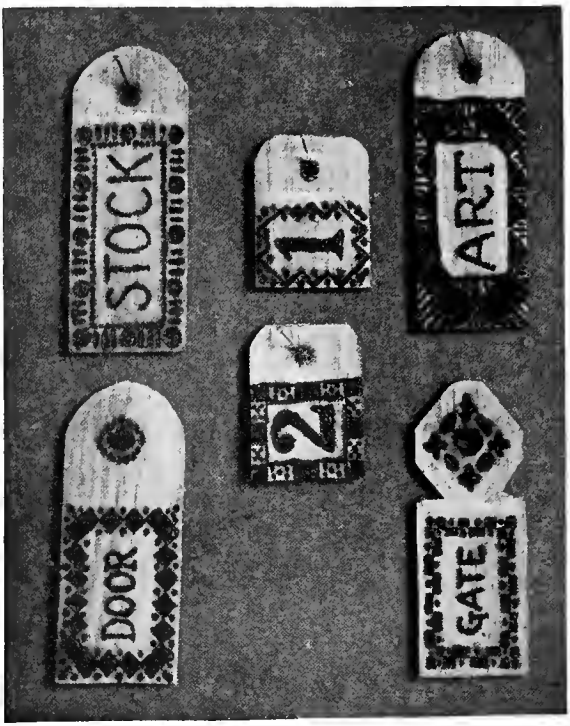

Plate XXI.

II.

A BOX-LID.

(PLATE XXII.)

The kitchen poker should be used to produce the comparatively large circles forming the floral ornaments at the corners; the remainder can best be marked out with the sharp end of a wire nail.

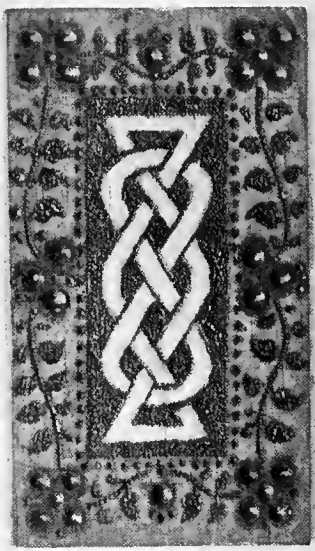

PLATE XXII.

III.

A DRAUGHT-BOARD.

(Plate XXIII.)

Red-hot nail-heads are used to form the petal shapes at the corners and at the centres of the sides ; the rest of it is done mainly with the point of a wire nail.

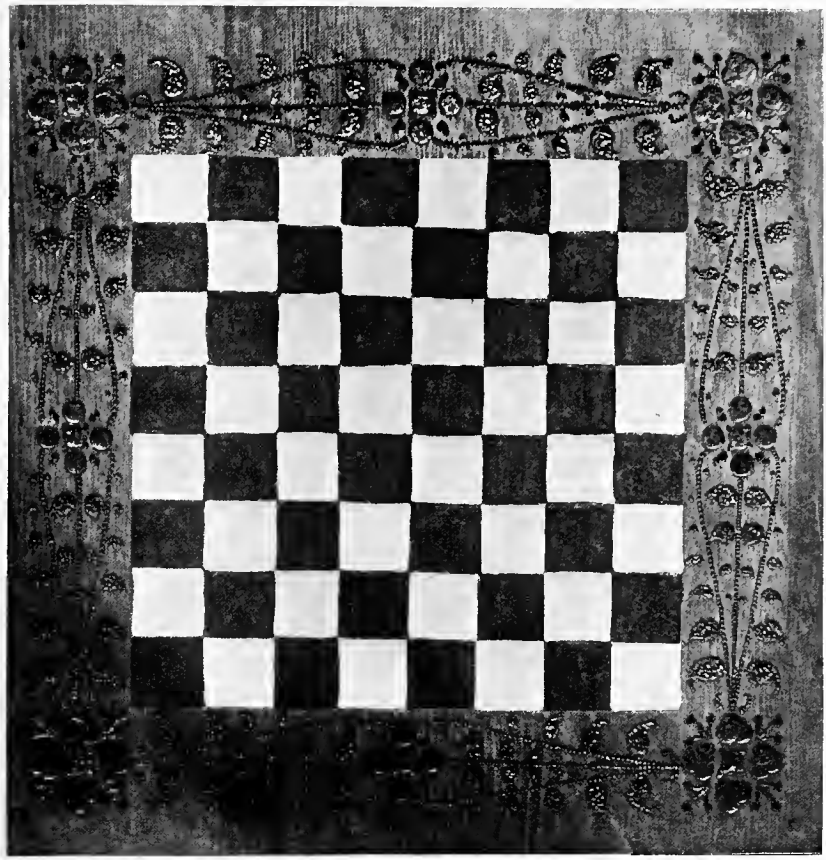

Plate XXIII.

IV.

A SOLITAIRE-BOARD.

(Plate XXIV.)

The stencil pattern of the rampant lion, which may be found on page 163 of Part I of this manual, is adapted so as to fill the squares left at the corners. The plate shows, if examined closely, that the masses are produced by a multitude of dots burned into the wood with the fine point of a wire nail.

The whole of the pattern is thus worked on a piece of dark wood so that it is not very evident, only slightly breaking up the hue of the wood, and not interfering with the lines and dots necessary for the game.

The lines are painted with cream-coloured oil-paint.

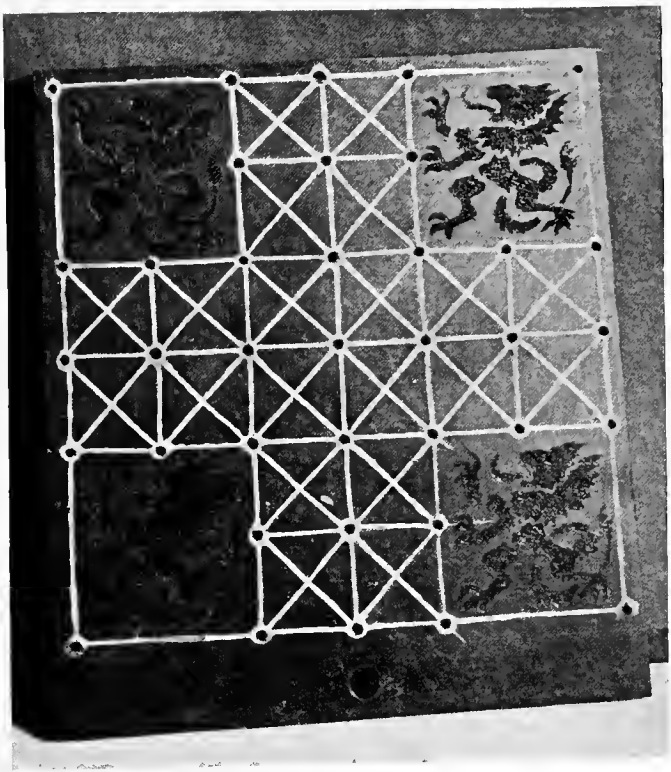

PLATE XXIV.

SECTION VI.

GESSO WORK.

THE word *gesso* is Italian, meaning "chalk" or "plaster," and is derived from the Latin *gypsum*. Its original signification in art appears to have been a prepared mass or surface of plaster, used as a ground for painting or gilding or for the application of other plaster in relief.

The term as used here should be *gesso duro*, which means a fine preparation of hard plaster used for works of sculpture, and hence a bas-relief, composed of this material, and generally covered with ornament as if in imitation of terra-cotta, and mounted in a frame made wholly or in part of carved wood. These bas-reliefs are not uncommon in Italy. Some of them are works of great masters of the sixteenth and seventeenth centuries.

The full name is now commonly abbreviated into *gesso*. The substance is a semi-liquid by means of which decoration may be applied to a properly prepared surface. It is usually put on with a brush, and because of its consistency gives a certain amount of relief. Occasionally other methods of application are employed. The resulting decoration has something of the character of modelling in relief, besides that of brushwork.

To pupils who have had some practice in the latter direction, it should make a strong appeal. It forms a splendid continuation and extension of that branch of art, and gives an entirely new character to much of the work done. Yet even if no previous practice with the brush has been had, much good work may be done by it. A stencilled pattern, for instance, can be developed, enlivened, and beautified by the application of gesso. A freely drawn pattern can be similarly treated. Even geometrical patterns, such as the interlacing strapwork of the earlier pages of Part I of this manual, can be made to serve as motifs for beginners.

As preliminary practice, so as to gain some experience, it may be worked on pieces of cardboard if wood is not to be had. Usually, however, such things as cigar-boxes are easily obtained, and it is better that they should be used from the beginning.

First as to the medium itself. It is composed of good whiting soaked in water, glue, and boiled linseed oil, to which a little resin has been added. A semi-liquid composed of plaster of Paris, size, and glycerine can be used, but it is not recommended for children, as it dries very quickly, and so has to be used quickly, and does not admit of much correction.

It is not necessary to state the precise proportions of the ingredients in these recipes, for the preparation is so messy that it is not likely to be tried by any teacher after the first attempt. Besides, the medium so prepared, before it can be used, has to be made liquid by being stood in a suitable vessel and surrounded by hot water. Even in a properly equipped workroom, this is best avoided, because of the shortness of modern lessons. Unfortunately, also, very few schools have properly equipped rooms for handwork, and to carry out a scheme of handwork in an ordinary classroom is a task the difficulty of which only those who have experienced it can assess at its true value.

So, although we have told you what the medium is composed of, do not try to make it yourself—except for your own private personal satisfaction. We admit that we have done so, but it was merely to gratify our curiosity—the artistic mind is often strangely feminine—and advancing years have taught us that strength must be husbanded and not expended on inessentials. We, therefore, prefer to buy or requisition it, ready made. This course is open to objections raised by the economical manager, but we do not make our own ink, or grind our own colours, or multiply our children's books by making written copies of them in our leisure hours. Why then make our own gesso? The point is to give the children exercise in the use of a medium whereby their artistic taste shall be cultivated in a certain direction. Excessive correlation is a waste of time and often obscures the object of a lesson. Preparations may be over-elaborated, so that in the end nothing is accomplished save preliminaries. Splendid foundations are dug out and laid, and the building operations stop.

There are on the market several well-known preparations that serve the same purpose as real *gesso duro*, and do not possess the drawbacks of the media described above. Of these Alabastine and Denoline may be cited. They both have the advantage of requiring only to be mixed with a little cold water to be ready for use, and they also set very slowly. The authors themselves prefer Denoline, and it is with this preparation that most of the examples illustrated have been worked. Denoline can be obtained in two forms: a dough-like mass requiring to be worked up in water, and a powder to be prepared similarly.

PREPARATION OF THE SURFACE BEFORE APPLYING GESSO.

The ground on which the work is to be executed, which may be wood or cardboard—it is sometimes plaster, but this is hardly likely to be the case in educational work—must not be porous, so it is prepared by being coated with a varnish or lacquer. A good

coating is shellac reduced to a creamy consistency with methylated spirit. Two or more coats may be found necessary. Several thin coats in succession are much better than one thick one. This varnish does not take long to dry.

The design is drawn or traced upon this surface in any of the usual ways, such as by means of tracing-paper, carbon-paper, etc.

BRUSHES.

Good, long sable brushes such as those known as decorators' "riggers" are the best. Reference to the illustrated catalogues of artists' colourmen will give a good idea of the thing wanted; but, at a pinch, much good work can be done with an ordinary sable, or even with a camel's hair brush.

Occasionally, such a large surface may have to be covered that the liquid gesso may be poured on it, and discreetly spread with the brush. Small parts of a design, such as spots, may also be covered conveniently by letting a drop fall from a stick or a very full brush.

USE.

As was done in the case of stencilling, an explanation of the method of use is perhaps best given by describing the complete carrying out of the process in an actual example.

Let us suppose that a brushwork design has been evolved for the decoration of a small wooden photograph frame. The surface, having received a coating of varnish, and being dry, is laid in a horizontal position, and the pattern is duly traced upon it.

Gesso is then mixed up with water on an ordinary wooden palette so as to be of about the consistency of cream, though it may be thinner or thicker if occasion demands. If the kneading is done with an ordinary palette knife, or even with an old table knife, the mixing is likely to be more thorough. A little experience will soon show how this can be done, and how the consistency can be modified as desired.

When properly mixed, it is applied to the prepared surface with a long sable brush. This is dipped into the liquid just as if it was ordinary paint, but it will be found to clog the brush more than paint does. The brush should be well charged with the gesso and applied to the surface in the usual manner, that is, almost vertically, so that the medium flows well on to the surface. The first application will most probably result in very little relief being obtained. However, when it is all covered thinly, more may easily be added by allowing the gesso again to flow on from a well-charged brush. After a little practice, one stroke of the brush is sufficient to cover a fairly large portion of the pattern. When wet, the liquid appears

in fairly high relief, but as it dries it sinks considerably, leaving the relief very low. Greater relief is then obtained by the repeated addition of more gesso after the coat underneath has become fairly "tacky," a state for which one does not wait long.

This method is the proper way to work gesso, for when finished it should appear quite free from texture of any kind. If the liquid is too thick, brush marks and other unevennesses will result. Not that these are always undesirable, however.

PLATE XXV.

For those parts of the ornament which are to be in high relief, the gesso should be mixed rather thicker. For very high relief, time may be saved by applying lumps of cotton wool, or tow well pulled out, into convenient pieces and worked into shape. These, mixed with gesso and modelled in the fingers to the required size and shape, can be applied to the pattern as a kind of core, and be given a further coating to hide the imperfect joints which are pretty sure to occur.

In the pattern given (Plate XXV), the straight lines of the inner border and the stalks of the floral part received only one application of gesso, and are thus in very low relief. The leaves required three

or four applications, and portions of the petals and the inner row of dots more still.

It is advisable not to attempt too high a relief in the preliminary exercises. Get as much variety as possible, but do not try anything excessive. The best experience is obtained slowly and surely.

This is a specimen of the work of a beginner. It is not entirely free from faults, but it shows about as much as may safely be attempted as a start. The midget photograph frame (Plate XXIX) might also be attempted as a first exercise.

GENERAL HINTS.

It is advisable to undertake only as much as can be finished at one sitting. The full relief and necessary modelling should be completed while the gesso is rather moist and tacky.

If left to dry and then worked upon, it is almost certain to " lift " or crack from the surface of the wood ; but this " lifting " may be avoided by adding a little Seccotine when mixing the gesso. It will then dry extremely hard. When dry it has a colour rather like plaster, the tone and hue being slightly creamy. In grain, too, it resembles plaster.

The ornament next has a coating of boiled linseed oil applied to it. Bees'-wax dissolved in oil of turpentine may be used instead. Afterwards, a hot iron held a little distance from the ornament will drive the preparation into the pores of the gesso. This treatment improves the grain and deepens the tone of the ornament.

White shellac dissolved in methylated spirit produces a similar effect.

The ornament is then lightly polished with a piece of silk rag, and it acquires an eggshell-like gloss. This treatment slightly colours the gesso, or, rather, deepens the creaminess of its tone. To make it thus slightly darker and richer is about all that is usually advisable, from an artistic point of view.

In certain cases it may be desirable—in most, however, it is best left alone—to colour various portions.

If definite colour is required, it can be obtained by putting powder colours with the gesso before mixing it, but the balance of the ingredients is liable to be upset, and the fluidity and consistency impaired. A little colour may be mixed with perfect safety, but more than a little is a mistake.

A better way is to mix the powder colours with the bees'-wax and turpentine, and flood on to the ornament. This must be a *second* coat, for the work must first be made non-absorbent by a first coat of *plain* bees'-wax and turpentine.

Many good effects which do not entail a great amount of labour

can be got by wiping off the paint with a soft rag from the raised portions of the pattern, and leaving the colour in the hollows.

If a flat tone is required, tempera colours (that is, powder colours mixed with gum) may be applied. Even water colour can be used, if it is evenly diffused by means of a spray diffuser.

Solid tempera or oil colour may also be applied, as well as gold or any other metal leaf. It must be protected by a thin coating of shellac varnish.

Colour harmony is extremely difficult to obtain with this medium. To most beginners in colour the difficulty is well-nigh insuperable, for the colour sense requires a fairly long training, such as at present is not to be secured at school, though Handwork gives a few opportunities for it. Unless a good deal of experience in colour harmonies has been gained, results are likely to be simply elementary, garish illustrations of inappropriateness. It may please the beginner, but as his colour-sense improves, as it is almost certain to do with increasing years, the faults and crudities become painfully conspicuous. The solidity of the material to which the gesso is applied connotes a certain permanence; consequently, the standard of excellence of its colour should be correspondingly a high one, or the feeling of its owner will eventually be one of some contempt. So it is best for only very slight variations of colour to be allowed.

The safest plan of all is to vary not the colour but the tone. Thus, part may be left of the natural colour of the gesso; other parts be given a slightly darker tone; and a few other portions may be still darker. A richness yet chasteness of effect is obtained, which is much to be preferred and likely to give more lasting satisfaction than a great number of hues can do.

Considerable skill is required to place these darker portions properly and decoratively.

As a general rule, with regard to colouring gesso, we may say: "Let well alone."

[NOTE.—In preparing the following illustrations, the gesso patterns were left in their crude white state for the purpose of photography, no attempt being made to reproduce coloured effects, though all the examples were subsequently finished. The reason for this is sufficiently plain.]

I.

A LETTER-RACK.

(PLATE XXVI)

The ornament is so simple that the method of application is almost self-evident. Blobs of various sizes are so disposed that they accentuate the quatrefoil openings in the leaves. Great exactness is desirable in the spacing. This is a little difficult to obtain from beginners, as the placing of the blobs here indicates.

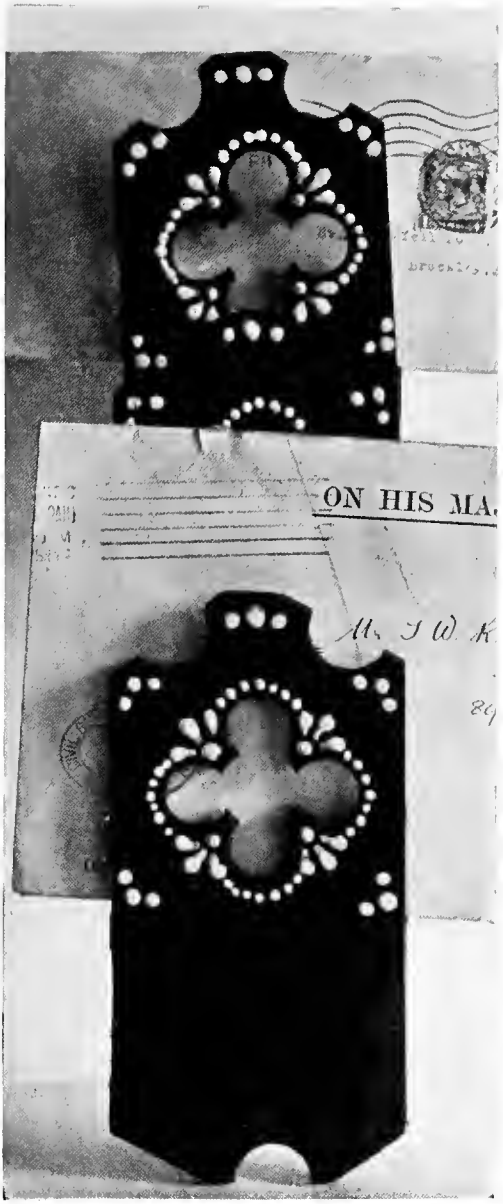

PLATE XXVI.

II.

A PLAIN RECTANGULAR PICTURE-FRAME.

(Plate XXVII.)

The same remarks as were made about the letter-rack (Plate XXVI) apply to this. As illustrated, it has the defect of exhibiting too much contrast. Note how the thickest main line is made more interesting by the addition of a series of dots in high relief.

The width of the frame and the relative proportions of the sides greatly affect the character of the ornament.

PLATE XXVII.

III.

A LITTLE MINIATURE-PHOTOGRAPH FRAME.

(Plate XXVIII.)

The woodwork of this article consists merely of a small, plain, square piece of oak of 2 in. side with a circular perforation in the centre. This perforation is relieved a little by a simple beading of wood, which was turned in a small lathe.

The opening is surrounded by a circle of gesso, the thickness of the line swelling a little at the sides, while the corners are emphasized by the addition of small looped circles. It is a simple exercise, but no more than this amount of ornament seems desirable for so small an object.

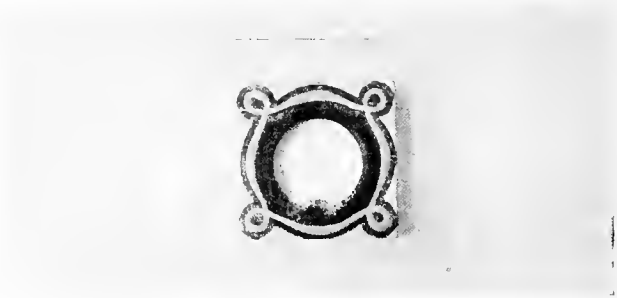

Plate XXVIII.

IV.

A PICTURE FRAME.

(Plate XXIX.)

As photographed, this frame is too startling in contrast. It was afterwards waxed and coloured, so that there was much less contrast between the wood and the gesso—in fact, not more than enough to produce a pleasant feeling of interest.

The size of the segments into which each side is divided is found by arithmetic; the motive for the interlacing work is derived from the geometry lesson. It needs very accurate setting out. The various portions of the decoration almost of themselves suggest the amount of relief they require. The lines are almost flat in feeling, their swellings are slightly higher, but the inset panels and ovals are raised considerably above the rest.

The colour of the border was suggested by the hues employed in the picture, and so harmony between the two was established.

PLATE XXIX.

V.

A NOUGHTS AND CROSSES BOARD.

(Plate XXX.)

This example was photographed before being toned down. The finished article did not display such pronounced contrasts of tone. The pegs were coloured vividly, a circumstance that made them easily visible against the dark brown of the board. The whole board was stained until the gesso appeared almost as dark as the background.

This is a very simple exercise, founded on very simple brush-strokes.

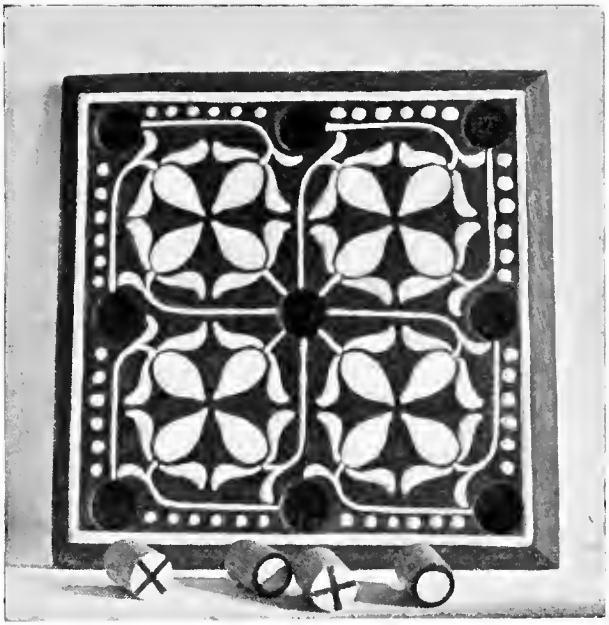

PLATE XXX.

VI.

TWO RACKS FOR SCISSORS.

(Plates XXXI, XXXII.)

These are very useful articles, scissors having a way of getting lost or mislaid almost more than anything else in the household.

Notice how the position of the slots to take the scissors is accentuated, so that there may be no need to have to grope for the opening.

The rather elaborate pattern of the back board in Plate XXXI is based on the wild rose; this is executed in very low relief—so low, indeed, that ordinary white paint would have perhaps done just as well. The lowness is demanded by considerations of utility; ornaments in high relief would suffer a good deal of damage from the points of the scissors.

In Plate XXXII the position of the apertures is even more strongly emphasized, and the back board has no decoration but a comparatively simple border.

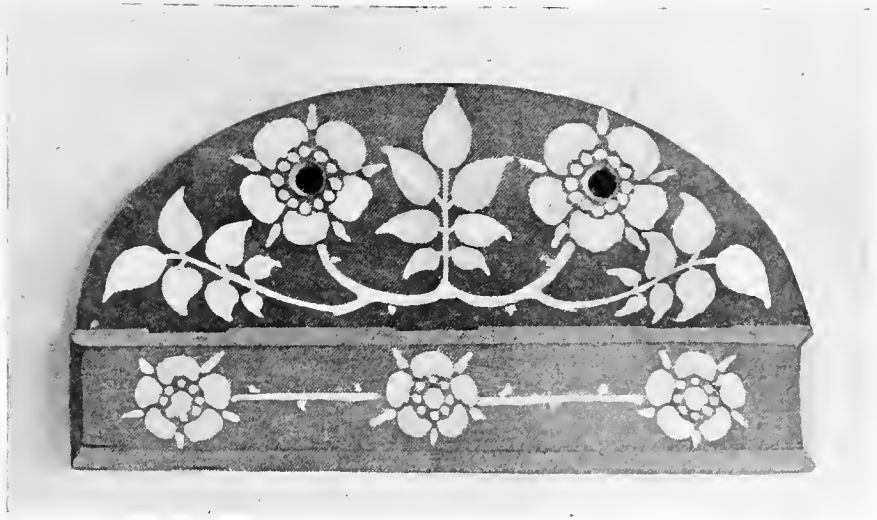

PLATE XXXI.

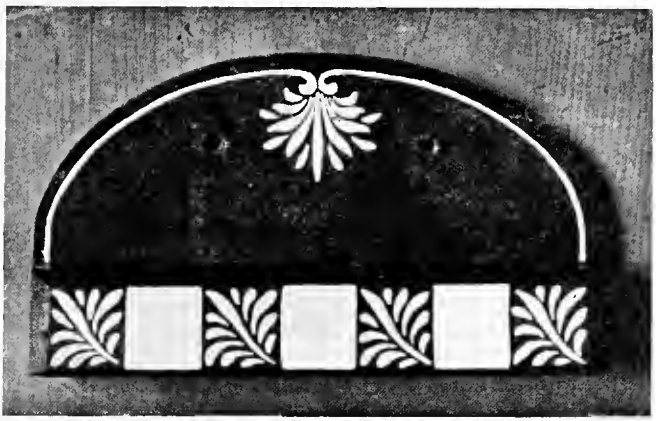

PLATE XXXII.

VII.

THE LID OF A CIGAR-BOX.

(Plate XXXIII.)

The black centre is left to be filled by a monogram. The "all-over" design, a conventionalised leaf and flower, was originally an exercise in brushwork, and was traced on the box-lid straight from the completed brushwork composition.

The relief given to this ornament is fairly high, and the exercise consequently takes a good long time to execute.

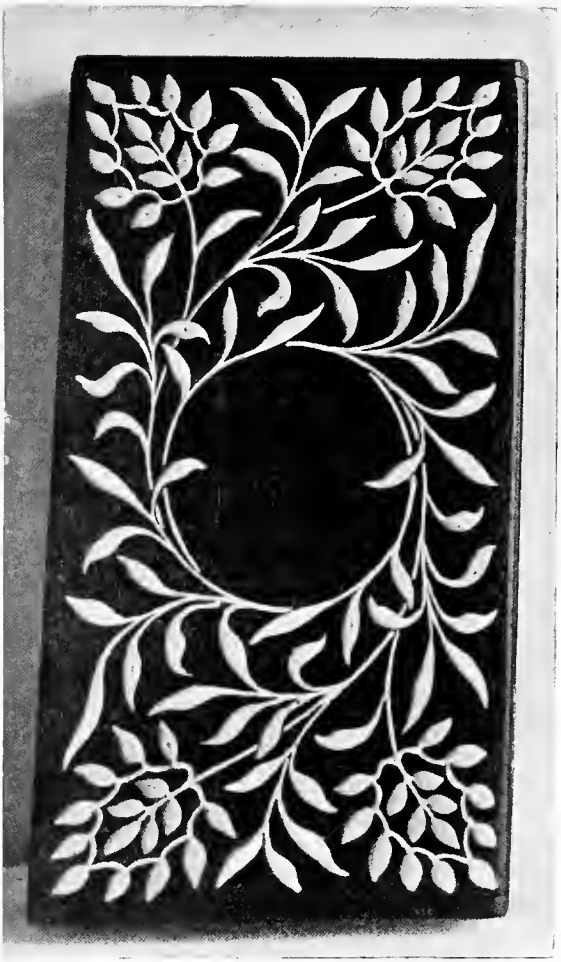

PLATE XXXIII.

VIII.

TWO TABLE PHOTOGRAPH-EASELS, CABINET SIZE.

(Plates XXXIV, XXXV.)

Such a design as that given in the first example (Plate XXXIV) is admirably suited to gesso, having that blobby quality which should make it distinctly evident that it is not a bastard sort of carving.

The pattern illustrated on Plate XXXV is arranged specially to suit the shape. The treatment is quite conventional and flat. The leaves are just heightened with the gesso, accented rather than modelled with it ; the flowers are more pronounced than the leaves. The latter fill the spaces in such a way as to give prominence to the flowers in the design.

As regards colouring, the background may be either gilded or floated in with transparent colour. The flowers may be done in tones of blue, and the leaves in pale, quiet greens. It is advisable, however, to keep well within one's capacity, and not to attempt too much.

It is more satisfactory to mellow the tone of the gesso to suit the colour of the wood background, than to use a large number of different hues.

PLATE XXXIV.

PLATE XXXV.

IX.

A NEWSPAPER-RACK.

(Plate XXXVI.)

The design was suggested by the shamrock. Though the main lines of the pattern are decorative in themselves, the even arrangement of the foliage rather tends to monotony. But it exemplifies that "blobby" quality already mentioned.

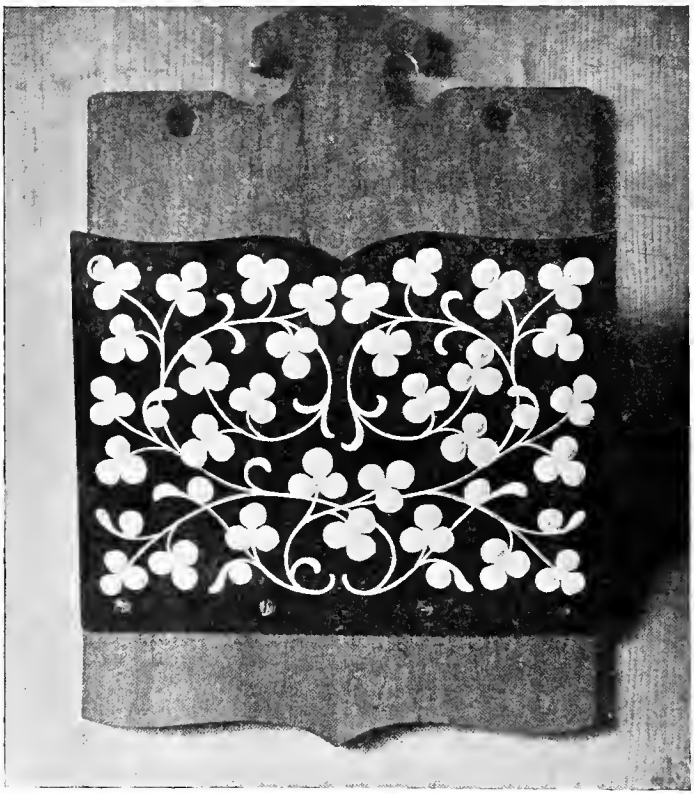

Plate XXXVI.

X.

A MAGAZINE-RACK.

(Plate XXXVII.)

In the introduction of animal or bird forms, the method of working direct with the brush will necessitate a conventional rendering. In no case should a "natural" treatment be attempted. Considerably more modelling is required in working these than in the "blob-like" patterns, but even here the "blobbiness" should not be lost sight of.

Plate XXXVII.

XI.

A WALL-BRACKET.

(Plate XXXVIII.)

Brushwork design suits gesso, and if the brush is held upright the gesso flows from it quite freely, giving the work a fresh and spontaneous appearance. As a result of this very directness, accidental qualities are obtained, and there always seems a greater charm about that which comes by a happy accident than there is about what is the outcome of deliberation. So the work in gesso should be of this direct "blobby" character.

PLATE XXXVIII.

XII.

A SMALL BOX.

(PLATE XXXIX.)

Besides being a good exercise in the planning of simple geometrical patterns, this affords scope for the proper arrangement of letters and an appreciation of correct spacing. The letters may be interlaced, if desired, and made ornate by means of foliation, due

PLATE XXXIX.

emphasis being given to the important letters of a monogram by executing them suitably in higher relief than the others. A free ornamental surrounding can be used in this case also.

But, as in the specimen illustrated, a geometrical pattern seems to have an agreeable appropriateness to the lettering, especially if the latter is at all severe in style. This harmony, no doubt, is due to the somewhat geometrical character of letters generally.

XIII.

AN OAK BOX.

(Plate XL.)

The decoration is a free treatment of the foliage of the oak, conventionalised to some extent. The main stems are developed into an important feature, and were indeed first considered, so as to form the skeleton which is afterwards clothed with leaves and

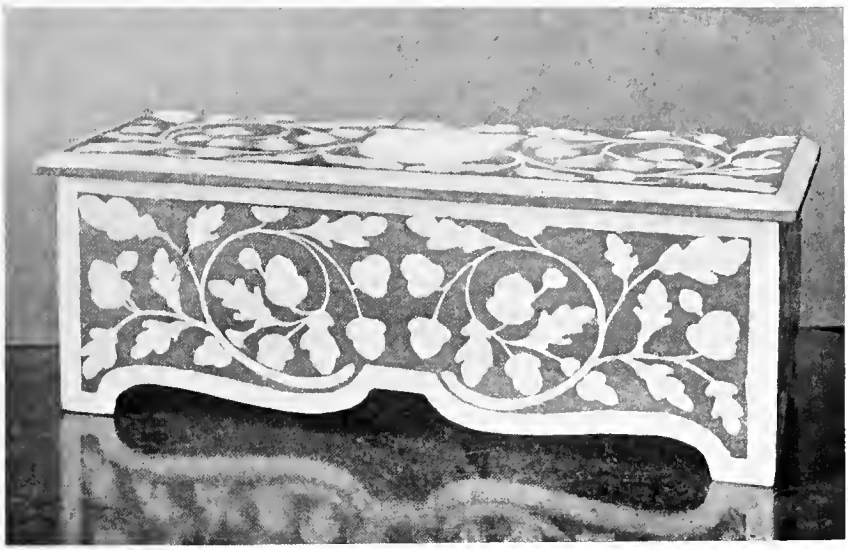

Plate XL.

fruit. There is considerable variety in the relief, some of the leaves being comparatively flat, others only just touched with gesso, others again brought up into higher relief, and the fruit brought still higher. The gesso, in fact, should play all over a design like this, and not be of the same relief throughout.

XIV.

A CALENDAR AND APPOINTMENT BOARD.

(Plate XLI.)

Here the woodwork itself is of a decorative nature, the plainness of the original shape—a rectangle—being relieved by the deletion of portions of the edges, a much more interesting shape being the result. It is not wise, however, to carry this elaboration of the form very far.

The decoration is pure brushwork, based upon the fruit and leaves of the olive. Note that the leaves are arranged either in pairs or trios, thus forming simple little masses. The position and manner of growth of the fruit also demand attention, as the sprays usually spring from the main stem itself.

The stalks are executed in comparatively low relief, a single application of the gesso being almost sufficient; the leaves are in higher relief, while the fruits are highest of all.

Note, however, the "all-over" effect of the disposition of the decoration.[1] This is intentional, for it was felt that the eye should be attracted by the clock-face and calendar, not distracted by their surroundings. This consideration is always important in decorating such objects as frames. Seldom, if ever, should the eye be made to dwell on the frame to the neglect of the object which it encloses.

[1] See Note on page 55 respecting the representation of examples by photography.

PLATE XLI.

XV.

A TABLE-CLOCK CASE.

(Plate XLII.)

In designing the decoration a beginning was made with the flowers, the positions of which were suggested by the round heads of the screws used to fasten the back of the case to the front ; the main lines of the pattern join these up, conforming to the exterior contour of the woodwork.

The leaves were afterwards arranged pretty evenly in the interspaces. The screw-heads again influenced the amount of relief given : the flowers are fairly high, the leaves generally are lower, and the stems are in even lower relief. The whole is thus an instance of what is essential in all good ornament—"to make a virtue of necessity," and not to try and conceal structural features, but to incorporate them boldly in the general scheme of decoration.

Further interest is given to the gesso surfaces by slightly modelling the veins, etc.

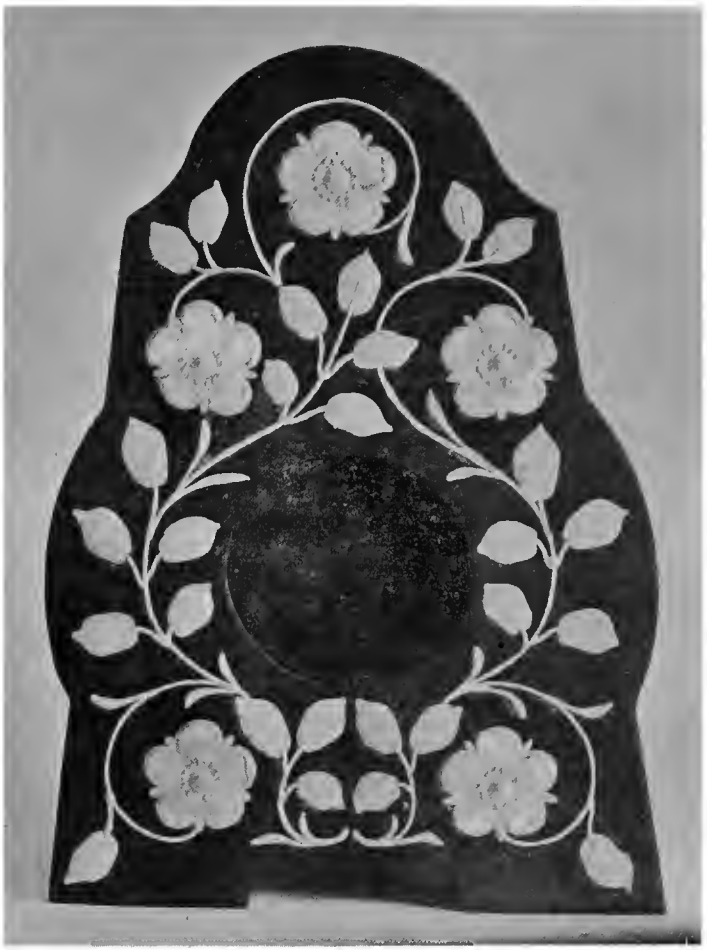

PLATE XLII.

XVI.

A TRIPTYCH SCREEN.

(PLATE XLIII.)

This rather ambitious object—ambitious, that is, for school work—consists of three wooden panels, the central one fixed to a support, and the side folds attached to the middle panel by means of hinges.

The three compartments are painted decoratively in oil, and the disposition of the surrounding ornament requires a good deal of care and taste.

The three openings are to be treated in the style of the miniature photograph-frame; that is, they are to be bounded only by a swelling line which emphasizes the shape, the corners being further emphasized by little loops. The relief is very low, except at the centres of the swelling portions.

The lettering agrees in style with these lines; but here, again, its exact situation and spacing set us somewhat advanced artistic problems to solve. It is easy, by injudicious spacing and a debased style of printing, to mar the effect of the whole. Too ornate a scheme of decoration and printing also would vitiate it, the aim being a chaste simplicity.

The relief of the lettering is slightly higher than that of any of the lines.

Note the size of the letters of the word DULCE and compare them with those of DOMUM. The difference is caused by the desire to keep the rectangular character of the screen well defined.

PLATE XLIII.

XVII.

A PAIR OF BELLOWS.

(Plate XLIV.)

The motif for the decoration of this article is one of those fabulous monsters that were such favourites of the Renaissance decorative artists. It has been adapted from a specimen of their ornamental work. It requires much skill, not only in drawing, but also in the application of gesso. In places, as many as five or six coats are required. It is an exercise much too difficult for the ordinary run of pupil, but a clever, conscientious child would take great pleasure in working it out.

PLATE XLIV.

SECTION VII.

LEATHER WORK.

Among the many minor arts and crafts dealing mainly with decoration, leather work certainly deserves much more recognition than it appears at present to get. Possessing the character partly of modelling and partly of carving, it gives, enhanced by other characteristics due to the quality of the material, an artistic appearance, combined with great softness and richness of colour, that can be presented in few other ways and with few other materials. As an adjunct to bookbinding, or even shoe-making, where these processes are carried out fairly completely, it is very interesting and requires few tools that cannot easily be made or improvised. It is distinctly light as labour, and is a fairly clean and tidy occupation also.

Although as a decorative medium leather has not with us now the vogue it once had, in consequence of its dearness and the many excellent substitutes for it, yet there are many leather articles in daily use whose decoration might well be undertaken, if only for general educational purposes. The process of applying this decoration is quite within the power of many school children, to whom it would give much pleasure and whose taste it would tend to cultivate. Belts, wristlets, book covers, chair seats, handbags, slippers, purses, are among the light leather articles that are available.

The art is, of course, of great antiquity. Wherever leather has been made (and in few countries is its manufacture unknown), there its decoration has been practised. Even comparatively savage peoples made some attempts; it is so obvious that permanent markings can easily be made on its surface. To reduce these marks to order and so produce a primitive kind of decoration is a simple and natural step to take as soon as this fact is observed. The quality of the decoration, of course, reflected very clearly the state of civilisation the artists had reached. With the older civilisations the art appears to have reached a very high standard. There is a pair of Roman sandals in the British Museum, decorated with a pattern formed of slashes cut in the leather with some kind of incised work connecting them. The excellence of the design and its peculiar appropriateness are very noteworthy.

The leather work of Spain has long been remarkable for the many excellent ways in which the decoration is applied. The American peoples of Spanish origin also excel in this kind of work; though it must be confessed that some of their work is so bizarre that we are more inclined to wonder at than to admire it.

In the Orient, from China to the Near East, there are still many

remarkable examples to be found, especially among the horsemen of the steppes, to whom leather is of such vital importance.

The decoration takes many forms, and is extremely varied in process as well as in range of article. Incisions, slashes, indentations, repoussé work, the application of spangles, of colour, of nails, etc., as well as the deliberate modelling of the surface, can all be suitably used for decoration. All kinds of leather may be used, from the thinnest and most delicate to the thickest and most solid. In the best examples the nicest discretion is evidenced by the choice of decoration and the method by which it is applied, besides the artistic taste and skilful handling displayed in the workmanship.

Of course, with such a subject, in dealing with school children one can touch no more than the fringe. But more than a mere cursory glance at a few of the examples exhibited in museums would be time well spent by the teacher. The lessons thus unconsciously learned in the application of ornament to a material outside the ordinary, broaden the artistic outlook, stimulate the mind, and increase its power of solving other difficulties and questions as they arise. Speculation as to the tools required often gives a clue to the judicious decoration of other articles, and increases one's stock of ideas regarding readily improvised implements.

The tools necessary for elementary leather work are few, and are all easily obtained or improvised. They comprise a modelling tool, a sharp-pointed knife, and a hammer.

Brief descriptions of two or three methods are given, mainly from the point of view of ready, easy application. With very little trouble or expense they are capable of being worked by children near the end of their school life.

FIRST METHOD.

In much the same way as very flat carving is executed, the outline of the decoration is pressed into the leather with the point of the modelling tool so as to form an indented line; the background is then pressed down all round this line. A very soft effect is obtained; the method is mostly suitable for small work.

To begin with, soak the leather in clean water, and then allow it to dry to some extent. The length of the soaking, of course, depends on the thickness and density of the leather.

Then, the leather being laid flat on a board, the design chosen may be transferred to it by laying paper with the pattern drawn on it flat on the leather. The outline is then gone over with some amount of pressure with the rounded end of the modelling tool, or any blunt-pointed steel tool. This will give a clean incised line on the leather. No pencil marks should be made on the leather itself. If the leather is too wet, of course, the paper will be softened and will drag and tear.

The transfer paper is then removed, and the outline deepened by going over it again with the modelling tool.

With the same tool, the background is now pressed down all round the outline with great care, for errors cannot be remedied, until the desired relief is obtained. This relief may, of course, vary in different parts of the pattern.

The working of the tool on the leather will slightly darken it and help to throw the pattern into relief. If too wet the pattern may turn out a light grey, and not be at all in harmony with the rest of the leather. Only experience can decide what is the ideal state of dampness.

The more delicate markings and details are added when the leather is nearly dry. During the process of working it will be found necessary to damp the work from time to time. This may be done with a clean sponge and water, but the whole of the surface must be wetted evenly at each operation, or else a patchiness in the colour of the leather will result.

The leather while being worked on must rest upon a hard level surface, such as a stone slab or a thick sheet of glass, with a piece of thick flannel placed between it and the leather.

SECOND METHOD.

The outline is cut with a sharp-pointed knife, the cutting to be half-way through the leather. This will require a little practice, as it is so easy to go right through. (A check or guard may be fitted on to the blade of the knife to obviate this.)

The cut line must then be opened out and the background, or the pattern itself, punched down with suitable tools and a small hammer. The "chasing" hammer used in metal work is an excellent tool for the purpose.

The part not punched down will stand up in relief. When the leather is nearly dry, smaller details may be added with the punches and lining tools. Different textures may be obtained by using "matting" tools, star punches, etc. They are easily made of sufficient strength for school use by filing nails, screws, or other suitable pieces of metal.

Thus, a screw may be firmly inserted in a handle, leaving about 1 in. protruding. Two file cuts on the flat head will produce a star-shaped punch. Other shapes can be simply made similarly. Thus, the punch may be star-shaped, circular, square, etc. Calf-skin, pig-skin, and cow-hide are all suitable for working on in this way.

THIRD METHOD.

This is very similar to the second method, except that greater relief is given to the pattern by pressing up the leather from the back. In transferring the design, a piece of carbon paper must

be placed underneath the leather, so that the carbon face is against the reverse of the leather. This gives the precise position of the design which requires relief. The pressing must be done on a soft substance, such as sand, or fairly stiff yet soft clay, the face of the leather being first covered with another piece so as to protect it from being soiled.

With thin leather, pressure with the modelling tool will suffice to give the required relief, but with thicker material it will be necessary to use wooden punches or the rounded end of the chasing hammer.

To make the relief thus obtained permanent, the hollows at the back of the work must be filled up with a stiff substance such as hard wax.[1] This backing must be free from chemicals; otherwise it will eventually discolour the leather. It must also be pressed home when the leather is dry, as any moisture present in the leather will prevent the adhesion of the wax.

The wax should only just fill the cavities and not project beyond the general surface of the leather; otherwise the surface will be uneven when the leather is laid down upon what it is to cover.

A simple process is merely to outline the pattern with a *wide* cut line, that is, one made by holding the knife at a comparatively slight angle with the surface. This line may, of course, be opened with the modelling tool. The leather is then coloured, either the background or the pattern, so as to separate the masses.

COLOUR.

If the application of colour is contemplated, the leather to be used should be light toned. The colour may then be semi-transparent, and the leather itself will play its part in the final effect. It should always be a rule to prize highly and make the most of the material itself that one is decorating. The whole, of course, should look "leathery," and no attempt must be made to imitate any other material. What would be the good of working on leather if all trace of the leather were lost? For this reason it is possible only to use transparent colours or dyes when tinting leather; thus the quality of the material is not obliterated.

[NOTE.—It is well, when transferring designs, to use a "style"; that is, some hard, blunt-pointed instrument. Special styles are on sale, but one can easily be improvised from an old bone toothbrush-handle.

No pencil or carbon impressions should appear on the *surface* of the leather. Of course, carbon impressions on the back are quite harmless, as they are not seen when the work is finished.]

[1] A good filling is made as follows: Mix well some fine biscuit flour with cold water until it is as thick as cream, boil in an enamelled saucepan, stirring the whole time, until it has thickened evenly. When cold, mix it into a stiff consistency with cotton wool.

STAMPED LEATHER.

With hammer and punch it is possible to mark leather in such a way that the result is of as fine a quality as when working by any of the above methods. The shapes which can be obtained from nails, screws, tubes, either round or square, are so numerous that it is possible to give but a small number of them. Those which are given, and the various simple patterns or units of patterns evolved from them, will show how, with sufficient thought and really very little trouble, many others may be created.

With thought, many elaborate and tasteful patterns may be designed by combining the use of two or more tools.

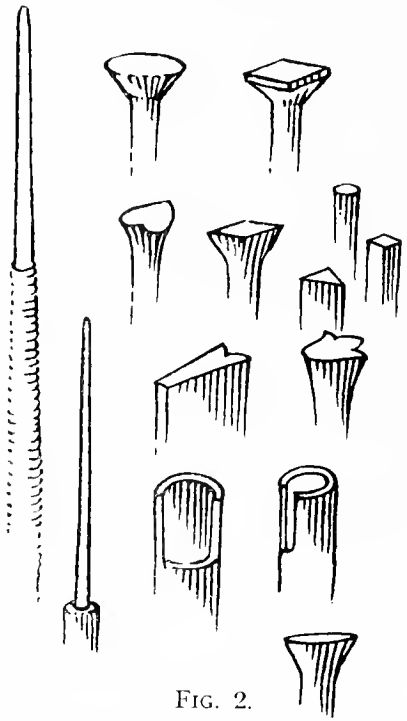

FIG. 2.

Fig. 2 represents various tools useful in leather work of this description, and made out of nail and screw-heads, tubes, etc.

It is not proposed to enter into any further explanation or illustration of the second and third methods of work, as each of them involves much more skilful manipulation of the tools, as well as much more time in execution, than can possibly be found in schools.

I.

AN EXERCISE IN ORNAMENT: FIRST METHOD.

(PLATE XLV.)

This is purely an academical exercise intended to give a little practice in this method.

PLATE XLV.

II.

STAINED LEATHER WORK.

(Plate XLVI.)

This is also merely an exercise suggested so that practice may be had in staining leather in a decorative manner. In the example, the pattern was incised and some of the parts broadly pressed down. Transparent colours and dyes were used in painting the particular shapes.

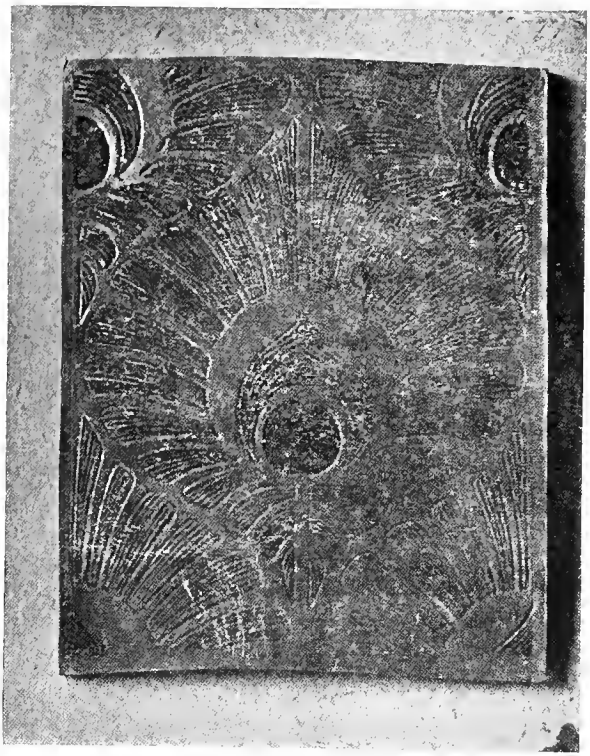

Plate XLVI.

III.

UNITS STAMPED ON LEATHER WITH VARIOUS TOOLS.

(Plate XLVII.)

This illustration gives specimens of various ornamental forms which can be produced by stamping with various tools of different shapes. Even the simple borders produced by the various tools give good exercise in that orderly arrangement so essential in all patterns. More elaborate and freer arrangements may afterwards be evolved, but, whatever is attempted, order and arrangement must receive very careful attention.

Plate XLVII.

IV.

A POCKET-BOOK COVER.

(Plate XLVIII.)

This shows the simple decoration of a pocket-book by stamped work as suggested in the previous exercises. The main consideration here is the geometrical spacing. The circular features are first fixed by careful division of the sides and ends, and this necessitates a variation in the number of straight lines in the interspaces.

Plate XLVIII.

V.

A CARD-CASE COVER.

(Plate XLIX.)

This is another example of the same method, viz., stamping.

Plate XLIX.

SECTION VIII.

METAL WORK.

This subject, if at all fully treated, is so technical, and therefore so impossible for the ordinary school which has no conveniences for practice in the way of special rooms and appliances, that not much need be said about it. The fully equipped modern school, which has conveniences, is as a rule fully served by teachers having the necessary skill to deal with any art question that may arise.

But, as there are many articles that can be made and decorated in a simple way by children, the following description and the accompanying examples may not be devoid of interest, suggestion, and instruction to the non-specialist teacher.

The home hobbies of children occasionally take the form of metal-working, especially in the case of boys of fairly mature school age. The teacher will add to his influence over them, if only he knows something of metal-working, even though it may not be his special line.

For example, repoussé work in a simple form requires few special tools that cannot be improvised where necessary.

Files, sandbags, hammers, punches, and the ordinary household tools, together with a few hard-wood punches, are all that are necessary for the execution of this very simple work. A pair of old scissors will cut very thin sheet metal, especially copper or brass. The explanations appended to the examples should sufficiently elucidate the processes by which they may be worked.

For the information of the teacher, the following somewhat technical general description is given.

It is necessary for the designer of a piece of metal work first to determine the best kind and condition of metal to use so that the form or decoration aimed at may be most readily produced.

The state in which the metal is available is very various, *e.g.*, sheet, tube, and wire ; the last, too, may be either round or square in section, and may be ribbon or moulded.

An intimate acquaintance with these various forms and a knowledge of their standard sizes and respective capabilities, both constructive and artistic, is very desirable in a teacher. It is also desirable that the objects treated by children should be small, as probably many of these various forms of manufactured metal will have to be used. Some may have to be wrought out of sheet metal, some from tubes, etc. ; or the work may have to be made in several parts, involving three or four different forms. So that, besides knowing the various forms, the teacher should be conversant

with the different ways of fastening parts together, whether of one kind or more. Unless these particulars are taken into consideration, however beautiful a conception may be, its working out to a successful completion will be well-nigh impossible: so many alterations will be required in the working out that little of the original idea will be left at the end.

Sound, useful practical work may be done by the pupil endowed with sufficient intelligence to master thoroughly the capabilities and limitations of the material; if they are kept firmly in his mind, he is almost sure to produce straightforward, and perhaps even beautiful results.

Of all the manufactured states of metals, the sheet form is probably the most truly characteristic, and lends itself most easily to artistic treatment by beginners.

SHEET METAL.

In sheet metal we are chiefly concerned with the various forms which the surface may be made to assume, and with the different treatment we may give it. In the first place we consider the artistic shape of the object as a whole; in the second we consider whether it shall be pierced or whether relief, low or high, shall be given to it, so as to produce a play of light and shade over its surface. When dealing with children one must arrange that this relief is low and easily produced; any piercing or cutting that the metal is subjected to must likewise be easily done. The copper ash-trays illustrated are examples of simple relief patterns; the brass and copper hinges are examples of simple pierced work.

Another aspect of sheet metal work is the making up of simple forms like trays, plates, and shallow bowls, which mainly depend on artistic line or shape, very little ornament being admitted, although some simple pattern in low relief may possibly add to the beauty. These articles should, as far as possible, be made in one piece, for joints are not only difficult for beginners to make, but are unsightly and mar the artistic effect.

TUBES.

Brass and copper tubes are made in a great variety of shapes and sizes; the most ordinary and useful shape being, of course, round. The following are useful sizes of round brass tubing, the measurements being outside diameters—

$\frac{1}{4}''$, $\frac{3}{8}''$, $\frac{1}{2}''$, $\frac{3}{4}''$, $1''$, $1\frac{1}{4}''$, $1\frac{1}{2}''$, $1\frac{3}{4}''$, $2''$.

Tubes are also made square, flat, triangular, and reeded.

WIRE.

Round wire can be obtained of any thickness, and half-round, square, and strip wires are generally to be had in $\frac{1}{8}''$, $\frac{5}{32}''$, $\frac{1}{4}''$, and $\frac{3}{8}''$

sizes. All wire is more or less flexible, according to its thickness and composition. Wires may be used for small *turned* legs and button-hook handles, also for ornamental features such as edgings and mouldings where easy bending is wanted.

In using ribbon wire the designer mainly depends on line. Unshapely, broken-backed curves should not occur; and rivets should chiefly be used in fastening.

CONSTRUCTIVE WORK.

We now come to the consideration of constructive work, and the various ways in which separate pieces of metal may be combined or attached to each other to form complete pieces of work. Fashioned or manufactured metals, such as tubes and wires, come under this class of work and give good artistic results.

METHODS OF ATTACHING METALS.

1. **Brazing or Soldering.** The most obvious method of attachment is by brazing. On account of the great amount of heat required in brazing there is a danger of melting the parts intended to be fastened together; the parts, therefore, must be so arranged that this is not likely to happen. For instance, a very thin piece of metal cannot easily be brazed to a very thick piece, for the thin piece is usually melted away by the heat required to bring the thick piece to the proper temperature. This is more so with brass than with copper, for the latter requires a greater amount of heat to melt it than brass; but it also requires a greater amount of heat for this operation; it is, therefore, not at all easy to braze brass and copper together.

Besides brazing, there are other kinds of soldering which require various degrees of heat. They do not, however, impose any very special limitations.

2. **Riveting** is another method of attaching separate pieces of metal together, and is exceedingly decorative when the rivets are properly arranged. The small heads of the rivets being made to form borders, bands or spots, greatly enrich the masses of plain metal which they fasten together. Here the method of joining is obvious, but, in brazing, a joint should be made so that the two masses of metal fastened together are practically one piece.

3. **Lap-joint.** A brazed joint does not show much in brass, but, as copper is darker than the "spelter" used, the joint shows as a yellowish seam.

If a lap-joint is used the joint need not be unsightly, and there is no reason why it should not be accepted as a material part of the design.

This joint is used only in joining together two edges of sheet metal. The two edges to be united are filed down to long wedges,

so that when they are laid together the joint thickness is the same as the thickness of the single sheet. Slits are then cut in one edge at right angles to it, and the pieces of the edge are bent alternately in opposite directions so as to form flaps; and then the other edge is inserted between these two sets of flaps, which are hammered down as flat as possible. The joint is then brazed. A good lap-joint is almost as strong as any other part of the sheet. It is particularly valuable in the construction of raised work or hammered hollow objects, for it is the only joint that will resist the strain.

4. **Turning.** The work must be shaped so that it can be attached to the lathe mandrel, or else be held in a chuck at one end of its axis. Unless quite small, it will also require support at the other end of its axis by the back centre of the lathe.

Generally speaking, turned work should be straight; but after the operation it can be moderately curved by bending, if slender enough at the bend. Handles, for instance, may be treated in this way.

I.

AN IRON STAND AND SIMPLE KEYHOLE-PLATES AND HINGES.

(Plates L, LI.)

Keyhole-plates make easy exercises, affording great opportunity for the artistic appreciation of form. They may simply be of shield form, with the keyhole drilled and filed to shape for the key, and with holes for round-headed screws. The latter, of course, may be made of ornamental value by spacing. Greater elaboration may be obtained by simple piercing, by adding handles, or by very low relief produced by the hammer; that is, repoussé work.

In designing hinges as simple exercises in sheet metal, a good, pleasing shape should be the first consideration. Another consideration is the advantages that can be obtained by placing the screws decoratively and by the length of the hinge pin. Simple

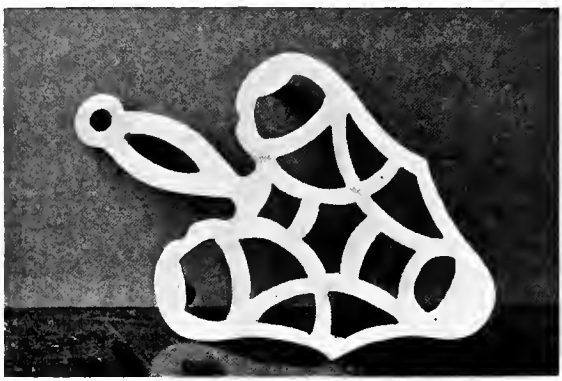

Plate L.

piercing may be decorative, but care should be taken that the hinge is not unduly weakened thereby. Hammering in low relief is sometimes a pleasing feature, but usually it is better left to a later stage of the pupils' capabilities. The flanges of metal for turning round the pin must carefully be kept long enough. The tiro often neglects this precaution. If there is a little too much metal, it may easily be taken off, but none can be added. Ill-fitting joints are bad and become obvious when the hinge is opened.

In the case of the iron stand, a little more difficulty is found on account of the thickness of the metal necessary for its size and purpose. It will be seen that the piercing is simple and geometrical. This is an exercise mainly in drilling and fretting.

PLATE LI.

II.

BELL-PUSHES OF SIMPLE SHAPE—SOLID, PIERCED, ETC.

(PLATE LII.)

These articles are of various shapes, and all require due consideration of the position of the screws. The kind of moulding for the centre or push-hole needs thought, too, and will be a simple exercise in turning. This must be done from a separate piece of metal, which is afterwards affixed to the plate by brazing. The whole is then centred on the lathe, and afterwards "finished."

Geometrical arrangements of pierced work, as well as very simple beaten ornament, such as bosses and spots, also form good exercises. Thicker metal than is generally used in hammered work is required for work in relief. Only one kind of metal must be used, so that there may be no difficulty in brazing on the centre-piece. (*See* Note on Brazing, page 96.)

PLATE LII.

III.

LETTER-RACKS.

(Plates LIII, LIV.)

Here again the ornamental shape is first considered, the relief being an added feature to give variety and play of light and shade to the plain surface of the metal.

The first plate, decorated with the letter L, was riveted to the back before being turned up into its correct position.

Plate LIII.

In the second example it will be noticed that the three front plates are of similar form. These must be fretted and trimmed to shape from three thicknesses of metal, so as to ensure uniformity of contour. They are afterwards attached to the back plate by riveting, beginning, of course, with the top one so as to allow more freedom in the use of tools during the operation.

PLATE LIV.

IV.

SMALL PIERCED GUARD FOR THERMOMETER-BULB.

(PLATE LV.)

This is a very simple exercise in the piercing of sheet metal, all being done in the flat. Afterwards it is to be bent into its semicircular form and affixed to the frame by screwing.

Some amount of care is involved in the development.

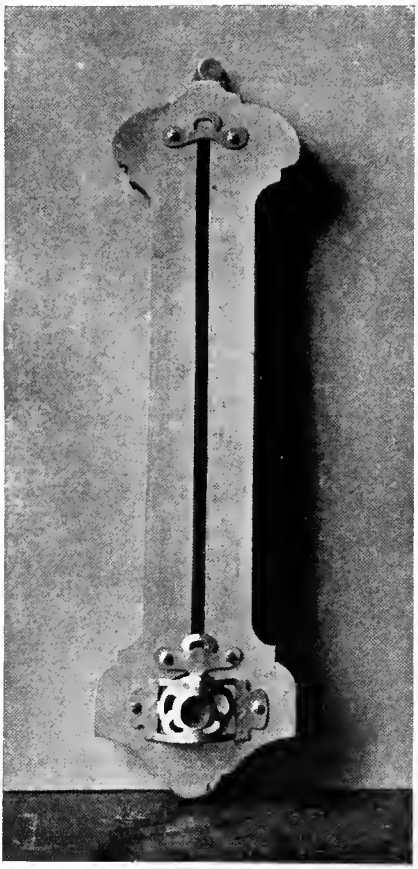

PLATE LV.

As it is very difficult to bend metal after it has been beaten or fretted in the flat, it is usually desirable that any necessary bending should be done beforehand.

V.

TWO PAPER KNIVES AND A BUTTON HOOK.

(PLATES LVI, LVII)

These form good exercises in turning, making a screw thread, tapering, and wire bending. The examples show what may be done in these directions. Turned mouldings should be kept simple in shape, variety being obtained in width and depth. Recognition of the value of plain intervals, and of the judicious use of straight and curved lines, is also very important.

To make a poker will give an exercise in harder metal; steel coal-tongs and nut-crackers may also be included in this category.

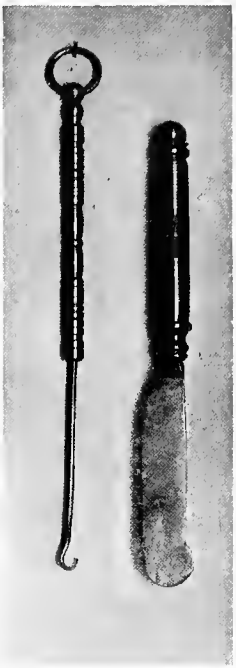

PLATE LVI.

PLATE LVII.

VI.

SIMPLE ASH-TRAYS AND PIN-TRAYS.

(Plates LVIII, LIX.)

Simple rectangular trays should be made in one piece, only requiring brazing at the corners; the metal, of course, being shaped to give the required slope of the sides when turned up. Any decoration given may consist of simple bosses or straps, or both, beaten up. A matted background may sometimes be an advantage, but in some of the examples from which the illustrations have been made this feature has been abused, and so the beauty and value of the metal have been destroyed. Though a "matted" background sometimes enhances the plain surface of the raised work, it should be used with judgment and restraint. The pupil who worked one of the examples, when asked why he had been so lavish with the matting tool, replied that he thought it would save a lot of cleaning! He failed to see that it was rather a dust *trap* than anything else.

In the hexagonal-shaped article, the centre was first beaten to the required depth, and then the heart-shaped relief was hammered up to the necessary height.

A turned ornamental peg riveted to a bent, shaped piece of metal, to be used as a cigar or cigarette holder, made an interesting variation.

PLATE LVIII.

PLATE LIX.

VII.

MATCH-HOLDER BRACKETS.

(Plates LX, LXI.)

In both examples it will be seen that the design is carried out in wood and metal—a very pleasing combination, which might be more often adopted.

Plate LX gives some rather elaborately pierced ornament, the effect of which is heightened by mounting the bracket on

Plate LX.

dark-coloured wood. The match-holder is of copper and the pierced back is of brass.

The match-holder of Plate LXI is made in one piece. The very shallow tray is also made in one piece of metal, and is attached to the bracket-back by loop-holes and pegs, to facilitate removal.

PLATE LXI.

VIII.

A WATCH STAND.

(Plate LXII.)

Stands may be made in a variety of shapes out of a judicious combination of brass and copper. In the example given, the shield-like shape and the base are of copper, while the supports and hooks are of brass. But it will be seen that brazing is not here necessary, the hook and support being riveted to the shield, this latter being hollowed out by hammering and covered with velvet where the back of the watch is to rest. The base is raised intentionally so that there is sufficient room to allow the brass support to be fastened to it by screw and nut. The bottom is afterwards filled with pitch, which gives it weight, and is then covered smoothly with a suitable material.

The support is turned out of square wire, the fork slot being filed to a length sufficient to attach the shield securely to the whole.

Two rivets are better than one to ensure rigidity and to prevent any lateral movement.

PLATE LXII.

IX.

CANDLESTICKS.

(Plates LXIII, LXIV)

Metal in the form of tubes may be used in the carrying out of these designs, and ornamental mouldings may be added by brazing or sweating. Chasing or graving on the tubes will give some amount of interest, but it must not be of any great depth, tending as it does to weaken the material. Each example is made up of several separate pieces. In their design, the method or methods of attachment must be carefully thought out. For instance, in the candle-cup, the lip moulding is brazed on; it is fitted with a brass base also brazed. Through this base it is screwed on to the long body tube similarly treated, with the wax-pan placed between them. The ornamental moulding on the body, as well as the base moulding, was first turned and afterwards brazed on. The tray-like base is of one piece of copper beaten into shape. It is raised in the centre to allow the fixing of the main tube. This is best accomplished by using a large-headed nut, screw, and washer.

In the second example, the procedure is practically identical with the first, except that the base, which is composed of flat brass wire bent into shape, requires different treatment. The curves should be of good shape. Owing to their thickness, considerable softening will be required in order that they may be bent to their proper form. It is necessary to attach these to the stem by double screwing.

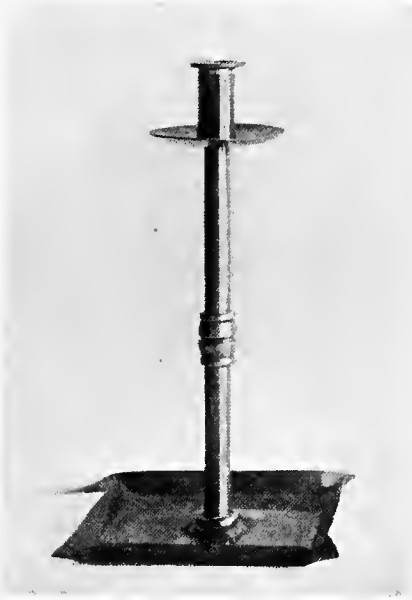

PLATE LXIII.

PLATE LXIV.

SECTION IX.

BEATEN METAL OR REPOUSSÉ.

The characteristic always noticeable in work of this kind is the convexity of certain parts—when the sheet of metal is viewed, of course, from the front.

Whenever sheet metal is struck by hammer or punch, there is a tendency for that part which was previously flat to assume a greater or less amount of rotundity, and thus it follows that the forms most readily produced are circular in plan and curved in section. It requires very little skill to hammer a disc of sheet metal so as to convert it into a bowl.

There are many small but useful articles that can be made by beating sheet metal with the aforesaid tools, and it may safely be said that there is no more fascinating home craft that can be taught by the teacher or practised by the amateur. The beauty of the metal surface so produced is such that one often forgets the possible defects in the pattern. But though almost anything may look well when beaten up in metal, it does not follow that there is no need to take much trouble in the designing. A barbaric rudeness and crudeness may in some cases be exceedingly effective, but considerations of ornamental proportion and suitability for decoration are of great importance.

In repoussé the pattern is partly produced by beating up from the back with hammer and punches, and partly from the front by means of metal punches which are capable of producing sharpness in the raised forms.

The work may be started, for instance, by carefully tracing the outline of the proposed ornament on the face of the sheet metal, this, of course, being in a horizontal position, and lightly scratching on the face with a sharp metal style.

This being done, the metal is bedded on pitch whose consistency has been somewhat softened by being mixed with other ingredients, of which details are given below. The ornament is then gone over with suitable lining punches, hammering sufficiently hard to make the pattern visible on the back. The metal is then taken off the pitch and, after the surface has been heated with a gas-flare, is rebedded face downwards. The portions of the ornament that require relief are then beaten up to the desired relief by working on them with the punches and hammer. Large, round-faced punches of hard wood are best for this purpose, if the portions requiring relief are at all large. The amount of beating, of course, determines

the amount of relief, and it is possible to obtain a great deal. Anything up to an inch is possible, though in sudden and high relief there is a danger of splitting or cracking through the metal, especially if the outlining on the face has been excessive.

The effect of a pattern depends largely on what relief is given to the several parts—the low relief of some parts, the high relief of others, and still higher relief again. The design in Plate LXV would be a very suitable one for a beginner to beat up, the relief of the larger and smaller bosses being uniform in character and production. Both are worked from the back, the larger with a large wooden punch having a round head almost equal in size to the boss itself, and the smaller ones with a metal punch.

But, in a piece of work such as Plate LXIX, much more skill is required in the selection and manipulation of the punches and the amount of hammer force to be used. Covering the whole surface with the same amount of relief should be avoided. Plain spaces are valuable, as they often increase by contrast the effect of adjacent relief.

The work can, and should as far as possible, be done with such nicety that little or no touching up on the face is wanted. Such work is the most effective and most characteristic kind of embossing. This results from the right choice of punches and hammer force to obtain the exact relief.

Copper is the best metal to treat in this way, being tough and elastic, whereas brass is harder and more brittle.

Punches should be in great variety of shape and size. The selection of them should be made by the teacher.

Wooden pitch-trays can easily be knocked up to any required size.

An old iron saucepan should be used for melting the pitch, which should be prepared in the following proportions—

7 lb. Swedish pitch.
7 lb. plaster of Paris.
2 lb. resin.
½ lb. Russian tallow.

DEVELOPMENT: THE USE OF GEOMETRY.

In Vol. I of this work something has been said of the teaching of Practical Geometry, and it is well here to emphasize again its practical use in the development of solids, as this development enters largely into the work of the workshop and craftroom. The principles must be well understood, so that little difficulty may be found in dealing with the development of any form of fashioned article.

POINTS TO REMEMBER.

Where relief work is to form a feature of such an article as a rectangular tray, this may be hammered up into the right relief in the flat, before the ends are finally fastened together. But in the case of circular trays, plates, and similar objects, it will have to be done after the building or hammering up of the object into shape. In a bowl, relief would be given by working with the hammer on a "snarling iron," whereas in the first case the flat plate may be laid face downwards on a pitch or sand bed, and be hammered or punched there.

It must be remembered that embossed ornament for cylindrical and spherical vessels cannot be beaten into relief with hammer and punches, unless the object is very large. It is, therefore, desirable that the relief to be given to the ornament by beating it from the interior should be of the simplest character.

I.

FINGER-PLATES.

(Plate LXV.)

In such a design as the simple rectangular form illustrated, the pattern should first be traced on the back of the metal plate, and fixed to prevent obliteration in working. This is sometimes conveniently done by scratching over the design with a metal point.

The large bosses are first obtained with the round end of a wooden mallet or a large wooden punch. Touching-up may be necessary with light taps of the hammer, so as to make the globular form fairly true. The smaller bosses, or dots, can be obtained with a metal punch, one blow being enough for each. A little preliminary practice will be needed in order to gauge accurately the amount of hammer force required, for each boss must be done with certainty on exactly the right spot.

Many good, simple patterns may be evolved by this method of obtaining relief. Others, very little more difficult to produce with hammer and punch, may be got by combining bosses and interlacing strap-work together. Exercises such as these make a good beginning in beaten work.

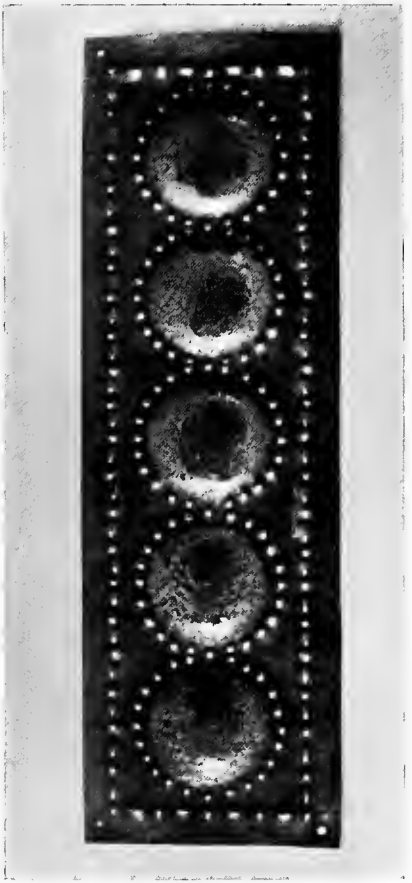

PLATE LXV.

II.

TWO EMBOSSED PANELS.

(Plate LXVI.)

Slightly varying in detail, these ornaments were designed to go together. The slight variation in the disposition of the leaves breaks the monotony.

The relief of the larger bosses, though varying a little from the circular, was produced as in the preceding example, with additional relief effected by a round-headed punch to give the seed-like surfaces.

The relief of the leaves and stems was obtained by means of rib-like forms, with little regard to their general surface.

The lines expressing these were produced by gently guiding the punch along the pattern and giving it a succession of light, rapid blows while doing so.

PLATE LXVI.

III.

A PLATE DECORATED WITH LETTERING.

(Plate LXVII.)

The proper spacing of the lettering to suit the shape and size of the object is the first consideration. After this has been determined, it is necessary to fashion the article to shape before tracing the lettering on the surface of the metal. In the example, a uniformity of letter relief and width is shown, as thereby the difficulty when embossing is lessened. It is quite simple to produce with the brush or pencil the seriphs and other complexities of the lettering, but it is quite a different thing to produce them with punches in metal. It must not be forgotten also that one is working backwards, and so used are we to the normal appearance of letters that, when so worked (*i.e.*, from the back) they are sometimes almost undecipherable—at least, at a glance. It is well to have a piece of modelling wax or clay at hand to take impressions of the work as it proceeds, so that this difficulty may be obviated to some extent. In fact, this is almost a necessity whenever any variety of surface form in modelling with the punch is aimed at.

PLATE LXVII.

IV.

A SMALL MIRROR-FRAME.

(Plate LXVIII.)

Here there is a somewhat complex contour, but a quite conventional filling for a small oval mirror intended to be fixed to a wooden back. The decoration varies from the bolder forms at the base to the much lower relief of the interlacing stems. It should be noted that the main lines of the masses conform to the outer shape of the frame.

PLATE LXVIII.

V.

A CANDLE-SCONCE.

(Plate LXIX.)

Candle-sconces, or wall candle-holders, are capital articles to engage the attention of the beginner when he has mastered the rudiments of the craft. In the example, the reflector is, of course, beaten to shape from the front, but the ornamental sunflower and bat are mainly worked from the back. Greater nicety of detail and finish must be obtained by subsequent working from the front. The background has been matted to enhance the value of the reflector.

The illustration gives some idea of the amount of relief given to the several parts.

The candle arm should be brazed on, and the socket may be fashioned out of sheet metal, being given a petal-like shape, and then turned up and screwed on to the arm. This socket could be executed similarly to that of the candlestick in Plate LXIII.

PLATE LXIX.

VI.

PLATE SHOWING PRELIMINARY TRACING AND EMBOSSING FROM THE BACK.

(Plate LXX.)

This is intended merely to show the method of procedure. The outlining of the pattern with punches on the front must not be too deep, but only just sufficient to give an impression of the pattern at the back. This is necessary to guide the worker in beating up. It will also show the first stage of the relief of the masses. These should be brought forward and then individually finished. It may also be pointed out that the metal will require annealing or softening from time to time, because the operation of beating decidedly tends to harden the metal. To do this the metal must be lifted from its pitch bed and annealed with a blowpipe.

PLATE LXX.

SECTION X.

BOOKBINDING.

BINDING MSS. IN LIMP COVERS.

THERE is an art of the book quite distinct from the literary quality of its contents. The easily-handled, sound, compact binding of some books is in strong contrast to the loose, weak, *noli-me-tangere* appearance of others. The design on the cover may be artistic, the print may be good, and yet, if the binding is loosely and slovenly put together, the appearance of the whole is spoilt. The prime, necessary quality at the bottom of all questions concerning common articles is for their construction to be subordinate to their use.

FIG. 3.

Failing this, whatever art is applied to their completion is misapplied. Nothing destroys the good points of an article so much as weakness of construction.

In many homes and offices it is often found desirable to renew the covers of books which have seen their best days, and manuscript sheets ought to be bound together and put into a portable form when finished, so as to protect them from damage and loss.

To bind books in leather, or even in the very stiff and elaborate paper boards commonly seen, requires considerable technical skill and practice which is not within the scope of this book. If

that is wanted, it is best to consult any of the bookbinding manuals which are published so cheaply. To rebind books in stiff boards is not beyond the capabilities of senior boys and girls, who also will delight in making very effective limp covers for their own books. It should also induce them to think of the binding and

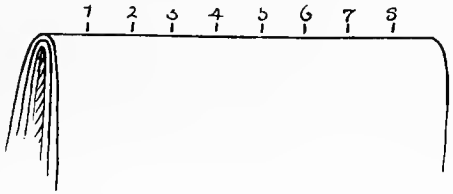

FIG. 4.

general get-up as part of the book. The contents and the binding should be in harmony: therein lies the art that we seek to foster.

Blotters and photograph albums also furnish suitable exercises in elementary binding. To make these volumes calls for no great skill, though accuracy and patience are essential.

The choice of tools, method of execution, appropriateness of design and taste in its application, as well as the general effect both of colour and configuration are the main points to emphasize in teaching the rudiments of the craft of bookbinding.

NECESSARY MATERIALS AND IMPLEMENTS.

Cutting board, sharp knives, backing hammer, glue or Seccotine, various papers and boards, tapes, thread, needles, and a fine bradawl.

HOW TO COVER A BOOK IN LIMP PAPER.

If the manuscript pages are not numerous—say about 24—it will only be necessary to attach the cover in the following way. Add to your book two plain paper leaves of a colour that will harmonize with the colour of the cover. These should be placed *outside* the manuscript leaves, as in Fig. 3, and indicated as *end-papers*.

This having been done, divide the back into any *odd* number of parts according to the size of the page, and mark them as in Fig. 4. These marks are called "kettle-stitch" marks, and are the points at which the needle will enter and re-enter during the sewing together. Use silk or good linen thread of suitable colour; the stitches will show.

To sew, put the papers together with the cover, and place them carefully on the edge of a table or board. Find the middle, and lift up one half, keeping the other half firmly fixed to the table.

The holes may then be pierced with a bradawl. Then insert the needle at the head kettle-stitch mark, bring it out at the next, and so on until the lower or tail kettle-stitch mark is reached. Return through the same holes, until the thread comes out at the hole below the head kettle-stitch. Withdraw the thread from the head kettle-stitch hole to the inside, and follow it up with the thread from the outside. Then fasten securely on the inside. (*See* Fig. 5.)

This will give some insight into the more difficult binding together of several sections. Incidentally a good deal of judgment is required.

The sections should be bound in the following manner. Cut four strips of linen or vellum according to the book and its cover

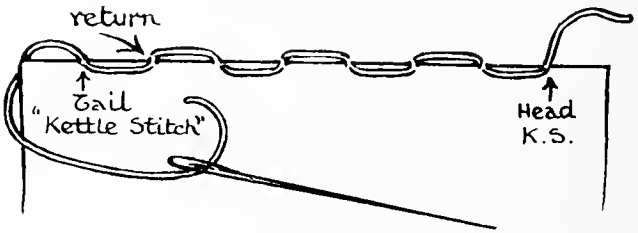

FIG. 5.

(*e.g.*, linen for a paper or thin cardboard cover, vellum for a vellum book). Thin linen tape will do for the former. When laid across the united thickness of the sections, the strips should project on each side for about 1″; they should be about $\frac{3}{8}$″ wide. On to these strips the sections of the book are to be sewn. Add to the book two plain sections, one at the beginning, the other at the end, but not enclosing the back. When this is done, knock up the sections squarely, keeping the heads (that is, the backs of the sections) quite level, and mark with a pencil the positions the linen strips or vellum slips are to occupy. The spaces between the slips should be the same as the space between the top slip and the top of the book, the space between the lowest slip and the bottom of the book being rather larger. Make marks by drawing the pencil across the back at points about $\frac{1}{2}$″ from the top and bottom edges for the kettle or catch-stitch. These marks will show as dots on each section; and, if 4 slips are used, there will be 10 dots in all on each section showing the position of the slips and kettle-stitches, (Fig. 6.)

Now sew the sections together. Bend the slips at right angles about $1\frac{1}{2}$″ from one end. Place the end paper evenly on the top section. Then insert the needle at the head kettle-stitch point, and come through at the next point before the slip.

Place the slip in position with its short end under the end-paper.

Re-insert the needle at the mark on the other side of the slip, and continue until all the slips have been enclosed by stitches, and you come out at the tail kettle-stitch mark.

This will give you a thread that passes along the centre fold of one section, alternately inside and over the outside of each slip,

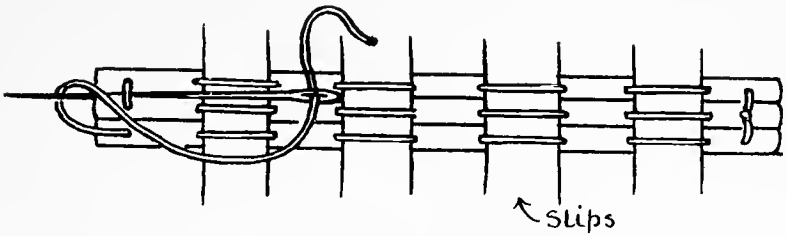

FIG. 6.

with a loose end at the head and another with the needle attached at the tail.

Lay on the next section, and sew in the same way but in the reverse direction. Tie up with the loose end at the head when you come to it. Sew the whole of the sections in this way, making a continuous thread from end to end. Each section should be

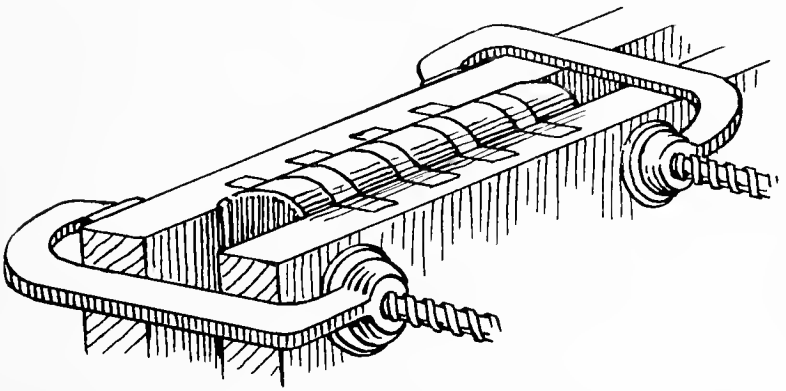

FIG. 7.

caught to the last by a loop. The threads crossing the loops should also be caught together.

The back is now to be covered with thin glue or Seccotine, and open linen or thin leather is affixed. It will be necessary to clamp the leaves between two boards, with the back just outside their edges, and it is left like this until thoroughly dry. Before glueing, pound the back with a hammer to make it hard. (Fig. 7.)

The cover is cut from the material about $\frac{1}{4}''$ larger each way than the sections. This, of course, is entirely a matter of taste, some preferring a larger margin and others even none at all.

Place the sewn-up sections in position on the cover, which should lie flat on the board (Fig. 8), and fix the slips in position with

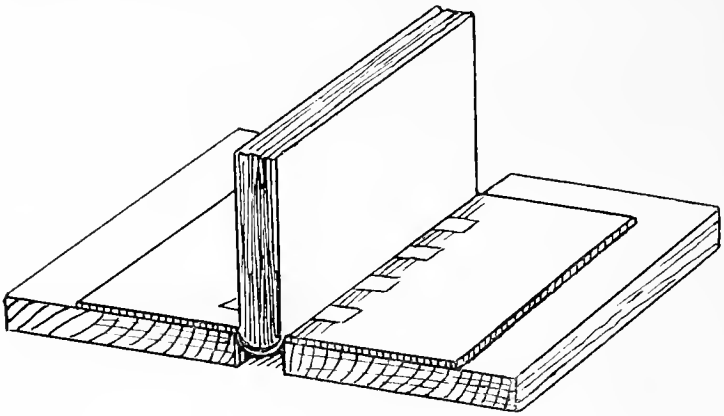

Fig. 8.

Seccotine or glue, and let them dry under pressure. The outside end paper may then be affixed to the cover with starch paste or Gloy. The design for the cover, and also the colour harmony, should receive the fullest consideration previous to binding.

I.

TO MAKE A BLOTTER COVER, A PORTFOLIO TO HOLD PAPERS, THIN BOOKS, ETC., OR A COVER FOR A BOOK.

(Plates LXXI, LXXII, LXXIII.)

Having executed the design for the cover by stencilling it on the chosen material or in any other manner, cut two strawboards, or pulp-boards, of the necessary size. Lay the material of which the cover is to be made with the pattern side down on a table or board. On this place the two cut strawboards in position, leaving a suitable space between them for the thickness of the blotting paper, book, etc., that it is to cover.

Care must be taken that the strawboards are in their proper places, so that the design on the other side of the material may be

correctly placed. This may be done by piercing the material with a needle from the front at the points where the corners of the boards are to come.

Having fixed these, rule a margin about $\frac{3}{4}''$ wide on the inside of the material round each straw-board. Cut out mitres as shown by the dotted lines in Fig. 9. This must be done round each board. Then carefully cut out along this line. Take up each strawboard and paste it well outside with thin glue or Gloy. Two or three

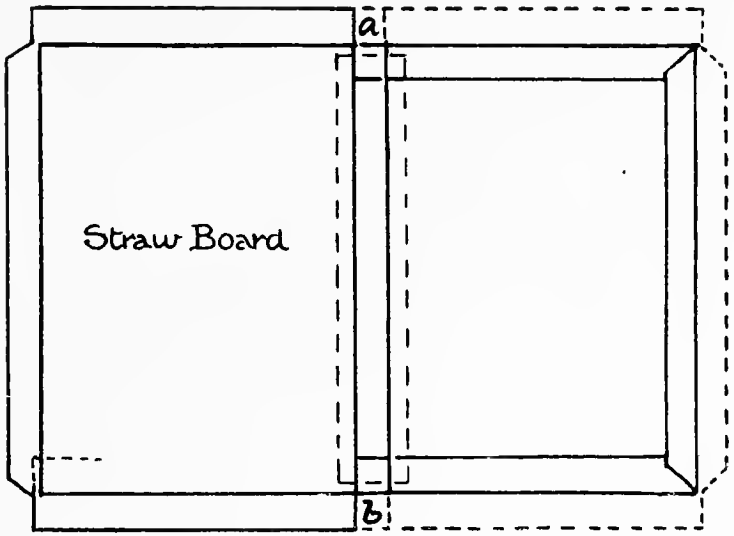

FIG. 9.

applications may be needed, as the boards may be so absorbent that the first application of adhesive simply disappears into the pores, leaving none to adhere to the covering material. Then lay each in its place on the fabric, and press well down, smoothing out any wrinkles or creases that may appear. This must be done by turning the whole over with the material upwards, and then pressing from the centre to the edges of the board. Then place the whole under a weight and allow it to dry. If a press be at hand so much the better.

When it is dry, paste the margins and turn them over as shown in Fig. 9 : first the top and bottom, and then the side margins. Turn in the portions *a* and *b* to finish.

When dry, the book is affixed to the cover in the same way as in the last exercise.

Blotting-paper is most conveniently fastened in by means of triangular corner-pieces. These are best made of stiff, strong paper, cut to the shape shown in the first diagram of Fig. 10.

The diagonal flap is gummed on its under surface, folded under the triangle and pressed down so as to give double thickness and strength to the long edge. The flaps *a*, *b*, are gummed on top, and then bent over under the triangle. The whole piece is then laid on the inside of a corner of the cover, as at *c* in the second diagram of Fig. 10, and pressed down until dry.

The corners of the blotting-paper, cut so as to fit, can easily be inserted.

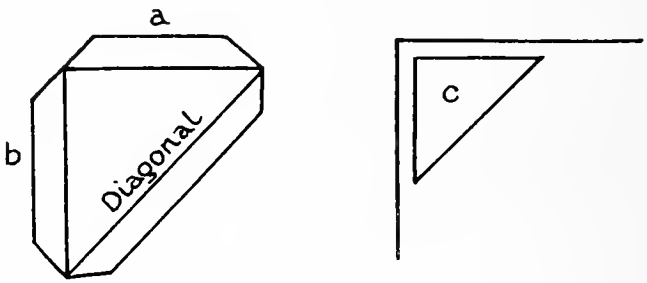

FIG. 10.

A strengthening slip should be put down the inside of the back before the end-papers are pasted on. Two examples of decorated blotter-covers are reproduced from Part I of this work, in Plates LXXI and LXXII. A book cover is reproduced in Plate LXXIII.

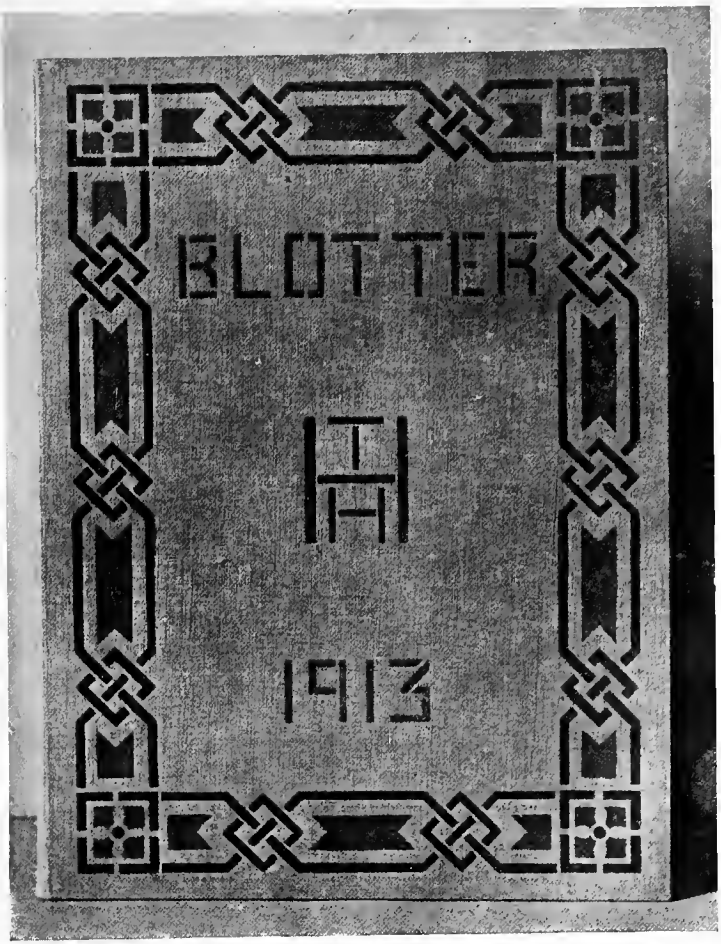

PLATE LXXI.

PLATE LXXII.

II.

LETTERING IN BOOKBINDING.

An appropriate style of lettering is usually hard for children and beginners to select, for even the simplest exercises in the art of lettering are strangely neglected at school. But after such exercises as are given in Part I of this handbook, the difficulties should be, if not overcome, at least greatly minimised. One or two remarks may be made with regard to lettering for book covers.

The lettering should be regarded as an inscription. Commonly, no

PLATE LXXIII.

stops of any kind are admissible, except after abbreviations. In extreme cases, where a complete sentence, such as a quotation, for instance, is included, stops, of course, are needed.

If a division between two words is absolutely necessary, a dot may be placed there in the middle; that is, exactly half-way between the guiding lines, after the manner of Roman and other inscriptions.

The lettering should be concise and compact, just enough for the volume to be identified: it should not do the work of the title-page.

SECTION XI.

MISCELLANEOUS PROCESSES SUITABLE FOR SCHOOLS.

In addition to the processes which have been already described so minutely in this work, there are many others, some of them exceedingly simple, bearing on the question of the formation of artistic taste that can be used as occasion demands or opportunity serves. Indeed, some of them are quite possible in schools where, owing to lack of equipment and convenience, more ambitious processes are impossible. Most of the following need no special tools or appliances beyond the common, everyday ones found in nearly every school.

(*a*) Wood Incising.
(*b*) Simple Combinations of Gesso and Poker Work.
(*c*) Splash or Splatter Work.
(*d*) Simple Sgraffito Work.
(*e*) *Passe-partout* Frames.
(*f*) Stiff Paper Picture Frames.
(*g*) Curved Paper Lanterns.
(*h*) Paper Staining.
(*k*) Etching on Metal.

Those who do not possess sufficient skill to execute the more difficult of the earlier examples in these volumes will find here easy ways of laying down some sort of foundation of taste in the application of art to everyday life.

(*a*) WOOD INCISING.

The humble attempts of the London costermonger to display his name on the framework of his barrow illustrate this simple process. The only tool required is a sharp-pointed penknife. Geometrical patterns, composed of straight lines and simple curves, are, of course, easy to manage, but considerable skill is needed to execute with precision more complicated patterns. Two cuts made at an angle of about 45° with the surface of the wood are necessary for every line. Each incision when completed is thus angular in section.

A better tool than a penknife is a V-shaped chisel or gouge. By means of this the incision can be made with one cut. If desired, the pattern may be filled with plaster of Paris, the surface then being scraped down to smoothness. This produces the effect of broad white lines on the decoration.

I.

A SMALL DOOR.

(PLATE LXXIV.)

An example of a very simple kind, the decoration being composed of straight lines only. The irregularities of technique due to the rudimentary nature of the tool are plainly visible. Notice how carefully the lines repeat the shape of the door and handle.

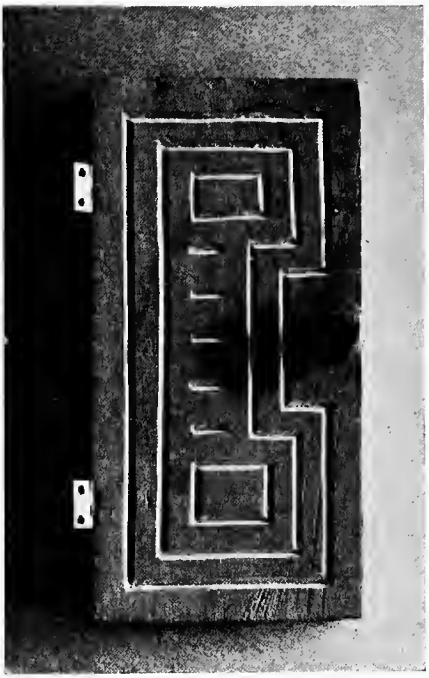

PLATE LXXIV.

Much more elaborate and complicated work is possible even with a penknife, if carefully used; this example is, however, quite enough to illustrate the process.

(*b*) GESSO AND POKER WORK COMBINED.

II.

A BOX-LID.

(PLATE LXXV.)

Combinations of the processes already described are possible in many cases. This is an example of one of the simplest and best, the colour of the poker work harmonizing well with that of the gesso after the latter has been varnished.

Certain portions of the background were partly filled in with poker work of a very shallow kind, which formed a pattern subsidiary to the first. It was done with the head of a nail. The lines forming the remainder of the pattern were not executed with gesso proper, but with liquid plaster of Paris, a material that gives results similar to gesso but not so refined. For very simple line work, plaster of Paris can often be used instead of gesso, but it is more susceptible of damage, being liable to chip or flake unless well varnished.

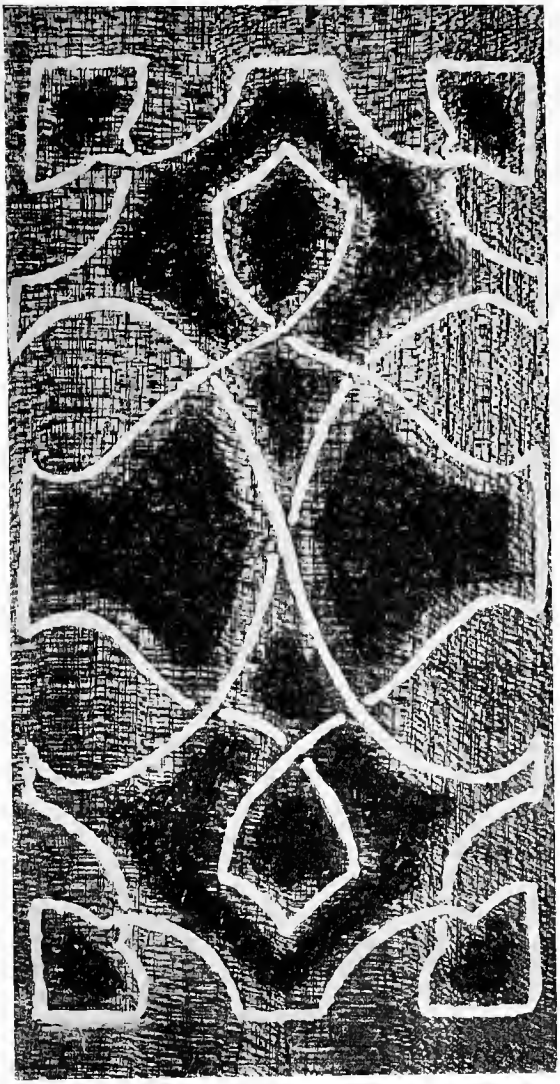

PLATE LXXV.

(c) SPLASH OR SPLATTER WORK.

This art, almost as old as the hills, is actually a modification of stencilling. It is applicable to many objects made in the handwork lesson, and is perhaps one of the easiest forms of decoration possible, though some amount of artistic skill in arranging the pattern is necessary.

Instead of using a brush and stencil plate or mask, the following is the usual procedure. Pressed and dried natural leaves and flowers, and similar objects, are laid on the surface to be decorated; they may be lightly gummed down so as not to be easily displaced. Artistic taste is exercised in the disposition of these forms over the surface. A very free or Japanese treatment of the arrangement is desirable; particularly as under these conditions any number of varieties of leaf-form and flower may safely be used in the same pattern. Until the arrangement is settled, it is best not to fix any of the materials to the surface, but merely to allow them to lie there loosely. When the arrangement is satisfactory, they may be lightly gummed so as to keep them in place. If the whole thing is then placed for some time under considerable pressure, the units will lie flatter to the surface, and so ensure sharper and clearer outlines. If straight lines are required as a border, slips of paper may be gummed on. A brush, such as a boot-brush or nail-brush, is now charged with liquid colour or stain, and, by scraping it lightly with a piece of wood or iron, small splashes or spots of the colour are scattered all over the surface. The spotting may be even in effect, or gradated, or blotched, just as the fancy of the artist dictates. Some indelible colour, such as permanganate of potash, or a thin oil colour should be used. When the colour is dry, the leaves and other gummed materials are removed by washing, and a silhouetted piece of decoration is left on the surface. The whole surface may then be varnished in the usual way. This is the customary procedure, but modifications of it are necessary if conventional ornament be required.

A method suitable for schools is the following. On the surface to be decorated paint the required pattern with thick water-colour. Brush-work, stencilled work, or painted work may be employed. When this is dry, thin *oil* paint of the colour proposed for the background is splashed all over the surface, and the whole is allowed to dry. The water-coloured ornament is then washed off, taking with it, of course, the splashes or spots of oil colour which fell upon it, and leaving the ornament showing on the natural colour of the surface. This method is particularly applicable to wood.

Again, paper shapes of leaves, flowers, fruit, etc., may be fixed on the surface with weak gum so as to form a pattern, and the

splatter work then applied, thin oil paint being used. When this is quite dry, the paper shapes can easily be washed off, and the pattern appears again of the colour of the surface.

Another way is to cover the surface with a stencil mask, and then to splash the colour on instead of applying it with the stencil brush.

III.

ANOTHER BOX-LID.

(Plate LXXVI.)

After the surface had been smoothed and varnished, the ornament was painted on it with thick Chinese white. When this had dried, the splatter work was applied with an old tooth-brush and thin light-brown oil-paint. The whole thing was allowed to dry, and the Chinese white was then washed off, so that the pattern was left in silhouette. If it had been desired, the background alone might have been covered with water-colour paint, when the decoration itself would have been formed by the splatter work. The first plan, perhaps, produces a better result in the case in point, but it is conceivable that with some kinds of decoration the latter might give a more pleasing effect.

Plate LXXVI.

(*d*) SGRAFFITO WORK.

This is a kind of decoration executed by covering a surface, as of stucco or plaster, of one colour with a thin coat of a similar material in another colour, and then scratching or scoring through the outer coat to show the colour beneath. The under colour thus supplies the colour of the pattern. The reverse process may be carried out ; that is, the background may be scored through and removed so that the colour of the pattern is that of the outer coat, while the under one appears as the background.

PLATE LXXVII.

Elaborate examples of this process are to be seen in church decoration, as many as three or four coats of varying tones and colours being used, and the effect obtained by cutting down to the required colour layer and removing the exterior ones.

But this is hardly possible for children to attempt, although it is well for the teacher to know what can be, and, indeed, is, done.

Moreover, if applied to any forms of handwork, the fragility of the plaster impairs the usefulness of the result. An example of a simple kind is given as an illustration.

IV.

A THIRD BOX-LID.

(PLATE LXXVII.)

The surface was first varnished. Then the ornament was applied in the following manner. A thin layer of plaster of Paris was placed on the whole surface, by means of an ordinary large paint-brush. When this was perfectly dry, the ornament, consisting of a piece of interlacing work, was traced on to it, and the plaster was then removed from the bands with a knife, the natural colour of the wood beneath reappearing. Two more coats of varnish were given to the whole thing to harden it. In the example illustrated, the layer of plaster was very thin, and the varnish has in places completely permeated it, giving it a clouded effect that was considered happier than would have been the case if the plaster had been applied very thickly.

(*e*) PASSE-PARTOUT FRAMES.

A *passe-partout* picture-frame consists usually of a pasteboard back and a piece of glass, between which a drawing or engraving is placed, often with a plain or ornamental mat between it and the glass, the whole combination being held together by means of strips of paper pasted over the edges, in the same way as lantern slides are bound by means of strips.

The making of these frames supplies children with excellent exercises, and gives them in a simple manner experience of the results obtained by differently spacing and placing the mount and the picture.

It certainly deserves more attention than it commonly receives, particularly as only ordinary modelling tools and a few picture postcards are necessary. Old negatives from photographic friends will supply all the glass that is wanted.

Good starch paste, freshly made, may be used to fix the paper mount to the glass. A stiffer adhesive that dries more quickly is, however, desirable for the binding strips.

V.

ORNAMENTED WITH BRUSH WORK.

(PLATE LXXVIII.)

The paper mount for the back was cut out first. The brush work ornament was then painted on it. The example illustrated, of course, does not show the colour. There is scope for endless

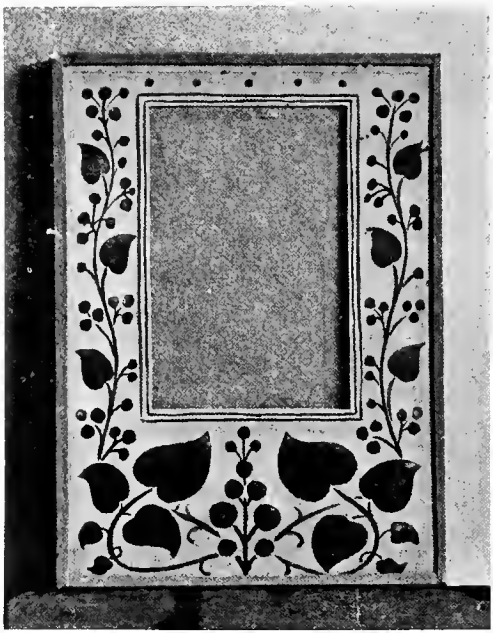

PLATE LXXVIII.

variety, both of colour and arrangement, but it is well that the former should be somewhat low in tone; otherwise attention is unduly attracted to it to the detriment of the enclosed picture.

VI.

ORNAMENTED WITH SPLATTER WORK (I).

(Plate LXXIX.)

Heart-shaped pieces of paper of the proper size were cut out and fixed by means of gum to the glass. The space to be occupied by the picture was similarly filled by a rectangular piece of paper, also fixed to the glass with gum.

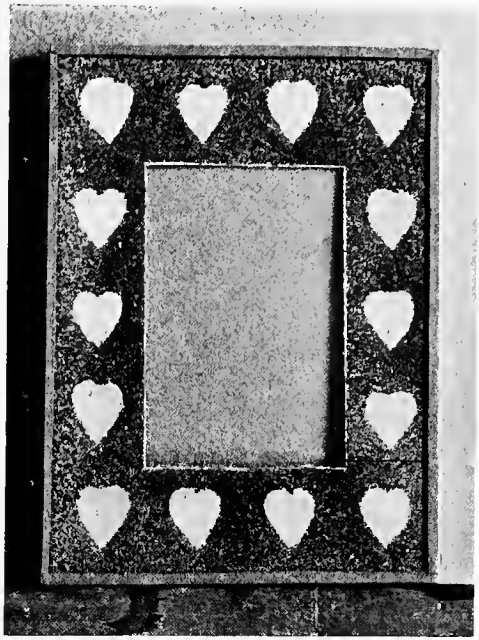

Plate LXXIX.

Splatter work of thin dark oil-paint was then applied to the whole plate. When this was perfectly dry, the pieces of paper were washed off, and a mount of suitable colour was attached.

VII.

ORAMENTED WITH SPLATTER WORK (II).

(Plate LXXX.)

The aperture for the picture was protected with a piece of paper, and then the entire surface was covered with a thin layer of plaster of Paris, and, while still wet, dabbed over with the brush so that

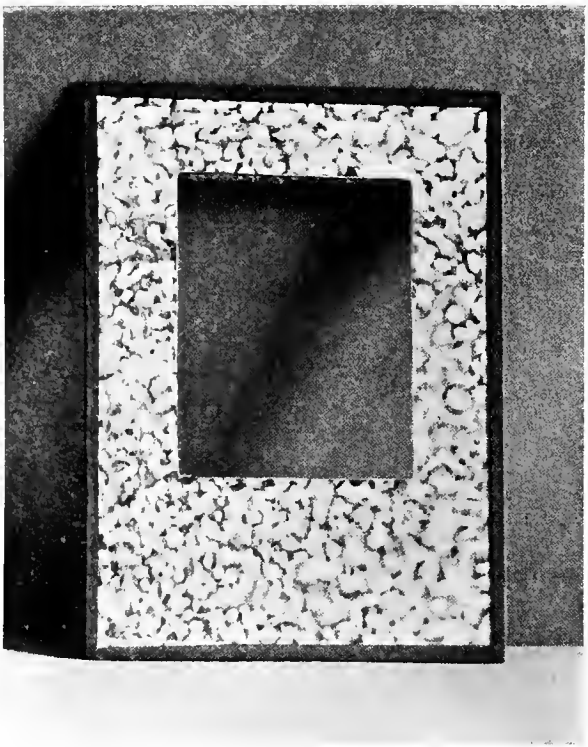

Plate LXXX.

an even, grainy pattern was formed. When the frame was dry, the mount of thin paper already prepared was fixed to the back with paste.

VIII.

ORNAMENTED WITH SGRAFFITO WORK.

(Plate LXXXI.)

The surface of the glass was, as in the last case, covered with a layer of plaster of Paris. When dry, the plaster was removed with a piece of wood to form the lines and dots of the pattern.

The coloured paper mount was then fixed to the back with paste.

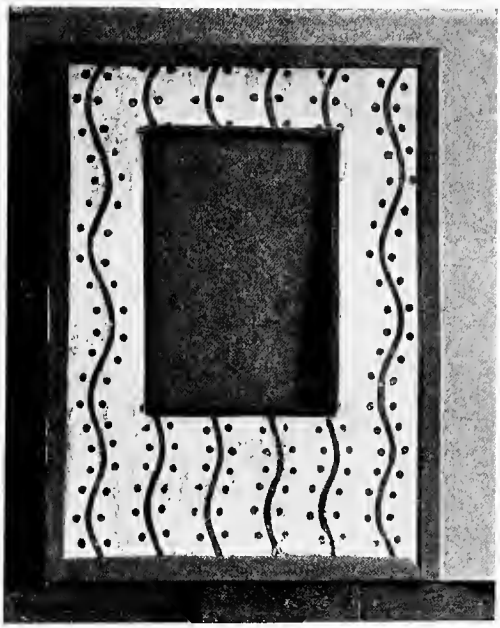

Plate LXXXI.

IX.

ORNAMENTED WITH SMOKE FROM A CANDLE-FLAME.

(PLATE LXXXII.)

This is a novel process, which gives an effect not easily obtained by other means.

The glass was first well smoked over a candle-flame. Then, by means of a damp paint-brush, the carbon was lifted from the surface so as to form the tree pattern seen.

PLATE LXXXII.

The paper mount, which, of course, had to be somewhat light in tone, was then cut and fixed to the back.

X.

DECORATED BY MEANS OF A STENCIL MASK.

(Plate LXXXIII.)

The mount itself in this case formed the stencil plate or mask. This was fixed to the glass, and then paper of another colour was pasted on behind it.

Plate LXXXIII.

XI.

DECORATED WITH BLOTTING-PAPER.

(Plate LXXXIV.)

A suitable mount was first prepared. Small circles of blotting-paper were then fixed in position on this to form the pattern. By pressing it with the point of a compass, the rosette effect on each was obtained. Strips of blotting-paper were also pasted round the edges. The whole was then given a coat of varnish, which hardened it, besides harmonizing the colour of the blotting-paper with the background. When dry, the whole mount was fixed to the glass with stiff adhesive ; the projecting blotting-paper being protected in this way.

This method of decoration is capable of extension within certain limits, even to the application of soft paper pulp, modelled in the fingers, to form the ornament. It always, owing to the fragility of the blotting-paper or pulp used, requires some form of protection, such as glass ; or it must be placed on a sunk surface, such as a piece of cardboard surrounded by a cut-out mount.

Leaves, flowers, etc., as well as figures, may be cut out, and the marking required on their surfaces may be incised with a hard, blunt metal point.

(*f*) STIFF PAPER PICTURE FRAMES.

Paper modelling, applied to form small frames suitable for picture-postcards, photographs, etc., is easily adapted by any teacher who is at all expert in this branch of handwork. It gives, like the preceding processes, excellent exercises in the formation of taste, and, in addition, enables some experience to be gained in the effects produced by various mouldings, for most of the common ones may be easily imitated in paper.

As few books on paper modelling give any examples of this branch of handwork, five or six easily made models are here described. Only the ordinary paper-modelling tools and appliances are necessary in their manufacture.

PLATE LXXXIV.

XII.

A SIMPLE PICTURE-POSTCARD FRAME IN STIFF COLOURED PAPER.

(PLATE LXXXV.)

The colour must be left to individual taste. Stiff paper, such as is used for Pastel Work, is most suitable for these. The annexed plan (Fig 11) shows the geometrical work required for setting this out. The broken lines in it must be scored.

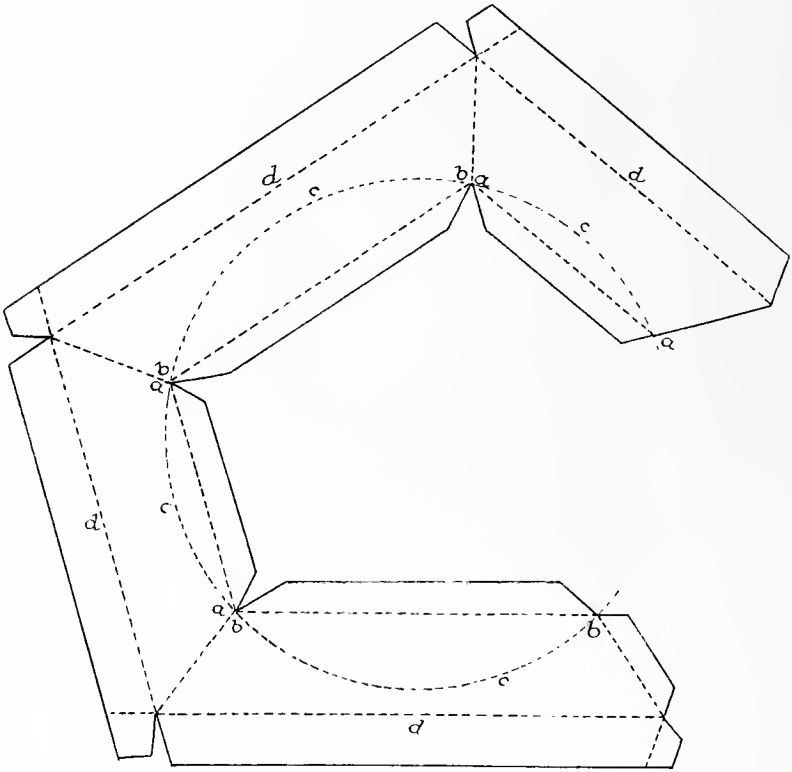

FIG. 11.

To set out the plan, proceed in the following manner.

Draw the circle *c c c c*, which must have its circumference at least 2 in. longer than the perimeter of the postcard. In it set out as chords the long and short sides of the postcard alternately.

Thus, *a a* is equal to the length of a short side, and *b b* to the length of a long side. Joint the points as in the figure. (*From this stage the circle* c c c c *can be ignored.*)

Draw the lines *d d d d* parallel to the lines already drawn, and at equal distances from them. These distances will determine the width of the frame.

PLATE LXXXV.

Join up the various points, and add the flanges as in the figure. Cut out along the plain lines, and score the dotted (or broken) lines.

A study of the diagram should show the way in which the paper is then bent along the scored lines. When this has been done, the flanges are gummed and the whole thing is stuck together. A plain hollow rectangle of a different but harmonizing colour is then cut out and fixed to the centre.

Various ways of fixing the postcard may be devised.

XIII.

A MORE ORNATE PICTURE-POSTCARD FRAME IN STIFF PAPER.

(Plate LXXXVI.)

No difficulty should be found with this if the accompanying diagram (Fig. 12) be studied carefully.

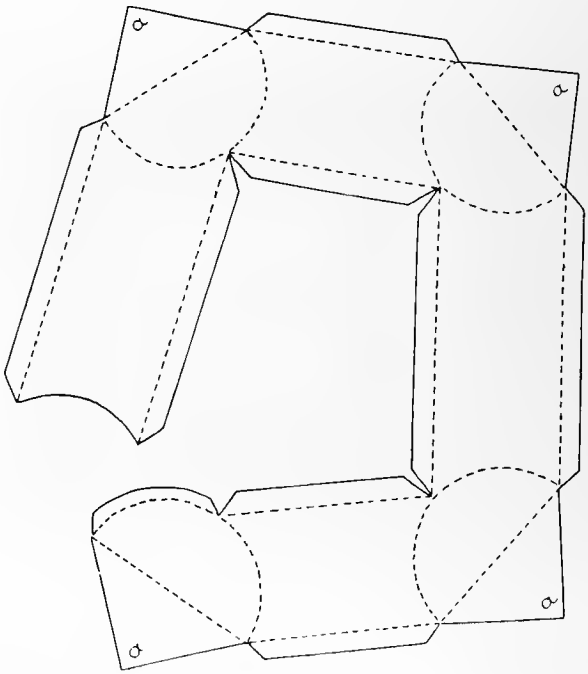

Fig. 12.

The method of setting out the plan is very similar to the preceding one, except that the angles at *a* must be right angles. Begin by setting out the lengths of the sides of the picture on a circle (not shown in Fig. 12), as before.

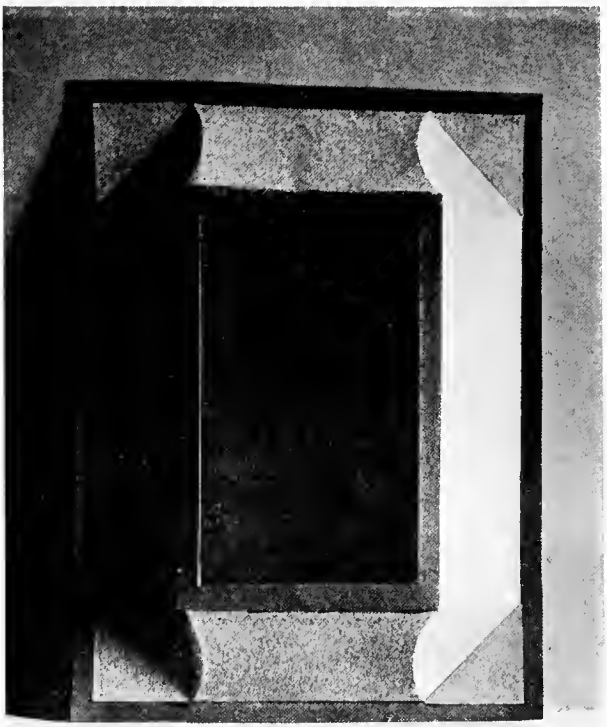

PLATE LXXXVI.

XIV.

A SQUARE FRAME FOR A MEDALLION.

(Plate LXXXVII.)

The accompanying diagram (Fig. 13) gives the necessary geometrical work. Two sections only are shown, but four are required. The angle at *a* must be a very little greater than 45°, say 2° or 3°. The angle at *b* is 45°.

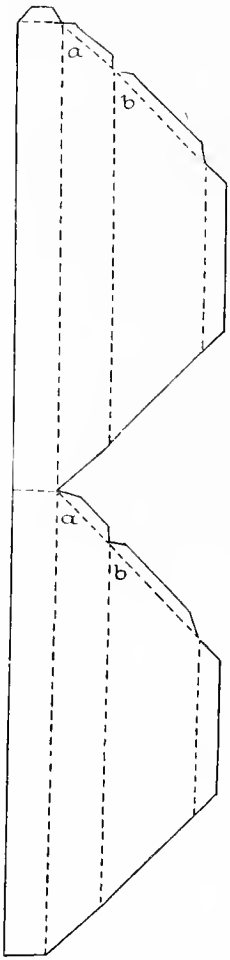

Fig. 13.

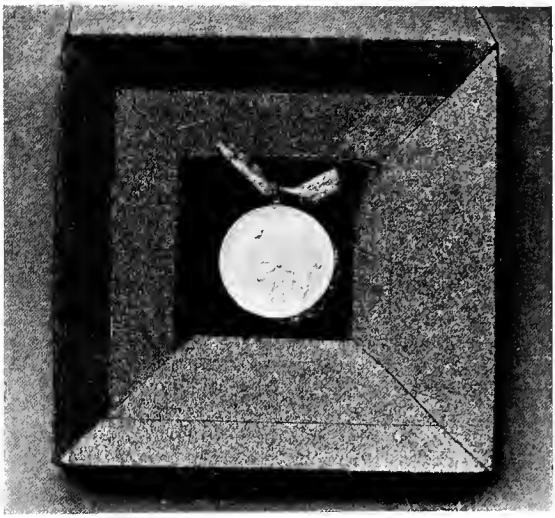

PLATE LXXXVII.

XV.

A CIRCULAR PICTURE FRAME FOR A PORTRAIT (SUNK PATTERN).

(Plate LXXXVIII.)

Study the accompanying geometrical diagram (Fig. 14).

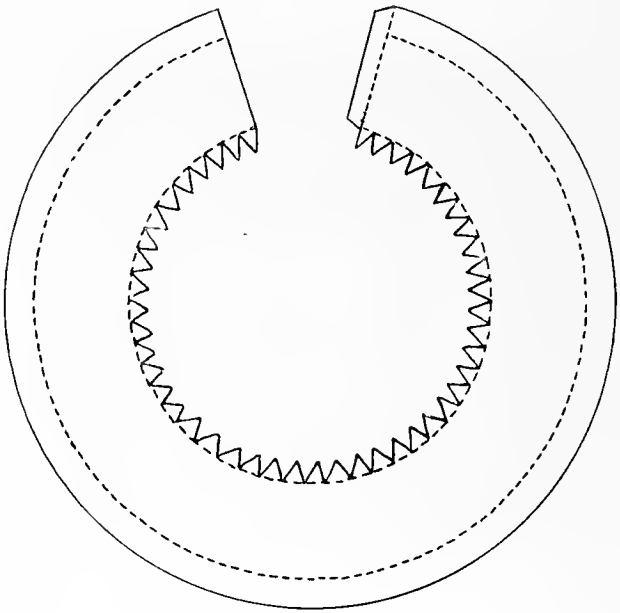

Fig. 14.

Notice that the greater the gap left in the circles, the deeper the central part will be sunk.

The dotted lines must be scored before bending.

After gumming up, a hollow circle of the proper size and of a different colour is fixed to the centre.

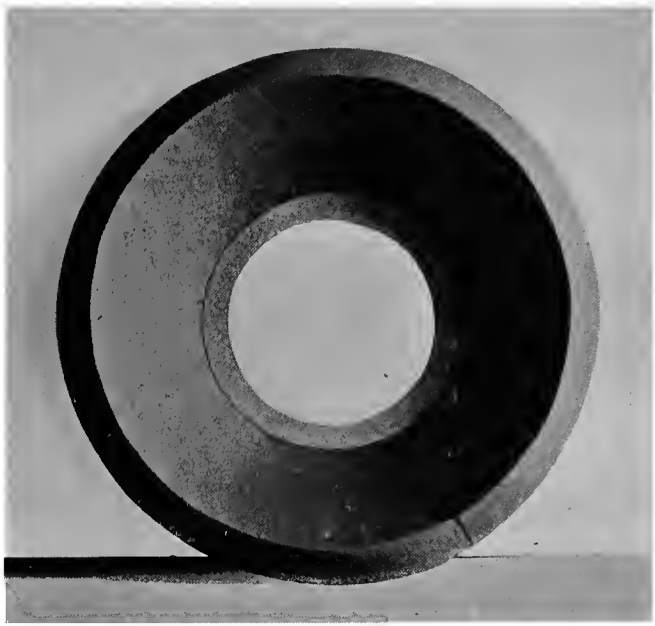

PLATE LXXXVIII.

XVI.

A CIRCULAR PICTURE FRAME FOR A PORTRAIT (RAISED PATTERN).

(Plate LXXXIX.)

Differences between the setting-out of this model and Fig. 14 are made clear by examination of the two diagrams. The bending will have to be suitably modified, and the inner ring of cardboard, cut out separately, is added last.

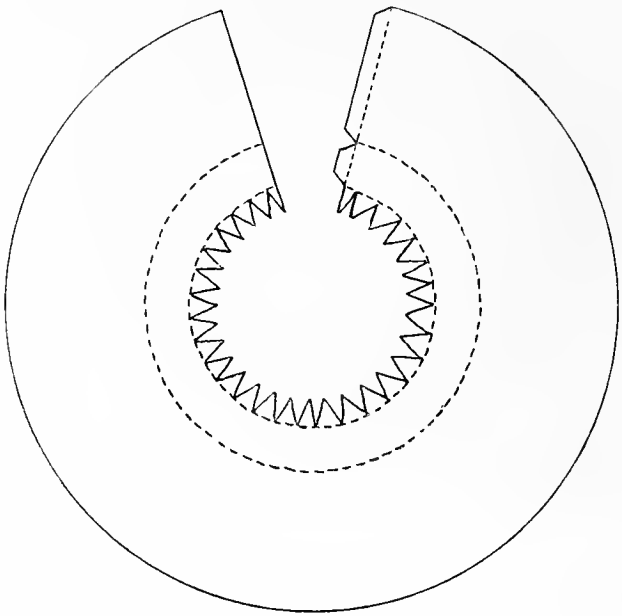

Fig. 15

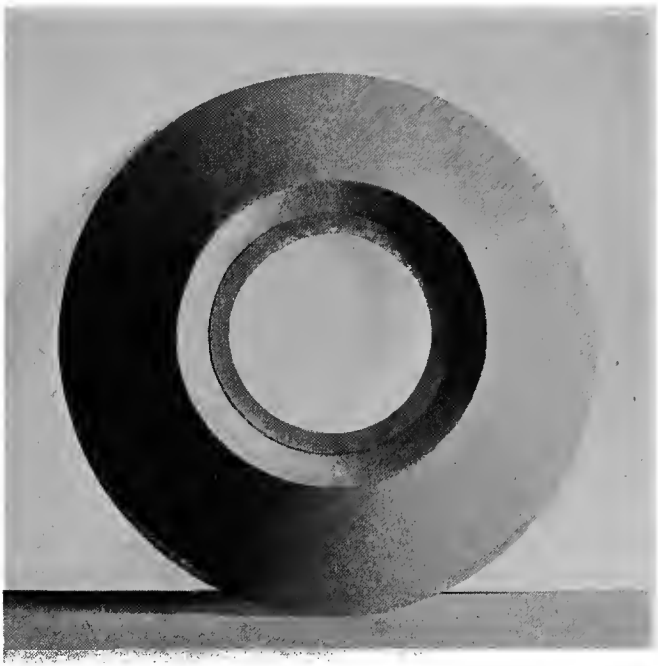

PLATE LXXXIX.

XVII.

A CIRCULAR PICTURE FRAME FOR A PORTRAIT (SCALLOPED PATTERN).

(Plate XC.)

The setting-out of the plan (Fig. 16) is so similar to that of the two other circular ones already given that it should now be practically self-evident.

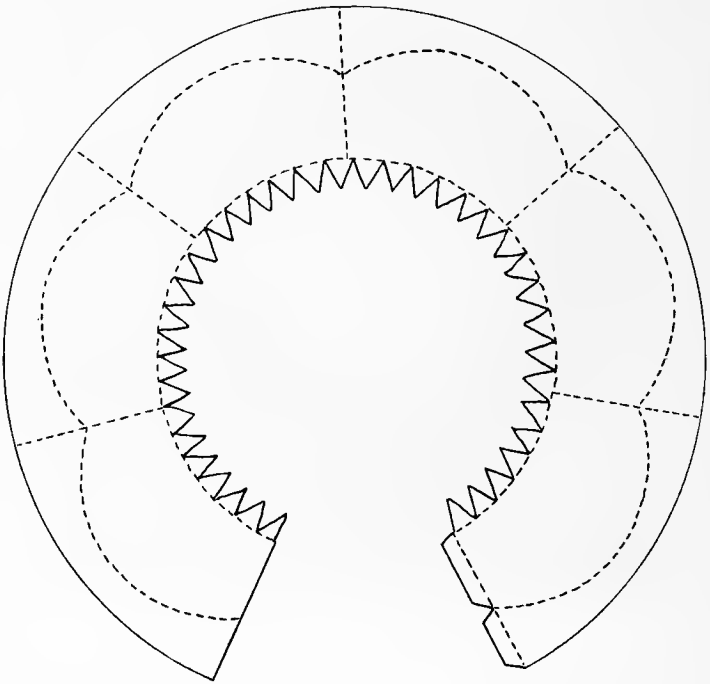

Fig. 16.

An examination of Plate XC must be made to determine the directions in which the lines are bent, especially along the curves.

After it has been bent and glued up, a hollow circle of the required size is fixed to the centre. This is better of a different colour.

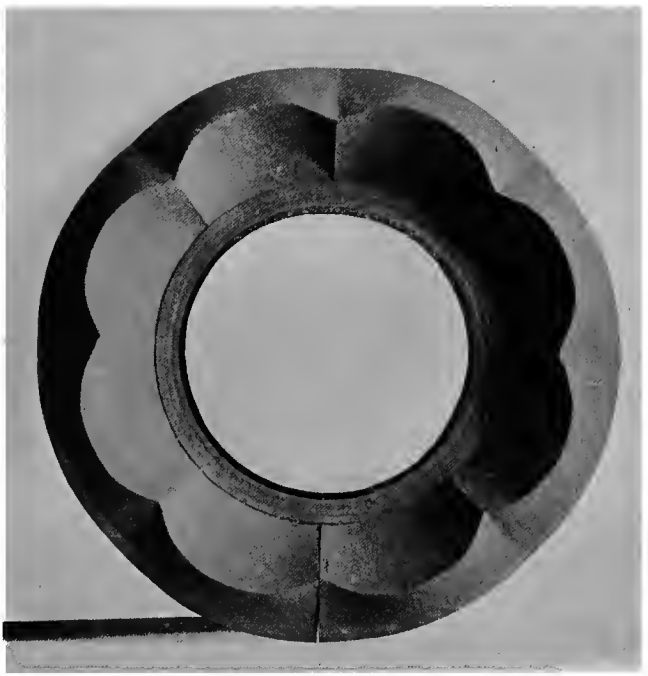

PLATE XC.

XVIII.

A SQUARE PICTURE FRAME (I).

(PLATE XCI.)

This is so much like the first frame described (Plate LXXXV) that the plan itself (Fig. 17) should be sufficient.

The dotted circle is ignored when scoring and bending, and will, of course, have to be erased.

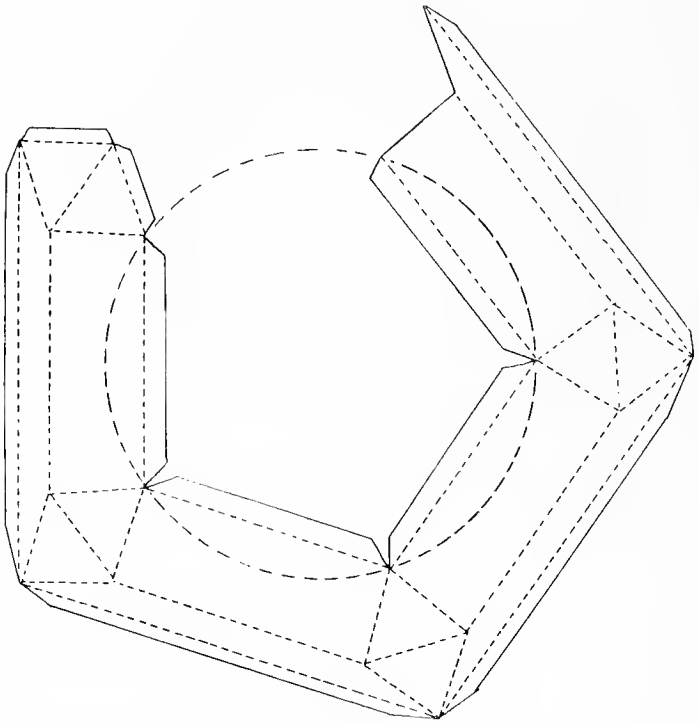

FIG. 17

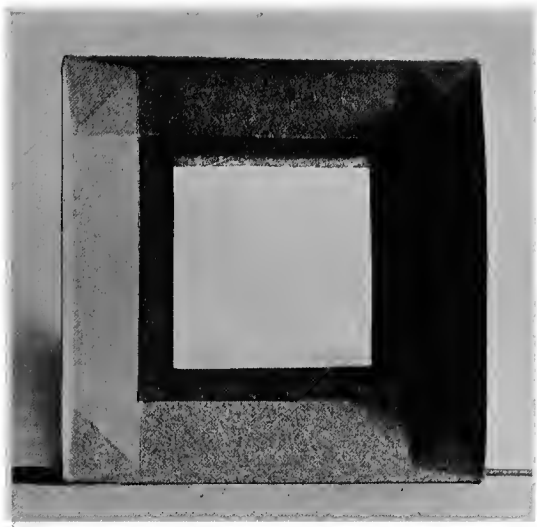

PLATE XCI.

XIX.

A SQUARE PICTURE FRAME (II).

(Plate XCII.)

Only two sections of the plan (Fig. 18) are given; four are needed for a square frame.

Notice that the effect of the construction is to produce a sunken frame.

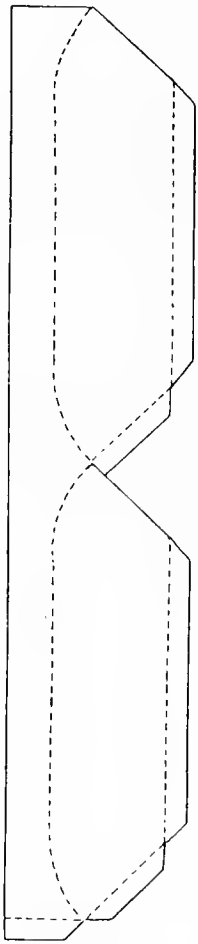

Fig. 18.

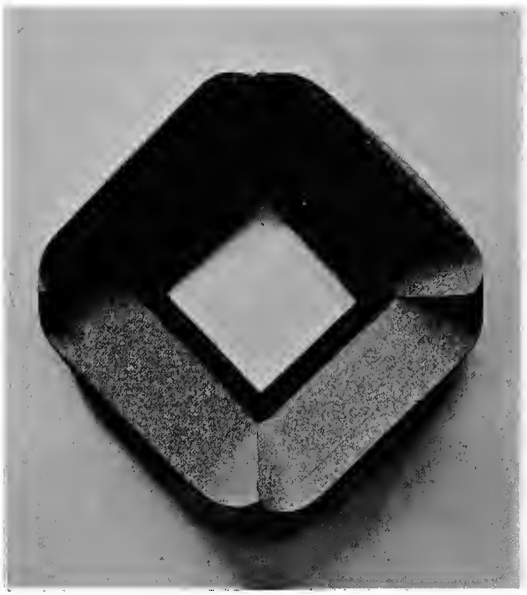

PLATE XCII.

XX.

A SQUARE PICTURE FRAME (III).

(PLATE XCIII.)

Two sections only are given in the plan (Fig. 19), four being needed for a square frame.

Notice that the effect of the construction is to produce a raised frame.

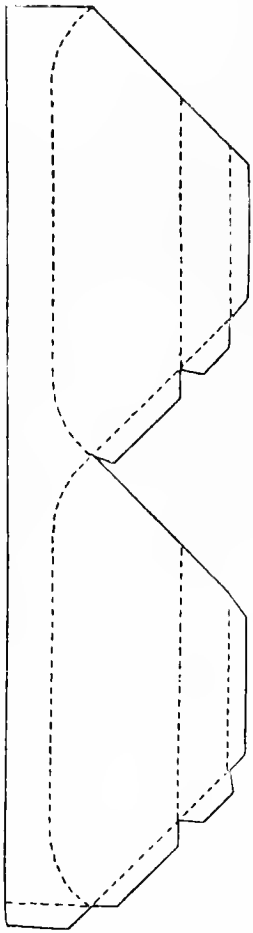

FIG. 19.

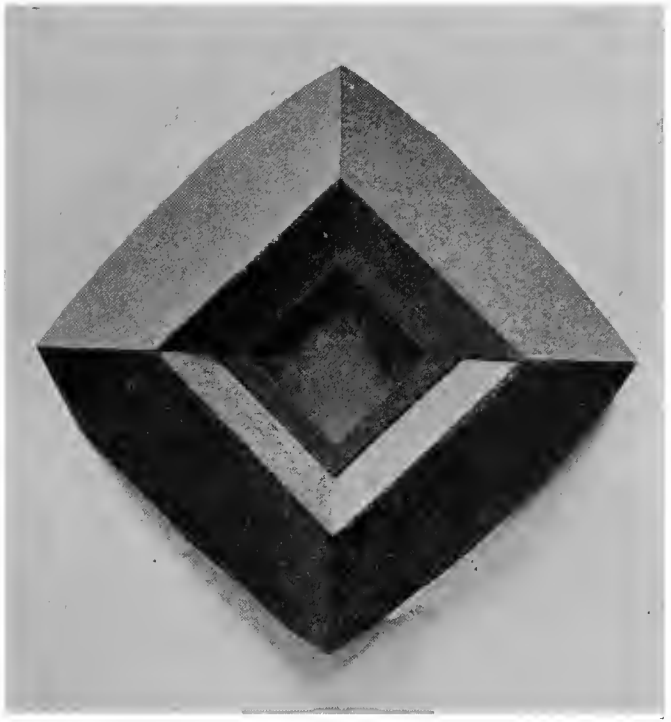

PLATE XCIII.

XXI.

A RECTANGULAR PICTURE FRAME.

(PLATE XCIV.)

This is made on the rectangular principle.

The angles marked *a* must be very slightly greater than 45°, say by 2° or 3°, to ensure the sunken effect.

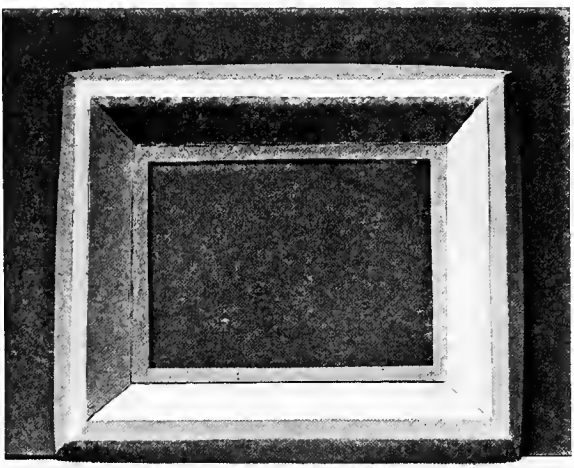

PLATE XCIV.

Two small pieces of the shape of the smaller plan (Fig. 20) are required to complete the frame.

The hollow rectangle, of a different colour, or darker tone, is then added.

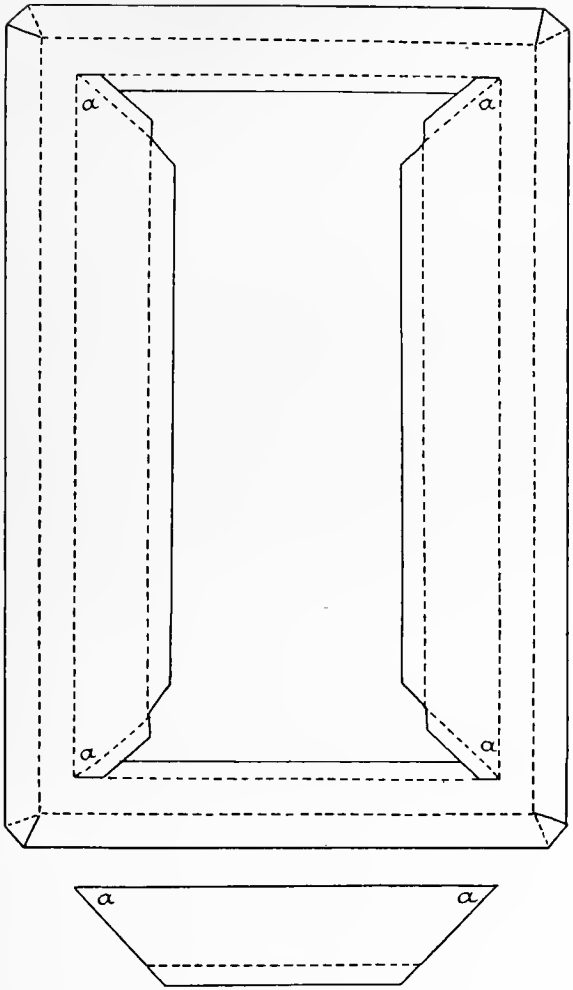

FIG. 20.

XXII.

A PICTURE-POSTCARD FRAME WITH CURVED BENDS.

(Plate XCV.)

The setting-out of the diagram (Fig. 21) is so much like that of the others already described that no further explanation seems necessary.

The remainder of the process is almost precisely the same as that which produces the other shapes.

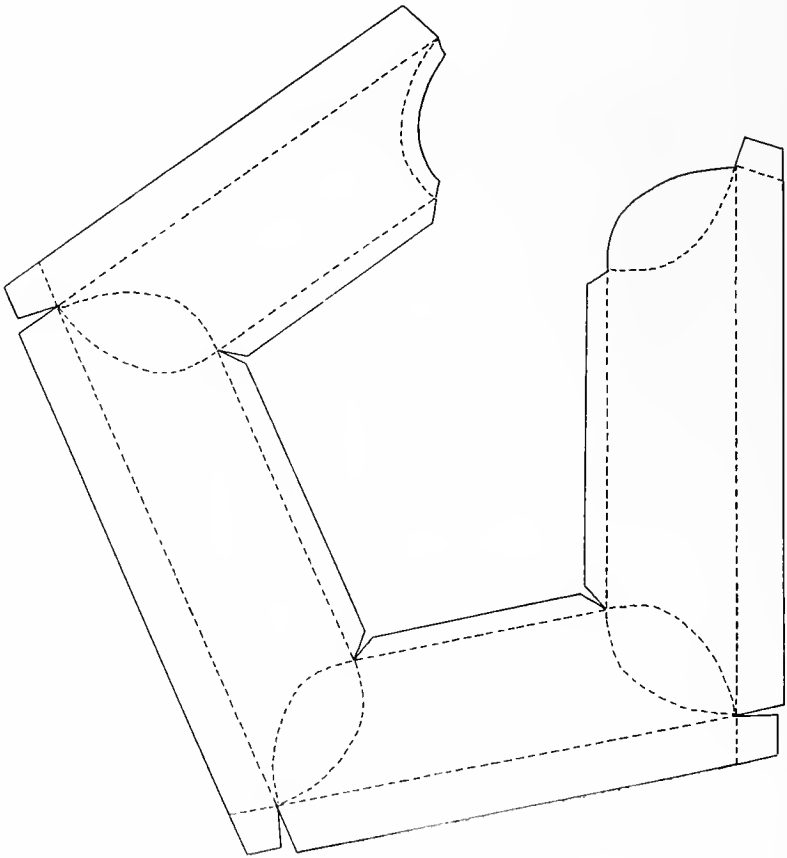

Fig. 21.

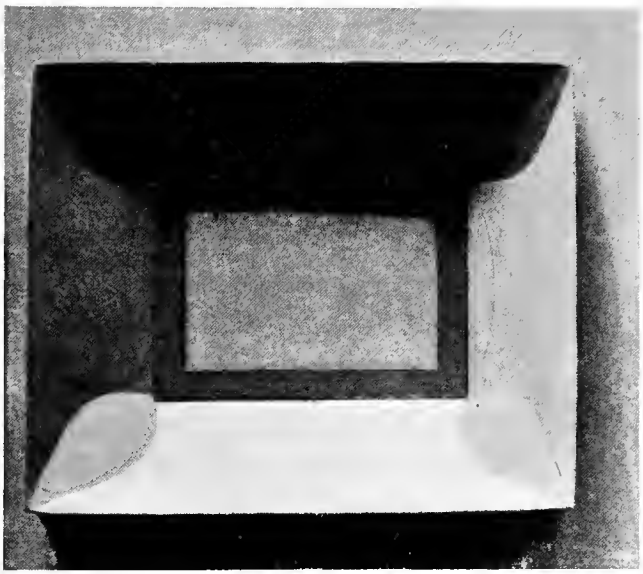

PLATE XCV.

XXIII.

A PICTURE-POSTCARD FRAME DECORATED WITH PAPER, MODELLED AND APPLIQUÉ (I).

(Plate XCVI.)

The bosses at the angles of this frame are modelled in paper set out like the diagram (Fig. 22). When gummed up they are fixed to the cardboard foundation with Seccotine. The remainder consists of slips of paper fixed to the cardboard by the same means.

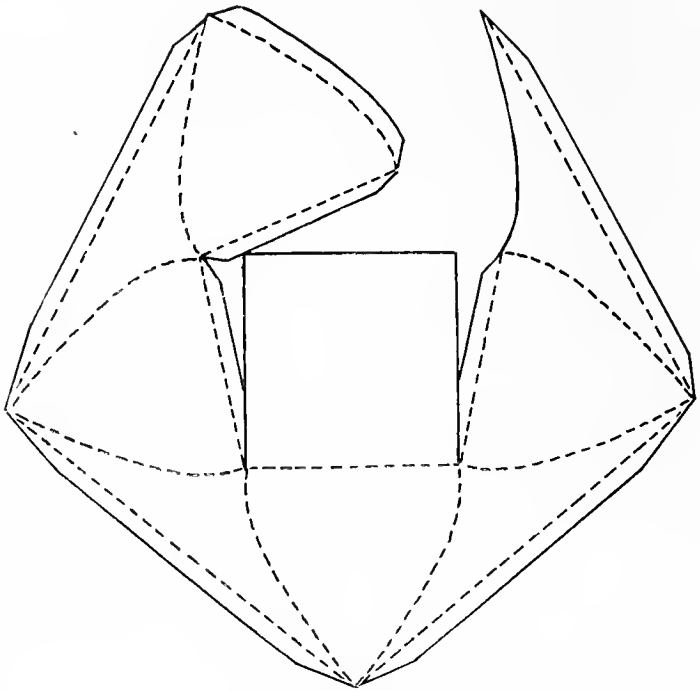

Fig. 22

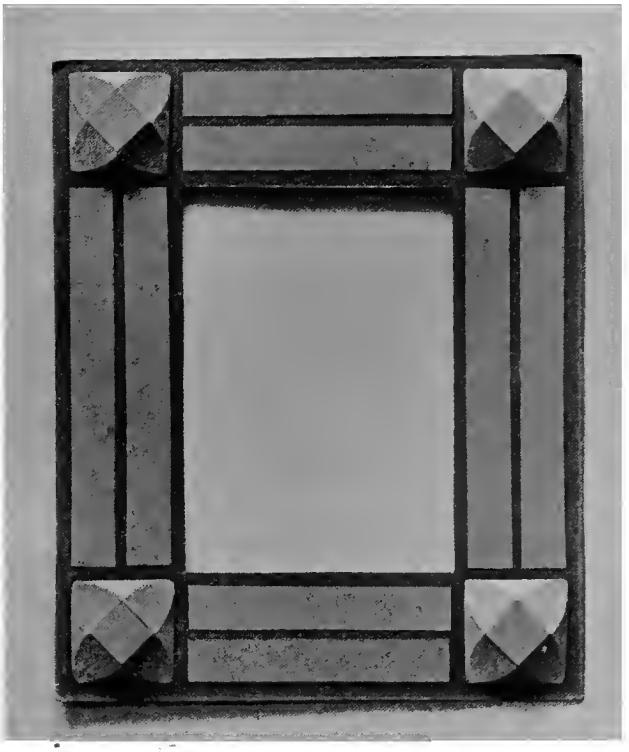

PLATE XCVI.

XXIV.

A PICTURE-POSTCARD FRAME DECORATED WITH PAPER, MODELLED AND APPLIQUÉ (II).

(Plate XCVII.)

The bosses at the corners are made of paper modelled after the fashion of one of the circular frames described already. (*See* Plate LXXXIX.)

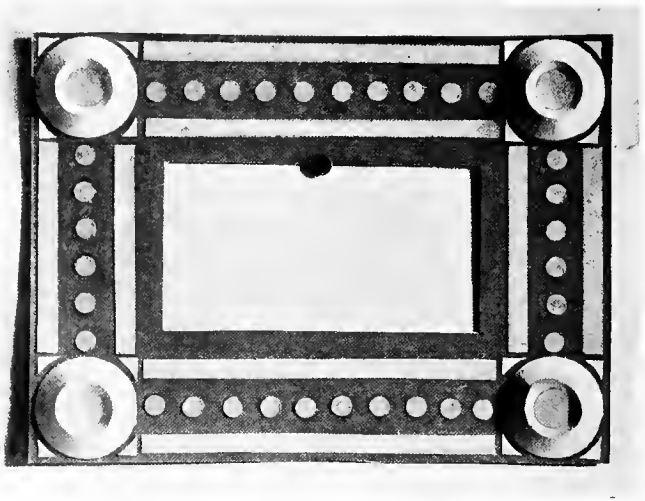

Plate XCVII.

When four have been completed, they are fixed to the cardboard foundation with Seccotine.

The tiny circles are formed of paper cut with a cork borer.

(*g*) CURVED PAPER LANTERNS.

XXV.

A LANTERN BASED ON CURVED BENDS (I).

(PLATE XCVIII.)

Six sections similar to the figure given as a boss in Plate XCVI were made, and the patterns seen in the plate were cut out stencil fashion. Tracing paper was then pasted behind each opening and

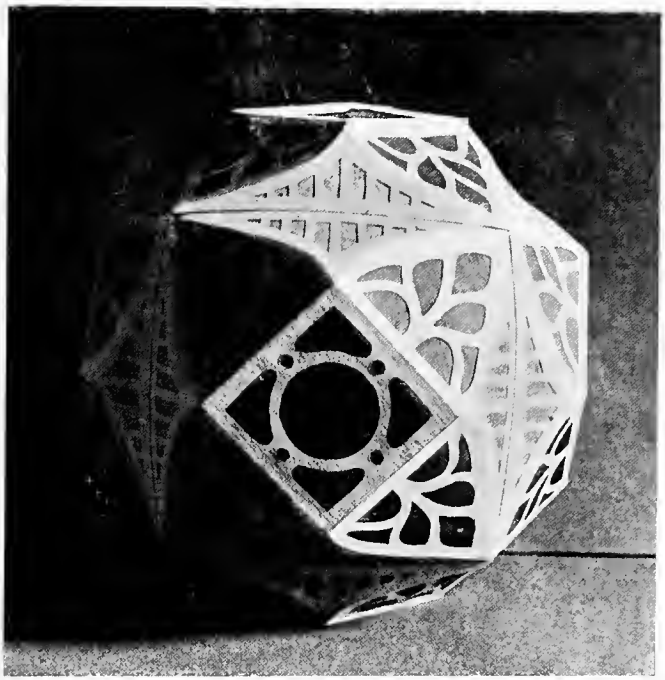

PLATE XCVIII.

stained with various coloured inks. The whole was then glued up, and squares of thick cardboard were pasted or glued at top and bottom.

XXVI.

A LANTERN BASED ON CURVED BENDS (II).

(PLATE XCIX.)

This is made on the rectangular principle, with various curved bends. Each facet is treated stencil-wise, and then finished as in the previous exercise.

(*h*) PAPER STAINING.

Objects modelled in white or tinted cardboard or strawboard may be very tastefully decorated in the following manner.

Having settled the pattern or arrangement, trace it on the object to be decorated, and proceed to paint either ground or ornament with shellac varnish. This should be rather stiff, so as to give some relief to the pattern and to allow for the absorption by the cardboard to some extent; it should, however, be capable of being flooded on, so as to give variety of tone. When quite dry, the whole is coloured with water-colour, which will tint the parts of the cardboard which are left bare, but will have no effect on the varnished portions. Plate C is an example of a frame treated in this way.

PLATE XCIX.

XXVII.

A SMALL PICTURE FRAME MADE OF STIFF STRAWBOARD.

(PLATE C.)

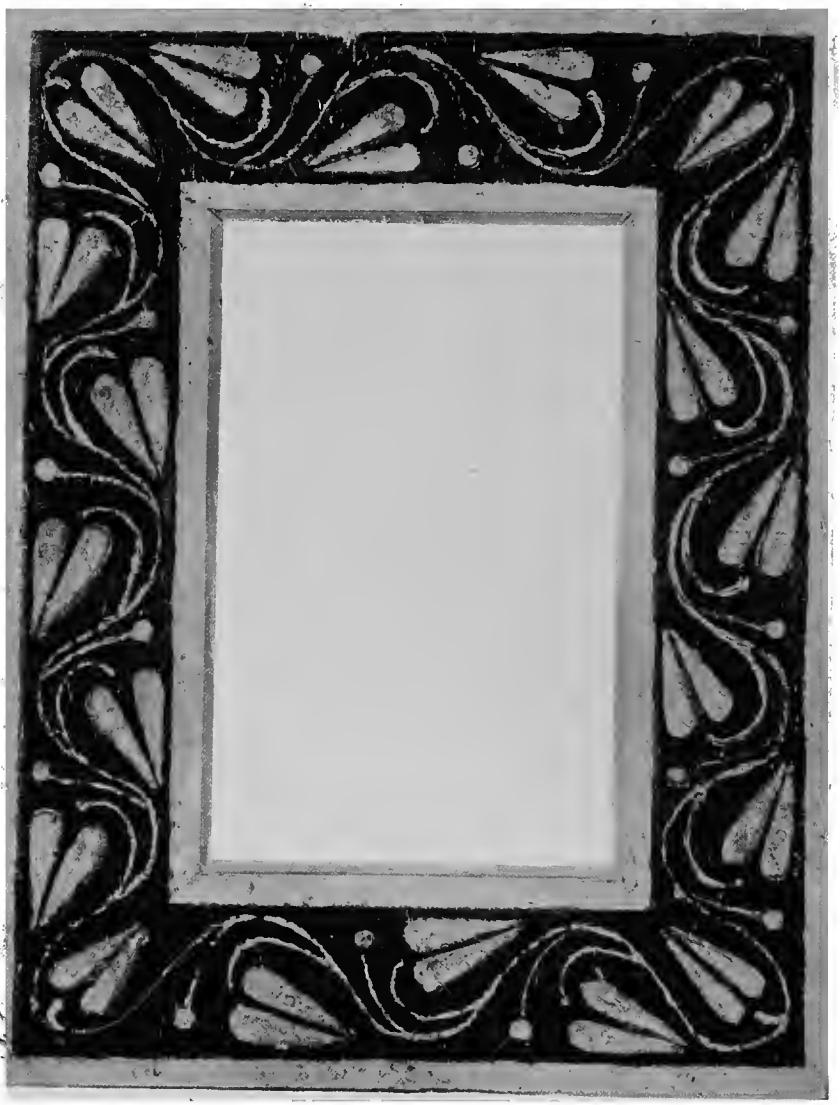

PLATE C.

XXVIII.

TWO MONOGRAMS.

(PLATES CI., CII.)

The mode of decoration in both examples is the same as that adopted in the case of the picture frame shown in Plate C. No further explanation, therefore, is necessary.

PLATE CI.

PLATE CII.

(*k*) ETCHING ON METAL.

This is a process of engraving in which the lines or other markings are produced by the action of an acid or mordant instead of by the usual engraving-tool or burin. A plate, usually of copper or brass, but sometimes of glass or stone, according to the use to which it is to be put or the effect sought to be produced, is covered with a ground made of asphaltum, wax, and pitch, with a small proportion of lamp black. On this ground the design is drawn with a steel point or needle as with a pencil on paper, care being taken not to cut the metal. The point leaves the metal exposed where it passes. The plate is then immersed in a bath of dilute acid (of course, an acid that will act chemically on the metal used). The acid bites those parts of the metal exposed by the drawn lines, while the remainder of the surface is protected from its action by the wax coating. Furrows are thus formed in the metal, which, when the plate has been cleaned and charged with ink, will, if impressed upon a piece of moist paper, print an impression of the design. But it is not proposed to use the process for the latter purpose, viz., obtaining prints, for a powerful press is necessary for this, but simply, by means of the bitten parts of the metal, to get a pattern on the metal itself.

Sometimes a coating of wax alone on the metal is sufficient; in fact, some of the examples which follow were produced by using wax from an ordinary candle. If very delicate lines are required, the liquid already mentioned, asphalte varnish, is almost a necessity.

If the metal is copper, the mordant usually employed is nitric acid (or "aqua fortis") somewhat diluted. A reliable substitute for this is common spirits of salt (hydrochloric acid), to which a few crystals of chlorate of potash have been added. For zinc, hydrochloric acid is quite sufficient. After the plate has been etched and washed, the wax can be removed by heating or, if asphalte varnish has been used, it can be removed by rubbing with a rag soaked in turpentine.

Any earthenware dish of convenient size may be used for the acid bath. Further information may be gleaned from the description of the various plates which follow.

[*N.B.*—Care must be taken not to get any acid on the clothes or the hands, for its corrosive action destroys cloth, and nitric acid also leaves brown stains upon the skin.]

XXIX.

A COPPER NAME-PLATE.

(Plate CIII.)

On a small sheet of copper, the lettering and the border were painted with asphalte varnish. (As a substitute for the varnish, thick oil-paint would do quite well; indeed, it might even be better, for the other has a tendency to "creep," that is, overrun the edges: evidences of this may be seen from an examination of the plate.) The back and edges of the plate were also given a coat of varnish for protection. The whole was then placed in

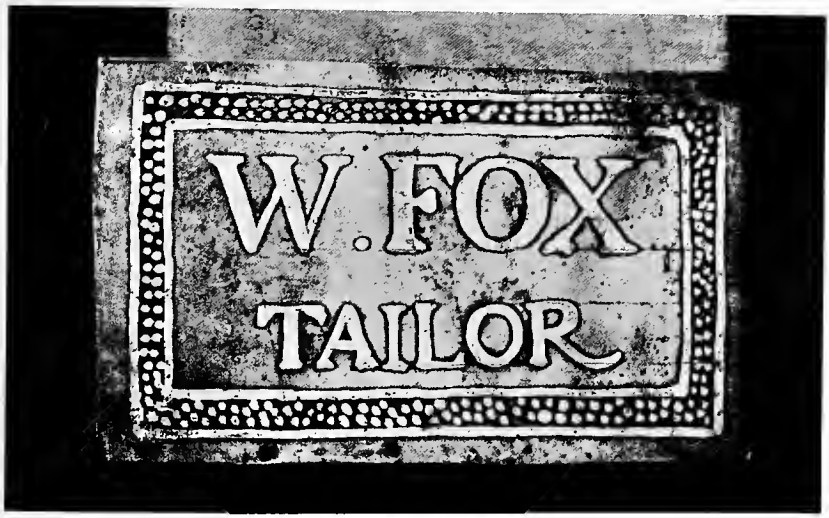

Plate CIII.

a bath of dilute nitric acid (one part acid to ten of water) for some considerable time, as long even as three hours, until the unvarnished portion of the plate (*i.e.*, the background) was eaten away to such a depth that the varnished portion stood well above it. The plate was then washed, and the varnish was dissolved by rubbing the surface with a rag soaked in turpentine.

XXX.

A MONOGRAM ETCHED ON A COPPER PLATE.

(PLATE CIV.)

This was done in precisely the same way as Exercise XXIX.

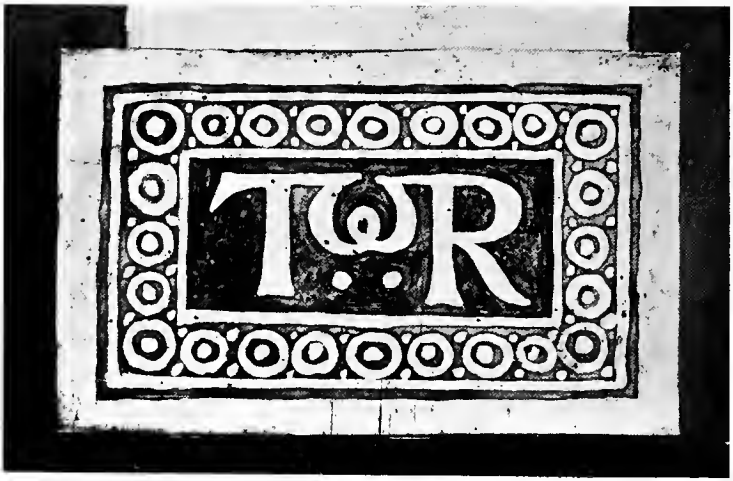

PLATE CIV.

XXXI.

THREE ETCHED COPPER KEY-TAGS.

(Plate CV.)

These were made in a similar manner on small spare pieces of copper. The making of key-tags is an excellent way of using up waste pieces of sheet copper that are left after larger and more important constructive work in copper has been executed.

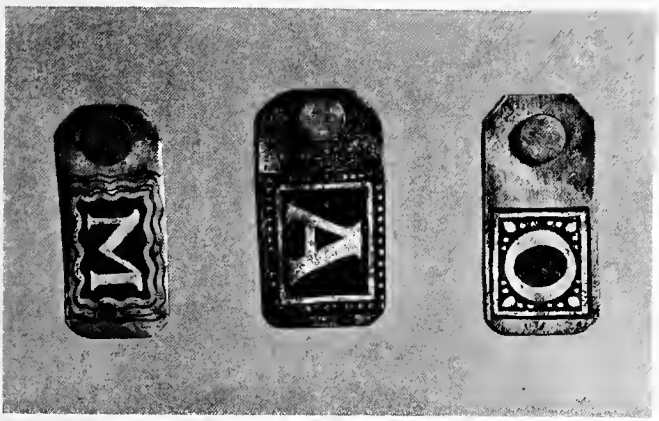

Plate CV.

A coat of thick black oil-paint was then put on those parts eaten away in the surface by the acid, so that the letters stood out more plainly.

XXXII.

A MONOGRAM ETCHED ON A ZINC CUP.

(Plate CVI.)

This was executed on the water-vessel of a friend's sketching outfit. The surface was given a coat of varnish, and, when dry, parts of it were removed by scratching the surface with a knife, so that those portions that form the monogram were exposed. The cup was then immersed, with the letters beneath the surface,

Plate CVI.

in a strong solution of spirits of salt, until the metal was deeply etched. When the varnish was removed, the etched portion was painted in with thick black oil-paint. Being put on the sunk portions, this was pretty safe from damage when the cup was in use.

XXXIII.

A SMALL FRAME OF ETCHED COPPER.

(Plate CVII.)

A more elaborate piece of work than any of the preceding, it was, however, made in much the same way. With a brush, and thick oil-paint mixed with varnish, the brush-work pattern was painted straight on to the metal. It was well loaded with paint, which was allowed to dry quite hard. The back was also protected by a coat of the same medium.

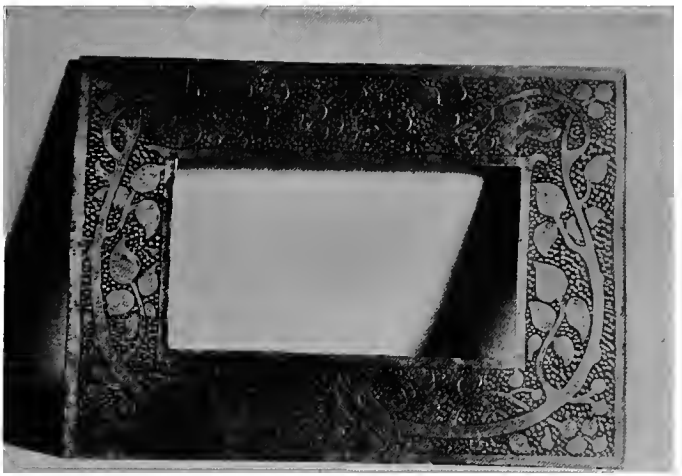

Plate CVII.

The copper was then immersed in a bath of dilute hydrochloric acid to which crystals of chlorate of potash had been added, and left there until the unvarnished portions were somewhat deeply bitten. This took about two or three hours. (It may here be pointed out that some specimens of copper seem to require much more time than others for this part of the process, the piece in question requiring what seemed a very long time. Brass, however, needs much less time, possibly owing to the fact that zinc is one of its constituents.)

The plate was then removed and well washed, and the varnish was rubbed off with turpentine. The rubbing caused some of

the varnish to be deposited in the sunk portions, and thus a darker background was formed, which was allowed to remain. As a relief to the pattern, the background may be made dull by what is technically called "freezing." This effect is obtained by oil-stone dust, mixed with oil and worked on with a hard, short, and stiff brush. The raised parts of the ornament are afterwards polished.

SECTION XII.

CONCLUDING REMARKS ON VARIOUS MATTERS CONNECTED WITH THE DECORATIVE ARTS; THE CULTIVATION OF TASTE.

Of all the many aspects of art exemplified in the teaching of drawing in elementary schools, there is one concerning which the authors are in strict agreement: they believe firmly that the applied arts alone meet *general* needs. The bulk of the work in art, as such, done at school should be directed along those lines. It is with the hope of laying a sound foundation of good taste that the authors have compiled these manuals.

Handwork has now been generally introduced, and will serve as a basis of operations that is much too good to be neglected. Children of previous generations had no such opportunity for a rational treatment of the subject, for no handwork of any kind whatever appeared in the codal work of the schools. Here and there it certainly was practised; but the work was a mere recreative adjunct or hobby, due to the enthusiasm of individual teachers, who wisely used the surplus energies and artistic impulses of their scholars to this end.

The popularity of the summer schools of the different Educational Handwork Associations is, however, a hopeful sign that better things are in store; it shows that teachers are waking up to their responsibilities in these matters, and are anxious to make up some of the leeway which has been lost, even if they have to sacrifice their hard-earned holidays.

The following words of a writer in *The Schoolmaster* are wise and apposite: "It seems probable that democracy has come to stay, unless the present unrest and warfare upset the foundations of society. Therefore, if we are to elevate the taste of a nation, we must begin at the beginning, and cultivate the taste of the children in the primary schools. For these are the workmen, manufacturers, and buyers of the future, and what they ask for they will have. They have the power of numbers, and will have the power of the purse by those very numbers. For what lasting influence has the taste of the few wealthy upon their generation? A man may set the fashion in some way, and a few who have the will and the means may copy him, but the great mass of the people neither know nor care whether his taste runs to Chelsea shepherdesses or mediaeval stained glass. But if we could only enable the myriad heads of Demos to know good and evil in the little things of everyday life, what a real Renaissance there would be! And it is nothing less than this which these devoted students and

teachers have as their aim. For sound construction is at the base of all good taste; and, if to that is joined the grace of colour and beautiful form, we have the highest art—and that without undue expense. Teach children to see and understand what constitutes real beauty and how to compass it with the simplest means at hand, and they will grow up to ask for that and no less. Then, when the poorest and youngest ask for beauty and truth as their right, they may, perhaps, build again some of the temples which we to-day are battering into ruins."

Much of the work done at present by children in schools connotes, it must be admitted, some educational and constructive good, even if this is only academic and has little contact with the real affairs of life. But, considering the very limited time at their disposal during their schooldays, and the still more limited time at their disposal afterwards, surely the most important, enduring, and far-reaching effects will be gained by cultivating their appreciation of decorative art; that is to say, by training their taste in connection with the affairs of common, everyday life and usage. Why have so many people such hideous collections of heterogeneous, trumpery household articles? Because they have grown up in the firm belief that these are the correct things to have; sometimes the dreadful things have been given to them as presents, and taste, unfortunately, does not always govern the selection of gifts. Fashion in dress is not the only vicious guise bad taste adopts. An added reproach is the fact that, because of the multitude of their abominable "treasures," often certain rooms in a house become positive incubuses: they possess us instead of us possessing them. The Sisyphean labours of dusting and polishing are, sooner or later, abandoned through sheer *ennui;* after which we meekly and timidly apologize for the shocking appearance of the "ornaments." Rather should we glory in it, and only make excuses for our lack of cupboards and cellars, wherein to hide them from the sight of man, for the weakness and sentimentality that prevent us from making an end of them. The curse of cheapness, too, blinds many a purchaser to the essential worthlessness of the object he buys. His sense of quality becomes blunted; he loses his touch, his instinct for the fine.

To counteract effectively in the adult the habits and customs of a lifetime is, perhaps, a hopeless task. We must start from the beginning with the child.

Such art work as the child does is usually, without its accompanying handwork, artificial, and its value is, we fear, quite fictitious and illusory. With handwork, it can be made real and vital. Children who have enjoyed the advantage of sound early art training of a practical kind will be certainly found possessed of at least the rudiments of good taste. Then, perhaps, soundness of

construction, fineness and propriety of colour, shapeliness of form, will help in determining a choice, and the false and meretricious will gradually be eliminated, until at last it ceases to be manufactured, being unsaleable. Such a consummation were devoutly to be wished !

There still appears to be a strong impression in certain quarters that the taste of a child can best be cultivated through the pictorial. [1] The bulk of our work still seems to tend that way. Thus, we find a deal of expression work—the drawing and painting of flowers and other inanimate objects, memory work, etc.—which alone is inadequate as a training in the perception of beauty ; but practical geometry, the basis of all applied decoration, has almost dropped out. A certain form of geometry, justly called theoretical, has in many instances taken its place. Its chief merit appears to consist in the fact that children are induced to talk about geometrical forms and relations with some glibness and, possibly, some understanding ; it may provide excellent exercises in verbal expression, but it is utterly useless for the purposes of art.

Much excellent work, both in pastel and in water-colour, is done everywhere, but the practice of using colour and form in a manner applicable to daily life is almost unknown.

The rudest elements of decorative taste receive little attention, except, as already stated, where the teacher takes it up of his own initiative as a recreative adjunct. Attempts have been snubbed and dismissed to the limbo of obsolete or heterodox ideas. At least one teacher was forbidden to carry on the work, and was told by an official superior that design of any kind was useless to children. Perhaps, before the days of handwork, he was not wrong, but his veto is certainly untenable in these days, and his dictum was always false. His strictures were apparently evoked by the fact that the children were not practising " self-expression " of the approved pictorial sort. But the dim, vague, nebulous worth of this self-expression made small appeal to the teacher. To create is a joy unspeakable, but the created thing must live, and move, and breathe. Most of us are chained to the concrete, with its definite limitations, which serve as a sure and interesting foundation

[1] If the pictorial interpretations of fashioned objects are to be of real value to the child, they need to be much more beautiful in form and colour than we usually find them in elementary schools.

In the drawing and painting of even the common articles of everyday life, the questions of soundness of construction, beauty of colour, grace of form, and fitness for purpose, as well as method of manufacture, should always be in the minds of those who have their selection.

In the matter of memory drawing, it is of very little use to ask for anything that has not been actually memorised. Here, again, careful judgment is necessary in selecting subjects. Colour, strange to say, is nearly always omitted by teachers when dealing with memory exercises.

for practice, and the results are not loose and sketchy, like those obtained from memory drawing of the "self-expression" order. As a well-known writer says: "The average man cannot cut clay into the shape of a man, but he can cut earth into the shape of a garden; and, though he arranges it with red geraniums and blue potatoes in alternate straight lines, he is still an artist—*because he has chosen.*" [1]

One confesses that a certain kind of art appreciation can be gained through the pictorial; undoubtedly some good is done by practising it. But is it the best training we can give the children? Remember that pictorial taste will affect their future lives very little; decorative taste, on the other hand, will be constantly exercised, and the results will have an enormous influence on their everyday surroundings. Good taste, like charity, must begin at home. Without depreciating the pictorial, why should the decorative be totally ignored? Should it not rather have first place? Even a good picture may be spoiled by bad framing or injudicious hanging. The most enthusiastic and discriminating picture-lover would excite derision if his clothes, tie, and complexion shrieked discordantly at one another, or his house was filled with vulgar, tawdry "ornaments."

Why foster appreciation of the purely abstract at the expense of vital things? It must be sadly admitted that pictures are of very ephemeral interest to the average citizen. He comes away from a picture gallery and complains of a headache or "Academy neck." He buys a few pictures to break the monotony of bare walls on commencing housekeeping; he looks at the pictures in the illustrated papers and magazines from a purely literary point of view. But his dress and his house and his furniture are always with him, challenging his attention. They wear out and need renewal. He can, however, scarcely be reasonably satisfied with the sentiment that his home is but a shelter from the weather, and his clothes but a covering and a concession to the demands of decency. They are the elements that form the A B C of art, so far as he is concerned, whether he knows it or not. It is, therefore, in this direction that a good foundation can be laid, and decorative

[1] There is a distinction that separates art into two classes, viz., "Fine" Arts, and the lesser or "Mechanical" Arts. The Fine Arts are architecture, sculpture, painting, music, and poetry. The Lesser Arts are those of the smith, the carpenter, the cabinet-maker, the potter, the weaver, the house-painter, the bookbinder, the glass-maker, etc. Broadly speaking, the arts of the first class minister to the enjoyment of man, those of the latter to his needs. The origin and purpose of the Lesser Arts, arising as they did from man's natural desire to provide himself with the elementary requirements of food, clothing, shelter, etc., are simple and easily understood. But there seems to be no complete agreement as to the precise origin of the Fine Arts, or as to their exact purpose.

appreciation expressed in deeds, not in words. He can live and move environed by beauty, certainly not less admirable because he has selected and arranged it of his own consciousness and volition.

It has been said cynically that restraint in art, as in other things, comes through satiety. Restraint, which is one of the cardinal virtues of art, is sometimes undoubtedly the result of riot and excess; but it is possible and desirable to produce this virtue in a saner and happier manner.

In regard to politics, many of us buy a daily paper as much to do our thinking for us as for the news it contains; so in matters of taste in ordinary affairs, we pay the tailor and the dressmaker, the upholsterer and the paperhanger, the builder and the architect, to prescribe for us. No wonder wicked fashion still bears sway!

But can much else be expected? "Not enough is said of the laws of beautiful arrangement in their relation to objects with which the boys and girls come into contact, and about which these men and women of to-morrow will often be called upon to exercise discrimination." The foundations of taste must be laid in the school. "Fuller development will come with experience later in life." But, unless some sort of beginning in the way of simple instruction and practice in real and vital art be given at school, the golden days of youth, with all its receptivity, will be lost for ever. A few may have leisure to cultivate an acquaintance with the finer work of our own and other times, and sufficient wealth to indulge in its acquisition; more may learn to take pleasure in the harmonious arrangement of their household goods. The vast majority are doomed to make the best of what can be taught them in their brief school life; and, unhappily, at present this is very often nothing. Before the war there were some faint signs of improvement, leading to hopes of better things. What influence the war will have for good or ill, who can say? The stronger reason, then, that some rudimentary critical knowledge of art should be given to our scholars during that time. Without it, they may have to go through life in ignorance of some of the essentials of civilisation, unobservant of the beauties of our "man-made world," with the avenues closed against them that lead to the chief joys and comforts of existence.

It has already been stated that love and appreciation of beauty in common things, or "restraint" (a term that connotes this), can be developed in children in a saner and happier way than by satiety. We mean, of course, by skilful training by skilled teachers.

There are many serious obstacles in the way, however, not the least of them being the hostile attitude of many local bodies and of the general public towards art and art-teaching. There is the question of cost. Until the financial aspect improves, it is idle

to expect any great strides. The whole business is out of the control of the teachers. In return for the rather exiguous remuneration bestowed on the majority of teachers, the country cannot expect—and probably does not expect—any wider cultivation of art by its teachers than it receives. Until an improvement takes place, the way is barred. Government inspectors are certainly invariably sympathetic, especially of recent years. The teachers do their best, as far as their training takes them. But it is their training, or, rather, their lack of training, that tells against success. How can they gain the knowledge and skill required for the presentation of the problems of art in such a way that real practical progress can be made? For rural teachers, the question at present appears incapable of solution. Remote, as they are, from any source of inspiration in the way of classes or expert advice—except on the occasion of the rare visits of inspectors, who, as a body, are most liberal and considerate—wedged in between the nether millstone of the labouring classes and the upper millstone of the middle class and landed gentry, what can be expected of them? They do their best under unfavourable circumstances. The only way in which they can get advice or stimulus is from books, and these are often beyond their means, for art books are seldom to be picked up second-hand.

A way out of the difficulty might be found, if cost did not prohibit it, by allocating one art teacher to every half-dozen or so rural schools in a neighbourhood, the teacher, of course, being peripatetic, in the American manner. Great judgment would, however, need to be exercised in choosing the teacher, for a purely city-bred teacher would completely misunderstand the rural character and requirements. The tendency would be for him to attempt too much. It would be idle to present in one room and one year all the lines of work that can be successfully carried on in the ordinary city schoolroom with ordinary city children. The capabilities and needs of the country child, with his narrow range of experience, though not necessarily lower intelligence, make the question difficult. It can only be answered after a close study of each particular district, and some amount of experience and experiment on the part of the teacher. The question of equipment and convenience also complicates the matter and aggravates the difficulty.

Assuming these obstacles surmounted—admittedly a great assumption—let us imagine what may be possible in the way of general art education in rural schools. The question of appropriateness of dress, and, intimately connected with it, of its colour, naturally comes first. This may be introduced into the colour lessons for girls by the dressing of dolls, etc. Even boys take an interest in such things, but in their case attention should be, in

the main, concentrated on their flower beds. It may be thought that this is unduly stretching our subject, but the household garden, even if not " of the house," is certainly one of the " precincts thereof," and the artistic arrangement of the flowers according to their colours is by no means to be flouted.

Indoors, the various cardboard and paper models, so extensively made, will serve as a basis of appreciation for much household pottery ; in this way some notions, however primitive, of fitness and beauty of shape and colour, may be implanted. The lessons may fall on deaf ears ; yet, if nothing is attempted, nothing will be done.

Where woodwork is taken, though this is unusual in rural schools, questions concerning furniture may be touched on lightly. In most country districts there are one or two buildings at least of some architectural pretensions. Reference may be made to these, and the reasons for their reputation be pointed out.

The beauty of trees, each of its kind, what constitutes their beauty (form, or growth, or colour), are cognate matters that deserve recognition ; also the reasons why we consider certain flowers more beautiful than others. Leaves form beautiful examples of the so-called laws of beauty.

These are only a few suggestions of what may be touched on to make the scholars realise the beauty and fitness of the natural world, and the desirability of the same beauty and fitness being found in all their home and personal effects. When dealing with Nature, one point requires much emphasis, viz., that naturalistic colouring and decorative colouring are two very different things. We have always observed that too much reference to Nature leads children to assume that the two are identical.

The teacher's desk may be tastefully decorated with flowers. Which vase shall be used ? The pictures may be re-hung to better advantage, and so on. Ask the children what they think of any new buildings near. Criticize them. In fact, stimulate thought on such matters in all possible ways.

A school in a small town should not experience anything like the difficulties of the rural school. Here the lack of adequate training in art severely handicaps the teacher, though opportunities for advancement are somewhat greater. But, even if the town happens to possess a School of Art (and seldom is this so, unless the town is situated in a textile or pottery district), the difficulty is hardly surmounted.

There are evening classes of a kind, but it is maintained by the authorities that they are not attended. There are rarely any classes in the arts of applied design. Simple applied arts, such as would be extremely valuable to teachers, are contemned, and high-sounding art of the pictorial sort is the only kind available

save in very rare cases. Even in Schools of Art there is a tendency, and sometimes more than a tendency, to ignore the claims of future buyers, and to concentrate all energies, financial and instructive, on the future craftsmen only. This is a great mistake. The potential customer should undoubtedly be educated as carefully as the craftsman. The sway of fashion is strengthened when the customer is so ignorant that he has to adopt the prevailing mode of the day, whether the same be good, bad, or indifferent. A knowledge of art will never be general until these conditions are swept away. The schools are mainly kept up by public money, and the public should have a right equally with artists and craftsmen to such artistic pabu'um as their aesthetic needs call for. The fees in the applied sections are usually, also, beyond the means of most teachers in small towns.

Again, assuming—more easily done here than in the case of the rural teacher—that these difficulties have been surmounted, let us briefly outline work possible in schools.

All imagined possible in the former case should be possible in this; many more examples are available, since woodwork is so general and the outlook of the pupils is wider. Equipment and convenience are better. The seasonal panorama of the shop windows, the varied architecture of the buildings, the daily placards, the kaleidoscope of life and movement, make it possible to carry on the work of artistic training in common things with a measure of success that can only be rarely approached by the rural teacher.

Nature is not yet so far away but that its valuable aid may be enlisted. There may be local museums—mines of wealth to the teacher. The applied arts, also, give scope for home-work in art, which, for children, is unsurpassed—art needlework for girls, and for boys, stencil-cutting, stamped leather work, bookbinding, pattern-staining, and many others. These all afford a convenient outlet for the realisation of original designs planned by the pupils, and are artistic occupations that can be practised (always provided that the teacher has some knowledge of the simple processes of the craft introduced, and that the number of the pupils is limited to not more than twenty) in most elementary schools where special centres, so necessary for woodwork and metal work, are not provided.

In the city school, one would imagine that anything and everything would be possible. Theoretically, it should be so. Unfortunately, however, many teachers are still hampered by buildings that were designed to satisfy the conditions and meet the requirements of a bygone form of education. The unduly large class still exists, more plentifully, perhaps, in city schools than in any others. The narrowing influence of a large class under one teacher can only be fully realised by those who have had the misfortune to teach one. In some places, the lack of convenience and the

number of the pupils make it folly to attempt any but the simplest kind of handwork. Appreciation of his efforts is as the breath of life to the ordinary child, and what teacher with even only fifty pupils can regularly keep in touch with each one's work? Many attempt it, but at an expense of energy that is severely felt in the other subjects of the school curriculum; sometimes at the more serious expense of the teacher's health. Wherever conditions like these obtain, teachers should leave serious developments of handwork severely alone. The game is not worth the candle.

But in the newer schools these handicaps are wanting. Airy and commodious workrooms, small classes, ample accommodation for plentiful materials, make the question of suitable art handwork a comparatively easy one. Under such happy conditions, almost any artistic occupation may safely and comfortably be attempted, and, given the requisite skill and knowledge on the part of the teacher, its successful accomplishment is practically sure.

Usually, too, these suitable conditions concur with considerable skill and taste in art on the part of some one or more members of the staff. It is where these are found that the happiest results may be looked for.

APPENDIX.

A FEW HELPFUL HINTS REGARDING VARIOUS PROCESSES AND TOOLS.

(1) PENCILS.

Get the boys to sharpen their pencils for themselves as early as possible. It is elementary handwork. See also that the pencils are sharpened at the right end ; the letters that distinguish the grade should be left. A strip of glass-paper pasted on a slip of cardboard is useful for finishing off the point. Each pupil can make and keep one for himself.

Remember that the smaller and finer the work to be done, the smoother should be the surface of the paper, and the harder the pencil or finer the brush. The larger the work, the coarser the paper and larger the tools.

(2) BRUSHES.

Brushes are best kept by themselves, and not in the colour boxes.

Oil brushes should be first cleaned with waste paper, and finally washed with soap and water until all the colour is removed from them.

Varnish brushes should be cleaned in methylated spirits at once, and not left for the varnish to dry hard on them.

(3) LETTERING.

Odd pieces of rag, kept at hand, are useful for wiping the pen when the ink clogs persistently.

Plenty of scrap paper is needed for testing the flow of ink from the pen and experimenting with various strokes when making the letters.

Bad writing is often the result of a dirty nib. If the ink is too thick, it may be thinned by adding a very little methylated spirit. (This refers, of course, to water-proof inks.)

(4) CUTTING CARDBOARD SHAPES.

The next best thing to glass to use as a bed on which to cut cardboard is an odd piece of cardboard. A much cleaner edge can be obtained than by using wood. Metal always blunts the knife too much.

Where convenient, cork borers should be used for piercing the cardboard; the pierced holes should be used as so many starting-points, as in the case of fretwork.

(5) STAMPED LEATHER.

Care should be used in damping the leather evenly; otherwise the pattern will be indented to various depths, giving a ragged effect.

The leather should not be too wet. Wipe it over with a comparatively dry sponge. Two or three applications may be necessary if the material is thick.

Do not use tools that are too sharp for stamping shapes on the surface of the leather, or they will cut it.

(6) METAL WORK.

See that all joints fit perfectly before soldering. Do not use too much solder; a little goes a long way, and the joints are then not ugly and unsightly.

In Repoussé Work, see that the metal is properly embedded on the pitch.

In hammering, do not use too much force at first. Feel your way.

Recipe for Varnish for Brass Models.

Shellac . . .	3 oz.
Methylated Spirit .	1 pt.

Warm the model and apply the varnish quickly, preferably by dipping.

Recipe for Varnish for Plaster of Paris Casts.

White Soap . .	$\frac{3}{4}$ oz.
White Wax . .	$\frac{3}{4}$ oz.
Water . . .	2 pts.

Boil together for a short time until melted.

This varnish must be applied cold with a soft brush. It dries readily and does not sink in.

(7) BOOKBINDING.

All work that is pasted or glued should be thoroughly dry before proceeding further.

Where pressure is required, let there be plenty of it. Things will then turn out flat.

Always work from the centre in pasting down end-papers, cloth on covers, etc. This will assure freedom from creases.

(8) STENCILLING.

In cutting, begin to work from the centre, all perforations with cork borers or punches having been done previously. Cut from the point of a form and end up at the same place.

No great pressure is required unless the knife is blunt—it should not be. You may move the paper on the cutting glass without moving the knife, when its point has settled on it.

See that the stencil plates are perfectly flat before printing. The flatness may be secured by placing the varnished plate between damp blotting-paper under pressure.

Do not attempt to use a cork borer or a punch on the glass, but use as a bed any odd pieces of cardboard you may have by you.

THE END.

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