

and durability of the colours after the lapse of so many years were surprising, while the execution of some of the antique specimens was no less so.

The question now before us is not how, when, or where it was first discovered, or practised, but to show as clearly and simply as possible how it is done or practised now, and to describe in a lucid, progressive, and comprehensive style the way in which the various patterns are manipulated, so that any individual possessing an ordinary share of common sense and understanding, may, without any other aid than practice, perseverance, and careful observation, do it himself, and where there are two ways of doing anything, that which half a century's experience has proved to be the best will be described. We will now proceed to describe, in the first place, the colours and materials used in Marbling.



# THE WHOLE ART OF MARBLING.

## THE COLOURS USED IN MARBLING.

THE colours required for this purpose are the same as those ordinarily used for painting either in oil or distemper, but you must procure them just as they are produced or manufactured, whether in lump, powder, or pulp, and grind them yourself. They may be obtained in London retail at most of the respectable oil and colour shops, and in the provincial towns at the druggists, or wholesale at the principal colour manufacturers throughout the kingdom. I subjoin a list of all that are actually necessary, though many more may be brought into use to please the fancy.

### REDS.

Carmine.  
Drop Lake.  
Peach Wood Lake (pulp).<sup>1</sup>  
Vermilion.  
Rose Pink.  
Burnt Oxford Ochre.

### BLUES.

Indigo.  
Chinese Blue.  
Made expressly for marbling.

Prussian Blue.

Ultramarine.

YELLOWS.

Chrome.

Dutch Pink.

Raw Oxford Ochre.

Yellow Lake (pulp).

English Pink.

GREENS.

Chrome Green.

Green Lake.

Emerald Green.

Brunswick Green.

BLACKS.

Vegetable Lamp Black.

Common Lamp Black.

Drop Ivory Black.

Blue Black.

BROWNS.

Burnt Turkey Amber.

„ Sienna.

ORANGE.

Orange Lead.

„ Chrome.

## WHITES.

China Clay.

Pipe Clay.

Flake White.

Paris White.

*Carmin.*

This colour takes the first place among the reds for brilliancy of colour, and when properly ground and prepared is easy and sure to work, but it is seldom used on account of its high price ; where, however, a little extra outlay is not an object, it amply repays for the additional expense by the superior lustre and permanency of the effects produced.

*Drop Lake.*

Next to carmine this is the most beautiful colour for book edges, and is most generally used, especially for the Dutch or stationery marbling. There are three different sorts of this colour, viz. scarlet, crimson, and purple, and different qualities of each. The scarlet is best adapted for general purposes, as it possesses a greater brilliancy than the others ; but as there is a great deal of a very inferior kind of drop lake about, which is of no use whatever to a marbler, possessing no body when ground and mixed, it will be as well to observe the following rule when about to purchase this article. Take a piece of the colour, break it, and apply the broken part to your tongue ; if it adhere to your tongue like starch, reject it, as it is extremely doubtful whether it will do, but if it holds up the moisture without manifesting any disposition

to adhere you may try it with better expectations of success, although this even is not an infallible test. This colour is sold in the form of small cones or drops, from which it derives its name ; it is a preparation of cochineal, therefore the cost of it depends much upon the price of that article.

*Vermilion.*

This colour is but little used, on account of its great specific gravity, and seldom without being combined with some other colour. It is a preparation of mercury, and though nominally a much lower price than lake, yet as so little of it in bulk goes to a pound it comes as dear or dearer than that article ; it is, however, a permanent colour.

*Peach Wood Lake.*

This colour is a preparation from peach wood, and has only been introduced some twenty or thirty years to the general notice of the trade. It was first brought under my notice by Mr. Thos. Hinks, of Small Heath, Birmingham, manufacturer of colours, chemicals, &c., and is a great acquisition to the marbler, not only of book edges but also of paper, as the very reasonable price and superiority of appearance give it the advantage over all the common reds formerly used in the marbling of paper. This colour is an exception to the general rule, as it is sold in the pulp, or damp state, and may be mixed and even used without grinding, being manufactured almost exclusively for marbling ; it is decidedly the best and cheapest red we have for general purposes ; it possesses depth, permanence, and brilliancy, and ranks next to drop

lake. It may be necessary to state that it is not known at the druggists or colour shops, but must be obtained only from the maker, Mr. Hinks, who for the convenience of all parties requiring it, will supply it in either large or small quantities.<sup>1</sup>

*Rose Pink.*

This is a very useful though common colour for paper; it is made by boiling chalk or whiting in a decoction of Brazil wood. It is a very fugitive colour, the pink very quickly fading on exposure to the atmosphere or to heat. Combined with a little orange lead or burnt ochre, it answers for a vein colour for common paper, or mixed with indigo or Chinese blue it makes a good purple.

*Burnt Ochre.*

This colour is obtained in its raw or native state from pits dug in the earth in the neighbourhood of Oxford, hence it is called Oxford ochre, and from its hardness, especially when burnt, "stone ochre." It is a sort of clay, and when burnt or made red-hot, turns to a kind of red colour; it is one of the most useful colours we have, and as the price is low is extensively used. With the addition of a little black it makes a good brown, with a little blue or indigo it makes a good olive, and is a good bright fawn colour when used by itself, and is not liable to fade or change.

*Chinese Blue.*

This is a very beautiful, but not a very durable colour;

Since writing this I find other makers of this colour in the market.

it is, however, an almost indispensable one to the marbler, as it will produce nearly every shade of blue by the addition of certain proportions of white. This colour requires particularly well grinding, as indeed do all the blues; it is also sold in some places in the pulp or damp state, both deep and pale.

*Indigo.*

This colour is a most valuable article, and cannot be dispensed with under any consideration. The East India or Bengal is the best. It is too well known to require any description here. Though not a bright colour, it is one of the most durable; and for mixing and producing greens and purples of a permanent kind is invaluable, neither can you make a good black without it; but be sure you obtain it good.

*Ultramarine.*

This is a very beautiful colour, but must be used very sparingly, as it will not glaze or take any polish, and is always inclined to rub off. The kinds now in general use are the French and German, the genuine article being far too expensive for this sort of work.

*Prussian Blue.*

This colour is now almost superseded by the Chinese blue, which is a much brighter colour; Prussian blue is much darker and heavier-looking than the Chinese, and is a very bad colour for glazing, and harder to grind.

*Dutch Pink.*

This is a common but very useful colour; it is a prepara-



tion of whitening and Quercitron bark. Mixed with blue or indigo, it makes a good green, and is also useful in mixing with chrome to produce the various shades of yellow you may require.

*English Pink.*

This is sometimes useful, it contains only half the depth of colour to be found in Dutch pink.

*Yellow Lake.*

A good colour for general purposes, principally used for old Dutch, and also for making greens mixed with blue.

*Chrome (Pure).*

There are various shades of this colour, known as lemon, middle, and orange, varying in shade from a pale lemon to a deep orange approaching to red ; it is a useful colour, but unless you get it pure or genuine, is very difficult to get to work properly.

*Raw Ochre*

is Oxford ochre in its native state. This may be used in certain proportions for making your olive or stone-coloured tints combined with Dutch pink, white, blue, or black ; it is also of use in small quantities to mix with your yellows when they are inclined to run off ; this colour being of a very adhesive nature.

*Drop Ivory Black.*

This colour cannot be well used alone, it requires to be

combined with lamp black and indigo to get it to work properly as a black.

*Vegetable Black.*

This is a superior kind of lamp black, but made from vegetable instead of animal matter: it is surprisingly light and cannot be used alone. It will not produce a good black for marbling except in combination with double its own weight of good indigo. A little drop black may be used with it.

*Green.*

Most of the green colours used in marbling are produced by mixing certain proportions of Dutch pink or yellow lake with blue according to the shade required, which must be regulated by your own judgment. As to the blue used, it must be remembered that Chinese blue will fade (indigo will not), and should the green be inclined to run off, a little raw Oxford ochre will be necessary. There are many green colours sold at the colour shops: among them is the emerald green, but it is comparatively useless in marbling, as it possesses but little body and will not burnish; and being prepared from arsenic is a rank poison and injurious to health.

*Brunswick Green*

will not stand the light of the atmosphere, but will fade in a few hours; it is, however, a very cheap colour, but not adapted for marbling. The best of all the ready-made greens is good

*Green Lake,*

which is a deep bright colour, and more permanent than

the others, but too expensive for paper. Next to this comes the

*Chrome Green,*

also a pretty good colour. But it is hardly worth while to multiply these, as it will only tend to confuse rather than to edify the learner.

*Turkey Umber Burnt.*

This colour produces a very good brown, but it is hardly needed, as it requires a great deal of grinding and requires to lie some time after to soften or rot, while if you have the burnt Oxford ochre, with the aid of indigo and black you can produce almost any shade of brown you may require.

*Orange Lead.*

This is a very heavy colour, and is mostly used for the edges of account books ; it may, however, be used in the manufacture of marbled paper, but a large proportion of it will sink to the bottom of the trough on account of great weight.

*White.*

For this an article called China clay is mostly used ; also, for some purposes, common pipeclay will answer. Flake white may also be used, but it is much heavier, and the others do quite as well and are much cheaper. Paris white is a similar thing to the china clay, but harder, and is apt to clog the brushes, as it is often mixed with plaster of Paris.

## GUM.

Of all the varieties of gum there is but one that is of any use for the purpose of marbling, and that is called gum tragacanth, or gum dragon—called by some druggists gum elect. You cannot be too particular in your choice of this article, on which so much of the excellence of your work depends. It is like the foundation of a building: if that be faulty, the whole fabric will fall to the ground. Good gum should be large, white, hard, and flaky (although I have occasionally had some very good in small white flakes), but that which is discoloured and lumpy is doubtful, it is no gain to buy it, however cheap it may be offered; if used at all, it would only do for the most common kinds of work, and even then one pound of the best would go farther than two of the bad, and produce a more satisfactory result. Have the best of everything, and it will be cheapest in the end, as the loss of time, joined with the inferiority of the work produced by the use of bad material, will prove. Good gum will produce a smooth surface when dissolved, but bad gum will often yield a rough one, which is inimical to your purpose. Again, some apparently good gum, or gum which has been exposed some time to the action of the atmosphere, will give a smooth surface enough, and yet possess no strength; the colours will flow well, and form themselves properly, and, when the paper is lifted off, will look at first very beautiful; but upon looking at it after it has been hanging up for five minutes, you will find the colours all running off, to your indescribable annoyance and vexation.

*Directions for preparing the Gum.*

Procure a large earthen pan, glazed on the inside, capable of holding from eight to twelve gallons; put therein one pound of gum tragacanth, and pour on it about two gallons of soft water; let it soak all night. The next morning stir it up well with a birch broom for about five minutes, breaking the lumps; repeat this at intervals of three or four hours during the day, adding more water as it thickens, or absorbs that which was first put to it. In about forty-eight hours you may venture to make use of it, though seventy-two hours would be better, and I have found some gum which worked all the better for remaining a week in solution, as, although a considerable portion of the gum may be dissolved, some of the hardest pieces, which contain the most valuable properties of the gum, will still remain in a semi-solid state. When your gum is properly dissolved, you must gradually dilute it with water till it is brought to the proper consistency, when it must be strained through a fine hair or muslin sieve. If you require it for Nonpareil, you must be particularly careful that you have no lumps in it, or they will get between the teeth of your comb and drag the colours; if for Spanish or Shell, it will require to be rather thinner than for Nonpareil, and if for the old Dutch or Account Book pattern a little thicker; but a little practice will soon enlighten the practitioner on this part of the process.

## LINSEED OR FLAX SEED.

It is possible to marble some common patterns on

mucilage of linseed alone, but it is a very objectionable vehicle for more reasons than one. If used, the linseed must either be boiled, or boiling water must be poured upon it, and kept stirred for a considerable time, to extract the mucilage from the seed ; but it is very seldom used, as it so quickly decomposes, or turns to water.

#### FLEA SEED (PLANTAGO).

This is an article but little known except by those who have occasion to use it ; its peculiar appellation arises, I suppose, from its great similarity to the very annoying little insect whose name it bears, being very like it in shape, colour, and size. When saturated with boiling water, and well stirred, it will yield when cold a very strong and powerful mucilage, far stronger than what can be obtained from linseed ; and, what is better still, it will not soon lose its properties, or turn to water, but will keep good for days. It is a great improvement when mixed with the gum for the making of the French or Spanish marbles ; but it is a total enemy to Nonpareil and all drawn patterns, as it will not allow a comb to pass through it without dragging all the colour off with it. To prepare it for use, put a quarter of a pound of seed into a pan or crock, pour upon it a gallon of boiling water, keep it well stirred for ten minutes, let it stand for half an hour, then stir it again for ten minutes more. In another half-hour pour a second gallon of boiling water, stirring it as before, at intervals, for one hour. Let it remain, and the seed will settle at the bottom of the vessel ; when cold, pour off the top for use, and the

seed will bear more boiling water, though not so much as at first. And sometimes the seed will yield a third supply; but this you must determine by your own judgment, as the seed when exhausted will lose its mucilaginous property, and must then be thrown away. One thing I would mention—never stir your seed up after it is cold, or nearly so, or it will not settle again without being heated afresh, or more boiling water being added to it, and it would be very difficult to strain it.

#### IRISH OR CARRAGEEN MOSS.

This may be either used or let alone; some like to use a little of it mixed with the gum for Nonpareil. It must be well washed and soaked in cold water, and be gently boiled for an hour or two, and when cold, strained, and well beaten up with the gum before putting it into the trough. But do not attempt to use it either for Spanish or French, as it will do more harm than good.

It is possible to marble on this alone also.

#### OX GALL.

The surest way of obtaining this article genuine is by procuring it in the bladder as it comes from the animal, if you are acquainted with any butcher on whom you can depend; if not, you must ascertain that the bag or bladder has not been broken, as I have been deceived myself in this way. I will here expose the method of the fraud practised on me. I had for some time been supplied with galls from a slaughter-house, but finding that

although the galls were brought in the skins, and emptied into a jar in my presence, it took a great deal to produce the proper effect, I set my thoughts to work to find out the cause, and at last discovered that the man who brought them procured one or two good galls, and at the same time obtained some empty bags or skins from which the gall had been taken; he then mixed the genuine with a quantity of water, and refilled the whole lot, carefully tying them up with a fine string, and selling them to me as the proper article. The gall from some animals is very thick and ropy; but, if kept awhile, will go thin, without losing its properties. In fact, gall is all the better for being kept some time, and is none the worse for stinking, excepting the disagreeableness of the odour to those using it.

#### OIL.

This is an agent of which you cannot be too careful, for, although it is indispensable for the production of some patterns, it is a most formidable enemy to the perfect accomplishment of others; indeed, a brush which has been used in the colour mixed for a French or Shell pattern, would, if put into a jar of colour in use for Spanish or Nonpareil, completely spoil it for those purposes, unless it were thoroughly cleansed from every particle of grease. I just mention this to show the necessity of being most scrupulously particular in everything connected with the processes of marbling, and how apparently trifling a matter may throw an obstacle in the way such as you would hardly credit.

Now the best oil for general use in French or Shell