

Survey of Current Methods and Materials Used for the Conservation of Leather Bookbindings

ABSTRACT

This survey gathered information from twenty-three book conservators on methods and materials used in the conservation of leather bookbindings in laboratories throughout the United States. The conservators work predominantly with special collections, in institutions with older collections, or have treatment responsibilities for special collections materials. The primary goal of this survey was to determine how conservators are treating leather bookbindings. A secondary goal was to determine how new materials and methods that have been developed or introduced to the field of book conservation within the past twenty-five years are being used in conservation labs.

The survey was divided into five sections. The first section asked for background information on staffing levels. The second section questioned respondents about the treatment of existing or original leather bindings. The third section of the survey sought information about rebinding books using new leather bindings. The fourth section covered the use of preparations on leather such as leather dressings, waxes and cellulose ethers. The fifth and final section inquired whether the labs had standardized their procedures for treating leather bindings.

INTRODUCTION

The primary goal of this survey was to determine how conservators are treating leather bookbindings. Book conservators repair original bindings and create new bindings to allow for greater access to, and preservation of, collection materials. Both repair and rebinding involve making choices about the methods and the materials that will be used. Often there are many options available. Simply

choosing an adhesive to adhere a repair can involve evaluating many different adhesives and, if desired, mixes of adhesives. In purchasing leather or skins, a conservator may choose to buy a certain type of skin based on animal species or tannage or both. Choices become even more complicated when a conservator is faced with the wide array of preparations currently available for use on leather. This survey compiled information about which materials and techniques conservators are using for the treatment of their bound leather materials.

A secondary goal was to determine how new materials and methods are being used in conservation labs. Over the past twenty years conservators have developed and published information on new methods and materials that can be used to treat leather bookbindings. One trend that is visible in the literature is a move towards minor, less invasive repair methods. The desirability of repairing rather than rebinding books is reflected in the introduction of techniques such as board tacketing, board slotting, and Japanese paper hinge repairs. In contrast with more invasive techniques such as rebinding or rebacking, these techniques retain most of the structure or materials of the binding. An additional benefit is that these methods may be less costly in terms of the materials and time needed to complete the repair. In addition to the techniques that may be used to treat damaged bindings, consolidants such as cellulose ethers, and new acrylic and microcrystalline waxes have been introduced to the field for use on deteriorated leather bindings. This survey sought to see what newer materials and techniques respondents actually were using in the conservation of their collections.

SURVEY METHODOLOGY

Survey Form

The survey was divided into five sections. The first section asked for background information on staffing levels. The second section questioned respondents about the treatment of existing or original leather bindings. The

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third section of the survey sought information about rebinding books using new leather bindings. The fourth section covered the use of preparations on leather such as leather dressings, waxes, and cellulose ethers. The fifth and final section inquired whether the labs had standardized their procedures for treating leather bindings.

The survey form was two pages long. Questions asked for responses using yes/no, multiple-choice, or short freeform written answers. More than one response could be given for many questions. Only the last question that asked about standard procedures for treating leather book-bindings sought lengthy narrative information on decision making. Once the survey form was developed, three conservators tested it. Following their suggestions, the form was revised.

Survey Population

Based on the type of collections they worked on, the size of labs, their type of institution, and their geographic location, conservators were invited to participate in the survey. These conservators work predominantly with special collections materials or are in institutions with older collections. A few factors made this a compelling target population. The first reason for focusing on special collections or older collections is the predominance of leather bindings. After the development and spread of book cloth as a covering material in the first half of the nineteenth century, leather bindings become much less frequent in collections. Additionally, special collections conservators have traditionally worked with leather as a material for repair, with rebacking and rebinding in leather being treatment options. Finally, judging by the literature, the development of newer minimal repair techniques has occurred within the context of special collections conservation.¹ This is not to discount the important role of collections conservators in promoting quicker and more efficient repair, which has also been a propelling force behind newer minor mending techniques. However, special collections materials often have artifactual value within their institutional context. If a book has value in a collection for the physical evidence it may possess, or if a binding is unique, one may consider less invasive treatment options in order to preserve the features that add value to the book. This type of decision making may be supported by the fact that books are used within supervised environments or do not circulate, so the necessity for more invasive and/or more durable treatments may not be present.

All of these factors have led to an assumption that the range of treatment options considered for leather bindings within special collections might be broader than in circulating collections. Since one of the main goals of the survey was to discover the range of repair methods used in conservation labs, it was decided to focus on these collections. Size of lab, type of institution, and geographical location

were considered with a view to getting the most diverse representation possible.

The survey population was chosen on the basis of perceived representative qualities. Therefore, the data presented in this survey cannot be considered statistically valid or transferable to larger trends, as a true random sample might allow. While this lack of statistical rigor limits how the information gathered and presented may be used, it is hoped that the collection of responses will be useful as a reflection of what is occurring in a specific group of labs throughout the country.

Conservators were asked to participate in the survey either in person or by email. They were sent a survey after they had agreed to participate. Follow-up emails were sent out asking if respondents had questions or needed another copy to prompt return of surveys.

SURVEY RESULTS

Survey results have been compiled in the following manner. All data gathered have been reported in tables. Beginning with table 4 (the first table reporting on methods or materials), every table lists the number of respondents who answered a specific question (i.e. “#/18” indicates that listed below is the number of respondents out of eighteen who answered that specific question). Percentages are determined by the number of specific responses in relation to the number of respondents to that particular question, *not* the overall number of participants in the survey. “N/A” (“not applicable”) is recorded in the results only if a respondent wrote in that answer.

The number in parentheses after the question refers to the number of the question on the survey form.

As mentioned above, questions were answered with a multiple-choice answer, a short freeform answer, or yes/no. Multiple-choice answers are identified in the tables as “multiple-choice answers.” All other questions were either yes/no or short answer questions with responses conservators wrote in.

In the case of questions 9a (table 16) and 11c (table 26), results were abbreviated. For question 9a, instead of listing every proprietary name brand of dye that conservators recorded, dyes were identified by basic type. The many different proportions of cellulose ether to solvent that had been reported in question 11c were grouped into three common ranges.

I. Survey Participants

Twenty-three conservators participated in this survey out of twenty-nine asked.² All the labs are found in the United States (tables 1–2).

The size of staffs in the laboratories surveyed also varied. The first questions of the survey asked respondents to list how many full time equivalent (FTE), non-student

employees worked in the lab and how many of those listed worked on leather bindings (table 3).

II. Treating Original or Extant Bindings

The first question in this section asked what treatment options conservators used to repair leather bindings. The first three choices were the board reattachment techniques of Japanese paper hinge repairs, board tacketing, and board slotting. Of the three, Japanese paper hinge repairs were the most popular, with board tacketing being chosen relatively infrequently (table 4). One conservator qualified the use of Japanese paper hinge repair by specifying its use for only inner hinge repairs, not repair of the outer joint of the binding. In addition to the three treatment methods offered on the survey form, two conservators wrote in descriptions of a board reattachment method using linen hinges at the head and tail of a binding that spans the spine onto the boards.³

The next group of answers addressed the traditional repair methods of rebacking and rebinding. Both techniques are still considered possible treatment options by the large majority of respondents (table 4). While checking it off as an answer, three conservators wrote in the margins of the form that new leather bindings were seldom or infrequently done. In the "other" section, two conservators described a variation of Japanese paper rebacks where laminates of Japanese paper and linen are used as rebacking material. Another two conservators wrote that non-leather rebinding was considered appropriate only for non-original bindings, circulating material, or if the original binding material was likely not leather.

The next two questions asked what materials were being used to repair leather and what adhesives were used to adhere repairs (tables 5–6). Most respondents reported using both leather and Japanese paper, with other materials also represented. The variety and combination of adhesives used to mend and repair leather was broad (table 6). Overall, paste was the most common adhesive, with eighteen conservators reporting using some kind of paste. The next most common answer was polyvinyl

acetate (PVA) and different types of mixes consisting of PVA and paste or methyl cellulose.

The last question addressed the treatment of extant or original bindings and focused on the problem of spews or blooms on leather. Over half of respondents reported finding spews or blooms on leather in their collections (table 7). There are two different types of spews that are

Table 3. Staffing information

Staffing sizes of conservation laboratories		FTE
Largest		20
Smallest		.75
Average		5.8
Number of staff working on leather bindings		FTE
Largest		9
Smallest		.75
Average		3.2

Table 4. What treatment options do you consider for leather bindings? (Question 2)

<i>Multiple choice options:</i>	Percentage	#/23
Japanese paper hinge repair	100%	23
Leather reback	91%	21
Rebinding (new leather)	91%	21
Rebinding (non-leather)	83%	19
Japanese paper reback	78%	18
Cloth reback	52%	12
Board tacketing	52%	12
Board slotting	17%	4
<i>Other (write-in):</i>		
Linen hinge board attachment	9%	2
Japanese paper lined with linen reback	9%	2

Table 1. Type of institution where book conservation labs are located

Private university	8
Public university	7
Private research library	5
Regional/private conservation lab	3

Table 2. Geographical distribution of survey respondents

East	12
Central	7
West	4

Table 5. What materials do you use to repair (fill or reinforce) original weak leather? (Question 3)

	Percentage	#/23
Leather	83%	19
Japanese paper	70%	16
Cloth	17%	4
Western paper	13%	3
Paper (non-specific)	9%	2
Alum tawed skin	4%	1
Shredded linen thread	4%	1

commonly found on leather bindings: either crystalline salts or oily spews. This question did not ask conservators to distinguish between the two or if both had been found on their bindings. The responses to the question on preferred methods for treating spews fell into two categories with either solvent or mechanical methods being chosen (table 8).⁴

Table 6. What adhesives do you use to adhere repairs to original leather or to readhere loose original leather to bindings? (Question 4)

	Percentage	#/23
PVA	52%	12
Wheat starch paste	44%	10
Paste (non-specific)	26%	6
Gelatin	13%	3
PVA/paste mix	13%	3
PVA/methyl cellulose mix	13%	3
Rice starch paste	9%	2
Methyl cellulose	9%	2
Lascaux 360HV	9%	2
Lascaux 498	4%	1
Lascaux (non-specific)	4%	1
PVA/Klucel G mix	4%	1
Paste/methyl cellulose mix	4%	1

Table 7. Have you had problems with spews or blooms on leather bindings in your collections? (Question 5)

	Percentage	#/23
Yes	57%	13
No	39%	9
N/A	4%	1

Table 8. Do you have a preferred method for treating spews or blooms? (Question 5a)

	Percentage	#/17
Mechanical methods	53%	9
Solvents	29%	5
No preferred method	12%	2
N/A	6%	1
Mechanical methods (number of respondents) Brush (5), cloth (5), wipe off or erase (2), aspirate (1)		
Solvents (number of respondents) Water (2), hexane (2), alcohol (1), acetone (1), petroleum ether (1), Klucel G (1)		

III. New leather bindings

The third section of the survey focused on the use of new leather for rebinding and rebacking. One conservator noted that their institution does not currently do new leather bindings and did not complete this section.

The first questions asked what kind of skin or leather, by animal type and tannage, conservators were ordering. The responses showed that goat and calf were the most popular types of leather purchased, with alum tawed skins often ordered as well (table 9). The most common tannages ordered are vegetable tanned leathers and vegetable tanned/mineral retanned leathers (tables 10–11).⁵ It should be noted that the survey did not include a check box for vellum or parchment, and while two conservators wrote it in, levels of vellum and parchment use in new bindings may well be higher than those reported.

The questions about leather tannages and types were followed up with questions on the type of adhesives used on new leather. As with the question on adhesives in the second section of the survey, respondents favored paste,

Table 9. What kinds of leather or skins do you use for new bindings or rebacks? (Question 6)

<i>Multiple choice options:</i>	Percentage	#/22
Goat	100%	22
Calf	91%	20
Alum tawed skins	91%	20
Pig	18%	4
Sheep	0%	0
<i>Other (write-in):</i>		
Pig (alum-tawed)	18%	4
Vellum	5%	1
Parchment	5%	1

Table 10. When you order leather, do you order specific types of tannages (e.g. native-tanned, aluminum retanned, etc?). (Question 7)

	Percentage	#/18
Yes	83%	15
No	22%	4

Table 11. If yes, which types? (Question 7a)

	Percentage	#/18
Vegetable tanned	50%	9
Aluminum retanned	39%	7
Alum tawed	17%	3
Native tanned	11%	2
Chrome retanned	6%	1

but in this case overwhelmingly so, with mix and animal glue being less common answers (table 12).⁶ Conservators were next asked whether they used the same type of adhesives for alum tawed skins that they use on leather. A substantial majority noted that they do use the same adhesive (tables 13–14).

The final series of questions in this section addressed the dyeing of leathers and skins used in new bindings and rebacks. For leather, aniline and mineral spirit dyes were the most common choices (tables 15–18). Fewer respondents dye alum tawed skins than dye leather; and of those respondents who do, half use different types of coloring agents than they would use on leather (tables 19–20). Comments in this area included interest in historic dyeing methods and a description of a technique for using thinned oil paints that are applied on a blotter to tawed skins.

Table 12. What adhesive(s) do you use to adhere the new leather? (Question 8)

	Percentage	#/22
Wheat starch paste	50%	11
Paste (non-specific)	45%	10
Rice starch paste	9%	2
Mix (non-specific)	5%	1
Animal glue	5%	1

Table 13. Do you use the same adhesives for tawed skins? (Question 8a)

	Percentage	#/21
Yes	91%	20
No	5%	1
N/A	5%	1

Table 14. If no, what adhesives do you use for tawed skins? (Question 8b)

	Percentage	#/3
PVA	66%	2
Gelatin	33%	1

Table 15. Do you dye or color leather for specific treatments? (Question 9)

	Percentage	#/22
Yes	82%	18
No	14%	3
Infrequently (<i>write in answer</i>)	5%	1

Table 16. If yes which types of dyes do you use? (Question 9a)

	Percentage	#/19
Aniline	42%	8
Mineral spirit dyes	32%	6
Metal complex dyes	16%	3
Acrylics	11%	2

Table 17. What method of application do you use? (Question 9b)

	Percentage	#/19
Cotton	42%	8
Brush	32%	6
Airbrush	32%	6
Swab	16%	3
Sponge	16%	3
Hand applied	11%	2
Foam brush	5%	1
Sprinkle	5%	1
Cloth	5%	1

Table 18. Does the dye you use require a fixative and what is it? (Question 9c)

	Percentage	#/16
Yes - Bastamol	6%	1
Yes - but don't use one	6%	1
No	88%	14

Table 19. If you use alum tawed skins, do you dye them? (Question 9d)

	Percentage	#/18
Yes	33%	6
No	61%	11
N/A	5%	1

Table 20. If yes, do you use the same materials and procedures as you would when you dye leather? (Question 9e)

	Percentage	#/9
Yes	44%	4
No	44%	4
N/A	11%	1

Write-in materials and procedures from 5 respondents: Watercolors, pastels, brazilwood, cochineal, historic methods used on tawed skins, oil paints thinned and applied on a blotter, and spray application.

IV. Preparations for Use on Leather

The questions in this section asked about the use of chemical preparations on leather, such as leather dressings, cleaners, and consolidants. The first question in this section inquired about waxes and oil and/or wax based dressings. For each preparation conservators were asked to check off a box that indicated why the product was being used. The choices offered were consolidation, lubrication, or cosmetic. Respondents also had the option to write in another reason to use the product.

In the section about waxes two different waxes were offered in check boxes: SC6000—an acrylic wax, and Renaissance wax—a microcrystalline wax. Both products received the same number of responses with nine conservators responding in each case (table 21). The main reason for using waxes was cosmetic. Two conservators wrote in that SC6000 is used on Japanese paper exclusively (not on the leather) for cosmetic reasons. In the write-in field two other conservators wrote that SC6000 is only used on new leathers (one further specifying that it is used for surface protection). One conservator reported that in their lab a 1:1 mix of SC6000 and Klucel G is used for consolidation and cosmetic reasons.

The next part of that question addressed the use of oil and/or wax based dressings. Eleven conservators reported using a variety of dressings (table 22). The most popular dressings were British Museum formula and lanolin/neat's-foot oil (also referred to as New York Public Library formula).⁷ Other proprietary products or types of leather dressing were also mentioned including Marney's,

Clarkson formula, Fredelka, and Hewitts. The most frequently identified reasons to use a dressing were for lubrication or cosmetic improvements to the leather. Three respondents who used dressings mentioned that they had used them in the past, used them only on new leather, or used them very rarely.

Finally, six respondents wrote in other preparations used on leather including a variety of leather cleaners and conditioners. Saddle soap, paste washes, and soap (weak solution with Orvus paste and water) were mentioned, as were the proprietary products Vulpex and Maroquin Leatherbalm.⁸

The final questions in this section addressed the use of cellulose ethers, in particular Klucel G (hydroxypropyl cellulose). A large majority of respondents reported using Klucel G, while one respondent reported using Klucel GF⁹ (tables 23–24). Respondents in this section mentioned no other type of cellulose ether. The most popular solvent for Klucel G is ethanol, but many conservators use both ethanol and isopropanol (table 25). The majority of respondents use a 1–2% Klucel G to solvent mix (table 26) with application by brush being the most popular method (table 27).¹⁰

The final question, asking whether conservators applied cellulose ethers to an entire binding or to a limited por-

Table 21. Waxes - Which of the following preparations do you use on leather through the course of a treatment, and why? (Question 10)

<i>Multiple choice options:</i>		Respondents
SC6000		9 (39% of total survey respondents)
used for:		
Cosmetic benefits		8
Consolidation		4
Lubrication		2
Renaissance wax		9 (39% of total survey respondents)
used for:		
Cosmetic benefits		8
Consolidation		4
Lubrication		3
Other waxes: 1:1 mixture of SC6000 and Klucel G for consolidation and cosmetic reasons.		

Table 22. Oil and/or wax based dressings - Which of the following preparations do you use on leather through the course of a treatment, and why? (Question 10 cont.)

	Respondents
Variety of formulas	10 (43% of total survey respondents)
used for:	
Cosmetic benefits	8
Lubrication	7
Consolidation	1

Table 23. Do you use Klucel G or other cellulose ethers on leather bindings? (Question 11).

	Percentage	#/22
Yes	95%	21
No	5%	1

Table 24. Which products do you use? (Question 11a)

	Percentage	#/21
Klucel G	95%	20
Klucel GF	5%	1

tion, drew a range of answers (table 28). Nine respondents reported that they apply Klucel G to the entire binding, with one respondent also applying it to paper on the boards if present. Eight respondents stated that the amount of Klucel G applied varies in accordance with the extent of the damage or that they judge on a case-by-case basis. If a book suffers from red rot overall then the Klucel G would be applied to the entire binding. Another factor one conservator reported considering was the type of treatment and housing involved. There were four respondents who said only a limited portion of the binding would be treated with Klucel G. One conservator further specified that Klucel G was applied only to those parts of the leather where a mend would be adhered.

Table 25. What solvents do you use? (Question 11b)

	Percentage	#/21
Ethanol only	52%	11
Isopropanol only	10%	2
Both ethanol and isopropanol	38%	8

Table 26. What proportion of cellulose ether to solvent do you use? (Question 11c)

	Percentage	#/21
under 1%	14%	3
1-2%	52%	11
over 2%	19%	4
varies	14%	3

Table 27. What method of application do you use? (Question 11d)

	Percentage	#/21
Brush	81%	17
Cotton wool	19%	4
Cheese cloth	10%	2
Airbrush	5%	1
Spray	5%	1
Varies	5%	1

Table 28. Do you apply cellulose ether to the entire binding or to a limited portion such as the deteriorated or powdery areas? (Question 11e)

	Percentage	#/21
Varies	43%	9
Entire binding	38%	8
Limited portion	19%	4

V. Standard Procedures for Treating Leather Bindings

The last question of the survey asked whether labs had developed standard procedures for treating leather bindings or specific problems that a leather binding might have. The majority of conservators reported that treatments for each binding are considered on a case by case basis (57% or thirteen responding with two N/A).

However, there were similar comments in a number of areas among those who described standard procedures. Many conservators said that leather bindings with red rot are treated with Klucel G. Two conservators reported that specific binding types receive housings. In one case, bindings with clasps have boxes constructed for them and in the other, limp leather bindings receive Mylar wrappers and boxes.

In considering standard procedures for repair of leather bindings in the area of collections conservation, two respondents reported standard procedures of preferring minor repair to rebinding if minor repair was more time efficient than rebinding. One conservator mentioned rebinding only if there was significant leather degradation or missing boards, while another respondent preferred rebinding if the paper was good. For special collections one conservator expressed a preference for housing over treatment while another preferred treatment over box making. Finally one conservator mentioned that pre-existing repairs of poor quality leather are removed as a standard procedure.

SURVEY CONCLUSIONS

In reviewing the responses given by the conservators in this survey a few conclusions can be made. The first is confirmation that many conservators are using a wide range of materials and methods in caring for leather bookbindings. While there are clear preferences for certain materials for specific operations, such as using paste to adhere leather for new bindings, in many areas there is no single standard or unanimous preference. In areas such as dyes or other preparations used on leathers there are a wide variety of products that are used by conservators.

Newer methods and materials have also been incorporated into conservation treatments. Minor mending techniques such as Japanese paper hinge repair and board tacketing are options considered in a number of labs, although board slotting is not being widely practiced in the United States. Newer materials such as Klucel G are widely used on leather; and, to a lesser degree, acrylic and microcrystalline waxes are also used.

Traditional repair methods have not disappeared from conservation labs. Repair techniques such as rebinding and rebacking are still being practiced, although according to the comments of some survey respondents they are used less frequently. As with repair techniques, some traditional

materials used on leather bindings such as oil- and/or wax-based dressings are still being used in some collections.

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NOTES

1. The three earliest published references the author found for newer board reattachment techniques were Clarkson (1992), Espinosa (1991), and Etherington (1995).

Many of these techniques may well have been in use or presented at conferences or workshops earlier, so the dates may not reflect the actual introduction of a method or technique to the conservation community at large.

2. *Private universities*: Brigham Young University, Columbia, Dartmouth, Harvard, University of Notre Dame, Princeton, Stanford, and Yale

Public universities: University of California, Berkeley; Harry Ransom Humanities Research Center, University of Texas at Austin; Lilly Library, Indiana University, Bloomington; University of Iowa; Texas Tech University; and University of Michigan

Private research libraries: American Antiquarian Society, the Folger Shakespeare Library, the Huntington Library, the Newberry Library, and the Pierpont Morgan Library

Regional/private conservation labs: Center for the Conservation of Art and Historic Artifacts, Etherington Conservation Center, and Northeast Document Conservation Center

3. This method was identified by one respondent and a reviewer of this article as having been developed by David Brock, rare book conservator at Stanford University Library. When Mr. Brock was contacted by the author he reported that he has presented this technique twice (at the Preservation and Conservation Studies Program at the University of Texas at Austin and to an Austin Book Workers meeting. He recently published it in the *Abbey Newsletter* (Brock 2001).

4. It is interesting to note that none of the respondents who listed mechanical methods also gave solvent methods and vice-versa. No respondent listed both solvent and mechanical methods being performed in their lab.

5. One respondent answered both yes and no to the question of whether they order specific types of tannage in Question 7.

6. One respondent answered both yes and no.

7. British Museum formula (3), lanolin/neat's-foot oil (3), oil & beeswax (1), neat's-foot oil (1), Clarkson formula (1), Hewitts (1), Marney's (1).

8. Two respondents reported using Maroquin, each of the other methods had single mentions.

According to Ibsen, Maroquin Leatherbalm contains 20% Lipoderm Licker SA (sulphochlorinated paraffin oil fat liquor), 10% Lipoderm N (anionic emulsifier with fat effect), 10% Karion F (sorbitol), 1% Tego B51 (fungicide), and 59% distilled water

According the Conservation Resources International catalogue (1999) Vulpex Spirit Soap is based on potassium methyl cyclohexyl oleate (p. 135).

9. F refers to "food grade" or the purest refined grade of Klucel G (Mark Vine, 19 Jan 2000, Conservation DistList Instance 13:41)

10. One respondent's answer spanned 1.5–3% and so was reported in both categories.

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Survey of Current Methods and Materials Used for the Conservation of Leather Bookbindings

1. How many FTE, non-student, positions does your conservation lab have? _____
 1a. Of these positions, how many treat leather bindings? _____

2. What treatment options do you consider for leather bindings?

- | | | |
|--|--|--|
| <input type="checkbox"/> Board tacking | <input type="checkbox"/> Japanese paper reback | <input type="checkbox"/> Rebinding (non-leather) |
| <input type="checkbox"/> Board slotting | <input type="checkbox"/> Cloth reback | <input type="checkbox"/> New leather binding |
| <input type="checkbox"/> Japanese paper hinge repair | <input type="checkbox"/> Leather reback | <input type="checkbox"/> Other (please comment) |

Treating existing/original leather bindings

3. What materials do you use to repair (fill or reinforce) original weak leather? _____

4. What adhesives do you use to adhere repairs to original leather or to readhere loose original leather to bindings? _____

5. Have you had problems with spews or blooms on leather bindings in your collections? ☐ yes ☐ no

- 5a. Do you have a preferred method for treating spews or blooms? _____

New leather bindings

6. What kinds of leather or skins do you use for new bindings or rebacks?

- | | | | |
|--|--------------------------------------|------------------------------|--------------------------------|
| <input type="checkbox"/> Calf | <input type="checkbox"/> Goat | <input type="checkbox"/> Pig | <input type="checkbox"/> Sheep |
| <input type="checkbox"/> Alum-tawed skin | <input type="checkbox"/> Other _____ | | |

7. When you order leather, do you order specific types of tannages (e.g. native-tanned, aluminum retanned, etc)?

- ☐ yes ☐ no

- 7a. If yes, which types? _____

8. What adhesive(s) do you use to adhere the new leather? _____

- 8a. Do you use the same adhesives for tawed skins? ☐ yes ☐ no

- 8b. If no, what adhesives do you use for tawed skins? _____

9. Do you dye or color leather for specific treatments? ☐ yes ☐ no

- 9a. If yes, what types of dyes do you use? _____

- 9b. What method of application do you use? _____

- 9c. Does the dye you use require a fixative and what is it? _____

9d. If you use alum tawed skins, do you dye them? ☐ yes ☐ no

9e. If yes, do you use the same materials and procedures as you would when you dye leather? ☐ yes ☐ no

If these vary, please comment. _____

Preparations for use on leather

10. Which of the following preparations do you use on leather through the course of a treatment, and why?

Waxes

<input type="checkbox"/> SC6000	<input type="checkbox"/> Consolidation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Cosmetic
<input type="checkbox"/> Renaissance wax	<input type="checkbox"/> Consolidation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Cosmetic
<input type="checkbox"/> Other waxes: _____	<input type="checkbox"/> Consolidation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Cosmetic

Oil and/or wax based dressings

<input type="checkbox"/> British Museum formula	<input type="checkbox"/> Consolidation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Cosmetic
<input type="checkbox"/> Other dressings: _____	<input type="checkbox"/> Consolidation	<input type="checkbox"/> Lubrication	<input type="checkbox"/> Cosmetic

Other reasons to use any of the above products: _____

Are there other preparations you use on leather such as leather cleaners, saddle soaps, etc? _____

11. Do you use Klucel G or other cellulose ethers on leather bindings? ☐ yes ☐ no

11a. Which products do you use? _____

11b. What solvent(s) do you use? _____

11c. What proportion of cellulose ether to solvent do you use? _____

11d. What method of application do you use? _____

11e. Do you apply cellulose ether to the entire binding or to a limited portion such as the deteriorated or powdery areas? _____

Conclusion

12. Does your lab have any standard procedures for leather bindings, or leather bindings with specific problems, that come through your lab? (Examples might be always making a housing, or consolidating red rot, or rebinding circulating books with significant damage.) _____

Thank you for participating in this survey!

Please either email your response to: kstjohn@rci.rutgers.edu

Or send your response to: Kristen St. John, Special Collections and University Archives,
Rutgers University Libraries, 169 College Ave., New Brunswick, NJ 08901-1163