

Fig. 13.

upon layers of perforated cardboard, each layer slightly smaller than its predecessor, and to gum these one above the other together, so that the design is highly raised in the centre, and much smaller there than at its base. A certain amount of care is needed when gumming these pieces to each other, as without great neatness the bits do not lie straight, and unless colourless gum (made by melting the white pieces of gum arabic in warm water) is employed, marks are left on the design should it overflow, but as these markers are very handsome when made, and are not expensive, they take a high place in their sphere.

We now come to church book-markers, which are in reality a study in themselves, so beautifully and carefully are they now made. The stout ribbed ribbon on which they are embroidered or applied, varies in width from one to three inches, and must be of one of the five ecclesiastical colours—crimson, blue, green, white and violet. To complete a set of church book-markers, three double book-markers of each of these five colours are necessary, as the markers are changed at the various church

seasons with the altar cloths. White is the colour used for the greatest of the church festivals, namely, Christmas and Easter, red, for martyrs and Pentecost, violet for Advent and Rogation days and Ember weeks, and green for all Sundays and weekdays that do not fall upon any of the above periods or days.

The length of ribbon and its width is governed by the size of the church book; thus an altar book only requires a yard of ribbon, a Bible a yard and a quarter. All the markers are double, and have a barrel or register dividing them equally into two ends. This register is generally bought at a church embroidery shop for four shillings and sixpence, as it is covered with a network of silk or gold made over a wooden mould, and could not be neatly imitated by private hands. The devices used for ornamenting church markers should be very simple, but must be kept strictly to devices known to be used by the church. The I. H. S. surrounded by an oval, the cross of Calvary, the Latin, or Maltese cross. The cross combined with the anchor of hope, the single or double triangle, the crowned I. H. S. are some of the best known. They can generally be bought in cardboard cut to the right size for working, and as it is most important that they should be well and accurately drawn before they are embroidered, a good outline of them is a necessity. To work a church book-marker, frame a piece of strong fine linen in an embroidery frame. Tack well down to

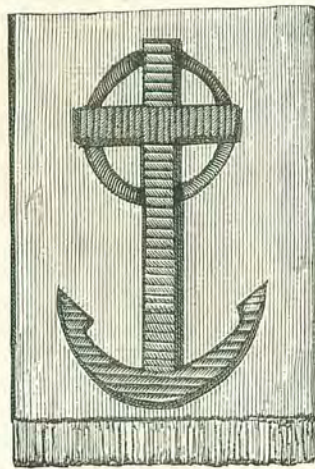


Fig. 14.

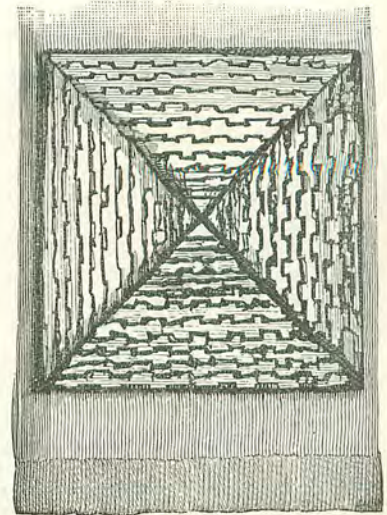


Fig. 15.

this foundation the last ten inches of the ribbon, sewing the ribbon to the linen only at the former edges, sew the cardboard design to the ribbon, five inches from the edge, and then cover the cardboard with even lines of gold thread or purple silk. Embroider the other end of the ribbon with some other device but in a similar manner; the embroidery on this must be on the reverse side of the ribbon. Cut away the linen foundation first from the frame and next from the under-side of the work where it is not required, and turn back the piece of ribbon left at the edge over the wrong side of the work so as to completely hide it. A little of the ravelled-out silk from the ribbon itself should be used for hemming it together, as extreme neatness about the joining is necessary. A fringe of gold or silk matching the materials used on the embroidery is sewn on to the ends of the ribbon. Some people embroider both sides of the ribbon, and need no turned backpiece when this is done. Each device is worked on linen in an embroidery frame, is cut from the frame and the ribbon being carefully stretched, the work is *appliquéd* to it, and a line of gold cord fastened or couched round the outlines to hide the fine stitches that secure the linen and silk together.

B. C. SAWARD.

HOW OUR COLOUR-PLATES ARE PRODUCED.

FOR the women and girls of all ranks this latter end of the nineteenth century is essentially a period of work.

Without becoming in the least degree unwomanly they come forward to take their part in the work of life with all earnestness and devotion, and however varied their talents, the work demanding labourers is equally varied and can supply occupation to all, whether their power be in the clear head, the tender heart, or the delicate hands.

To all interested in women's work it is a matter of congratulation when the law of supply and demand creates some new branch at once suitable and remunerative for them.

Such an one was called into existence about fifty years ago, and has been kept in full swing ever since by the love of the public for coloured pictures, the production of which is known by the name of chromo-lithography.

Whoever introduced or originated this special art, whether a German or an Englishman, is entitled to the best thanks of both

nations. Up to a few years ago England sent the majority of work of this kind to Germany, which then had the monopoly, although the original drawings more often than not were supplied by English artists.

It became inconvenient as time went on and the art increased in public favour to have employers and employed at so great a distance one from the other, and the question arose, why could not intelligent English girls, with teaching and practice, do the work quite as well as German women?

The Royal Female School of Art in Queen's Square, which has done so much towards raising and developing artistic taste in English girls, conceived the idea of throwing out a branch from itself for instruction and practice in this new method of producing coloured pictures, and so under the wing of this institution the studio was started, and is fulfilling to the utmost the hopes entertained of it.

It is an art requiring from its disciples business habits, a sensitive nature, clever

hands, immense patience, and a good knowledge of drawing and colour.*

To see how these pictures are produced, we will begin at the beginning. An artist sends a sketch, it may be of a flower, a house, a landscape, or a head for reproduction in colours. It will necessitate two sets of workers—the artist and the printer. To enable the first to carry out her special work she must have ready to hand transfer-paper, a special kind of ink or crayons, prepared blocks of stone, and a pencil, or stick, of snake-stone.

The transfer tracing-paper has a coating on one side of gelatine, starch or gum, and on this side she traces an exact copy of the sketch which is to be multiplied.

The ink is a great part of the secret of chromo-lithography; it must be greasy, or

* All particulars of terms and period of apprenticeship can be obtained of Miss Rushton, who has the superintendence of the Chromo-Lithography Studio attached to the Royal Female School of Art in Queen's Square.

what is called fat ink, and is prepared in such a way that when laid on the stone it adheres so strongly to it as to require chemical force to remove it. It is bought in cakes and diluted with distilled water, or rain-water filtered through blotting-paper. The best is obtained from Lemerrier, of Paris, who also supplies the crayons.

The stones used are specially hard, compact limestone, either polished or grained, the former for ink-work, the latter for crayons, because they are harder and sharper, and act as a rasp to take off a sufficient quantity of crayon to give blackness and body to each dot. They are prepared in all sizes and sold by weight, from a penny to fourpence a pound; the best come from Munich.

The snake-stone is almost indispensable, for it possesses the rare quality of being able to erase from stone.

All these materials being ready to hand, the original drawing is given to the girl-artist, who begins by making an accurate tracing of it on the coated side of the transfer-paper with transfer-ink, and while the ink is wet the paper is damped and placed on the stone already prepared, and to which the tracing adheres.

This tracing is called the key, and is used for as many stones as there are colours to the picture, each colour demanding a separate stone, and to distinguish them from the first stone are called off-sets.

All the work on the stone done by the girl artists is with the greasy ink, the colouring is done by the printer.

Suppose the picture to require eight colours, and the first to be grey, she will indicate this first coat of paint by means of a pen or brush filled with the greasy ink; varying the light and shade according to the dark or delicate tints of the colour required. When this part is completed it is etched with acid and gum which eats into the stone. This is sent to the printer with a water-colour wash to indicate the colour, and he, having washed the stone, puts it into a press with a cylinder of grey colour, which goes only to the parts assigned for it, indicated by the filling in of the greasy ink; and strangely enough, the paint is picked up by those parts only, the remainder receiving and retaining water simply, thereby revealing the secret of chromo-lithography, which is that grease will not directly combine with water. A proof is pulled of this first stage and sent to the studio for approval; if all right it is passed and returned together with a second stone with a view to the pink portion of the picture, supposing that colour to come next. Everything, you will observe, that the girl artist does to the stone is drawn in black as a medium to prepare it. This is what is called drawing the stone to a colour.

When the whole of the eight colours are impressed, the proof, together with the original, is sent on to the patron, and as far as the girl artist is concerned her work is finished.

As to the sequence of colours there can be no hard-and-fast rule; so much depends upon the tone and tint desired. Sometimes the colours are intended to soften into each other,

at other times to overlap each other so as to produce another tint, and in both cases the proper arrangement of the colours can only be acquired by study, experience, and observation.

There are opaque and transparent colours, and as a rule the former are placed on first, in order that they may be seen through the latter, but even this order is changed sometimes. For backgrounds of large pictures, which would take a long time to stipple, a gelatine plate is inked and laid on the stone, and then rolled up and down with a miniature roller, so as to leave the impression on the stone. This is an American invention called "Day's Medium," and is an exquisite instrument.

We have only spoken of the work done by the girl artists as we saw it in Queen's Square, the printing, which is most interesting, being done elsewhere. This part we saw at Pocher's in Nuremberg, one of the largest chromo-lithography printers in Germany. There were thirty-six thousand stones from which impressions were taken. Three thousand impressions can be taken from one stone, but if the stone be broken or cracked in ever so slight a degree it cannot be used.

They use in this house in the course of a year five hundred thousand sheets of paper, and two hundred pound's worth of gold paper every month; they employ two hundred and forty people, one hundred of whom are women and girls. There are sometimes twelve or fifteen colours in a picture; each has to be lithographed separately, and only one can be lithographed in one day.

MARCHING EVERMORE.

By HELEN MARION BURNSIDE.



WE are marching, lads and lasses,

We are marching, great and small;
We are marching ever onward
On Life's highway, one and all.
Hasting to what fate we see not,
Meeting faces all unknown,
Only sure that our great Captain
On the road before has gone;
For as darkness closes round us
We can hear His trumpet call—
Marching, marching, ever onward,
One and all.

Through the hot and dusty stubble,
Over green and fragrant lawns,
Through the valleys, over mountains,
'Midst the roses, and the thorns.
In the gloom, and in the sunshine,
Through the wheat, and through the tares,
Drinking now of joy and gladness,
Now of sorrows, pains, and cares.
We are marching, lads and lasses,
Marching, marching, evermore,
Heeding only that our Captain
Goes before.

"Hasting to what fate we see not"—
Aye! but this we surely know,
We have trusty shields and bucklers
That will serve 'gainst every foe:
And we march beneath one banner,
And we march towards one end,
And they're faces of our brethren
That press round us as we wend.
We are marching, lads and lasses,
And we need not doubt or fear,
For the footsteps of our Captain
Shine so clear.

We are marching, marching, marching,
On Life's winding changeeful track,
Which has many a diverse pathway,
But no turn that leadeth back.
Hope is ever strong within us,
And we need not fail or stray,
For the Captain whom we trust in
Knows each winding of the way.
We are marching, lads and lasses,
Through the glamour or the gloom;
We are marching, marching, marching,
Marching home!

Let us look to keep our conscience
Pure from thought or deed of shame,
Lest we bring to foul dishonour,
Christ, our Captain's holy name;
It will be so sweet to hear Him,
When the goal at last we win,
Say, "My soldier, brave and faithful,
To My kingdom enter in."
We are marching, lads and lasses,
We are marching, great and small,
Ever upward, ever onward,
One and all!