

LEATHER STAINING, DYEING AND DECORATING

Guild of Bookworkers
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No records can tell you when animal skins were first used or discovered. Primitive man is credited with using skins for protection but these were subject to decay and rot in a very quick time. When tanning and leather were first discovered is also a mystery and was, by popular belief, probably found by accident - as many important discoveries are. Tannin or tannic acid, which is used to convert raw hides and skins into leather, is available from parts of trees. How this connection was made is still a mystery and probably the theory that the discovery was made by chance is valid.

Any bookbinder who has worked with leather will appreciate the qualities of its suppleness as well as its strengths and versatility. It can also be demanding; preparation of leather for binding can be tedious, and soul destroying. Most binders (if not all!) have made a hole in the wrong place whilst pairing leather (this always seems to be the very last spot you have to shave down). This amounts to frustration, waste of time and also a waste of an expensive skin.

Why, after so many years of using leather, should we feel it necessary to stain or dye leather?

I can only answer this using my own personal experiences.

I basically use three tanneries in Great Britain for my skins, the choice of which depends on what the skins are to be used for. I have listed below the three tanneries and the types of leathers they supply, (I will go into more detail as we progress):-

Harmatan Leather Ltd
Westfield Avenue
Higham Ferrers
Northamptonshire
England. NN10 8AX
Tel: 01 933 312471

Oasis Goatskins
Calf
Skivers

J. Hewit & Sons Ltd.
Unit 28, Park Royal Metro Centre
Britannia Way, off Coronation Road
Park Royal
London, England
NW10 7PR
Tel: 0181 965 5377

Chieftain Goatskins
Clansman Goatskins
Calf
Skivers

William Cowley
97 Caldecote Street
Newport Pagnell
Buckinghamshire
Tel: 01908 610038

Vellum
Transparent Vellum
Parchment

Goatskin leathers (such as Oasis, Chieftain and Clansman) come in an extensive range of colours and I have rarely had to dye them to obtain a colour match. The only form of colour alteration that I am currently using is air-brushing with acrylics, but this is for specific decoration and would not be over the entire skin or cover. Air-brushing is a very positive method of placing a design on a cover. The only preparation required is to test your colours and techniques first on a trial piece of leather, mask off the areas not requiring brushing and off you go. Some of my students have achieved dramatic effects using acrylics on goatskin. As the acrylics offer a range of very bright and vivid colours, they can achieve startling designs in a very short period of time.

Again, back to my original question, why stain or dye leather?

I really only stain or dye Calf and there are three main reasons:

- i) To match the covers on a repair; either spine, corners or both.*
- ii) To antique the covers on a rebind.*
- iii) To prevent keeping a lot of different shades in stock.*

Calf is very porous and, having this quality, is very amenable when it comes to staining. I do use skins that have already been coloured but I would only use them when I did not want to try and create an antique or worn (used) look but to achieve a pristine, prize style of binding.

I use three different types of stains/dyes - one somewhat controversially - but I will get to that a little later and explain my reasons why.

The main two dyes that I use are ANILINE & SPIRIT, aniline being a water based dye and spirit, IMS (industrial methylated spirit) based.

There are things for and against each type of dye. Water based dyes are not so strong in colour and are more difficult to achieve an even colour over the skin; the plus point is that the skin does not lose any of its character. Spirit based dyes are much stronger, give a much more even finish, but make the skin stiffer and not so easy to use for covering. They also lose that wonderful leather smell that always pleases visitors to my Studio. Conservators prefer spirit stains being used as the skins will not be so open to attack from insects etc.

The third stain(s) that I use are, Hydrated Potassium Carbonate (salts of tartar) & Ferrous Sulphate (Copperas).

Hydrated Potassium Carbonate (salts of tartar) & Ferrous Sulphate (Copperas) have been used by bookbinders from around 1775 to decorate calf, either by what was known as calf marbling or later as tree calving. Both methods have the unenviable reputation for deteriorating the leather quicker than normally expected; the fact that many eighteenth and nineteenth century examples are still around does not convince conservators, maybe for genuine reasons, that there is still no substitute for these chemicals to achieve an antique marbling effect. I have never been afraid of using this method of staining as there has never been any indication that the text could be damaged by this process. It may be an old fashioned ideal, but I still believe that the text is the most important part of any book and that the covering can either be renewed or repaired.

DEMONSTRATIONS

Cambridge Panel, with an aged staining

My main concerns, when rebinding an antique volume, are to make the binding sound and the appearance to match its period. Bernard Middleton, an English binder of reknown, has mastered this technique - even to the extent of ageing the corners - and, in my humble way, I have tried to expand on his ideas and enhance the ageing effect in the staining.

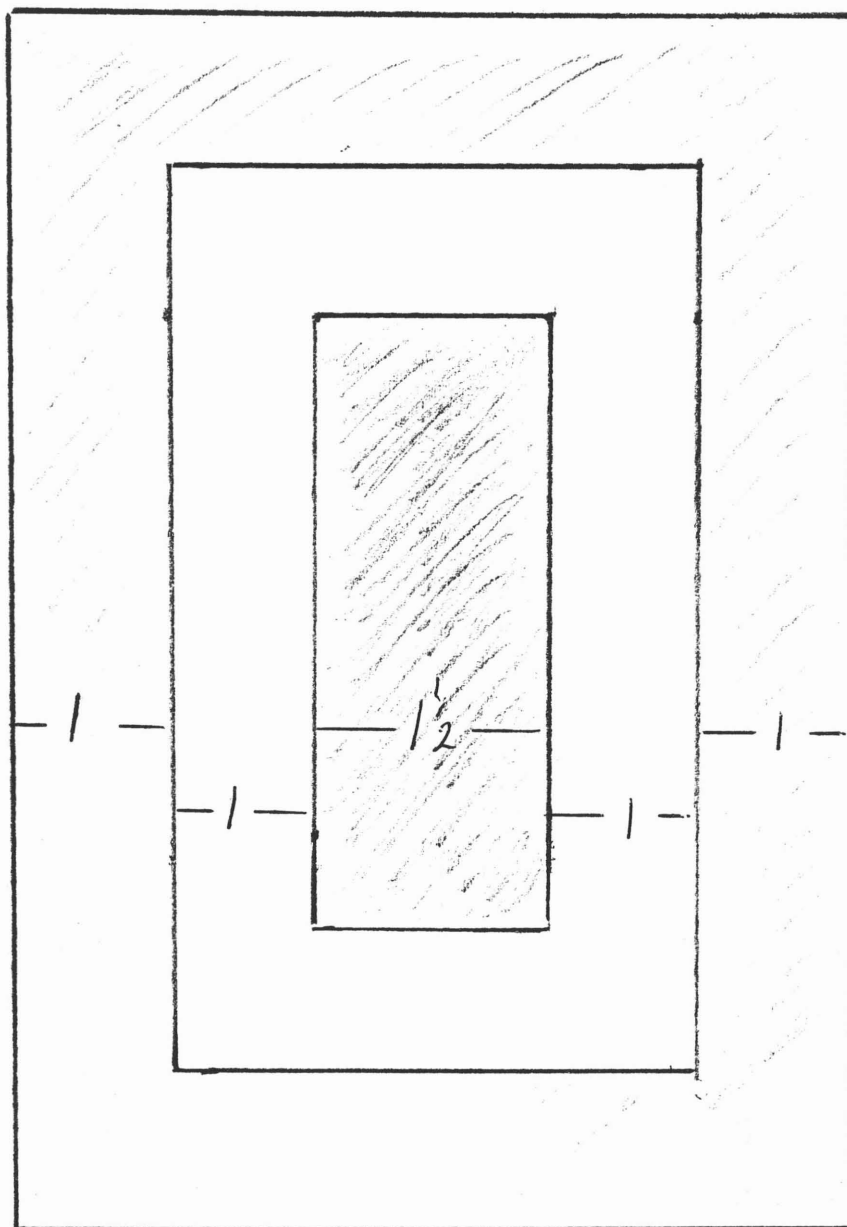
I would like you to assume that the book has been prepared to the covering stage and the natural calf has been edge paired and is now ready to be used as the covering material.

Lay the covering material down flat on clean waste paper, sponge the cover with clean water, then load a large piece of cotton wool with the chosen water stain (lighter than the required finished result). Flood the skin, wiping the loaded cotton with upright strokes, followed with a sideways stroke action, making sure that the skin is thoroughly soaked and even. Turn the skin over, paste out, cover in the normal way, allow to dry, and open up in the normal way. The next stage is to decide (this should have already been organised) on the finished stain colour (SPIRIT). This will be darker than the water stain used. I would now rub paste over parts of the cover sparingly, remembering that these will remain a lighter shade on the finished binding. Allow to dry. Load up a wad of cotton wool and thoroughly cover with the Spirit stain. The finished cover should now have a two-tone appearance - how much of the lighter colour you wish to remain, or wish to see remain, will come through practise and experience. If your final staining has a metallic bloom on the surface, this can easily be removed by wiping over the surface with a wet sponge.

I will now take the demonstration a stage further and convert this binding into a Cambridge Panel. If you do not wish to use this pattern style then you can complete the binding without using the Cambridge Panel style.

To prepare for the staining of a Cambridge Panel, you will need two soft greyboards (or similar) cut to the exact board size of your covered volume. There has never been a formula for measurements of the panels, it is basically left to the binder to determine his own pattern style. I would assume that this was, in its day, a very quick and cheap way to decorate leather bound books.

I work to my own formula, which may not suit everyone, but there is scope to produce your own styles and patterns. There is a diagram to explain my methods below. Basically, I divide the width of the board by 5 and a half, the panels working out as 1, 1, 1 and a half, 1, 1 (see diagram) . Mark out square and even, to pattern board, cut along panel lines, making sure that you have cut all the way through, keep the cut boards as one and repeat on the other board.



Open the book out with the boards at right angles, place in a finishing press with the text between the jaws, the book should be capped up at this stage, tilt the press at a very slight angle, placing the head of the book upright. I must emphasise that the press should only be slightly tilted, too much angle and the stain might run.

You can use three types of stain for the next process; either Indian Ink, Spirit Stain or Ferrous Sulphate (this will need a different process which will be covered later).

I personally prefer to use a strong spirit stain, the best example of which is shoe dye.

To apply the stain, place the two pattern boards (square to book on the binding), place a weight onto the centre of the board and carefully, without letting the pattern board move, remove the outside panel. This will leave the outside panels and spine exposed. To apply the stain I use a toothbrush. This gives a very fine pattern and makes the amount of stain you require much easier to gauge. Load the brush with the stain (usually black), use a knife to flick the bristles with an action pulling the knife towards you (the opposite way will decorate you!!) It is best to test this on a piece of paper first. You should also make sure that the toothbrush is never directly over the book as there is a chance of the brush dripping. Once you have achieved your desired pattern, allow to dry for a short time, replace the outside pattern boards, mask the spine and remove the centre panel of the pattern boards. Repeat the staining process to desired amount. The most common pattern would be for a light sprinkle on the spine and outside panel with the centre panel being darker, this being achieved by applying more stain. Remove pattern boards and allow to dry.

The finishing technique is as for normal calf bindings - marking up, paste wash, glaire and tooling etc. If you wish to leave the binding plain (Cambridge Panel or Antique) then lightly paste wash the cover, allow to dry and dress with a leather dressing. If you require a finish that is not too shiny, then I would recommend J. Hewit's white leather dressing. This is a wax and water based liquid which you apply all over, allow to dry and polish off with a soft cloth. This will enhance the staining and improve the antique look.

I said earlier that I also use Hydrated Potassium Carbonate (Salts of Tartar) and Ferrous Sulphate (Copperas) to stain leather. This is the

original way to achieve Calf Marbling. Unfortunately, and justifiably, it has the reputation for deteriorating leather. Many of the styles can be achieved by using safer stains/dyes such as described in the Cambridge Panel demonstration but there does not seem to be such a good substitute when it comes to Tree Calf.

My apprenticeship of six years was served with W.T. Morrells, a Bookbinders in the West End of London. They were known for fine leather bindings and tree calving. My boss in those days, Ralph Themburg, was credited as being one of the last commercial practitioners of tree calving. I have kept his notes but I rarely use this type of staining due to its reputation for deterioration of the leather.

Equipment and Materials for Calf Marbling using Hydrated Potassium Carbonate and Ferrous Sulphate

Albumen Glaire, matured.

Hydrated Potassium Carbonate (salts of tartar) a solution of two rounded teaspoons in a one pound jar of water.

Ferrous Sulphate (copperas) a solution of three rounded teaspoons in three pints of water.

Paste Wash solution.

Large Brush and Knocking Stick.

Sponge and Cotton Wool.

Water Spray, or bundle of birch twigs.

Wooden Roller, 3 to 4 ins. in diameter, 12 to 16 ins long.

The Process

Tree calf bindings are bound using a thinner board than normal. The boards are not lined with a draw sheet before binding but are encouraged to pull out away from the text once covered. The freshly covered book is allowed to stand on its foreedge whilst drying, keeping a careful eye that the binding will not topple over during the drying stage.

The text must be capped during the staining process, there is a strong possibility that water will be splashed onto the text so careful capping is important.

Paste wash the leather and allow to dry.

Sponge the leather with Hydrated Potassium Carbonate. The leather will turn brown. Keep on applying the solution until the right colour is reached, make sure you do the spine and the turnings as well. The boards will soften. Now take the roller and gently roll the boards to create an even more exaggerated warping. Allow to dry.

Coat the boards (not spine) with glaire (a generous coating applied with cotton wool) Allow to dry.

Suspend the book in a finishing press, tilt at an angle, the head of the book should be uppermost (mask the spine if you want a traditional style, masking tape is sufficient).

Using either a sponge, bundle of twigs, or water spray, forcefully splash water on to the boards. The water should be encouraged to run down the boards, flowing to the centre from the sides. Once this pattern has been achieved, using the large brush, load up with the Ferrous Sulphate solution and (as if you were sprinkling edges of a book) sprinkle the boards. A pattern of black spots should appear which should run in the water flow and create a tree-like shape. Allow the stain to take hold for a couple of minutes and then wash down with water.

Place the book between two very clean pressing boards. Place a heavy weight on top, allow to dry and fill in with draw sheets.

The Cambridge Panel can also be achieved by using Hydrated Potassium Carbonate as the basic colour and Ferrous Sulphate as the panel stain - preparation as with Tree Calf, Pattern Boards as described earlier.

Patterned or Marbled Calf can be achieved by using the same preparation and, either sprinkling, or lightly sponging (using a dabbing action) over the covers.

Terry Buckley
1996

Every bookbinder appreciates the qualities of working with leather, why in this modern technology world has there never been a worthy replacement found?

Suppliers.

J. T. Batchelor
9-10 Culford Mews
Dalston
England
N1 4DZ
tel. 0171 254 8521

Spirit Stains

J. Hewit & Son Ltd.
Unit 28, Park Royal Metro Centre
Britannia Way, off Coronation Road,
Park Royal
London
England
NW10 7PR
tel. 0181 965 5377

Analine Dyes