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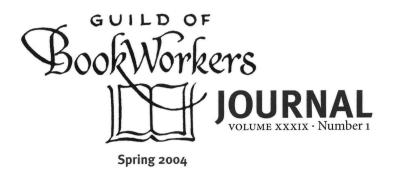
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Betsy Eldridge

21st Standards of Excellence Seminar October 2001, Alexandria, Virginia

The tradition of Foundation Sessions, started in Chicago in 1999, continued at the 21st Standards Seminar. "The Foundation Sessions are intended to be comprehensive introductions to broad, general topics, given by instructors who are teaching the in the field."* Martha Cole, Canadian fabric artist and bookbinder, spoke on "Color: Theory and practical tips on how to color you own paper and cloth." Martha's presentation will be published separately and available for purchase.

*Betsy Palmer Eldridge, The Foundation Session, Guild of Book Workers Standards of Excellence Seminar, Chicago, 1999.

VELLUM OVER HARD BOARDS

Peter D. Verheyen

Allein ein Pergament, beschrieben und beprägt, ist ein Gespenst, vor dem sich alle scheuen

—JW v Goethe, Faust.

Following a work-study program in the conservation lab at Johns Hopkins University Library, Peter Verheyen interned for two years (1984–86) in the conservation lab of the Germanisches Nationalmusem in Nuremburg, Germany. He apprenticed at Kunstbuchbinderei Klein in Gelsenkirchen, Germany in 1987 and studied at the Professional School for Book Restoration in Ascona. He was Mellon intern at the Folger Library in 1988 before working in Chicago with Heinke Pensky-Adam at Monastery Hill Bindery and as assistant to Wil-



liam Minter. He was assistant conservator at the Yale University Library in 1991, rare book conservator at the Cornell University Library in 1993, and established the rare book conservation lab at Syracuse University Library. Peter has served as Public Relations/Publicity chairman and Exhibits chairman for GBW. He has exhibited his bindings widely with the Guild and in other invitational and solo exhibitions.

INTRODUCTION

Vellum is arguably one of the most beautiful binding materials in use, and at the same time one of the least used in modern design bindings. While it is often used in limp bindings, its use "over hard boards" has been much more limited. A study of the bookbinding literature reveals it being covered in-depth to a larger degree in German language trade manuals than in English. This could explain their seemingly greater popularity as evidenced by reproductions in exhibition catalogs and other publications. With a decline in traditional training opportunities, it is becoming increasing difficult to

find exposure to this technique. As a material, vellum has many wonderful characteristics. It is translucent, can be made transparent, is available dyed or veiney, and exceedingly well wearing. Its major drawback is its hygroscopic nature, which especially in dry conditions will cause the boards to warp strongly. This, perhaps more than anything else, has discouraged binders from working with this wonderful material.

The structure described in this article is designed to address this problem of warping, and hopefully lead to an increase in the numbers of binders working in vellum. By applying the "split board" technique I learned as an apprentice in Germany, and described in Wiese, one breaks reduces the pull of the vellum on the boards, making it much easier to control with the counter-linings applied to the inside of the case. In contrast to the technique described by James Brockman in his New Bookbinder article from 1993, this is a case binding, with most of the work being done off the book, something which may make it easier for some as well.

Vellum can be used either unlined or lined with this technique. When wanting to take advantage of the translucent properties of vellum, it is often easier to create the work on paper, and then to line the vellum with that. In doing so, it is important not to use too heavy a weight paper and to let the lined vellum dry between blotters and under weight until dry and stabilized. By selectively sanding, applying moisture, and pressure, the properties of translucency can be manipulated. The vellum can also be directly underpainted. Vellum can also be worked in relief. As it does not readily stretch to conform to the contours, it is important to keep these quite flat. Done well, these effects can all be very effective.

Special thanks in preparing for the presentation at the 2001 GBW Standards meeting in Alexandria, VA, and with this article go to: Donia Conn, Andrea Reithmayr, and Gregory Santos.

ADHESIVES

Adhesives which are used in the process of this binding style include wheat paste, 50:50 PVA/Methylcellulose (or PVA/Paste) mixture; straight PVA. Use of synthetic adhesives is for ease of use. On fine bindings, or if this style is adapted in the course of a conservation treatment, I will use gelatine (hide glue) for certain tasks such as backing, adhering spine linings, hollows...

Paste is used initially for pasting up the spine and is critical for proper shaping of the headcaps. This is because it extends the "open time" and provides the "slip," as well as the moisture needed to make the vellum pliable,

making shaping the vellum easier. Paste should also be used when lining vellum to paper as it is less likely to strike-through and show brush marks.

50:50 mixture is used for wrapping the boards, adhering the vellum to the sides, and making the turn-ins.

PVA is used for assembling the case. In very dry climates, it can also be used to adhere the vellum the cover as it introduces less moisture, i.e. the material will stretch (and ultimately contract) less.

TEXTBLOCK PREPARATION

This binding style is derived from the German (Bradel) case binding in which the case is worked off of the textblock.

Endsheets

Make endsheet – Depending on size, kind of endsheet paper/material, or whether it's a full vellum or 1/4 vellum binding there are two different endsheet styles I like to use.



Full Vellum Endsheet Section

Cloth Lining / Hinge Single Folio Decorative Fly Leaf and Pastedown

Double Folio Endsheet Section

For 1/4 vellum – double-folio with tipped-on contrast folio and tipped on cloth hinge which is hooked around the endsheet section. The endsheet is "made" by tipping the fore-edge down with a thin bead of adhesive, ensuring greater flexibility.

For Full vellum – double-folio with tipped-on contrast folio which is lined with a thin cloth and hooked around the endsheet section. The endsheet is "made" by tipping the foreedge down. This ensures greater flexibility.

Trimming / Edges

For "rough cut" edges, trim signatures in the boardshear on three sides prior to sewing. Note: if decorating edges, these will need to be trimmed in a plough or guillotine after sewing and pasting up.

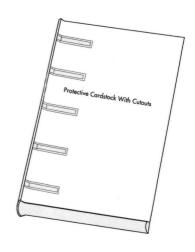
Sewing

The book can be sewn on tapes, frayed out cords, or vellum slips. Prior to sewing, pre-stab holes with awl using a jig to make sure holes are uniformly placed. Before sewing, put a loose guard of Sekishu weight Japanese paper, which harmonizes visually with the text and ends, around the first and last "text" sections. The kettle stitch should be circa 1 cm from the final head and tail trim to allow for trimming after sewing. Swell from sewing should be calculated so that when backed to 45 degrees the book has a gentle convex curvature to the spine. As always, sewing should be evenly taught. After sewing, the loose guard is adhered to the underside of the endsheet covering the cloth. This enables the endsheet to swing freely, and avoids the stiffness associated with tipped on endsheets. This is done with paste in order to avoid the staining and show-through associated with PVA.

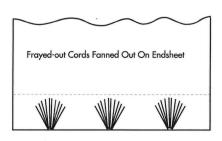
Forwarding

Before backing, if the text was sewn on vellum slips, or tapes, cut these to an even length (about 5 cm on each side). Next, cut two pieces of card, or folderstock, the size of the textblock, and then mark and cut out corresponding slots in the card. Apply tape from top to hold slips in place. The card should go all the way to the shoulder. This will help prevent the slips from being pressed into the endsheets during backing, and protecting them from soiling.

If the book was sewn on frayed out cords, cut these to about 2-3 cm in length. Next thin them out so that they can be nicely fanned out and adhered to the pastedown without leaving bumps. I do this by first using an awl or needle to separate and untwist the strands, Then I place a sheet of tin or some other thin, hard, material

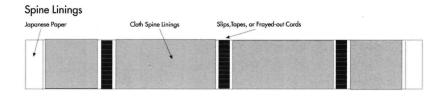


underneath, and using the backside of a knife thin them out. Finally, paste out the frayed out cords and evenly fan out onto the cloth of the pastedown. Use a folder to smooth out. Let dry before backing.



Backing

Glue/paste up spine, square up, and let dry. After this has dried; round and back to a 45° angle in a backing press. When backing make sure that the depth of the shoulder is 2x thickness of board. Note: If decorating the foreedge, trim just that after pasting, but before rounding and backing. While the book is still in the backing press, line the spine with Japanese paper along the entire length and let dry. Next, line the spaces between sewing supports and kettle stitches with cloth. This can be linen, cotton muslin, or book cloth. PVA can be used as an adhesive for this.



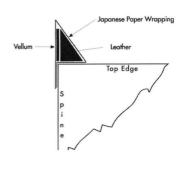
Edge decoration

Edges can be decorated in a multitude of ways. Gilt and graphite edges work very well with vellum binding. Mitchell's book on edge decoration is an excellent guide.

Endbands

A teacher of mine (Julie Puissant) once said, "a book without an endband is like a gentleman without a tie." I like to sew my endbands on a triangular core, a technique I learned from Frank Mowery at his Standards presentation on the Logic of German Binding, given 1990 in Washington, D.C.

I make my core by gluing a piece of vellum to a piece of leather. When dry, I cut out triangular strips so that the vellum will be at the back of the endband, supporting and keeping the core straight. To help support the core while sewing, wrap tightly with thin japanese tissue, and glue to spine. Tie down as usual by going through the sections. There are many styles of endband to chose from. Jane Greenfield's and Jenny Hille's book is an excellent guide.



After endbands have been sewn, put protective paper over edge decoration to protect. If all three edges were decorated, wrap entirely. Note: this will need to be removed when trimming fore-edges of case to ensure accurate squares. Rewrap afterwards.

Apply Hollow

After sewing the endbands, a hollow is applied to the spine. I make a one -on, two-off hollow out of 80lb text weight paper. The hollow is made off the book and then applied to the spine. Trim just below the top of the endband. The completed case will be attached to the hollow in preparation for lacing through vellum slips, and casing in.

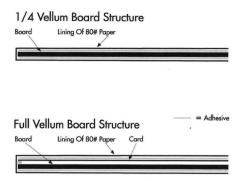
The Case

The essence of this binding technique is in the construction of the case. The board structure helps control warping because the vellum pulls on "weaker" cardstock, to which it is adhered, allowing counter linings on the thicker, main board to counter-act the pull more effectively. This technique is described in Wiese, and what I learned during my apprenticeship in Germany.

ASSEMBLY STEPS

Make Boards

Cut boards slightly higher and wider than needed in each dimension. Narrowly tip cardstock (Stonehenge) on along spine edge. Using paste or a PVA/methylcellulose mixture, wrap board/cardstock with 80lb paper,



turning around board only at spine edge. When making a 1/4 vellum binding, use a solid board rather than the split board. Wrap boards with 80# paper in the same manner as with the full binding.

Let dry.

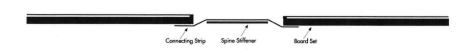
Trim board to proper height. Ideally the size of the square of the boards should be equal to the thickness of the board.

Make Spine Piece

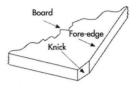
Measure spine and cut strip of cardstock (Stonehenge) to the exact width and slightly longer than board height. Cut a connecting strip of 80lb paper (this should be same stock as that used for wrapping board) to width of spine strip + 6 cm, and slightly longer. Apply PVA to spine strip and center on connecting strip. Rub down with folder, turn over, and accentuate edge of spine strip with folder.

Assemble boards and spine strip/connector leaving ca. 7 mm gap (depends on thickness of material and size of book).





Round spine and fit cover to book. Mark the foredge with a pencil/knife and trim fore-edge. Take small knick out of corner at fore-edge. This will later hide the tab from the corner, and leave the fore-edge straight, rather than having a bum and spine.



Covering

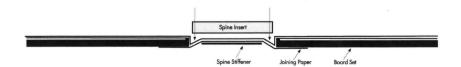
Covering the case is a three-step process. First the spine is covered, then the boards, and finally the turn-ins and headcaps are completed. Except in a very small number of instances, I have not pared, or otherwise thinned the vellum at the turn-ins. Therefore, select a skin which is not too thick, and can be easily folded and worked.

Adhering spine. Prepare a "spine insert" of thick blotter with piece of thin Reemay/ Hollytex. The thickness of this spine insert needs to be greater than thickness of board and cut to a hair less than the exact width between boards, including the groove.

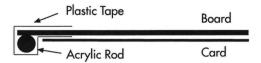
Mark exact width of spine on the vellum with light pencil marks at the turn-ins. Lightly dampen vellum from grain/hair side. This will help soften the vellum, and aid in working the vellum into the spine and the groove. Dampening also reduces the chance of strike-through from the adhesive. As an adhesive I prefer straight PVA for this step. Paste can be used but must be allowed to dry completely under pressure with insert in place.

Apply adhesive, using stippling motion to avoid the possibility of streaks showing through, to spine area of vellum only, lining up wastepaper with pencil marks. Avoid getting adhesive onto the turn-ins as it can make head-caps harder to work later on. Lay vellum on spine of case, making sure it is centered, and rub down, especially along edges of spine stiffener and board edge. Place "spine insert" onto spine and place into press, applying heavy pressure. Take out to check, then put back in press with insert to let dry. This will assure that the vellum is well adhered to spine strip.

If making a 1/4 binding, these steps can be combined, in which case the thickness of the spine insert should equal that of the boards. When dry apply corner pieces. Turn-ins will be handled the same way as with a full binding.

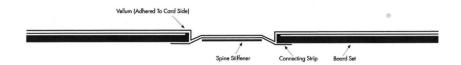


Adhering sides. When adhering the vellum to the boards, I like to use the pressing boards. James Brockman in his article in *The New Bookbinder* made his own using binders board, acrylic rods (or the appropriate thickness knitting needle for the board), and clear plastic tape. Multiple sets of these boards can be made for different thickness of board.

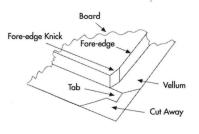


Lightly dampen vellum on front side (to reduce chance of strike-through from PVA), fold back on self, put waste paper underneath, and apply adhesive. For this step, I'll use a 50/50 mixture of PVA and methylcellulose, or paste. Next, fold vellum back onto board ensuring that vellum is tight along the spine edge of board. Put in press using the casing-in boards to ensure crisp edge along board. Repeat on other side. Let dry under weight for as long as possible. This will help stabilize the vellum and help with warpage control later on.

If a 1/4 binding is being done, apply corner pieces Any stamping to be done on the spine should be done at this point. After the headcaps have been formed it will no longer be possible to flatten the spine.



Turn-ins. Using a folder to pre-fold the turn-ins and make cuts for corner. This will help later on by making the turn-ins somewhat less likely to pop off while working. Next, reround spine and dampen the turn-ins, starting with the head and tail edges. Apply straight PVA along entire edge, and then paste in the area of



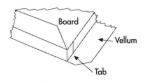
the headcap. This is crucial as you will need the time, and slip, to be able to shape the headcaps. Turn in along edges at top and bottom, pulling up the vellum and roughly preshaping the headcaps. Place book into cover. James Brockman, in his *New Bookbinder* article ties up thebook with soft twine as an aid. As our cover is not yet attached to the textblock, tying up will also help keep the textblock in place.

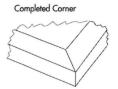


Begin shaping headcaps. Headcaps should be evenly wide along entire length, with the width corresponding to the thickness of the board. Avoid getting creases in the headcap. A narrow pointed folder (bone and/or metal) work great. Tuck the extra material at the ends down in a sharp motion, into groove. This is the toughest part

of covering the case, and the vellum can be quite stubborn. Allow yourself time. The paste which was applied at the headcaps will give you the time. If needed, lightly dampen the headcap from the outside, but don't get the spine too damp.

Carefully remove case from text, turn in the fore-edges and make the corners. Do not attempt to "flatten case" when doing turn-ins as it can damage still damp headcaps.





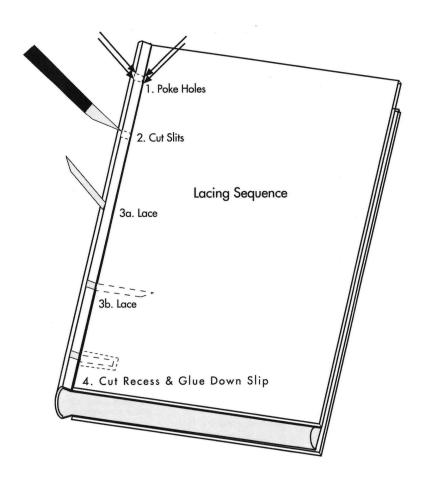
FINAL STEPS

Place piece of Mylar on top of endsheets to act as a moisture barrier, and let dry between casing-in boards and in press under light pressure or use weights. Be patient as parchment dries. Next, remove textblock from case, and trim out the case allowing about a 1cm turn-in. If making a 1/4 binding, fill in the area between the vellum and corners with a piece of appropriately thick card using straight PVA as the adhesive. Then apply covering paper.

Casing In

Apply straight PVA adhesive to hollow and fit book in snugly. Place in press with casing-in boards or plexi-rods to make sure case is tight around spine. Let dry thoroughly. This is important. Examine boards to determine amount of counter-linings needed. Remember, the pastedown will pull the boards inward as well. Patience is critical.

- If book was sewn on frayed out cords: fill in/counterline covers, allow to dry completely so that boards are flat. Finally, case in using casing-in boards.
- If book was sewn on tapes: remove protective card sheets and trim tapes evenly to length, cut recesses for tapes into cover and adhere, fill in/counterline covers, and allow to dry completely so that boards are flat. Next, sand to smooth out bumps left by tapes, and casein using casing-in boards.
- If book was sewn on vellum slips: now is the time to lace these through. Remove card holding slips and cut slips to a point. This will help with lacing through. Holding the book with boards open so that when looking at it from the fore-edge, all you see is the edge of the board with a clear line of sight to the slips. Using an awl, prick holes at the edge of the spine for the slips. Insert card to protect endsheets and vellum slips, and then using a scalpel, cut slits using pricks as start and end point. From outside, insert awl to "open" slits, and lace through slips. Next repeat process at board edge. Cut slips to uniform length, and recess into cover, adhering with glue. Make sure slips are pulled taught. Finally counterline covers and allow to dry fully. Next, sand to smooth out bumps left by tapes, and case in using casing-in boards.



Vellum Binding Flow-chart: For full vellum, adaptable to quarter vellum			
1 70.10	Covering in Boards	True "Bradel"	Case Binding
1. Prepare endsheets			
Forwarding Textblock	Please Note: Steps in flow-chart are simplified and for general guidance only. Directions in article are for case binding	2. Sew3. Round & back4. Trim edges5. Decorate edges6. Sew endbands	
7. Cut component parts for cover to size			
Making Cover	Attach boards to text-block and trim fore-edge square to size	8. Attach spine piece to hollow, attach boards, and trim fore- edge square to size	8. Assemble case, round, fit to book, mark and trim fore-edge square to size
Mak	9. Cut vellum to size and prepare		
Covering	9 1 b	O. Attach vellum to spine; work into roove and onto boards Shape groove with casing-in oards Complete turn-ins Shape headcaps	10. Attach vellum to case (15.) Stamp / tool spine* 11. Make corner cuts, re-round cover, begin turn-ins, insert text into cover, shape headcaps, complete turn-ins and corners 12. Remove case from textblock
Asing-in / Finishing	15 16 17	4. Set joint, lace through vellum slips 5. Stamp and tool cover 6. Trim-out, counter-line / fill-in 7. Put down endsheets / case in 8. Final check	(16.) Trim out * 13. Attach case to hollow, shape groove with casing-in boards * When working case off of book, tool spine before completing turn-ins. Tool board before casing-in

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MENDING PAPER

Christine Smith

Christine Smith is President and Chief Conservator at Conservation of Art on Paper, Inc. (CAPI) in Alexandria, Virginia. CAPI treats fine art and rare manuscripts for an internatinal clientele of museums and collectors. (The firm does not treat books.) Ms. Smith received an M.S. in Art Conservation from the Winterthur Museum, University of Delaware, and served as Paper Conservator for the Smithonian Institution's Conservation-Analytical Laboratory and National Portrait Gallery before founding CAPI. She also holds an A.B. in Art History from Vassar College.



SEMINAR AGENDA

I. Basic Concepts

- A. Mend equal to or weaker than object
- B. Thin adhesive layer better than thick one
- C. Mending/filling materials move in same way and degree as object
- D. Paper grain
- E. Difference between Western and Japanese tissue
- F. Japanese tissue traditional for mending
- G. Water tears vs. cutting
- H. Materials w/same name/description not necessarily the same

II. Tissue/Paper Choice & Prep

- A. Paper Choice
 - e.g., paper/tissue, strength, grain or not, color, thickness, surface
- B. Toning Methods

Acrylic Paint

Dyes

Toasting

III. Adhesives

A. Water-based

Solvent-based

- B. Traditional Method: Fresh Starch Paste and Tissue
 - 1. Wheat Starch Paste

Making / Kneading / Use

- 2. Rice Starch Paste
- C. Remoistened Strips
- D. Cellulose Ethers
- E. Heat-Activated Adhesives
- F. Solvent- Activated Adhesives
- G. Pressure-Activated Adhesives
- H. Mixtures of Compatible Adhesives
- I. Unsupported Adhesive Films

IV. Mending

- A. Prep the tear line
- B. Prepare tissue
- C. Apply adhesive to strip
- D. Apply strip to object
- E. Press together and dry
- F. Alignment
- G. Mending along folds
- H. Single- or Double-sided

V. Filling

- A. Tissue laminates
- B. Fill cut to exact size
- C. Pulp
- D. Japanese ceramics technique

VI. Surface Finish

- A. Burnishing/Texturing
- B. Tengujo overlays
- C. Inlaying a line of pulp

VII. Hand-Outs

- A. Article on paste preparation w/CAPI recipe
- B. Tools & Supplies List

MENDING PAPER:

AN INTRODUCTORY BIBLIOGRAPHY

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WHEAT STARCH PASTE

INTRODUCTION

Pastes are generally weaker adhesives and better complements to paper artifacts than glues, which tend to be too strong. In addition, most tapes and glues are hydrophobic and do not respond to humidity changes, so they tend to cause paper to develop bulges or cockles while hygroscopic pastes,

by expanding and contracting somewhat, minimize cockling. Pastes are made from vegetable sources while glues are derived from animal sources or synthesized. Flour paste contains a mixture of starch and gluten, a material which crosslinks. As a result, flour paste is difficult to remove after it ages. If gluten is extracted from flour during initial processing, the residual starch may provide an excellent adhesive for paper-based artifacts. Different plant starches have different characteristics: the one best suited to paper adhesion is wheat starch.

When properly cooked and properly prepared for use, wheat starch forms a paste which can be modulated from extremely strong to very delicate. People who have used it only occasionally sometimes object that wheat starch paste is not reliably strong: it is true that paste which has not been prepared properly is weak, and it is unreliable if it has been kept too long or stored in a refrigerator. Its effectiveness depends on preparation, freshness, and the skill of the user. Good paste provides a combination of strength and reversibility and does not discolor over time. For these reasons, wheat starch paste is the standard adhesive used by paper conservators.

Rice starch makes a slightly weaker adhesive and is sometimes useful. Other starches (e.g. potato, corn) are not sufficiently strong.

Cellulose ethers are useful in some situations. This group includes methyl cellulose, hydroxypropyl cellulose, ethylhydroxyethyl cellulose and similar materials. These adhesives provide viscosity and tack, but by themselves are too weak for mending or hinging any but the sheerest tissues. They can be mixed into a starch paste to cut its strength, and they are useful by themselves to tack down disturbed fiber surfaces.

Commercial library paste consists of dextrin, a converted form of starch, and additives such as preservative, plasticizer, fluidizer, and fragrance. Dextrin is weaker than starch, and the additives are unnecessary for adhesion and possibly damaging to valued artifacts.

The best starch paste cannot be purchased because its short shelf life (about one week) makes it commercially impractical. However, starch paste requires almost no effort when made in an electric saucier (a pot with a paddle that continuously stirs the starch-water mixture).

With more "elbow grease" it can be made in a double boiler. Compared to commercially available products, well-made starch paste is well worth the effort.

MAKING STARCH PASTE

Supplies

- Never use tap water unless it has been analyzed and shown to be free of the metals and micro-organisms which catalyze paper degradation.
- Many types of wheat starch are sold for paste-making, and the starch sold under a particular brand name may change. If a new batch of starch produces paste with a different character, one can assume that the manufacturer has changed the starch. (You may be paranoid, but that doesn't mean the starch hasn't changed.) Different conservators prefer different starches. This author uses a precipitated wheat starch sold under names like "Zin Shofu" because it can be made into a paste that is very strong and very smooth.
- The easiest way to cook paste is in an electric sauce-maker with a Teflon-coated interior, available from conservation supply houses or kitchen supply stores. Alternatively, a glass or ceramic double boiler and a flat-bottom plastic or wooden spoon can be used. To insure purity, reserve the cooking vessel and spoon for paste-making.
- A finely meshed non-metallic sieve can be purchased from conservation supply houses or cooking supply stores. Alternatively, plastic window screening can be stretched over an embroidery hoop, although the screen openings generally are larger than desirable.
- A glass or glazed ceramic jar with a non-metallic lid is used for storing the paste. To prevent mold growth, two cotton dental dams (available from dental supply houses) can be soaked with ethanol and laid on the paste. Some conservators report that putting freshly prepared paste into sterile tubes or syringes and then driving out excess air allows paste to be kept much longer than jar storage. Others cover the paste with a layer of pure water, changing the water daily.

Proportions

1 part wheat starch, by weight

9 parts distilled or deionized water, by volume

(Experimentation will reveal how large a volume is generally needed.

One might begin with 20 gms of starch and 180 ml of water.)

Preparation

Put the starch and water in a clean glass bowl and stir about five times over a period of three hours. The starch will absorb some of the water, so once cooking begins the tiny starch granules will burst open more readily and create a continuous, sticky gel. If the paste will be sieved through a Japanese horsehair or silk strainer, completely drench it with cool water just before beginning to cook the paste, and then wet it again just prior to sieving. This helps to prevent screen breakage.

Cooking

Electric Saucepan Method

The Teflon-coated interior protects starch from contact with the metal pan, and the rotating plastic paddle makes strong adhesive while saving the worker significant time and effort: anyone needing paste frequently will find this device a valuable investment. The heat should be maintained at the highest setting (usually "5") for approximately 25–30 minutes. In a dry workroom, less cooking time is required, in a humid room, more; and the proportion of water can be adjusted in these environments. Larger volumes require longer cooking. As the paste mixture cooks, its volume diminishes and a crust forms on the bottom and sides of the pan. Cooking is complete when the paddle pulls the paste into taffy-like formations.

Double Boiler Method

If an electric saucepan isn't available, cook the paste in a glass or ceramic double boiler over medium high heat on a cooktop, with continuous stirring for about thirty to forty-five minutes. Doing this once convinces most people of the value of the electric saucepan.

Microwave Method

Some conservators make paste in a microwave oven although many, including this author, have not found paste prepared this way to have the strength of paste cooked with continuous stirring for a much longer period. After soaking the starch and water, microwave on the high setting for 20 to 30 seconds. Remove the paste and stir with a plastic spoon. Repeat the microwave heating, and stir again. Continue this process for 3 to 4 minutes (how long will vary with the particular oven and the volume of paste).

Testing Strength

With any cooking method, test the strength of the paste by tapping a little bit between two fingers several times: thoroughly cooked paste is very tacky. Immediately remove from the heat, scoop the paste from the saucepan with a non-metallic spoon or spatula, and discard any crust.

Sieving

After cooking, the paste is pressed through a fine mesh non-metallic sieve. This minimizes lumps when the paste is worked up for use. Ideally, the paste is first pressed through mesh with (relatively) larger openings and then through a second sieve with smaller holes. Alternatively, one can sieve once or twice through the finest mesh available. One can sieve all the paste immediately after cooking, but the aeration will lead to spoilage after about a week. Sieving a little immediately before each job requires more work and clean-up, but allows one to make paste more infrequently.

Storage

Rinse a glass jar with a non-metallic lid in ethanol, shake out the alcohol, and put in the paste. As much as possible, tamp out air pockets. Wet two cotton dental dams with ethanol and lay them on the paste. Leave the jar top cocked open for a few hours so water vapor can escape, then tip the jar to drain any free water, close the lid and store in a cool place—but not a refrigerator—for up to one week. Using a jar large enough to provide about an inch of air space above the dental dams seems to preserve paste longer, probably because the alcohol vapor can suffuse more effectively. Undiluted paste should be discarded after a week—or sooner if it displays any sign of degradation: change in odor or texture, loss of strength, or spots of mold. If the paste fails any test, it should not be used even if it appears to adhere properly because it is likely to fail with time or stress.

Clean-Up

Drive cool water through the sieve to clean the mesh. A horsehair or silk sieve must be treated gently, but cleaned thoroughly. Soak the saucepan in water and then clean it with a soft sponge or cloth to preserve the Teflon surface.

STARCH PASTE USE

Paste is diluted just before using it, and proper preparation is critical to elicit its strength. With a blunt-ended hog-bristle brush (i.e., a large "bright"), put some paste in a flat-bottom glass ash tray reserved for paste work and knead the paste vigorously in all directions for about seven minutes. Its strength will increase noticeably, and its appearance will change. At first the brush will begin to create track marks; then the paste will become transparent, then invisible; and it will develop a snapping sound as you knead.

Add a few drops of deionized or distilled water and work the water into the paste. Work out any lumps immediately as they occur. Blend in a few more drops of water, and then continue to gradually work in more water until the paste is the desired consistency. How liquid it should be varies with the job and can be determined only by experience. To apply tissue hinges to an object on medium-weight paper, a consistency between milk and cream is often appropriate. Most people observing paste dilution for the first time comment that the consistency is much thinner than they imagined. The paste is applied thinly, just enough to pull two surfaces into contact and hold them together. Thick layers are likely to distort artifacts and crack apart within the adhesive layer.

To dry a pasted area: Lay thin polyester web (available from conservation supply houses or as interfacing from a fabric store) above and below the joined surfaces and then absorbent white blotting paper above and below the poly web. The blotting paper withdraws water from the paste while the poly web prevents undesirable adhesion. Lay a piece of glass or inflexible plastic over the upper blotter, and put about two to four pounds of weight on the glass/plastic. Convenient weights can be made by pouring lead or steel pellets into the rectangular plastic boxes in which 35mm photographic slides are returned from photo processors and then covering the boxes with heavy packing tape. The sheet/block of glass/plastic distributes pressure evenly over the pasted area, maintaining tight contact between the bonding surfaces as the paste dries. Move the pieces of web and blotter several times over the course of twenty minutes to insure dry surfaces above and below the bond and then leave the weighted bond for at least several hours. When attaching hinges, some conservators take the precaution of leaving weights in place overnight.

After use, diluted paste can be covered and saved overnight, but it should be discarded at the end of the second day. And before using it on the day after dilution, inspect it carefully for any signs of mold. Sometimes tiny black specks of mold will be visible when the paste is examined with a head loupe or other magnifier.

Problems Working with Starch Paste

Experience is necessary to develop skill and confidence working with thinned paste because different papers respond to it in different ways and to different degrees. Nevertheless, its stature as a versatile and archival adhesive for paper artifacts repays the effort. The most common problem is cockling or deformation of one or both surfaces being joined. A number of application details help to prevent this problem. Brush the paste onto a segregated piece of blotter to allow some water to wick away before the paste is used. Apply the paste to the mending tissue or hinge, not to the object. Change the poly web and blotters several times as the bond dries. Blotter pieces can be dried in a microwave oven if rapid extraction of moisture seems especially important. Sometimes wheat starch paste causes pale gray shadows on papers. These discolorations are often impossible to remove, so alter the paste or application technique if they appear. Wicking out more water before using the paste, substituting rice starch in the recipe, or cutting wheat starch paste about 1:1 with a viscous methyl cellulose solution should solve the problem.

Inadequate adhesion, either immediately after drying or with the passage of time, can result from a variety of factors. The paste may be old: degraded paste often appears to adhere, but fails when stress is exerted on the bond. Besides using too little or overly thinned paste, too thick a layer allows the adhesive to develop internal cracks. Common causes of bond failure include inadequate pressure on the bonding surfaces, weak mending/hinging tissue, using tissue with its grain parallel to the line of stress, using too few or too small hinges relative to the weight of an object. A water-resistant surface caused by grease, other residues, or a deliberate surface coating can cause bond failure. Finally, hinges will fail if an object is too weak to support its own weight as it hangs: the evidence is a break around the hinged area, with a fragment of the object still adhered to the hinge.

JAPANESE TISSUE VOCABULARY

In the middle of a word, "k" often becomes a "g". Thus, "kami" and "gami" may be synonymous.

hankusa paper to which woodpulp has been added

hon-genuine

-kami paper (also "gami")

kikai- machine-made

kizuki made from pure fiber

mare made by hand

-shi a suffix meaning "paper." From the Chinese vocabulary adopted by the Japanese and having the same sense as the native Japanese suffix—gami/kami. E.g., gampishi means paper(s) made with gampi fibers.

shin- literally "new," but in the sense of machine-made as opposed to hand-made.

usu-thin

washi fine quality OR traditional style Japanese paper

TOOLS, SUPPLIES, & SUPPLIERS

* Items are listed in the category to which they seem most to belong: they may be needed in other areas as well.

Making Paste

Wheat Starch, Methyl Cellulose, Other Adhesives

conservation supply houses

Balance/Scale to weigh out materials

scientific supply house

Weighing Dishes (or use paper)

scientific supply houses

Glass Bowl/Large Measuring Cup

Graduated Cylinder, e.g., 100 ml

scientific supply house

Distilled or Deionized Water

Stirring & Sieving Spoon, flat-bottomed, plastic

Electric Saucepan or Glass Double Boiler

conservation or kitchen supply stores

Paste Sieve (fine mesh, non-metallic screen)

conservation supply houses, Japanese paper importers

Glass Jars w/Plastic Caps (remove cardboard cap liner)

Dental Dams (a.k.a. "Medium Cotton Rolls")

dental supply house

Ethanol

scientific supply house

Mending

Blotters, absorbent and white

conservation, art, or specialty paper suppliers

Clear Glass Ashtrays w/Notches or Flat-Bottom Glass Dishes w/Covers

Synthetic Spun-Bonded Webbing, e.g. "Hollytex"

conservation supply houses, fabric stores

Hog Bristle Brushes, e.g. Grumbacher Co's "Gainsborough"

art supply stores

Sable Hair Watercolor Brushes w/ Fine Points

art supply stores

Pasting Surface, e.g. glass plate or ceramic tile

Tweezers and/or Forceps

medical, conservation, or scientific supply house

Small Scissors w/Angled Blades

medical, conservation, or scientific supply house

Polyester Film, small pieces, e.g. "Melinex"

conservation supply house

Scalpels w/Various Shapes & Sharpness of Blades

scientific, medical, or conservation supply house

Teflon Spatulas

conservation supply house or make your own with Teflon sheet and an electric drill fitted with a sanding disk. Work outside and wear a particle mask: the dust is dangerous. However, you can make a broad range of implements quickly, easily, and cheaply; and you can use the thickness of Teflon you prefer. [Dominic Riley suggests shaping Teflon under warm water. No dust is created, and the warmth softens the Teflon and makes it easy to work with a sharp knife.]

Head Loupe w/Appropriate Magnification

conservation or craft suppliers

Acrylic Blocks (e.g., 3 x 5 x 3/8")

plastics company. Have edges & corners softened.

Lead Weights/Scuba Weights e.g. lead shot in wrapped photo slide boxes

Tissues

Japanese paper importers, conservation supply houses, some art supply stores

Filling

Dissecting Needle/ Dental Needle Probe
educational-scientific or medical supply house
Light Box, flat style (not essential for occasional work)
photo or conservation supply house

Tinting Mending Tissues

Tinting tray(s) made by folding polyester film, 5 mil conservation supply house

Polyester film 3 mil, to carry tissue conservation supply house

Professional grade acrylic paints art supply store

Fiber-reactive dyes

See Ruth Norton article

Optional Tools

Plastic water pen for paper tearing art supply store Straight Edge, stainless steel with 90° and 45° Edges art supply stores Burnishers different materials, different tip shapes

SUPPLIERS

General/Various Supplies

Gaylord Bros.

Tel 1-800-448-6160 & ask for the archival supplies' catalog

TALAS

Tel 1-212-219-0770

University Products

Tel 1-800-628-1912 & ask for the archival supplies' catalog

"Zen Shofu" Precipitated Wheat Starch

TALAS

Methyl Cellulose ("Methocel A4M" from Dow Chemical Co.)

Spun-Bonded Fabrics

TALAS dry goods stores

Tissues

Conservation supply houses

Hiromi Paper International

Bergamot Station Art Complex 2525 Michigan Avenue, #G-9 Santa Monica, CA. 90404 Tel 310-998-0098

Paper Connection International

166 Doyle Avenue, 2nd Floor Providence, R.I. 02906-1645 Tel 10877-434-1234

The Japanese Paper Place

887 Queen Street West Toronto, Ontario M6J 1G5 Canada Tel 416-703-0089/416-538-9669

Blotters

N.B. It is difficult to find very absorbent blotters. Request samples, compare them, and drop water on the samples to learn whether colored materials move out of the paper.

Ahlstrom Paper Group

122 W. Butler St.

Mt. Holly Springs, PA. 17065-0238

Customer Service Tel 717-486-6420. Sell through distributors.

Head Loupe with Accessory Lenses

"Optivisor"

TALAS

Teflon Sheet

McMaster-Carr Supply Co., Tel 732 329 3200

DECORATING A LEATHER PLAQUETTE:

Onlays, Inlays, Blind and Gold Tooling S.A. Neff, Jr.



S.A. Neff, Jr. will demonstrate some techniques for decorating with leather that he has refined in recent years. Using an Ascona-type tool with stiff paper templates, he will create a fluid design that will include a flat onlay, a raised onlay, narrow inlays, and blind and gold tooling.

Neff came to fine binding from a background in graphic design and photography. He has a strong sense of the history of the book, is president emeritus of the Pittsburgh Bibliophiles and an active book collector. For years he has lectured on the history of the book and other bibliophilic topics and has given specialized bookbinding workshops.

Among his many interests, Neff is a dedicated fly-fisherman. He collects books on fishing, and many of his bindings are of books on the subject. One intricately decorated box houses a collection of vintage reels. Neff's exhibition, "The Collector as Bookbinder: The Piscatorial Bindings of S.A. Neff, Jr.," finished a two-year, six venue schedule on 31 December 2000. The New York Times published a half-page article on the exhibit when it was mounted at The American Museum of Natural History in New York City. The 68-page full-color catalogue that was published for the exhibition received an award from the American Association of Museums in 1999. His work has appeared in The Journal of Fly-Fishing, Der Fliegenfischer (a German periodical) and a 12-page essay with photographs in The Angler's Life, a book published in New York in 2000.

S.A. Neff, Jr. stresses precision and control in everything he does. All his cutting tools, pencils, pens and brushes have nearly identical handles and grips so that his hand muscles are trained to the same conditions while working. He soaks his bone folders in motor oil for a couple of months to increase their ability to slide on leather. Motor oil is chosen because it will not become rancid like salad oil, for example, might. Folders soaked in oil should never be used on paper. [Teflon folders slide very well on leather, and the possible danger of prolonged exposure to machine oil and its additives is avoided.]

The following is a description of the steps involved in decorating a leather-covered plaquette with raised and flat leather onlays and inlays and both blind and gold-tooled lines using a special tool he has designed, based loosely on the Ascona tool. He formerly used the Ascona tool, but on top of its high cost, the brass bezel holding the point in place heats up and will burn your fingers. In addition, the Ascona handle is awkward and the blade too long to have the control Neff needs. Note how his tool is shaped. The indentation on one side allows it to fit snugly against the tooling templates, increasing control and accuracy. The edges of the "blade" are very softly shaped to remove the sharp edges.

The "template tool" he has designed can be made be setting a ¼" brass dowel an inch or two into a simple wooden dowel handle to hold heat well. He uses 3-ply bristol templates as guides to the tooling to insure control of every step. All leather is bookbinding grade goatskin.

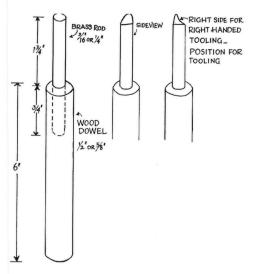


figure 1.

Neff's process begins with drawing a symmetrical design on tracing paper using a soft pencil, with shapes determined for raised onlays, flat onlays, inlays and lines for tooling. To transfer the design, the paper is turned over with the with graphite side down and a harder pencil lead is used to trace the design onto templates and onlay forms.

The two shapes for raised onlays are traced onto 80 lb Superfine cover and cut out using an Olfa knife held exactly perpendicular to the cover stock.

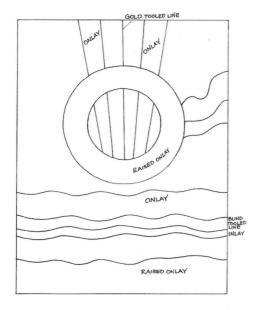


figure 2.

Make the cut in one pass to achieve a clean edge. Both pieces are adhered to the flesh side of thinly pared goatskin, .3 or .4 mm thickness, using 70% PVA /30% methyl cellulose, leaving at least ¼" of leather excess on all sides of the shapes for turn-ins. (The PVA mix is applied to the goatskin and NOT to the paper shape. The paper shape will therefore remain constant.) These are left to dry under a 4 oz weight.

Neff prefers the PVA mix for onlays, except where leather is attached to leather. In that case, only paste is used. PVA does not cause as much stretching of the leather as paste, and methyl cellulose extends working time. Care must be taken to avoid applying too much PVA, thereby staining the leather.

Using the tracing paper design again, the remaining shapes are traced onto 3-ply bristol and cut out in one pass; the cut edges must be perpendicular to the surface of the bristol. These will be used as tooling templates.

Mark each cut-out with "f" on the front, and use the traced design frequently to check for placement and accuracy.

The bristol templates are taped together corresponding with the design, put into position on the leather plaquette (position is verified using the tracing paper design which may be taped to the top of the plaquette), and taped at the bottom (the tape will act as a hinge). It is important to apply the tape as shown in Figure 3, so that the templates will not shift. Neff uses artists' tape which is more expensive than masking tape, but leaves no residue. Tack may be reduced by pressing a finger onto the sticky side.

Using the template tool with medium heat, the uppermost line is tooled; first dry, then with moisture (applied with a fine brush). Be sure that the tool is perfectly perpendicular to the surface of the leather. Use uniform pressure, and moisten and tool short portions of the line an equal number of times. End by tooling the whole line. When the tooled line is deep

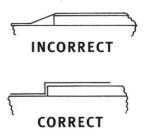


figure 3.

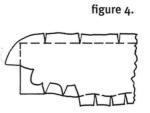
enough, that piece of the template is removed and the tooling process is continued against the edge of the next template. The template tool should be polished occasionally on a polishing board made from a thick piece of goatskin, flesh side up, glued to a piece of binders board. Always hold the tool absolutely vertical, and pull in the same direction. From time-to-time, the tools may be reshaped using "crocus cloth," a fine, abrasive cloth. (The area between these two tooled lines will eventually contain a flat onlay.)

When the second line is completed, that template is removed and the next line is tooled. This will be a blind-tooled line. It should be slightly deeper and darker than the previous lines. To achieve a darker line, use a fine Rapidograph pen with diluted black ink inside the line to darken. The lines can be examined at any point by simply lifting the top edge of the whole template (the taped hinge keeps it in place).

The fourth line is tooled, and will contain a linear inlay.

Then the last template is removed from the plaquette.

Returning to the raised onlay shapes: Hair side down, a border of ¼" is allowed and the excess trimmed away. Next, "v"-shaped notches are cut into that border at every quarter inch, just up to the edge of the template. When this is completed, the notched border is turned in, using PVA, three notches at a time, pushing excess PVA toward the center of the onlay.



When this step is complete, a tracing is made of the area not covered by the turn-ins. A fill in piece is made from the tracing using 65-70 lb. text, and glued into position. (This insures that the surface of the raised onlay will be perfectly flat.) When both raised onlay shapes are turned in and filled in they are placed under a 4 oz weight to dry.

The goatskin for the flat onlay has been pared to a thickness or .3 or .4 mm. Neff uses a Schärf-Fix for paring. The leather is lightly adhered to Japanese paper (hair side to paper) using thin paste and weighted with a 4 oz. weight until dry. This will stabilize the shape of the thin leather.

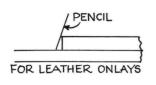


figure 5.

The top tooling template is taped to a piece of 80 lb. Superfine cover, and a tracing of that shape is made and cut out. The new piece becomes a template for cutting the exact shape for the flat onlay, albeit very slightly larger. To achieve this slight enlargement, hold your pencil at an angle as shown in Figure 5.

This will give you the pattern, but about one pencil lead thicker. If you wish to use a compass to draw or cut a circle, place a small piece of bristol under the point so that it will not mark the leather.

The leather template is taped to the Japanese paper-lined leather (template to paper) and cut out. The edges are then beveled on the flesh side using a small Olfa knife. (The Olfa Company makes many different knives. They are thinner than X-Acto, and can be stropped to sharpen, so they can be used three times as long as X-Acto. www.olfa.com, look for art blades.)

The area for the flat onlay is scraped using a curved scalpel knife to remove the bloom; the scraped area should have an even surface. Gouges can be filled with Japanese paper. The purpose for scraping is to provide a suede surface for the onlay to adhere to, and also to slightly lower the surface of the onlay area so that the resulting surface will be more nearly flat.

The onlay leather is pasted out on the flesh side (the Japanese paper on the hair side keeps the thin leather from stretching). The scraped area is moistened with paste water, then the onlay is put in place. When it is positioned, the Japanese paper is moistened and removed. The beveled edges are tucked into the tooled line. The onlay should be a perfect fit. The plaquette is then weighted until the onlay dries.

Next, a narrow strip of plated leather is cut to match the width of the fourth tooled line. To plate leather, pare skin to .3 or .4 mm; wet and press between stainless steel plates in a press for a few minutes. Then dry between paper, under weight. The resulting leather will be stiff enough to cut very thin lines for linear inlays. Drag about ¼" of the linear inlay through a small puddle of PVA, then tap the inlay gently into the tooled line with a No. 11 X-Acto knife. Apply PVA on the next sections of the inlay with a small brush. After each section is glued into position it is rubbed down with a small bone folder using thin Japanese paper to protect leather from bruising. To anchor the inlays, use the point of the X-Acto blade to tuck the very narrow ends of the inlays into a tiny slit cut into the leather of the plaquette.

The tooling templates are cut for the lines in the upper part of the design and are taped into position, one set on the right side, another on the left side.

The first and third and fourth and fifth lines will be blind tooled and form the edges of leather onlays cut from thin leather (as described above).

The third, middle line will be gold tooled. The tool should be heated to between medium and high. First an impression is made similar to the blind-tooled line lower on the plaquette. The impression should be polished, using the tool (this will also dry any moisture in the impression). The gold foil (23K) is laid in position and held down with the template.

A section of ¾" should be tooled, then the tool reheated. The tool must always remain perpendicular to the tooling surface. Otherwise the line will vary in width, and the bottom of the impression will be uneven. At least two or three layers of gold should be applied.

The curving lines radiating out from the round raised onlay will have linear inlays cut from plated leather (as described above).

The tracing paper design is taped into position at the top of the plaquette. The circular raised onlay is positioned (using the tracing paper design as a guide) and weighted. Small pieces of tape should be placed on the plaquette surface to indicate that position. The raised onlay is removed, and then the underside is glued out with the PVA mixture, put into position, and rubbed down. The tape indicators are removed and the plaquette is weighted with a brick.

The second raised onlay may be attached soon afterwards. The plaquette should be weighted overnight to dry.

Based on S.A. Neff, Jr. handouts and participants' notes. Figures 3, 4 and 5 are from Jim Dorsey's article in the Binders, Guild Newsletter, Volume XXV, No.8.



BIBLIO

BOOGIE

Suzanne

Moore

In her presentation, "Biblio Boogie," Suzanne demonstrated paste paper techniques; her handouts, reprinted here, address imagination, play, technique and the creative process, among a multitude of other subjects. Suzanne's presentation is dedicated to the memory of Stella Patri, F.G.ME. (Fairy Godmother Extraordinaire), "who gave me the two best pieces of advice in my life."



The pursuit of lettering study and art introduction to the rich book arts community in San Francisco followed a BFA in Printmaking and several years of restoring historical buildings. Sequoyah's Cherokee writing system, letterform exploration and artists' writings on the creative process have been core subjects during Suzanne Moore's 15 years of bookmaking. Her painted and lettered books have been exhibited widely and acquired for private and public collections in the U.S. and Europe, among them, the Library of Congress, the Pierpont Morgan Library, Harvard University, Wellesley College and the James S. Copley Library in La Jolla, CA. Suzanne recently moved to Cleveland to take a position as art director of the lettering design group at American Greetings.



"The metaphor of 'flow' is one that many people have used to describe the sense of effortless action they feel in moments that stand out as the best in their lives. Athletes refer to it as 'being in the zone,' religious mystics as being in 'ecstasy,' artists and musicians as aesthetic rapture. Athletes, mystics, and artists do very different things when they reach flow, yet their descriptions of the experience are remarkable similar." – Mihaly, Csikszentmihalyi, Flow

Flow. Air flow. Blood flow. Traffic flow. Ice flow. Energy flow. Ink flow. Crowd flow. Cash flow. Flowing hair. Work flow. Free flow. Each of these is a positive state of thinking / doing / being. Each of these terms exudes a desirable quality: clarity, mobility, health, prosperity, efficacy. Given the opportunity to choose between these qualities and their opposites: jam, dam, blockage, kink, tangle, chaos—which appeals to us?

What is flow? It might be defined as energy, as breath, as soul or as essence. Once we have defined it and recognize its value, we must ask how we can encourage and preserve it, recapture it for ourselves and nurture it in collaborative settings. We each have a memory of a perfect fluid moment, hour, event, day, or even a year when task, description, logistical planning and schedule were unnecessary. Energy and idea became reality without effort. Things simply flowed. One perfect day a



One perfect day a perfect sand castle appeared on a perfect beach.

perfect sand castle appeared on a perfect beach. Its moat protected it from the incoming tide until that sunset-approaching moment when you were ready to see it dissolve. No plan. No boss. No schedule. The day, the task, the company and the process flowed.

"Flow tends to occur when a person faces a clear set of goals that require appropriate responses. It is easy to enter flow in games such as chess, tennis, or poker, because they have goals and rules for action that make it possible for the player to act without questioning what should be done, and how. For the duration of the game the player lives in a self-contained universe where everything is black and white.

"Flow tends to occur when a person's skills are fully involved in overcoming a challenge that is just about manageable. Optimal experiences usually involve a fine balance between one's ability to act, and the available opportunities for action." Mihaly Csikszentmihalyi, Flow

As an artist and creator, I view the experience of flow as that state of synchronicity when mind, body, spirit, tools, materials, subject and intention are all participating easily in the unfolding process. The right tool, sharp and balanced, is at hand; the ink/paint mixes to the perfect shade and consistency as it kisses, splatters, elbows or tangos its way onto the page. The work before me evolves dramatically as a leaping dancer or a lightning bolt, or quietly, seemingly immobile, as a glacier or moss carpeting a rock in the lush recesses of a forest. Time is suspended, and place, weather and surroundings can be irrelevant. Idea becomes tangible *through* my eyes, body and hands, guided by an indescribable source of intuition and energy. I am the instrument through which the muse, the "force," the source plays thoughts and ideas into reality. In a way, I must give in, give way, give up rational thought and give myself over to the possibilities. The very process pulls me farther and farther into dialogue, play and action. Ben Shahn describes it beautifully in *The Shape of Content*,

"From the moment at which a painter begins to strike figures of color upon a surface... Idea itself – ideas many ideas move back and forth across his [her] mind in a constant traffic, dominated by larger currents and directions, by what he [she] wants to think. Thus idea rises to the surface, grows, changes as a painting grows and develops... It is an intimately communicative affair between the painter and the painting, ... a conversation back and forth, ..."

How do we get into flow? How do we stay in flow? Like yoga and other individual challenges, there are techniques / vehicles / inroads which can demystify flow and teach us to live it. Be it. When Yoda, the Jedi master (in the Star Wars movie) heard the exasperated

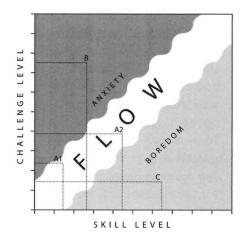


Luke Skywalker claim, as he was attempting to walk across the top of a quicksand pit, "I'm TRYING!", Yoda calmly replied: "Do, or don't do. There is no such thing as try." Easy for you to say Yoda, but HOW? Perhaps the goal in achieving flow is to never have to try. Just do and be. Flow.

There has been considerable research examining and defining flow. The following chart is one I find useful, and I apply its principles in my work as well as presenting it to students for application in classes. It is useful for students to get the most out of class when skill levels and individual working processes vary in a group, but particularly when they go on to work independently beyond classes.

The chart above was adapted from the one in Mihaly Csikszentmihalyi's book entitled *FLOW*, *The Psychology of Optimal Experience*.

"When goals are clear, ... and challenges and skills are in balance, attention becomes ordered and fully invested. Because of the total demand on psychic energy, a person in flow is completely focused. There is no space in consciousness for distracting thoughts, irrelevant feelings. Self-consciousness disappears, yet one feels stronger than usual. The sense of time is distorted: hours seem to pass by in minutes. When a person's entire being is stretched in the full functioning of body and mind, what ever one does becomes worth doing for its own sake, living becomes its own justification. In the



harmonious focusing of physical-psychic energy life finally comes into its own." – Mihaly Csikszentmihalyi, Finding Flow

When challenge and skill level are loosely matched, we exist in flow (A1 and A2 as well as infinite intersections of "matched" skill and challenge levels.) When the challenge noticeably exceeds the skill level as B and surrounding shaded area show, anxiety is the result. Conversely, boredom results when the skill level exceeds the challenge as C and the surrounding shaded area exhibit. When we perceive an unbalanced relationship between challenge and skill, we can alter the process, working closer to or getting squarely back into flow by heightening our challenge or improving our skills to meet the challenge and regain the balance of flow. In *FREE PLAY, IMPRO-VisATION in life and art*,) Stephen Nachmanovitch says:

"When skill reaches a certain level, it hides itself. Many an art work that looks simple and effortless may have been a life-and-death battlefield when the artist was creating it... Technique is the vehicle for surfacing normally unconscious material from the dream world and the myth world to where they become visible, nameable, singable."

Working in flow. As we work hour to hour, day to day, year to year, we each develop a work flow – and hopefully a unique body of work which results from melding spirit (being) with idea and action through flow. Setting out on the path one morning with the goal of making a great body of work is an overwhelming task, as well as an undefined one. Instead, if we remember "The Work" is, indeed, what one produces over a lifetime, we can avoid the pressure of seeing the work before us as something which must be and do and say all. Each work deserves our ultimate attention, intellect, vision and craftsmanship as well as the "unique expression" which comes when we infuse a piece of work with spirit. This perspective can liberate us to see each effort as *part* of the ouevre. By defining and limiting content, letterforms, palette colors, techniques and the concept of a work, I can move quickly to and through the process of making. Narrowing the focus to a few manageable core ideas/concepts unclutters the mind and makes room for the elegance of flow.

In my own work, flow allows the milliseconds of our lives to connect and make sense, propelling us through the days, weeks and years of life and work. As a lettering artist and painter, I most often choose the book form as the format to convey my message. A manuscript book of more than a few pages is only possible with an overall flow of concept and process, and such a book demands:

- · uninterrupted working time
- space (to work / play / experiment)
- thinking / process time (that is, time away from the work)

A large bookwork has the same requirements, expanded, and it is made up of a series of overlapping processes, each benefiting from its own flow, in which I might:

- define / clarify / expand the verbal content
- solve technical problems (materials and book structure)
- examine and develop letterforms appropriate to the message
- create, in paint, a new reality which my reader can explore

It is at the various thresholds of anxiety and boredom (which even a simple task might include) that I consciously or automatically apply the principles of flow. A continuous and energetic dialogue between me and the object I am making is what keeps the work fresh, interesting and compelling. I learn as I paint and write and listen. I listen as I paint and fold and draw and sew and gild. I keep listening. It flows on. Applying flow to making art and making life seems like it might be simple and straightforward, since we have defined and described it. The really fluid part comes when we don't even have to think about whether we are in or out of flow. The really fluid work / life is neither when we are practicing flow nor when we are in flow, but when we are flow. There's a challenge for you. Don't even think of missing it.

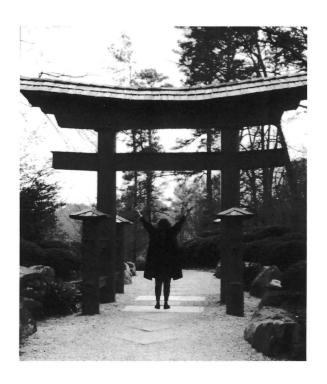


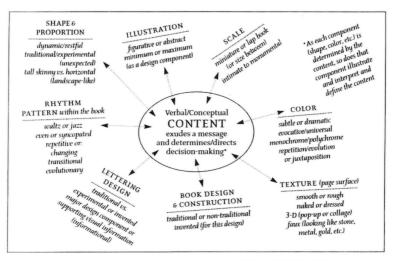
Calligraphy by Suzanne Moore

The gods were with me on this one. I am not a natural-born writer, and although I was flattered by Hermineh's request to write something for this issue of Scripsit I had no idea at the time that I would be trying to describe something as elusive as flow during a period of my life which seems strewn with roadblocks and dams and distractions. Flowless, indeed. The gods were certainly with me, as during this descriptive process I rediscovered some of the magic of meeting a challenge and the necessity of the kind of work which flows through us when we allow it. My friends: Bob Phillips (a New Mexico play-spirit guru), Ben Shahn and Stephen Nachmanovitch (friends through their perceptive and generous writings) have provided so much information and inspiration as I make my way. Thank you, all. I see it.

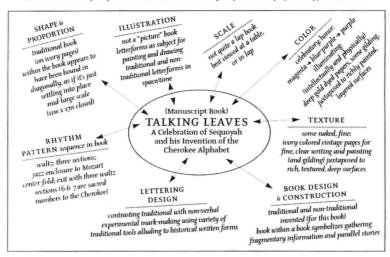
Suzanne Moore thoughtfully weaves content and imagery through her richly textured manuscript books. She teaches traditional and inventive book design and lettering workshops in the U.S. and abroad.

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Suzanne Moore's mind-maps. Map 1 above: How content determines book design. Map 2 below: Example of mind-map for Talking Leaves.



ARTIST'S BOOKS

Books are places. Intimate, subtle and serene, or public, playful, boisterous and bawdy. Words and images, design, texture and color are the passports and points of entry. The reader is the traveler/occupant who spends as much or as little time to breeze or meander through the journey/place, and each experience will be unique to that traveler's focus and perspective.

Since youth I have loved places; visiting, exploring and making them. Long after my young peers had put away their dolls, I kept a carefully furnished (mostly handmade) contemporary doll house in a quiet corner of my parents' living room. I still have clear memories of that bird's eye view and the layout of the rooms -- even particular furnishings. Building multi-room castles and tunnels in the snow was a winter occupation, and in the summer the vegetable and flower gardens were hiding places as well as resources for materials (even weeds) with which to make things. Since those playful beginnings, a direct involvement in the making of places has always been a part of my life. As a renovator of historic buildings in northern Wisconsin, I designed and worked out structural and decorative transformations for homes, small public buildings, gardens and a barn. Later, while in the San Francisco Bay area, I worked as a gardener's helper, restoring order and clarity to garden rooms, and at Stanford University I designed and organized exhibitions of rare books and manuscripts. My husband Don Glaister and I currently occupy and continue to build and paint the interior of a small post and beam barn surrounded by woods, which we converted to living space.

Books, I have discovered over the last ten years of making them, are an opportunity to create complete, varied, hopefully evocative, interesting and informative places, which will invite readers to return again and again. These "places" differ greatly from exhibitions and buildings, or course, in that they may be held in the hands and are more easily transported. The viewer experiences each book in the first person: you must handle a book to view it. Viewer involvement with a handmade book determines the key components of rhythm and sequence, while providing opportunity for, or obligation to be, involved in other sensory perceptions (sound, touch, even aroma/odor!) which are impossible with many other art forms.

The challenge is to provide verbal/visual information in an interesting, accessible and hopefully enlightening way, choosing and playing with the possibilities of book materials and format. *How* does a maker deal with the incalculable number of decisions to make in conceiving a work of art? My solution is to have a verbal/conceptual core. I work with the words of au-

thors whose work I finally choose after long periods (usually intermittent over one to five years) of reading, re-reading, investigating parallels and exploring juxtapositions. Occasionally I work on non-verbal conceptual pieces which have more abstract content, dealing with design, color, sequence, and allusion, combined with illegible calligraphic marks/words/passages.

The content/concept is the at the core of each decision regarding scale, page design, lettering design, color, technique and even binding construction, as the "mind maps" illustrate. The text must intrigue and inspire me, and have a longevity and message which will interest and inform others. Once I have defined/selected the content, it becomes what Ben Shahn describes so well in *The Shape of Content*, "From the moment at which a painter begins to strike figures of color upon a surface he must become acutely sensitive to the feel, the textures, the light, the relationships which arise before him... Idea itself – ideas, many ideas move back and forth across his mind as a constant traffic... It is an intimately communicative affair between the painter and his painting, a conversation back and forth, the painting telling the painter even as it receives its shape and form."

As an example of the design and decision-making process, I have chosen the manuscript book, *Talking Leaves, A Celebration of Sequoyah and His Intention of the Cherokee Alphabet*. It is the longest (122 pp.) and most complex book I have designed and completed to date, and it was commissioned by an Italian book collector in 1990 and completed in 1991. It was the culmination of the exploration of Cherokee letterforms and the research I had done on Sequoyah's alphabet over a seven-year period.

To accommodate two or more parallel texts in a single volume, I used various ways to preserve the definition and clarity of each text through the book. Each of the seven sections in *Talking Leaves* has three folios. The innermost folio of each section is painted and written on vintage ivory Saunders paper. The other pages in each folio are dyed deep gold or painted in rich shades of scarlet, blue and purple. The gold pages each have a textured square of small dark green Romans relaying personal accounts of Sequoyah by individuals who met him during his life. The classically designed ivory pages are bound into the book slightly off-square against the deep-colored pages, as if two separate books had been mistakenly interleaved and bound together.

One book often leads me to another; in content, design, technique or structure. The Cherokee letterforms, which I have chosen *not* to learn to read (for the present) have forced me to examine letterforms purely from a design standpoint. The study of this intriguing alphabet has encouraged

me to look at historic and contemporary letters from many sources, exploring them as visual rather than verbal information. Parallel to my study of the Cherokee alphabet has been an interest in earth signs: petroglyphs, mazes and pictographs. Expansion of my repertoire and application of new tools is another effect of working on a variety of renderings of the alphabet. The exposure to a variety of letterforms which I do not read had given me a sense of the tremendous variety as well as the interconnectedness of human beings throughout history in their efforts to record and communicate information, concepts and celebrations. Work on the Cherokee books also piqued my interest in Native American literature, and one of the results was a book which is a combination of Native American writings about their relationships to the earth, and petroglyphic, symbolic and abstract marks suggesting the deep and complex history of man on earth and how he leaves marks to denote events and sacred places.

Once I have chosen a text (or texts), the question is: How does one create that place/space which will invite the viewer to read and visually explore the content of a book? My goal has been to create pages which appear more atmospheric, deeper, more richly colored, more delicate or more mysterious than anything commonly known to the reader. At the same time it is important to maintain connections and allusions to the familiar. An example of this is the use of familiar colors and color combinations juxtaposed to unexpected colors. Using marks which are recognizable calligraphic strokes and therefore feel familiar and approachable, but having those marks be unreadable in a literal sense, is another example. The viewer is both attracted and surprised by the interweaving of the familiar and unexpected.

The paste paper technique was introduced to me as a way to make decorative papers for bookbinding and box making by Daniel and Babette Gehnrich about 1986. Since then I have combined those basic techniques with drawing and painting techniques, layering and lettering to produce surfaces which aspire to look and feel like something other than paper: one of those passports to another place and time and state of mind. The physical constraints of book design – touchability and subtle abrasion over time, and the necessity of pages to remain flexible enough to turn gracefully, present technical problems not encountered by artists who work is intended to be glassed and/or framed.

As paste extends the working time of acrylic paints while it melds the pigment with the paper surface, the painter has a great variety of techniques available to her/him. Oil pastels can be used on dry paper, with

paste and paint over it, to produce a resist effect. Soft pastels can be used in a book and the paste acts as a binder for below or layered over the top of the otherwise dusty pigment, allowing artists to consider pastels as a book medium. The layer-ability of the paste painting process makes it ideal to develop surfaces of interest and depth, as well as easily working on both sides of a single sheet (which has been allowed to dry between paintings). The fluidity of the medium allows sweeping painterly marks and the possibilities of writing, drawing and painting in wet paint. With some experimentation surfaces can be painted which work beautifully for surfaces on which to write or layer painting and drawing.

The technique of combining paint with paste to coat, decorate and texture paper is one which has endless possibilities to alter page surfaces. One may create paper which looks like shadows or stucco, or pages which look like they are deep texture instead of relatively thin paper. I have found this technique to be perfect to solve many of the design and technical challenges presented by books. Because the variety of effects possible with paste painting is so great and continues to expand for me, I find I must remain focused on the concept – the core of my text – as I work. Without such a focus, one might easily get lost in the painting materials and techniques. The text, and my interpretation of it, always provide the necessary direction as I develop each book. There is no doubt that I also meander as I allow/encourage that irresistible, "Intimately communicative affair" which Ben Shahn describes so well.

Reprinted with permission from AbraCadaBrA, Spring 1995. Illustrations not included in this version. AbraCadaBrA was the journal of The Alliance for Contemporary Book Arts which disbanded about 2000.

Lucy Goodman, Susan King and Jaime Robles founded AbraCadaBra. Gerald Lange was the editor for several years. Kitty Maryatt was guest editor for the Spring 1995 issue and constructed the diagram showing Suzanne Moore's "mind maps."

ALTERNATIVE PASTE RECIPES

Mixing and Cooking:

Cake Flour

Sift 1 part cake flour into 2 parts water; whisk together and let stand for 15-20 minutes. In a stainless pan, boil 5 or 6 parts water (depending on the thickness of paste desired). Pour the flour/water slurry through a sieve into the boiling water, and adjust the heat to bring the mixture to a "burble." Cook for 10 minutes, stirring constantly.

Pour hot mixture through a sieve or strain through a nylon stocking.

Over the years I have experimented with many pastes applied to a variety of papers, and the above recipe produces both beautiful color-saturated and very subtle effects using a variety of techniques.

Unbleached Flour

Same as above, but proportions are 1 water to 4 flour.

Wheat Starch

Mix 1 part wheat starch in 1 part water until dissolved. Heat 8 parts water until almost a boil. Slowly pour dissolved starch into the hot water. *Mix constantly* on medium/high heat until mixture comes to boil and begins to thicken. Lower heat to low/medium, continue to stir for another 2–3 minutes or until desired consistency. (This is just a few minutes.)

Cooling and Storing:

Pour through a sieve into a stainless or glass bowl or strain through a nylon stocking when cool to remove any lumps. Spritz with water, and cover with plastic wrap, pushing the plastic down onto the surface of the warm paste (this prevents a skin from forming). Cool thoroughly in the refrigerator (overnight or until the paste sets to a gelatin consistency). To cool quickly, submerge pot in very cold water while still stirring or cover and let cool more gradually. Wait until cool before using. Keep in covered glass or plastic container and store in cool place. It will last 3 days to a week.

A thicker paste will allow you to get many of the color-saturated effects and to maintain more intense patterns, especially "combed"/ridge patterns. You may thin the finished paste, if necessary, by whisking additional water into it.

Others

The following recipes were offered to me years ago by Daniel Kelm, Carol Blinn and Sarah Creighton. It seems that most binders use the same paste for paste paper production that they use in their binding work, and they periodically change to a new product/recipe.

DK: 1 part cornstarch to 1 part water (to make a slurry), added to 6 parts boiling water. Cook on a low flame, stirring constantly, until translucent (may take a very short time).

CB: Argo Laundry Starch. She doesn't measure; you're on your own. (Like cornstarch.)

SC: Whisk together one part Zinshofu Wheat Paste and one part cold water. Add 3 or 4 parts water. Stir and cook on a low flame until translucent.

For book pages, my paper of choice is Arches Text Wove, because it is tough enough to withstand the most abrasive techniques, and because (using wheat paste) its wove surface is a great lettering and painting surface, especially for large format books. ATW is easily dried flat on corrugated cardboard or a drying rack. Smaller books require a paper with more flexibility, and I usually select a thin handmade or one of the Mohawks for books under 7" wide (spine to fore-edge, depending on the binding style). Various handmade papers each produce a distinct effect, according to their surface characteristics and sizing. Select a book weight handmade sheet, or one of the Ingres-style papers for books. Experiment, play, and experiment some more to find the combinations which meet your requirements.

I recommend matching the type of paste and the paper to the particular use you have for the papers. Rice starch, laundry starch and methyl cellulose generally produce more fluid designs and lovely surfaces with more sheen than my flour paste. When starch pastes are applied to smooth papers (Mohawk Superfine, "smooth"), paste applied to the finished sheet has a sheen that is impossible to achieve using the flour paste and Arches Text Wove. (See the Process and Materials sheet for more information.)

THE PROCESS

Dip the sheet in water, drain off excess water and (with a sponge) smooth onto a flat plastic, glass or Formica surface to remove any air pockets.

Since the process is so hands-on and pigment and water are always in contact with your hands, rubber gloves will protect you from the absorption of pigments through your skin. It may seem a bit awkward at first, but a little reading about pigments will convince you it is worth the trouble.

To create your colors: use acrylic paints, or mix a water-based color medium (gouache or tempera) with acrylic medium as a binder. Matte medium and gloss medium may produce different effects, depending on the amount you use. Mix paste in proportions which will produce the desired strength or subtlety of color in small containers with lids (e.g., yogurt containers). A half cup of paste and two tablespoons of most colors, especially Golden matte and "high load," will result in quite rich color. Keep in mind that pigment characteristics (opacity, staining, etc.) come into play when using acrylics mixed with paste and water in this technique. Thin the paste (or paste/paint mixture) with water if it seems too thick.

Apply the colors with a sponge, roller, spoon or brush. The first color, applied and rubbed in with a sponge, will tint the paper; then subsequent colors may be added. Multiple colors may be added in the first layer, and blended or moved around the page with clean sponges to keep the colors fresh. Once you have the paste/paint on the paper, you can create texture and pattern by using combs, notched pieces of cardboard, sponges, a palette knife, adhesive-spreaders, etc. PLAY: layering, abrading (gently), stenciling, etc. This is a lot like finger-painting!!

Your mark-making tool or sponge may leave wet, thick ridges or pools or paint in its wake. Usually these flatten as it dries. Experiment. You will discover which papers and paste thicknesses will give you the effects you are after.

Chalk pastels (Nupastel is my choice) may be applied to a pasted sheet at any time during the process. A "stencil"/shape cut out of heavy paper or a manila folder-weight sheet (Mylar, card stock, etc.) placed under the wet sheet of paper, then painted or rubbed in a single direction with Nupastels, produces interesting three-dimensional effects. The paste and acrylic binder will meld the pastel pigment into the painted surface. Oil pastels may be applied to dry paper before dipping or painting the sheet.

A painted sheet, allowed to completely dry may then be layered with other colors to produce rich effects. To produce book pages, you can re-dip and paint the "back" of each sheet.

When your design is completed, lay flat to dry. Lay the sheet on corrugated cardboard and air dry. Pressing should be avoided while papers are still wet. Thin papers will buckle when drying. They will dry flat when glued to book boards or cover stock. Ironing is not advised, because it might melt the colors and produce unwanted shininess. When dried, these papers are water resistant and are ideal surfaces for lettering, drawing and printing.

The best advice I can offer is to experiment and use this versatile technique to produce effects unavailable to you with traditional printmaking and painting. Use references of surfaces you wish to recreate (stone, textiles, plant forms, or metal and plastic surfaces). The possibilities are unlimited, and I've found the technique to bring out individual aesthetic and color usage as no other process I've experienced.

SO... HAVE FUN!!!

PAPER SELECTION

You can use almost any sturdy drawing paper. The one requirement is that it will not disintegrate when it's wet!! A thin or medium weight paper is best if you are going to eventually use it for a covering for book board. A heavier cover-weight stock is ideal for pamphlets, cards, etc. Colored papers such as Canson Mi-Tientes, Bugra and various Ingres papers give added dimension to the final design by adding an extra color element.

Surface Characteristics

Choose wove, laid, smooth or textured surface according to the effects you are aiming for, keeping in mind the final application of the sheet by making a sample page or cover.

Fiber Strength

Some of the thinnest sheets are very resistant to abrasive techniques, and some of the papers which appear tough almost fall apart immediately on getting dipped in water. Smoother papers painted with paste mixtures to which gloss medium has been added in the process will produce papers with a subtle sheen. These sheets are desirable for cover sheets and pastedowns. Choose papers with the greatest integrity and match your papers to the requirements of painting, printing, restoring and binding by making a good test before starting the book.

Some Suggestions

Arches Text Wove (and laid) is the most versatile sheet I know and gives me the matte surface I like for pages. It works well for the most abrasive techniques and provides a great surface on which to do a progression of techniques.

Charcoal Papers (Canson Mi-Tientes, Fabriano Tinziano, German Bugra, etc.) These sheets are not intended for wet media, but provide the best color possibilities and come in a variety of weights and surfaces.

Watercolour Papers are not intended to be folded and should only be used for flat work.

Mohawk Superfine, Zerkel and other bookmakers' favorites are desirable for a variety of uses because of their weight, size and surface.

Handmade Papers of all thickness and surfaces should be tested to determine their suitability for your design.

MATERIALS

Acrylic Paint

Golden Artist Colors New Berlin, NY 13411 607/847.6154 www.goldenpaints.com

Great product; widely available; note the variety of paint: high load, matter, etc. The Golden website will provide you with great information, store lists and an opportunity to order swatches.

Papers

In addition to your favorite local and mail order suppliers,

Stephen Kinsella Inc. PO Box 32420 St. Louis, MO 63132 800.445.8865

Kinsella has good prices on Arches Text Wove.

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This book suggests the possibilities of tapping into creativity and applying it to all endeavors and professions: from accounting to playing the violin.

An Outline of Book Design, Douglas Martin, Blueprint Publishing Company, 40 Bowling Green Lane, London EC1R ONE, United Kingdom

STUDIES IN MEDIEVAL BOOKBINDING:

Some Notes on Presentation at Standards Seminar, Alexandria 2001 Iiri Vnoucek

This presentation will focus on early medieval bookbindings dated from the 10th to the 13th century. In the first part of the presentation, several types of bookbindings of western European codices from that period will be documented with slides and lecture. In the second part of the presentation, practical examples of binding construction such as sewing, spine treatment and covering will be shown and discussed.

For some, bindings of early medieval codices represent the golden age of construction of high quality binding. These structures combine good balance between



the construction of the bindings (including the use of good quality materials) and the purpose for which they were made. This we can observe especially from "ordinary" or simple bindings of that period, because, although famous opulently decorated "treasure" bindings of that period have usually been rebound, we can still find undecorated bindings of the period which have been preserved more or less in their original state. The structure of the binding of these codices has provided an incredible durability and, although some of them are almost 1000 years old, they still show amazing function and quality, which gives us something to think about, even in this new millennium.

Jiri Vnoucek was born in Prague, Czechoslovakia (now the Czech Republic) and now lives close to Prague. After studying at the technical high school and further studies in conservation and bookbinding, he worked as paper and book conservator at the Strahov Library in Prague from 1984 to 1991. The following year he worked as conservation officer in the National Library in Prague and studied archivist studies and art history at Charles University in Prague. He worked as an intern with

Christopher Clarkson at West Dean College, England. Since then he has been the head of the conservation department in the National Library in Prague. Beginning in 2000, he has been conducting a research project on the preservation and conservation of medieval illuminated manuscripts. He teaches book conservation at the School of Conservation in Litomyol and lectures at other schools and cultural institutions. He is also a preservation and conservation consultant for major book collections and has lectured at several international conferences.

The National Library in Prague has for several years been surveying the conservation needs of its extensive collection of manuscripts, printed books and other rare library material. We are also surveying medieval materials in other library collections. As conservator, this has given me the opportunity to study in detail many books of many historical periods, and to understand the construction of medieval bindings. I have come to understand that very early medieval bindings were of such quality that later developments in bookbinding could not surpass them.

I do not have a complete explanation for the incredible quality of construction in these earliest preserved bindings, but it may have something to do with solving the problem of binding together parchment quires. Parchment is very durable and flexible, but also very difficult to control. It is hydroscopic and sensitive to changes in temperature. One might say that it is from a beast, and always has a tendency to want to return to its original animal shape. These characteristics create a need to control the material, but the binding must be flexible enough to be opened comfortably. The binding must act as a tight jacket when closed, but allow freedom for the folios to move when opened and used. As we can see in early il-

lustrations, the scribe working on a manuscript keeps a knife in his left hand to correct mistakes, but also to keep the parchment flat and under control.¹

All of these properties contribute to the difficulty of controlling the material, and it is probably in solving these difficulties that solutions capable of controlling the text block were devised.



illus. 1: Evangelist as scriber; note the knife and tab

Very few early medieval manuscript bindings have survived intact. But even those which have been rebound, recycling parts of previous bindings, offer clues to earlier binders' methods. Our predecessors understood the materials and used great skill in choosing the tools and cleverness in methods of construction.

In the first part of my presentation, I showed slides of bindings and illustrations of early books from contemporary manuscripts. The latter were not intended to portray the "history of the book" but included books as accessories, so they must not be relied upon as completely accurate in every detail. Still it is at least possible to observe the chunky brick-like shape when the book is closed. This might



illus. 2: A gold ornament in the shape of a codex from the 9th century Moravian empire.

explain why the form is called a codex, from the Latin caudex which means "tree trunk." Moravian gold jewelry from the 9th century in the shape of books probably show the first use of supported sewing.²

For the second part of the presentation, I showed three stages in the construction of early medieval bindings, based on the construction of the manuscript *Homiliarium of Opatoviciense*. This manuscript is from the end of the 12th century but probably includes parts of even later binding. It is a Romanesque binding which has the typical characteristic brick-like shape when closed, with no squares, a flat spine and tabs at head and tail.

During a recent conservation of this binding, we were able to understand its construction and study normally hidden details.³

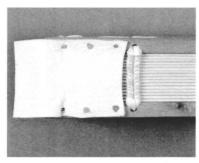


illus. 3: Binding of *Homiliary of Opatovice*, 12th century.

The sewing of the parchment quires is fundamental to the quality of the whole binding. My sewing is intended for a full parchment text block, although for economic reasons only the outside sections are parchment. The inner ones are paper. I make my own parchment, and this process has helped me a great deal to understand the character and behavior of parchment.

Herringbone sewing on alum-tawed thong supports provides a suitable binding structure which must rely on this rather than glued at the spine. After careful sewing of each section, a consolidation stick should be used to position it in the text block correctly. Well done sewing is a serious business, the result of peace of mind, ease of body movement and high concentration. I consider it a type of intimate meditation, and I am not accustomed to doing this in front of an audience.⁴

During my presentation there was discussion about the construction of sewing frames in medieval times. The first known picture of a sewing frame appears in the famous Bamberg manuscript.⁵ These small drawings show several steps in parchment and manuscript manufacture. I emphasize that equipment and tools used in early medieval times were simple. I can imagine that the master binder used the same knife in his bind-



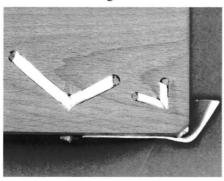
illus. 4: Sewing and fastening of tab with wooden pegs.

ing that he used for cutting bread. The knife needs to be sharp and properly shaped, of course. Then he needs a couple of sewing needles, one of them curved, some kind of bone folder and maybe a pair of good scissors. Perhaps he owned a few more tools. For a sewing frame, he might have used a simple piece of wood on which the thong supports were stretched. In some cases it seems that bands were first laced through the channel of one of the cover boards and later used as double bands for sewing. In any case, the binder relied more on his skill than on special equipment. I was kindly offered a "high tech" sewing frame to use for my presentation. It has several fittings like mirrors which enable you to see the front edge during sewing. With such sophisticated equipment I would find it hard to concentrate on the process of sewing itself.

When the sewing is completed thick, solid wooden boards can be attached. The early medieval method was based on a thorough knowledge of wood, and boards were almost certainly chopped, rather than sawed, limiting movement of the wood during the aging process. The board was later possibly finished with an adze and holes made by a simple auger. Ingenious systems of lacing channels were used. The number of styles and combinations of holes and channels for attaching the text block to the boards during this period was not improved upon during the later medieval period. Holes are never drilled in one line, so that the wood is not weakened in one place.

Wooden pegs are inserted into the board to anchor the end of the thongs, and trimmed with a knife, flush with the board.

The next step is constructing the endbands. The endband core is threaded through holes in the boards and anchored with wooden pegs.



illus. 5: Lacing system for sewing supports and endbands.

The endband is sewn over this core, and through the center of each parchment quire. This adds further reinforcement at the head and tail of the book.

To fasten the tab (spine reinforcement or flap) made from alumtawed skin to the spine, tap small wooden pegs through it into predrilled holes in the boards (See Illus. 4). Later, only the tab will be visible on a typical medieval binding.

Since the spine of the text block is not usually treated with adhesive (although some examples exist), the spine reinforcement and good sewing yield the proper movement of the book structure. In fact, we might say that the spine reinforcement and endband system, sewn through the sections, allow the fabulous functioning of the binding of the parchment text block.⁶

When the book is covered, typically with alum-tawed skin adhered with paste, the tab is doubled. This tab or flap may be sewn around the perimeter or further decorated, but may be also left unfinished. The purpose of this

tab is unknown, but serves to reinforce the spine, and in some ways is more practical and durable than later styles of spine finishing.

It is important to hold the boards together with clasps or fasteners to prevent the parchment text block from cockling due to moisture, temperature changes or just the inherent tendency of the parchment to return to its original (animal) shape. Fastening straps in the Romanesque period are anchored in the upper board

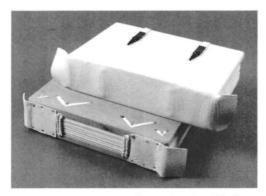


illus. 6: Good sewing, the endband system and no adhesive create the incredible functioning of the binding.

and finished with pin clasps sometimes connected with a clasp ring at the outer face of the lower board (See Illus. 7.)

I hope that I have managed to give you a short excursion into early medieval times when extremely skilled craftsmen, with simple tools and thorough knowledge of their materials, were able to create amazing binding structures. In my opinion, these techniques have never been improved upon.

Central Europe played an important part in the cultural development during medieval times and in the development of the western style of codex binding as well. We are fortunate to have examples of these bindings and others in the Czech Republic. It should be our mission to understand this cultural heritage and do our best to preserve it for future generations.



illus. 7: Completed binding.

Notes:

- 1. For more about parchment of manuscripts and its behavior see: Clarkson, Christopher. "Rediscovering Parchment: nature of the beast" in *The Paper Conservator* volume 16, 1992 published by The Institute of Paper Conservation.
- 2. I learned this in discussions with Janos Szirmai. Please note his book, also on the topic of early medieval bookbinding: Szirmai, Janos. *Archeology of Medieval Bookbinding*, published by Ashgate in London, 1999.
- 3. Vnoucek, Jiri. "The Homiliary of Opatovice conservation of book as an artifact" in Care and Conservation of Manuscripts 6, proceedings of the sixth international seminar held at the Royal Library, Copenhagen 19th–20th October 2000, published by Museum Tusculanum Press 2002, University of Copenhagen.

- 4. When I was working as an intern with Christopher Clarkson at West Dean I remember as many of us waited eagerly to see Chris sewing the Romanesque manuscript he was working on for many months. In the end we came back from the weekend one Monday and the manuscript was already sewn. Later I understood.
- 5. Ambrosius Manuscript, Bamber, Staatsbibliotek, Ms. Patr. 5, fol. 1v, dated second half of the 12th century.
- 6. For methods of attachment and good terminology see Clarkson, Christopher. "Further Studies in Anglo/Saxon and Norman Bookbinding: Board Attachment Methods Re-examined" in Roger Powell, *The Compleat Binder, Liber Amicorum*, edited by John L. Sharpe, published by Brespols 1996, and Szirmai, Janos, *Archeology of Medieval Bookbinding*, published by Ashgate in London, 1999.

ARCHIMEDES PALIMPSEST

Banquet Address on the Archimedes Palimpsest Restoration Project at the Walters Art Gallery in Baltimore, Maryland

The Archimedes Palimpsest is a tenth century parchment document containing a number of the Treatises by Archimedes, the Greek mathematician. Two of these are unique to the codex, and one of these, "On Floating Bodies," is preserved in the original Greek only in this manuscript. In the thirteenth century the Archimedes text was scraped off the manuscript, and the parchment reused for a prayer book. The manuscript was sold to an anonymous private owner at Christie's in New York in October 1998. The owner deposited it at the Walters Art Gallery for conservation and research in January of 1999.

Dr. William Noel, Curator of Manuscripts and Rare Books at the Walters Art Gallery in Baltimore, Md., gave an illustrated presentation on the Palimpsest. The manuscript is undergoing extensive conservation. It is being imaged to enhance the at present indecipherable Archimedes text, and it is being studied by scholars as far apart as Stanford and Cambridge. Senior conservator Abigail Quant supplied details of the conservation with additional slides. This constituted an interim report on the fascinating project, due to be completed by 2007. Publications resulting from the project should be available in 2008.

- William Noel, PhD

Colophon

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