

## GLASS PAINTING AND STAINING.

## FIRST LESSON.

VERY few amateurs have taken up glass painting, partly because the materials are not so easily obtained as those for china painting, and partly because glass painting is still confined to the professional glass painters, who in the worst spirit of conservatism seem jealous of their craft. The difficulties of glass painting are not *greater than those met with* in china painting, and as the glass can be fired in the same kilns as those used for china, and the leading can be done by any good glazier, we see no reason why glass painting should not be as successfully followed as many other of the decorative arts. True it is that glass must be used in its appropriate place, for windows or window-blinds, and cannot be hung on the walls of a room as a china plaque; but then the uses to which it must be put make it alone in its special field, and most of my readers can testify to the charming effect painted leaded glass gives to a house. In London houses—and country ones too, as far as that goes—the outlook is seldom particularly inviting, and in the rooms likely to be overlooked the place of the ordinary wire or wicker window-blinds is much more appropriately filled by coloured glass. Indeed, nothing can possibly vie with stained glass in all places where a rich effect of colour and semi-opacity is desired. A glass blind effectually shuts out the gaze of the outer world and yet does not darken a room in the same way as wire or wicker blinds do; for though glass can be made in such a way as to prevent it being seen through, it does not prevent the light from entering at the same time.

The light glass used for church windows, and known as "cathedral," is rolled so as to produce an uneven surface, which destroys its transparency but does not materially affect its translucence. Another charm of stained glass is the variety of colour it introduces into a room. We don't refer now to the coloured glasses, such as ruby, blue, green, etc., but to what are known as "whites" in the trade, delicate tints of green, grey, yellow, and salmon, and by combining these indiscriminately a rich and varied effect is produced. A good many people are apt to imagine that all the colours they see in a stained glass

window are painted on as in china; but this is not the case. The rich ruby, blue, green, and other colours are pot-metal glasses—*i.e.*, colours produced in the manufacture of the glass itself, which the artist arranges in such a way that the lead lines employed in holding the pieces together help rather than detract from the design. He also traces, as we say, the glass already coloured.

It may interest our readers and help them the better to understand the subject of glass painting if we briefly describe the method of painting and putting together a church window. The first thing to be done is to make the small drawing or design to show the arrangement of the figures and the general scheme of colouring. These drawings are made to a small scale, often three-quarters of an inch to a foot, having the lead lines just indicated, and the colours washed in. To make the drawings effectively requires considerable practice, for as it is impossible in so small a space to put everything, the know-

The next thing is to make the cartoon or full size drawing of the figures, for in windows with architectural canopies and bases these portions of the design are not always drawn by the figure draughtsman, but by an ornamental designer. As the majority of stained glass windows in churches are painted in the studios of a few noted firms like Heaton, Butler and Bayne; Clayton and Bell, and Powell, cartoon draughtsmen are among the staff of artists, and by long practice they can draw life size representations of some of the most sublime conceptions, which might have worthily engaged the attention of the greatest artist.

It would surprise many of our readers to spend a month in a glass painter's studios and see the machine-like, not to say mechanical, way windows are drawn, painted, and leaded.

The cartoon is generally worked in charcoal, as a quicker and bolder effect can be produced by it than with chalk or pencil. The cartoon is then set with size, and a tracing is made,

just marking the outline of the figures, drapery, foliage, etc. This outline indicates the lead lines, and is known as a "cut-line," it being used by the glazier to cut the glass from and afterwards to put it together by. Making a cutline requires practice, as it is important to use the lead lines to outline the work instead of cutting up the design. If the lead lines are well managed they should at a short distance drop into their place and almost lose themselves. Of course some few lines cannot be hidden, owing to

the exigencies of the craft, for it is never advisable to have any of the pieces in a window too large, for fear of breakage. The cutline is marked with the various colours to be used in the window, and the selecting of the proper glass is usually left to a skilful workman, generally the foreman. When the glass is cut it is painted, the only colours used being browns and black.

The flesh is the most difficult part of the work, and is only given to the best hands to paint. The drapery also requires careful work, as the effect of the folds is entirely produced by washes of brown shade painted upon the already coloured glass. Any diapering is also done in brown. The canopies and ornamental

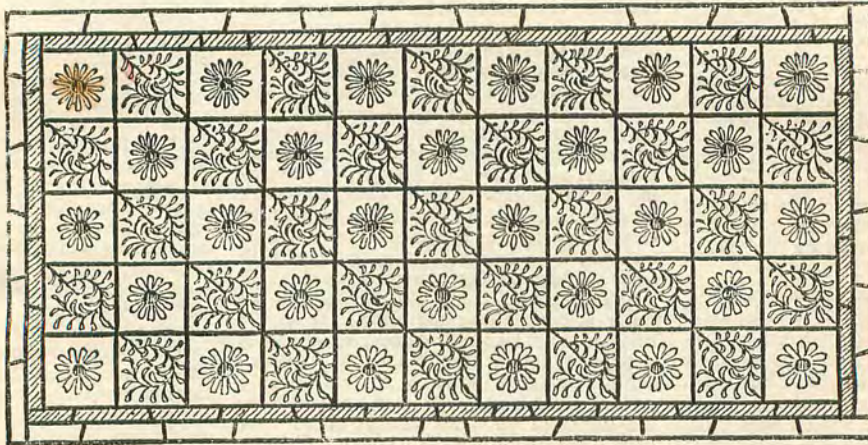


FIG. 1.

ledge of what to leave out is only to be acquired by long training. In large glass firms there is generally an artist, whose sole duty it is to make these small drawings, and in the trade there are men well-known for their skill in making small designs. As most of the orders for windows are obtained by submitting these scale drawings, either in competition with others firms, or at the instance of an architect or private patron, it will be readily understood that great importance is attached to these drawings. It is hardly necessary for us to point out that undue importance is given to small designs, for making them effective is almost a trick or habit, and the window itself, as so many have doubtless found to their cost, often comes far short of its indicated excellence.

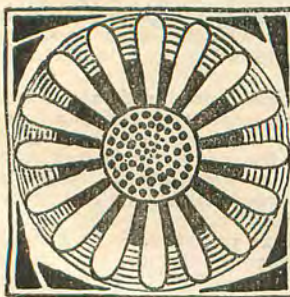


FIG. 2.



FIG. 3.

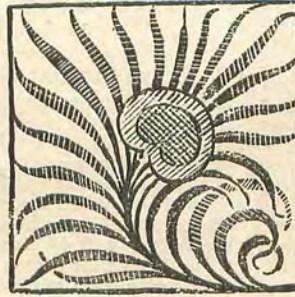


FIG. 4.



FIG. 5.



FIG. 6.



FIG. 7.



FIG. 8.



FIG. 9.



FIG. 10.

accessories are painted by ornamental hands, whose scale of wages is much lower than that of the figure painters. We may here mention that to white glass (including the tints before given) a beautiful yellow is often given by means of nitrate of silver. This "yellow stain," as it is technically called, is the only stain used in glass painting. There are colours or enamels, such as ruby, blue, green, &c., similar in make to china colours; but though they may be used just here and there to introduce a bit of colour which it is not possible to lead in, the effect is dull and opaque, as no colour merely burnt on the surface of the glass can have the brilliancy of that coloured in the making. Enamelled windows were at one time popular before the reintroduction of mosaic windows (the name given to such glass as we have described, where the different colours are put together after the plan of mosaics, only with the addition of lead to keep them together instead of cement), but their effect is heavy and opaque, as may be seen in the west window of the Abbey, and in the windows designed by Sir Joshua Reynolds at Oxford. We shall have something more to say about enamelled glass in a subsequent article. The yellow stain is not an enamel, as it penetrates right into the glass, and is not merely fluxed on the surface like the other colours. Consequently the yellow stain does not destroy the brilliancy or transparency of the glass.

When the glass is painted it is fired in a muffle kiln at a rather lower temperature than china, and, unless it requires repainting, is taken into the glazier's shop to be leaded together.

This, then, briefly is the method of painting a church window. We have purposely left out all details, because in a practical article like this it is better to start at the beginning, mastering the various technicalities as they occur, and this we shall proceed to do.

A very few colours are required in glass painting, and the following will be found to meet all the requirements of a beginner:—

*Tracing brown.*—A colour resembling purple-brown. Is quite opaque, unless put on thinly, and has a reddish cast when seen in the light, but against the light, being opaque, is black. This colour is used throughout a window for tracing the ornament, diapering the drapery, and painting foliage. As this article will confine itself to tracing glass, it is most essential the student should have it.

*Ancient brown.*—A colder brown than the last; used principally for painting shadows on drapery and tracing flesh. Can also be used like the tracing brown, and for flesh is even to be preferred to the former colour.

*Umber brown.*—A more transparent colour than the two last; somewhat resembling raw umber in tone. Is used *entirely* for shading.

*Vandyke brown.*—A lighter coloured brown than umber, semi-opaque; useful for painting hair, warm shadows, and delicate tracing.

*Black.*—Is used where a cold shadow is required, and for strong bits of colour.

*Red.*—Very useful in painting flesh, and in shading ornamental glass, and for other purposes where brilliancy is desired.

You can make the yellow stain for yourself, and we had better give the recipe for so doing. Purchase half an ounce or an ounce of pure silver at some bullion dealer's, price 5s. 8d. an ounce; what is known as silver foil is the best, as it can be cut up into small pieces with a pair of scissors. Put it into a bottle and pour upon it two ounces of strong nitric acid, or even less if there be less silver, diluted with about twice as much water as acid. The acid will at once attack the silver, causing a kind of effervescence, which will continue until the whole of the silver is dissolved. Pour

this liquid into a larger vessel, such as a basin, when all the silver is dissolved, and fill it nearly with hot water. Take a handful of common salt and sprinkle it into the basin, and the silver will immediately fall to the bottom in a white precipitate. Stir up the liquid so as to thoroughly amalgamate the salt, in order that all the silver held in solution may be precipitated; then pour off as much of the liquid as is possible without losing any of the silver; fill it up again with boiling water and drain off, and so continue this washing until the water can be poured away without having a milky appearance, for at first the liquid will almost resemble milk. This washing is most important, and cannot be done too thoroughly, for if any of the acid be left in the silver it does not burn a clear yellow. Let the silver dry, and to the original ounce of silver put about two ounces and a half of yellow lake, to be obtained of any artists' colourman, and it is now ready for use. The yellow lake is used to dilute the silver and to enable it to be painted on the glass thinly and evenly, for the pure silver is far too strong in itself, and would turn black when fired instead of staining the glass a brilliant yellow.

A glass painter is always very particular about his brushes, and is most careful to keep them in good condition and for his own use, and I should advise my readers to do the same. Amateurs are, as a rule, not nearly careful enough over their brushes, too often allowing them to remain in the colour, or putting them away dirty, so that they harden and, consequently, spoil. A brush when once the hairs have been bent or hardened with



FIG. 11.



FIG. 12.



FIG. 13.



FIG. 14.



FIG. 15.

colour is never brought back to its pristine condition, and I should advise that all brushes be carefully washed after using—those in oil or turpentine in warm water and soap. If this precaution were taken, brushes would last a much longer time than they do. No new brush works like an old one, therefore do your best to retain its services. A few ordinary camel-hair brushes of different sizes for painting and staining with; one or two flat camels in tin, from 1 inch to 1½ inches wide, for laying grounds; a couple of stiplers, medium-size *badger*; two or three black sable tracers or liners (these brushes have the hair rather long, and should come to a fine point when wetted); and a few flat and round hog-hair brushes will be all the tools required.

Some ordinary turpentine, such as you get at any oil-shop for about sixpence a pint; a bottle of oil of tar; and of fat oil same as used for china painting; a hand-rest and glass muller. A glass easel is necessary in painting anything very elaborate. You might get a carpenter to make you a deal frame like an ordinary picture-frame, with a glass fitted into it, and supports to keep it at the required angle.

In this, our first lesson, we shall confine ourselves to tracing some simple squares, somewhat like the illustrations accompanying this article. It would be quite ambitious enough to paint a window-blind, made of a number of squares leaded together, similar to the design (fig. 1), and our first duty is to get the squares cut. Three inch squares are a very good general size, and designs drawn to this dimension can be fitted into most windows.

In making a cutline, have a piece of paper a little larger than the size of the window, and mark on it the length and width. If it is for a window blind, you must allow for an oak or other frame to take the glass. Be careful to remember two things: (1) Rebate measure is the extreme size of the thing to be fitted into any frame; in a picture it is the size of the opening at the back of the frame. (2) Sight measure is the size seen at front. Having marked the rebate size of your window, see how it will divide up, for it is important to get an exact number of squares in length and height. Assuming the window to be three feet wide and eighteen inches high, this would give twelve squares one way and six the other. But it is always better to have a line or two round the outside of the window to frame in the squares as it were, so if we make the outer line one inch wide and the inner line of ruby glass half an inch wide, we shall only have to knock out a row of squares in length and width, and shall still get an exact number in. If the window is not quite three feet wide, the lines can be reduced or each of the squares made slightly smaller. It is sufficient to mark in the divisions or lead lines thinly with Indian ink.

Having had your glass cut and your designs drawn full size, place a square of glass over the design to be traced, and having ground up some tracing brown in water with a small portion of loaf sugar (about one part sugar to six of colour), trace the glass, following the pattern underneath as accurately as possible. At first you will find that you touch the glass with the brush before you are aware of it, which will rather confuse you, but a little practice will soon obviate this. Your hand too will probably seem unsteady, but this shakiness will soon be overcome. Use your colour tolerably thin, so that it runs from your brush in a flowing, solid line. Never allow your brush to become dry, but let it be always well filled with colour. Of course you must not overload the brush, or it will run down on to the glass in blots. In taking a fresh brushful work your brush thoroughly into the liquid colour and point it by turning it round a few times on the palette.

Hold up the glass to the light, and if the tracing presents a solid firm line against the light you will know that your colour works as it should do. If, on the contrary, the lines appear washy and ragged, it shows you have been using your colour too dry. It is as well to mix up the tracing colour a day or two before you want to use it, as new colour does not work as well as old. The colour does not harm, but on the contrary rather improves, by standing. It is difficult to give the exact proportion of sugar to the colour. The best test is in its working. If it flows on the glass freely and when dry holds on and is not easily rubbed off, your proportion is about right. If, on the contrary, the colour shines when dry there is too much sugar, and you must therefore put more colour into it.

When you have traced several squares you may stain them with the silver. Mix up a small portion on a palette with turpentine and fat oil, grinding it thoroughly with the muller until it is perfectly smooth. Take a square and place it *traced side downwards* on a piece of white paper, and with one of the camel hair brushes paint on the stain evenly with broad, free strokes. Do not try to get on a uniform thickness of stain, as the thickness and thinness give the light and dark yellow which looks so well. In a design where the flower and leaf is introduced, as in many of our illustrations, put the stain on the leaves much thicker than on the flowers, so as to make a difference between the two. The thicker the stain is on the darker will the yellow be when fired.

It is important to note that the stain takes with varying intensity on the different coloured whites. The whiter the glass the thicker should the stain be painted, but on green or grey tints the stain must be used weaker, and it is as well to dilute the silver with more yellow lake rather than use a very thin wash of strong stain. To this end have a little stain with a larger proportion of yellow lake than that you use on white glass by you. A good plan before using a stain you are unacquainted with is to paint some small pieces of glass with the various tints you are using and place them in the clear red part of a fire until they are red hot, then take them out with a pair of tongs, and when cool enough rub off the film of yellow lake and see if the silver has stained the glass as you wish it. If too strong, either put more yellow lake with the silver or paint it on thinner. Recollect that it is better to dilute your stain with yellow lake, than use a strong stain thinly.

The lines running from right to left on the leaves in the designs accompanying this article are not intended to be traced on, but were done to show the effect of the dark stain. You only want to put in the principal lines with the brown; such as the outline of the forms, veins, stamens of flowers, and any other characteristic touches. The effect of colour is given by the stain, which is painted over the whole design in varying degrees of intensity. When your squares are traced and stained, send them to the kiln, and afterwards to the glazier. Should the stains on any of the squares come out too light, restrain them and put them through the kiln a second time.

Recollect *always* to paint the stain on the side of the glass which is *not* painted. The stain must *never* come in contact with other colours. Don't put too much fat oil in the stain, but only so much as will make it work freely and bind on the glass.

The leaves or flowers can be painted with umber brown or red, used thinly if preferred. Mix up the colour in fat oil and turpentine, and paint it on very evenly, so that when held against the light it does not look smeary. A good effect can be given to a design by using the tracing colour more like ordinary oil colour, and painting on the veins thinly with it. The

tracing colour when used thinly is not unlike burnt sienna, and a leaf so treated and stained at the back has a much richer effect than when the tracing is done like pen and ink. Tracing to be good ought to be free and not stiff-looking, as though it were printed. Some leaves can be filled in with tracing colour and the veins scratched out with a fine point when the colour is dry. If the colour binds on very hard, breathe on the glass first and you can then easily remove the colour. This picking out on glass is very effective, and always gives the work a delicate and "lacy" appearance. It is easily done and gives lightness to a solid background, as shown in fig. 14. An etching needle in a handle is a good instrument to use for picking out a diaper in a background.

#### DESCRIPTION OF ILLUSTRATIONS.

Fig. 1 is a sketch of a simple window blind made of small squares leaded together with an outer line of light grey and an inner one of ruby. There are only two patterns used, one consisting of a simple flower after the character of a daisy, the other of leaves arranged in a set manner. Windows are very effectively treated with alternate patterns, as in a mass the very repetition is agreeable. Figs. 2 and 3 are also intended for this alternate treatment as in fig. 1. Fig. 5, founded on the dandelion, and fig. 6 on the jasmine, are more naturally treated, and are intended to be used alternated with fig. 4, founded on the peacock's feather. Plant forms should be simply treated when used in this manner for glass painting, and no attempt should be made to indicate complicated foreshortening or the accidents of growth. The flat treatment is the best, wherein only the characteristics of the plant are given. Other variations are shown in fig. 7, founded on the wood sorrel; fig. 8 on the buttercup; fig. 9 on the hawthorn; and fig. 10 on the wild rose. These and other "sprigs" could be alternated with such designs as figs. 11 and 12. The greater variety of "sprigs" you introduce into your window the richer will be the effect, but I should always recommend my readers to alternate them with simple geometric patterns (such as figs. 2, 4, 11, and 12), rather than have each square a "sprig."

Fig. 13 is shown to occupy two 3 by 3 squares. It is a conventional representation of the buttercup. Fig. 14, founded on the pink, shows the method of diapering a solid background by picking out a pattern with a point or needle. If the colour cannot be removed easily, breathe on it for a few seconds. Fig. 15 shows a diaper traced on the glass instead of being picked out, though such a pattern could be worked in that manner just as well. "Sprigs" worked on circles of glass are effective; they can be introduced into the centre of a window, the rest of the space being filled out with squares. The Christmas rose is the plant treated in this illustration. Quaint renderings of birds, beasts, and fishes add great interest to a "sprig" window. In this case the sprigs should be used alternately with a bird, etc. The Japanese are very clever at drawing these quaint renderings of natural history, and many "motifs" can be gleaned from the cheap Japanese books now sold at so many shops in London and elsewhere.



## GLASS PAINTING.

## THE USE OF COLOURED ENAMELS IN GLASS PAINTING.



FIG. 1.

We have hitherto confined our attention to the treatment of glass in the browns and silver stain, and it will be as well here to say a few words on colouring glass by means of enamels. As we have before pointed out, the only stain that can be applied to glass after it is made is that produced by nitrate of silver, which, at a certain temperature, colours the body of the glass itself. All other colours, whether of the nature of tracing colours, such as ancient, umber, vandyke brown, or black, or the coloured enamels or fluxes, are merely fused to the surface of the glass, and in no chemical sense become part of the glass itself.

Glass is coloured in its molten state with the oxides of certain metals, and the finest coloured windows are those produced by binding the pieces of various tints together, the only colours employed being the browns and yellow stains. Windows coloured by the use of various pieces of divers tints, fitted together something like a child's puzzle, are called "mosaic" windows, and can only be treated in a broad manner, and the subjects must be designed with special reference to the lead lines, and hence only comparatively large subjects can be wrought in this way. For a long time small subjects were traced in the brown colour on panels of white glass, and shaded with thin washes of the brown colour, and merely stained yellow. But after a time artists began to enhance their small subjects with blue enamel, then green, ruby, and other colours were employed, until pictures almost as elaborate as those painted on pottery or porcelain were wrought on glass.

The Dutch and Germans in the sixteenth and seventeenth centuries were noted for these small enamel windows, often containing in the space of a square foot several subjects, usually taken from sacred history, and painted with great skill and elaboration. But, besides these figure subjects, heraldic designs were very successfully treated in enamel colours, this class of design lending itself to this method of treatment perhaps better than any other. It must be confessed that these old enamelled windows have a peculiar charm of their own, and it must likewise be conceded that they were wrought by

artists who knew exactly what best to do with the material they worked in.

It may be as well to mention here that this enamelled glass entirely superseded the old leaded stained glass which made our churches and cathedrals so magnificent in the fourteenth, fifteenth, and part of the sixteenth centuries, and for nearly 250 years in this country stained glass windows ceased to be produced. As long as enamelled glass was confined to small subjects and heraldry no harm was done, but when glass painters attempted to paint large windows by means of coloured enamels laid over the surface of white glass, the art of stained glass painting rapidly decayed, and for a long time remained dead, until revived some forty years ago by the exertions of a few men, foremost among them being Mr. Charles Winston, who examined the remains of old glass in our ecclesiastical buildings, had some fragments of old stained glass analysed, and slowly and with infinite trouble we have retraced our steps back some 400 years, to the time when the art of staining glass and combining it into windows was most successfully practised.

It may be asked how should the employment of enamels on glass have led to the decay of genuine glass painting. The answer is not perhaps obvious to those who have not troubled to compare windows of various periods and styles; but we will endeavour to explain the cause, as it will materially help the subject we have under consideration. The chief beauty of the old stained-glass windows is their colour, and the art of the glass painter was to combine the various pieces of coloured glass into a harmonious and appropriate design.



FIG. 3.

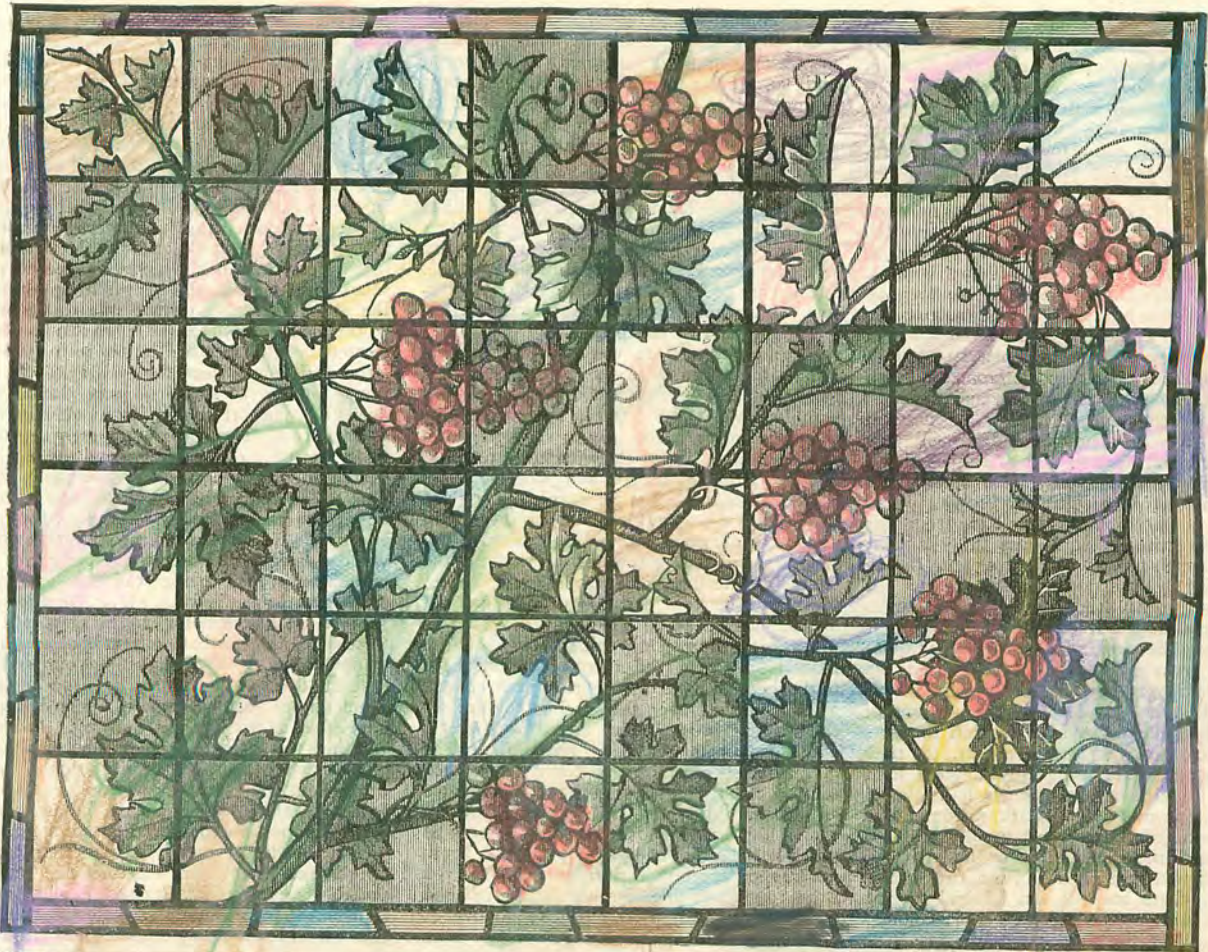


FIG. 2.



FIG. 4.

Colour can only be given to glass in its molten state if it is to retain its gemlike beauties of transparency and translucence. Glass coloured by means of enamel is dull, flat, and opaque compared to "stained" glass, and the "gem like" qualities in the old windows, which makes them still so beautiful, are entirely wanting in enamelled windows; for the most beautiful enamels made cannot have the same transparency as glass coloured through its entire substance. As long as the enamels were employed in small masses, as they were in the small subjects and heraldic devices of the old German glass painters, no harm was done, but when men proceeded to fit church windows with these painted windows, they were setting up a false art in place of the one they dethroned. Such windows are dark and gloomy and funereal. Enamels are quite legitimate when used appropriately and sparingly, and we will now give a few hints on how best to employ them.

The old German painters were very careful to outline their work in tracing brown, and to produce a good solid finished effect in this way before proceeding to use the enamels; just as though we drew in a design in Indian ink, filling all the portions that are to tell dark, and getting the finished effect as far as possible in the black, leaving certain portions that are to be emphasised with colour quite plain. In addition to this they used the silver stain very largely, and by this means confined their enamels to small portions of the design, often in greater position to parts made dark with the tracing colour, for they were not afraid of using this in good solid patches; and thus the enamels had almost the appearance of gems in dark surroundings. They restricted the enamels usually to blue, green, and ruby, though they had two or three different tints of each of the two former colours. Glass enamels can be had ground up in oil in tubes like Lacroix's china colours, and are about the same price, varying from sixpence to a shilling each.

There are other makers besides Lacroix, but I have found from experience that his are as good as any, and, being in tubes ready ground, are much handier to use. I find the following selection sufficient for all practical purposes.

Bleu fin No. 1 makes good greys when used thinly without stain, and with stain cold greens can be used thicker for deeper tints, but is apt to look crude if employed on large surfaces.

Vert intense, No. 6 transparent, makes good rich greens with stain, and without bright greens. Can be tried with Brun M.

Rouge feu and orange red, good for autumnal leaves, as with stain produces good orange tints.

Rouge chair foncé, deeper and more laky in tone than the last. Useful for colouring fruit, drapery, etc. Both these reds can be used thinly for flesh.

Brun M is useful for drapery, shading, toning greens and reds.

Brun No. 2 foncé for deep markings, solid bits of colour, stems of trees.

To these might be added black, transparent yellow for lightening greens, deep purple, intense transparent blue-green, and if on the test palette there is any colour that seems very nice you might add it to your list. I have endeavoured to give the fewest colours possible, because too great an assortment is both expensive and bewildering. Great variety can be obtained by judicious mixing, and by using the stain at the back of the glass.

It is advisable, whoever maker's colours you employ, to try them on a piece of plain glass, so that when you come to use them you have some idea of what the ultimate effect will be; for glass colours, like all vitri-

fiable colours, often undergo a considerable change in baking. If you buy enamel colours in powder you must mix them in turpentine and fat oil, as in ordinary china painting, taking care of course not to use the fat oil too lavishly. The colours in the tubes merely want thinning with ordinary turpentine.

Now for a few hints as to the best method of using glass enamels, and the sort of effects most suitable for their employment. The design should be firmly outlined with either "tracing" or "ancient brown," mixed with water and sugar, as described in first article. In the case of leaves, in addition to the outline, you want to put in the characteristic markings, such as the principal veins, and I find it a good plan to wash in the shadows also with brown. I generally outline the forms, first of all, of the whole design, without troubling about the details; and when this is done go over the work, supplying the marking and other characteristic touches, putting them in a free and more or less sketchy manner. Let your colour be thin, and allow it to flow freely from the brush, and, as before observed, make it indicate the shadows and strong touches, as well as the details of the forms. These shadow washes must not be too dark or the design will appear heavy. The advantage of doing as much with the tracing colour as possible is that it saves your after-work, all you have to do then being to use your enamel colours as thin washes over the tracing colour; for the ancient brown being mixed with water and sugar, is unaffected by turpentine. The glass enamels must on no account be painted on too thickly, otherwise they turn opaque and heavy. Lay them on in broad washes with a full brush, and keep them as even as possible. To this end do not let the brush marks show more than you can help. If you want to get one side of a leaf rather richer in colour after the first coat is dry, go over it again; by this means you get on an extra thickness of colour, being careful to avoid disturbing the first tint.

The colours must not be made too thin, or you will not get a sufficient body of colour on the glass. There is, unfortunately, a tendency to crudeness in the glass colours, which, unless guarded against, is very painful, and is really the reason why so many glass painters avoid their use. To obviate this defect I use the yellow stain at the back of the glass as far as possible. In fact, the better plan is to stain your glass as though you were not going to enamel it, and use the colours merely to enhance the effect of the stain. A great variety of tints can be obtained by using the stain in various degrees of strength, or the same stain on in the thinnest wash, where the colours are to tell lightly, and darker where the effect of colour is to be richer. You can really get some splendid tints by colouring in front of stain, for, as has been stated in a former article, the stain must be kept at the back of the glass, and never come in contact with any of the colours. The expression "with stain" always means the stain used at the back of the glass, and never mixed with the enamels. A wash of blue over white glass gives a soft grey tint, and white flowers may be shaded in this way, and if thin stain be employed in addition, some charming tints can be obtained. To produce a good orange tint, red in front of stain will give it; and, in painting apples, pomegranates, or autumnal leaves, combinations of red or brown, and stain in varying degrees of strength, are very effective. I would not advise, except under strong temptation, the use of enamels as backgrounds. If employed to cover large surfaces, their effect is weak, cold, and altogether unsatisfactory.

If you want a background to throw up white flowers or some light object, use a thin tint of amber brown, or, better still, yellow stain.

Suppose, for instance, you were painting a long, narrow panel of white lilies as in Fig. 1. The flowers, to make them effective, want relieving in some way, and the best plan is to stain all around the flowers, and graduate it off as you work towards the bottom, until the stain loses itself among the leaves. And this brings us to the question of the kind of designs best adapted for this sort of glass painting. In the way of figures, little more need be said, as we touched on that in the earlier part of the article. Prints of these old Germany figures can be bought for a few pence per sheet at many stationers' shops. Subjects after the style of Walter Crane's and Caldecott's picture books would also be effective if properly treated. If your space to fill with glass is large and comes near the eye, it is better to use a number of small subjects distributed over the space than one large one. In the case of foliage and flowers, it greatly depends upon the shape of the window and the style of design adopted. For narrow, upright panels, such as are frequently seen at the side of hall doors, flowers like the lily, iris, yellow flag, are effective. If your glass is cut up into squares you can treat it with a design running over it, without reference to the lead lines, and then such growths as the vine, Fig. 2, blackberry, wild rose, and clematis can be employed if treated in a somewhat conventional or ornamental manner. We may remind our readers that all designs for glass should be of this character, as glass painting is a very different kind of art to water-colour drawing. In glass painting you want to suggest the plant you select as your *motif*, and bearing this in mind throughout your work you will only endeavour to indicate the colours of nature, and in no way attempt to imitate them. You cannot paint pictures on glass if you try, for the effects, easily obtainable in oil or water-colour, cannot possibly be produced with enamel colours on a transparent body like glass. After all, painted glass should not wholly obscure the light, and the decoration should just enrich the window, without giving the appearance of heaviness or gloom. Light, delicate designs and not too crowded are the best. The illustrations accompanying this article will, it is hoped, assist the reader in understanding these few remarks. We must reserve our remarks on the Mosaic style of glass painting for a future article.

#### DESCRIPTION OF ILLUSTRATIONS.

Fig. 1 shows the treatment of lily, suitable for the side of doorway. The whole design is traced strongly in brown. The background is stained to throw up lilies, and is graduated off towards the bottom. The leaves are both stained and enamelled; the buds and flowers might be shaded thinly with blue. The pot is intended to be cut out of a grey glass, and the fish are merely traced; and the background of conventional water is both traced and stained, so as to throw the fish into relief. Stain at the back of grey glass produces extraordinary tints. It is not advisable to have the glass in too large pieces, hence the two lead lines running across the panel. The inner line of dark glass would look well in varied coloured low-toned greens, the outer line tinted white. We may here note that narrow strips of glass at the outside of windows are technically known as "lines."

Fig. 2 shows a window composed of squares of light glass, treated with an all-over pattern. This is a most effective way of painting glass, and when well done has a particularly rich and varied appearance. It will be noted that some of the squares of glass are tinted. It looks much better to have the squares cut out of various tinted "whites," than all out of the same colour.

Fig. 3 shows the treatment of a panel of glass for "stain" and enamels. It was one of four panels drawn to suggest the seasons, this one being autumn, and they were de-

signed expressly for the use of enamels, and the treatment of the apple is consequently rather more natural than it would have been if it were to be stained only.

Fig. 4 is given to show the sort of treatment of figures for enamelled glass. It forms part of a procession, the figures of which were drawn by Mr. Ryland, and requires little comment. The figures should be solidly outlined, and they can then be enhanced with stain and enamels. The walk at the back should be traced thinly in ancient brown, and matted over with umber brown, leaving the flowers white. The legs of the second figure and dress of the third figure might be left white, as the wall being tinted will throw them up sufficiently.

FRED MILLER.

## A FEW HINTS ON NURSING.

By A HOSPITAL NURSE.

### II.

Now as to a few of the accidents which we may come across. Suppose a neighbour was to faint away: are there many young readers of *THE GIRL'S OWN PAPER* who would know what to do? Supposing the patient faints in a chair, there is a quick way of restoration which you probably would not think of for yourself. It is to draw the head forward towards the knees. Another way is to lay the patient flat. On no account raise the head of a person who has fainted; it is simply the worst thing you can do. The reason of this is that fainting is caused by there being too little blood in the head, and the object is to get it back again. You can see that if you raise the head it helps to keep the blood away. Loosen any tight clothing, especially about the chest and throat; a little water given to drink as the patient's senses return, will help recovery, but there is no object in drenching a person, as is sometimes done. Sal volatile, or smelling salts, may be used if they are at hand, but the patient will generally come round without much difficulty if placed in a proper position, and given plenty of air. Do not let people crowd round a fainting person. Anyone who is not of use had much better keep quite away. If you are alone with someone who faints do not be frightened; generally it does not signify much.

If, however, you should see a person become insensible with flushed and purplish face and heavy breathing, this is another matter, and may be very serious indeed. In this case get a doctor as soon as possible, and in the meantime raise the patient's head, as there is too much blood to it; bathe it with cold water, unfasten any tight clothing, and put hot bottles to the feet. If you have not got a regular tin or jar, an ordinary glass wine bottle will do. The water, of course, must not be so hot as to crack it, and the cork must be carefully tied in. The bottle ought also to be wrapped in something to keep it from slipping about. One should never make these heaters so hot as to hurt the patient, and this caution is specially necessary if he is insensible. In any case I would put the sheet at least between the bottle and the skin.

I suppose all of us some time in our lives come in contact with hysterical people, and though we may be very sorry for them, and not like to seem harsh or unkind, yet we must remember in dealing with them that humouring and coaxing them is the very way to make them worse. I should not like to say that hysteria is all nonsense—I have, unfortunately, seen too much of it for that—but I am sure if a girl has self-control, and her friends do not make her worse by mistaken indulgence, a great deal can be done to shake it off when it

begins. A girl gets low-spirited and miserable for no particular reason, mopes about, takes whims and fancies about her food, and about her family, imagines that certain people have taken a dislike to her or takes herself an unfounded dislike to someone, feels inclined to cry if anyone speaks to her, more especially if that person speaks kindly. I entreat of you, girls, if any of you ever have these or kindred feelings, do your very best to fight against them and shake them off. There are few women who have not had some of them at one time or another. If you knew what they may lead to, making you a burthen to yourself and to all around you, I think you would struggle hard to get rid of them. They are caused partly by disease, I know, but it is a disease which the sufferer can do much to remedy. Having plenty to do is a very good cure. If you are with a person who is hysterical, and can succeed in making her a little bit angry with you, you will be treating her far more kindly than if you coax and humour her.

If you happen to have the care of a person recovering from ether or chloroform you must not be caressing in your manner. I remember the first time I was set to watch such a patient, an experienced nurse saying to me, "Now, when she comes to, whatever you do, don't speak kindly to her." This sounded very cruel about a poor creature who had just gone through a severe operation, and I felt relieved when the nurse came back before the girl had recovered her senses, so that I could watch her and see what she really meant. Very soon I saw the wisdom of her directions. Sometimes after chloroform people are inclined to cry, then if you coax them it makes them ten times worse. Sometimes they say queer things before they are quite restored—of course, unconsciously. I remember once hearing of a girl saying, "Oh, I can't bear that So-and-so," meaning the house-surgeon, who, unfortunately, was standing at the foot of her bed at the time.

Bleeding from the nose is a common accident, which is often made far worse than it need be by improper treatment. Holding the head down over a basin is the very way to increase the flow which you wish to check. In a case of this kind let the patient lie down flat, and draw up the arms above the head. Apply a door-key or smoothing-iron, or anything cold to the back of the neck—an ice-bag is often used in hospital. These simple remedies generally give relief, but there are cases where the nostrils have to be plugged by a surgeon. If the bleeding goes on long you should send for one.

In an ordinary cut if you press tightly on it with your finger, or hold something firmly against it, the bleeding will generally stop sufficiently to let you tie it up. If you cut your finger, hold it up; do not let it hang down. The same way with your arm or leg. Raise the bleeding part, and hold something, say a piece of folded linen, against it. Cold helps to stop bleeding, as it closes the vessels; a piece of ice, if it can be had, laid over a trifling cut, will stop it directly. If, however, it is a bad gash, and you see the blood, of a scarlet colour, spouting out in jets, send for a surgeon at once, and, in the meantime, tie something firmly round *above* the place, and hold a little pad of linen over the cut with your thumb. I remember reading a story of a girl who was at work in a hay-field with several other people, when a man gave himself a severe cut with a scythe. While some of the neighbours ran for a doctor, she snatched off her garter and tied it tightly above the wound, thus probably saving the man from bleeding to death.

Don't be frightened if you see blood. In fact, those three words, "Don't be frightened," contain a very important lesson for a nurse, and women who are not naturally timid have

a great start of others who are so. Still, as we go on, if we learn to forget ourselves in the interests of our patients, we learn to forget our fears too. If, however, you do scream or faint at the sight of blood, you had much better keep out of the way when there is an accident. If we are not of any use ourselves, at least we need not hinder the usefulness of others.

I think one has to go into hospital to learn the value of ice. I have told you it will stop bleeding; in cases of vomiting, too, ice will sometimes stay down when nothing else will. In vomiting blood, which is not a pleasant accident to witness, little pieces of ice are sometimes given to the patient to suck, also in blood-spitting when in any quantity. It sometimes gives relief in the latter case when applied to the chest or between the shoulders. An ice-bag laid on the lower part of the body may help to check the bleeding from the bowels in typhoid fever.

A small piece of ice in milk makes it a very pleasant drink for an invalid, whereas milk alone will make him thirsty. I have often put this to the proof. If I had no ice, and was giving a patient milk to drink, I should add a little water to it.

The worst of ice is, however, that valuable as it is, it is not at all easy to keep. If you want it to last any time you must let the water drain away from it, otherwise it will melt directly. In some hospitals it is wrapped in flannel and kept in a box with a false bottom formed of wooden bars, through which the water drains, and is carried away through a little spout. In a private house I should make a flannel bag for ice, and hang it up to drip, in the coolest place I could find. The best way to break it is to get a moderately-fine needle, and drive it in with a thimble on your forefinger. This way makes no noise for one thing, and you can break off as much or as little as you want. If you use a hammer you will probably waste a good deal. An easy way to make an ice-bag to apply to a patient is to soften a bladder in hot water, and put some broken pieces into it; when the ice is melted it is of use no longer. A bag of this kind down the back was an old-fashioned remedy for sea-sickness. To keep ice at the bedside tie a piece of flannel loosely over a bowl, and lay the pieces on it so that the meltings can drain away. It lasts thus a great deal longer than it does if you lay it in a saucer, and let it melt in the water. In Germany ice is often used as linseed poultices are here. It sounds rather cold comfort.

Burns and scalds are very common accidents, and the sooner they are attended to the better. Dust the injured skin thickly over with flour. In slight cases this gives relief at once. Of course, for a bad burn you must have a doctor's advice, but I would use flour at any rate, and lay a piece of old linen over it. Blisters, if they rise, may be let out with a needle, but be careful not to tear the skin. Carron-oil, a mixture of lime-water and oil, first used at the Carron Ironworks, is a very common dressing for burns. It is a useful thing to have in the house in case of accident; lint or old linen is steeped in it, and laid over the place; cotton-wool is apt to stick on burns. These injuries are generally very painful. In a severe burn this is a favourable sign, as sometimes when most dangerous they are accompanied by no pain at all. I remember seeing a poor little baby brought into hospital with its back literally charred. It seemed quite numbed, and only lived a few hours. Another small boy a good deal scalded about the head and face screamed and cried, and would scarcely let himself be touched; he suffered a good deal, but recovered, except for a few scars. In a dangerous scald the skin is of a pearly whiteness. Bad cases of this kind will generally be taken