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2020

### Fish Tales, experiments with fish skin for bookbinding

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#### Recommended Citation

Verheyen, Peter D. "Fish Tales, experiments with fish skin for bookbinding." *The New Bookbinder: Journal of Designer Bookbinders*, Vol. 40, 2020, pp. 26 - 34.

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Peter D. Verheyen

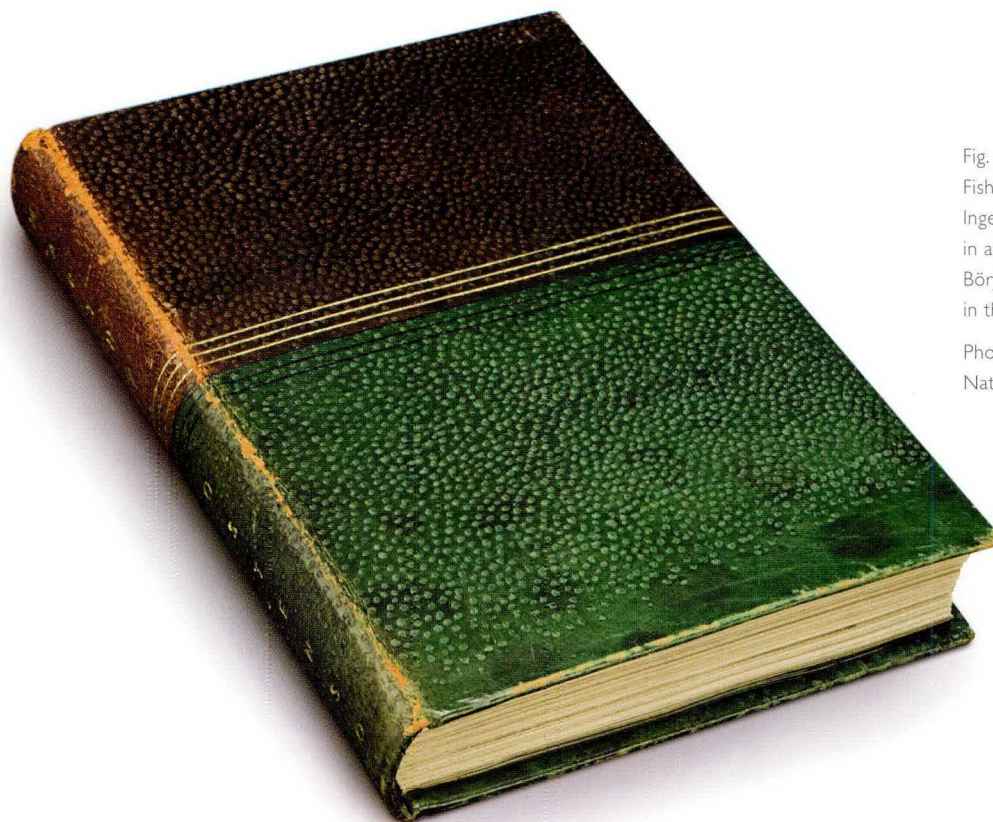


Fig. 1.  
Fish skin binding by  
Ingeborg Börjesson. Bound  
in anglerfish skin during  
Börjesson's Paris period  
in the 1930s.

Photo: István Borbás/  
National Library of Sweden.

**When we think of fish skin**, our first reaction is not to consider it in the context of bookbinding materials. Most likely, the reaction will be a wrinkled nose and pinched face reflecting a certain disgust at the idea. 'Smelly', 'slimy', 'weak', or 'just gross' are some of the responses I have received since starting to work with this material but interestingly, despite the comments, nobody had actually seen, or worked with fish skin. Responses aside, fish skin as a material is witnessing increased interest due to its aesthetic appeal and because it is considered more sustainable than traditional farm livestock.

Tanned fish skin has been used in binding for decorative elements such as inlays and onlays, but it has a much longer history of use for clothing, sword handles, *objets d'art*, and other applications across global cultures [Figs 1 & 2]. I was first introduced to fish leather twenty or so years ago in the form of commercially prepared exotic skins – frog, chicken feet, fish, and eel. Beyond decorative applications, I did not give fish any further thought, although I was endlessly intrigued by the textures.

In the course of my Ernst Collin project, I discovered a body of literature describing fish as a material in bookbinding, as well as how to make parchment and leather from fish.<sup>1</sup> I shared this history from the German perspective in 'Fips and His Eels: Fish Skin in Bookbinding'.<sup>2</sup> In that 'history,' interest in the possibilities of fish leather was spawned by shortages of traditional leathers and austerity measures during the First World War and the interwar years. It was first described in *Fischhaut zu Bucheinbänden* by Berlin-based bookbinder Franz Martini who experimented with skins discarded from a field kitchen in Belgium. With encouragement from Paul Kersten, Director of the School for Artistic Bookbinding in Berlin and others, Martini had his fish parchment tested at the national testing centre in Berlin, with the results published in his 1919 article.<sup>3</sup> The results were impressive, especially in terms of fold and tear strength where the fish parchment easily reached 50,000 double folds without damage. As the equipment used and other details like thickness of skin are not indicated, these impressive results are hard to compare.



Fig. 2.  
**Dalmatinischer Frühling**  
 with leather spine, and  
 boards covered in linen  
 with herring skin onlays.  
 The book was bound  
 by Heinz Klein in the  
 late 1930s.  
 Collection of Dietmar  
 and Regina Klein.



Fig. 3.  
 Elmendorf tear tester  
 showing a 'failed test'  
 on the salmon: the fish  
 skin was too strong.  
 Photo: Timothy Barrett.

Due to the challenges in reproducing these tests exactly, I asked Timothy Barrett to test the material in his papermaking facility at the University of Iowa Center for the Book (UICB). Salmon parchment, a piece of modern goat parchment comparable in thickness, and UICB PC4 paper (often used by conservators as an alternative to parchment) were put through Elmendorf tear and MIT fold strength tests [Fig. 3], and the results were

impressive [Fig. 4]. Videos of testing and the full test report is available online.<sup>4</sup>

On his bindings, Martini used the fish to cover the spine and corners of quarter-bindings as the shape and size of the skins do not lend themselves to full bindings. Martini also noted the ability to mould the fish over raised cords without wrinkling which is difficult with traditional parchment. Whilst the striking visual properties earned praise, fish skin was largely viewed as an

	TEST	TESTS	FINAL AVERAGES
FISH PARCHMENT	Fold	2	79,338 folds
	Tear	3 (disqualified)	NA (did not tear across full width due to strength)
GOAT PARCHMENT	Fold	2	12,015 folds
	Tear	6	784 gr/cm
UICB FLAX PAPERCHASE PAPER (circa 1992)	Fold	60	4501 folds*
	Tear	60	828 gr/cm*

\*Average from test strips cut in both the chainline and the cross-chainline directions.

Fig. 4. Results of Salmon parchment tests.

austerity measure. It was a material to make do with (and not waste) until better times allowed a return to more traditional materials. *Das Falzbein* (1960), the national apprentice magazine, suggested that “bookbinders might try their hand at making it once or twice before returning to their favourite leathers.” These articles only fanned my interest in using fish for binding beyond the decorative.<sup>5</sup>

As a binder, my first love in materials is parchment. While tanned fish is readily available and with increasing choice, parchment is not. DIY instructions for various tanning methods are plentiful online, but again, nothing about how to make parchment. So, what is a binder to do? Make one’s own!

Martini’s article, the generous sharing of information from Jesse Meyer of Pergamena Parchment, and ‘Fips’ (the unlikely hero of this project) provided me with the encouragement I needed. In the apprentice magazine *Der Buchbinderlehrling* (1927-43), I found a short article about ‘Fips and the Eel Skin’ (1937) [Fig. 5], and although I have worked with eel leather, this was the first article I had found which described making parchment from a fish skin. In his final apprentice year, ‘Fips’ wanted to do something special for his entry in the annual bookbinding competition. So, he went to the fishmonger and asked for a really big, fat eel, but without the meat, entrails, and bones. After some discussion, he got what he needed, scrubbed it clean in the courtyard of the shop (to the disgust of all), and tacked it to a board to “let the sun do the rest.” Could it really be that easy?<sup>6</sup>



Fig. 5. ‘Fips’ with his eel skins.

Photo from *Der Buchbinderlehrling*, Vol. 10, no. 10, 1937.

## MAKING PARCHMENT FROM FISH

With practical instructions scant, making parchment from fish skins became a wonderful adventure in experimentation and improvisation and I learned from mistakes as I went along.

For a first attempt I recommend ocean fish such as salmon, as the skins will be thicker and easier to work with. Store-bought fish will often be cleaned and de-scaled already and you can generally ask for the fish to be skinned, but remember to ask for the skin as well. You *will* get odd looks, but this is all part of the experience. Since my first formative experiments, other species have joined the salmon – Arctic char, sea bass, lane snapper, haddock, and mackerel – and all have been transformed into parchment [Fig. 9]. The full parchment-making process in photos and videos can be viewed at the *Pressbengel Project* blog.<sup>7</sup> The images that follow depict some of the steps [Figs 6, 7 & 8].

Most commercially available fish skins will be mineral-tanned [Fig. 10].<sup>8</sup> To tan fish, DIY and traditional methods are available in print and are plentiful online. Lotta Rahme and Dag Hartman’s *Fish Leather: Tanning and Sewing with Traditional Methods* (2012)<sup>9</sup> is the definitive source, recently joined by Nienke Hoogvliet’s *Fish Leather* (2017).<sup>10</sup> I also recently egg-tanned salmon using Hoogvliet’s instructions which resulted in attractive skins, but I have not used them on a binding. Beyond ‘Fips’, none of the methods found describe the process of making parchment from fish skin.

Fig. 6. Removing skin from Arctic char filet.



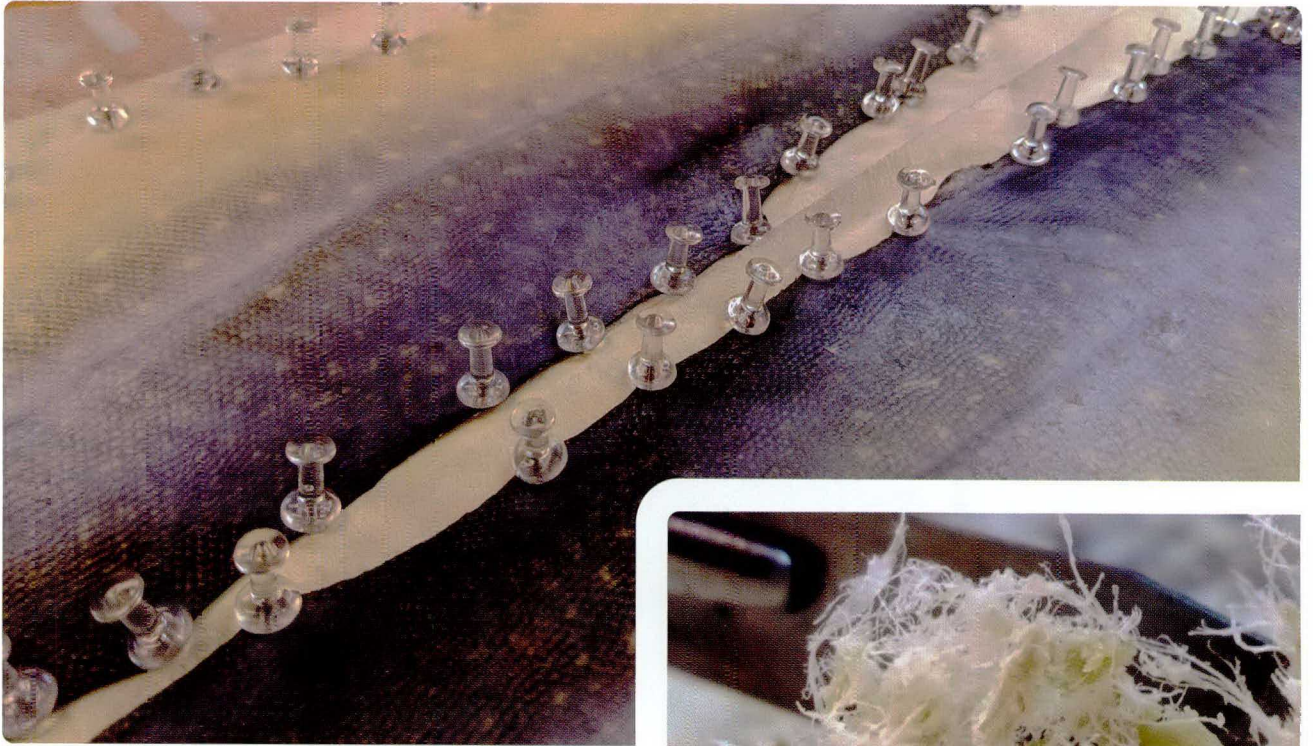


Fig. 7. Still wet Arctic char skins with flesh-side showing.



Fig. 8. Scraping off last fleshy remains when dry.



Fig. 9. A selection of my parchments. From top: mackerel, sea bass, lane snapper, haddock, Arctic char, Atlantic salmon.

Fig. 10. Commercially tanned skins. From the top: eel, trout suede, salmon glazed, salmon suede, carp glazed.



Fig. 11.  
**For Now Bound** 2017 by  
 Coleen Curry in Harmatan  
 goatskin with inlays of wolffish  
 skin.  
 Photo: Black Cat Studio, Jay Daniai.

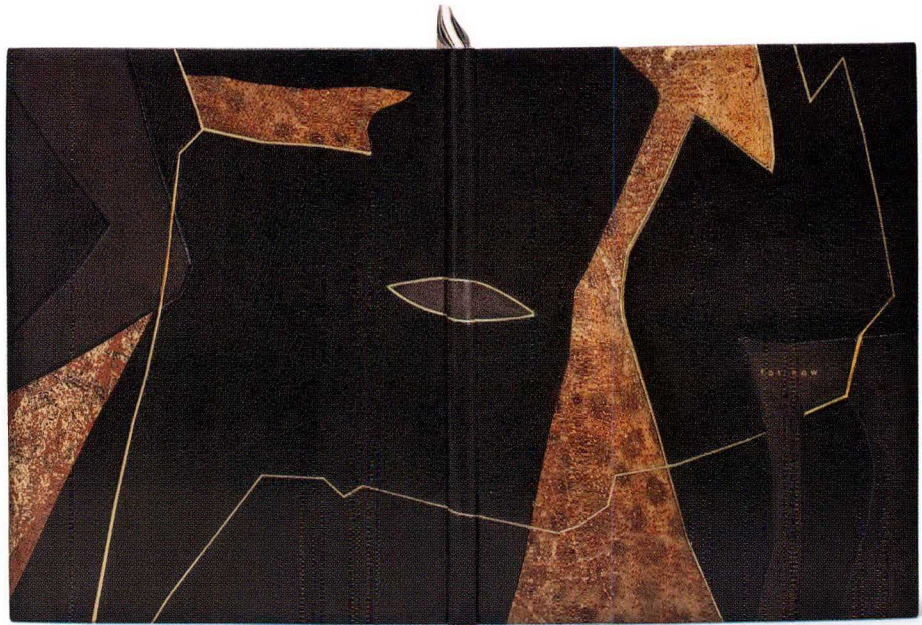
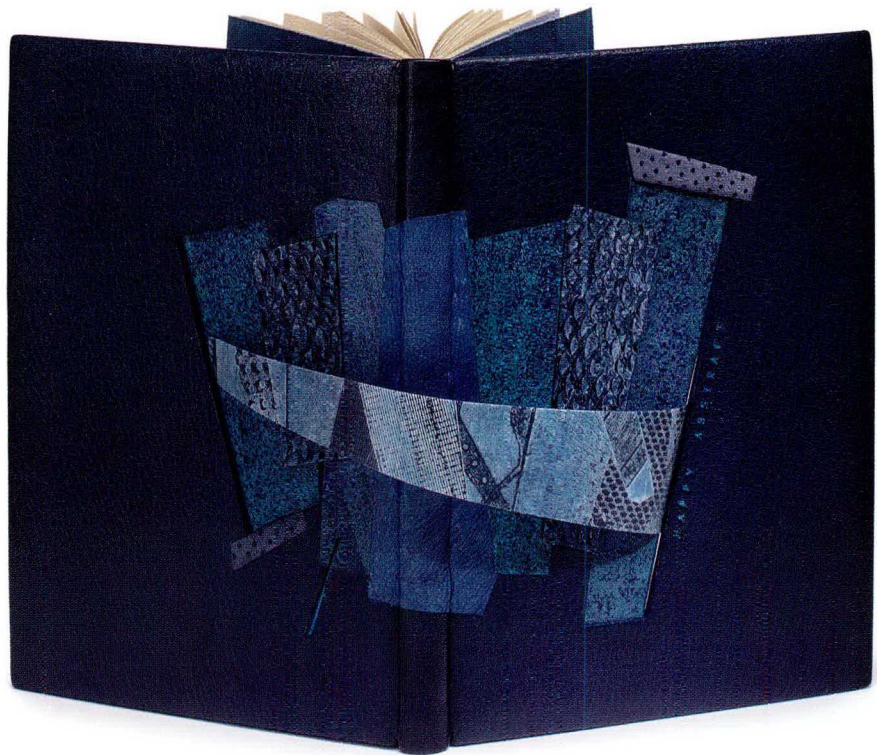


Fig. 12.  
**Happy Abstract Bound** 2019 by  
 Coleen Curry in Harmatan  
 goatskin with raised carp  
 inlays.  
 Photo: Black Cat Studio, Jay Daniai.



Due to the small size of the skins and the relative briefness of the process, with planning and preparation ahead of time, the making of parchment from fish would be a wonderful workshop exercise for those studying the history and materiality of the book. The skins could then be used for any number of basic binding structures, thus completing the experience.

#### BINDING WITH FISH

Most contemporary applications of fish leather are decorative, as demonstrated here by Coleen Curry [Figs 11 & 12], not structural, perhaps because design binders prefer 'full' bindings. However, there are many ways to cover a book such as variants of the Bradel and Dorfner-style open joint styles that work equally well with parchment and leather [Figs 13–15]. Skins can be

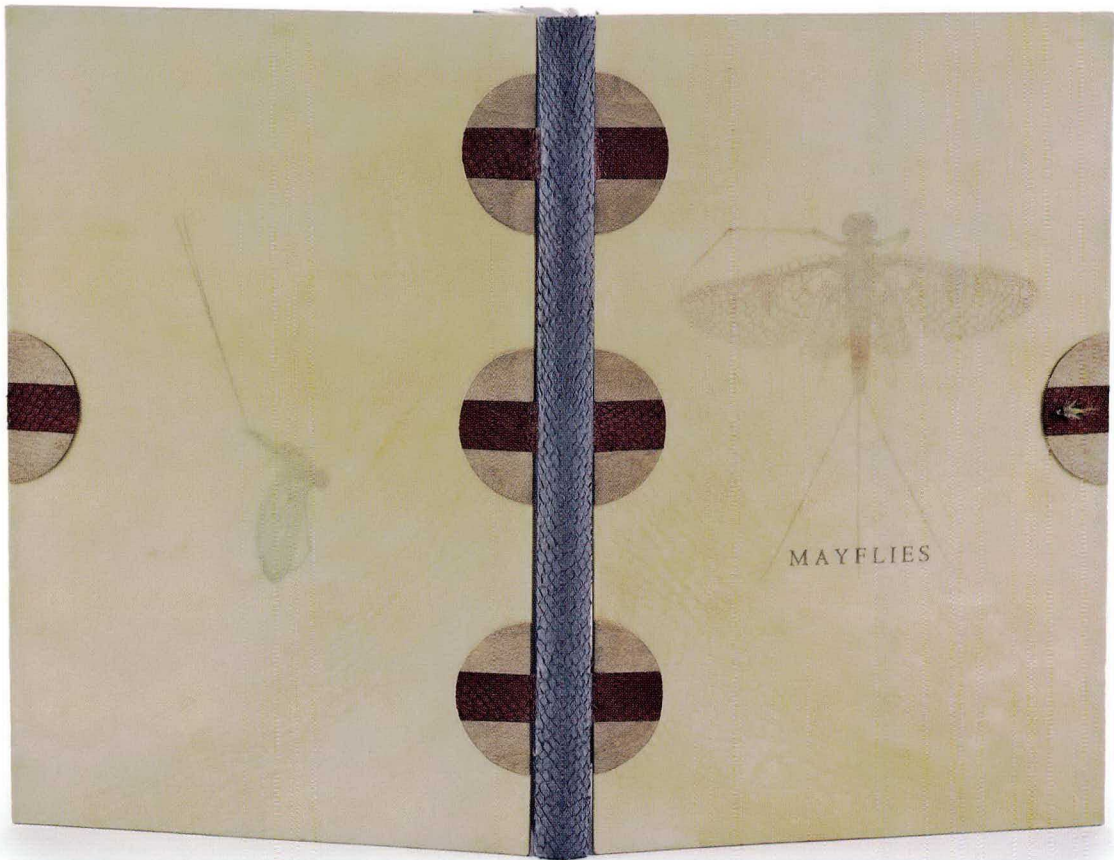


Fig. 13.  
**Mayflies.** Bound 2013 by Peter D. Verheyen with salmon suede thongs and spine, and translucent goat parchment sides in a 'Dorfner-style' open joint binding.

Photo: Paul David Ellis.

Fig. 14.  
**The Bone Folder.** Bound 2017 by Peter D. Verheyen in salmon parchment with paste-paper sides.



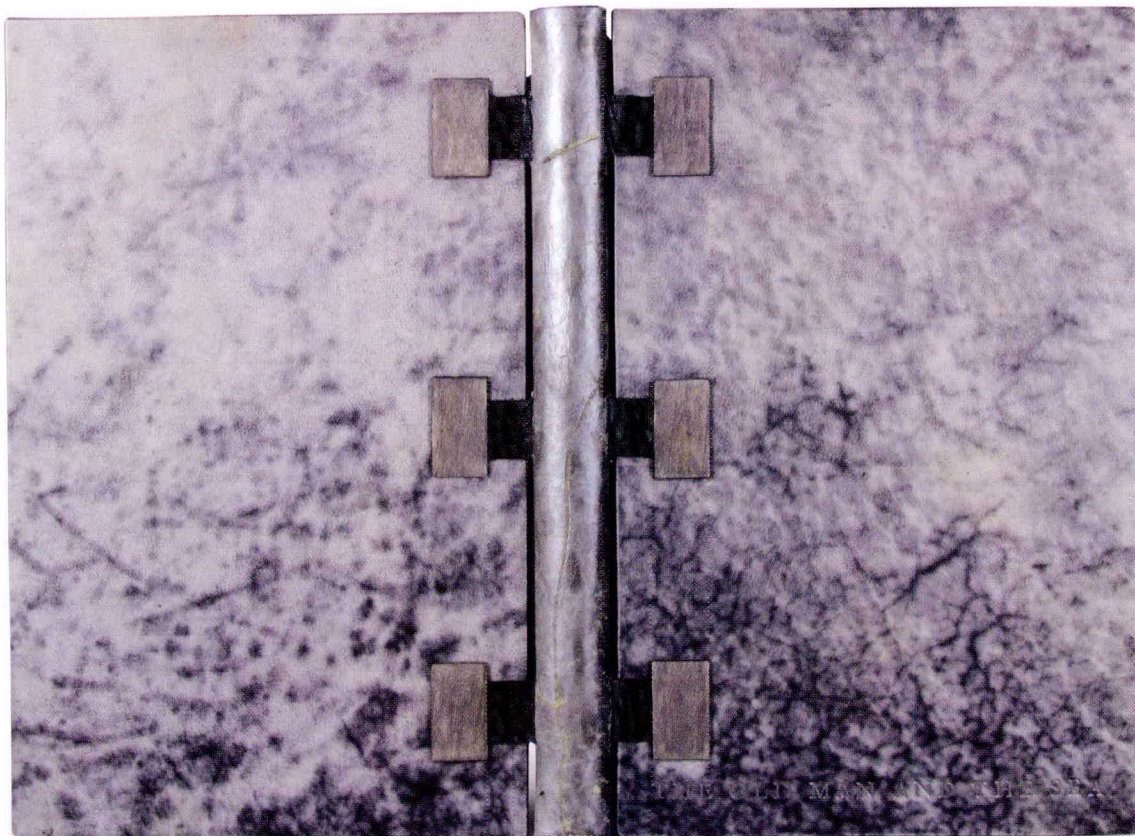


Fig. 15.  
**The Old Man and the Sea**  
 Bound 2020 by Peter D. Verheyen  
 in mackerel parchment with shark  
 leather thongs and dyed goat  
 parchment sides.

pieced together to create full bindings like the 'Tudor' or 'Lacunose' techniques, promulgated by Paul Delrue, that could wonderfully combine into full bindings. Canadian binder Odette Drapeau has achieved similar results and her technique could also work well with parchment [Figs 16 & 17].

In use, fish parchment is comparable to any other parchment, and all traditional binding adhesives such as paste, PVA, and mixtures will work. The only caveat might be warm hide glue that could cause the skin to break down. I have not tried this, but in preparing the char, the skin made momentary contact with tepid water rendering areas gelatinous and weak. Fish parchment will be rather translucent when done, and colours will

have faded. This presents opportunities for lining with different papers and/or dyeing, but the latter is not something I have done.

Like traditional parchment, the moisture in the adhesive will also cause the skin to expand, not always in predictable ways. I have found the most success by applying PVA to the surface that the parchment will be adhered to and lightly dampening the skin before putting down. I then smooth out from the centre of the book's spine and onto the boards, rubbing down with a Teflon folder through a piece of clean paper as I go. If making a case binding, I fill in the area between the boards with a piece of blotter cut to fit and a piece of dense foam or board, and place in the press to really set the parchment down. If working 'in boards', I will put it in the press using a set of casing-in boards. Finally, I dampen the turn-ins and apply paste or a mixture, especially if I wish to form the headcaps. A link to my tutorial on binding in parchment can be found in the notes.<sup>11</sup>



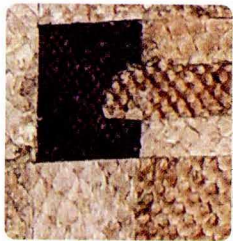
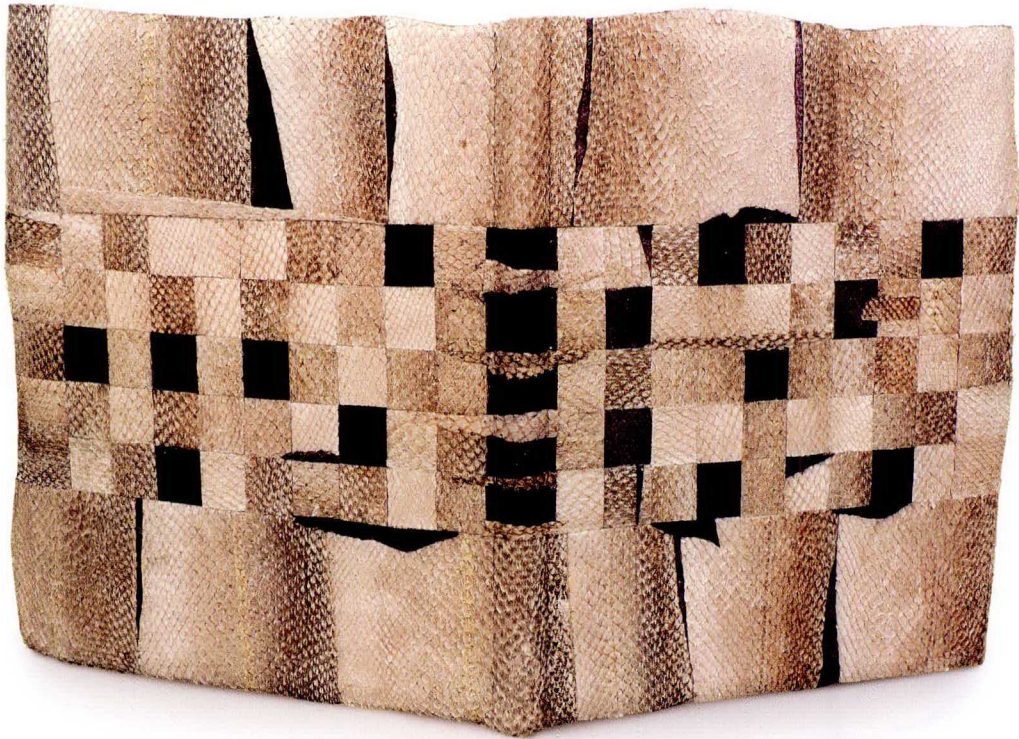


Fig. 16.  
**100 Personalités 100 Recettes**  
 Bound 2003 by Odette Drapeau  
 in natural and black salmon leather.  
 Photo: Yvon Beaudin.

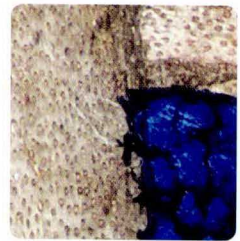


Fig. 17.  
**Québec où survit l'ancienne France**  
 Bound 2008 by Odette Drapeau in  
 haddock and salmon leather.  
 Photo: Yvon Beaudin.



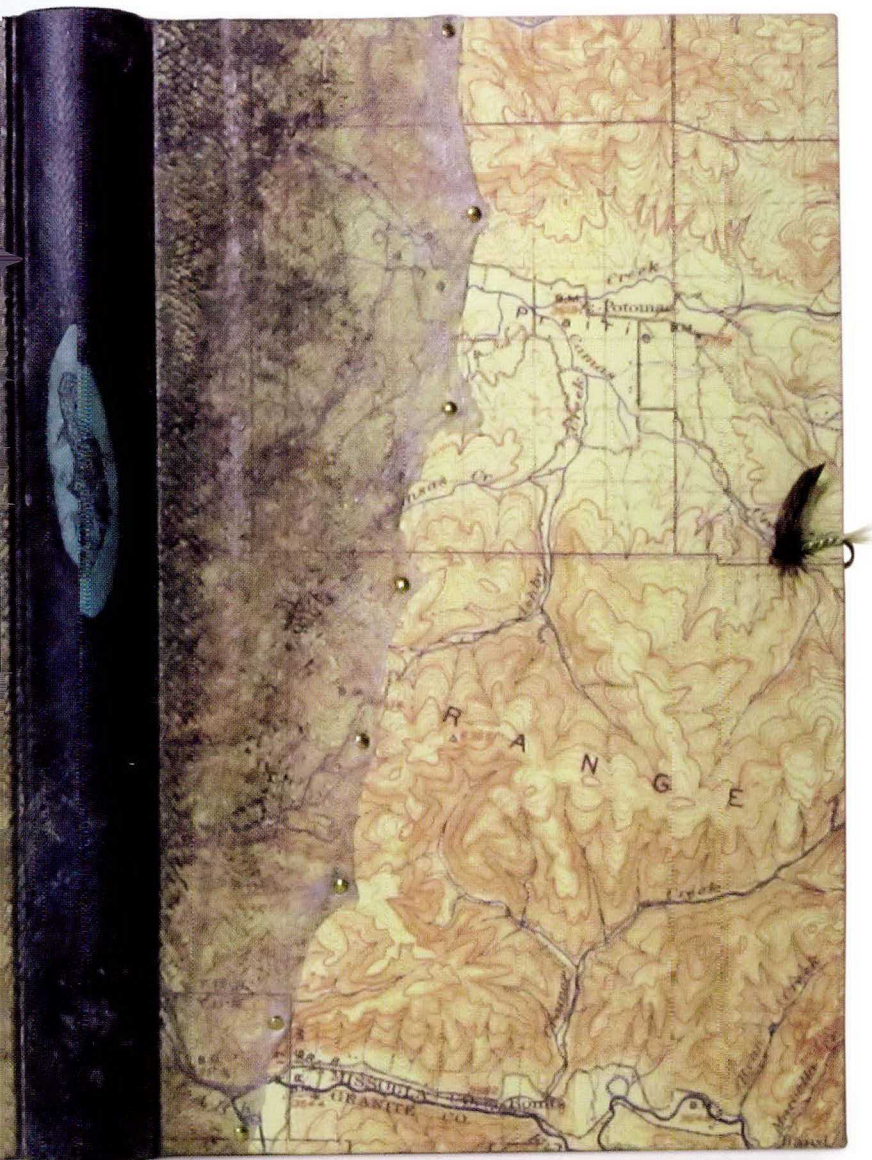


Fig. 18. A River Runs Through It  
Bound 2020 by Peter D. Verheyen in rainbow trout parchment with images from a topographic map, inlaid printed image on leather, and trout flies.

Fish leathers, among them trout, salmon, cod, and carp, are readily available glazed and as suede. Paring is possible, but what I've found most effective is pasting out the back for dimensional stability – fish leather can be quite stretchy – and letting it dry on Mylar. Peel off and sand (a 'micro' belt sander is great) with a little edge-paring at the turn-ins, around headcaps, and corners. The fibrous nature of the skins can be challenging, and I have found that a Swiss/French paring knife used like a spokeshave will work (and not clog), followed by sanding. The textured nature of the skin will help disguise any irregularities.

## NOTES

- i. Ernst Collin was the son and grandson of Prussian and Imperial German Court bookbinders. He learned the bookbinding trade, but chose the career of writer, editor, and antiquarian with the bulk of his articles about bookbinding and the arts. He is best known for being the author of the *Pressbengel* (translated as *The Bone Folder*). More can be found in *The Collins* (2016), [www.works.bepress.com/peter\\_verheyen/45](http://www.works.bepress.com/peter_verheyen/45)
  2. Verheyen, Peter D. "Fips" and His Eels: Fish Skin in Bookbinding.' *Book Arts du livre Canada*, Vol. 10, Nr. 2, 2019, pp. 5-16. [www.works.bepress.com/peter\\_verheyen/52](http://www.works.bepress.com/peter_verheyen/52)
  3. Martini, Franz. 'Fischhaut zu Bucheinbänden.' *Archiv für Buchgewerbe*, vol. 56, 1919, pp. 19-21.
  4. Fold and tear strength tests courtesy Tim Barrett, Research and Production Paper Facility, University of Iowa Center for the Book. Fall 2019. [www.pressbengel.blogspot.com/2019/10/some-shorts-of-testing-process-on-my.html](http://www.pressbengel.blogspot.com/2019/10/some-shorts-of-testing-process-on-my.html)
  5. 'Fischleder.' *Das Falzbein*, vol. 12, no. 10, 1960, pp. 154-55.
  6. 'Fips und die Aalhaut.' *Der Buchbinderlehrling*, vol. 10, no. 10, 1937, pp. 156-157.
  7. *Pressbengel Project* blog articles about fish. [www.pressbengel.blogspot.com/2018/05/more-fish-parchment-mehr-fisch-pergament.html](http://www.pressbengel.blogspot.com/2018/05/more-fish-parchment-mehr-fisch-pergament.html)  
Follow the in-article links, and 'fish leather' tag for more.
  8. 'Atlantic Leathers Sustainability.' August 9, 2018. [www.tinyurl.com/y7g9496d](http://www.tinyurl.com/y7g9496d)
  9. Rahme, Lotta, and Dag Hartman. *Fish Leather: Tanning and Sewing with Traditional Methods*. Sigtuna: Lottas Tannery, 2012.
  10. Hoogvliet, Nienke. *Fish Leather*. Den Haag: Studio Nienke Hoogvliet, 2017. See also the RE-SEA Me project webpage at [www.nienkehoogvliet.nl/portfolio/re-seame](http://www.nienkehoogvliet.nl/portfolio/re-seame)
  - ii. Verheyen, Peter. 'Vellum Over Boards.' *The Guild of Book Workers Journal*, Vol. 39, No. 1, 2004. [www.works.bepress.com/peter\\_verheyen/5](http://www.works.bepress.com/peter_verheyen/5)
- Odette Drapeau website: [www.odettedrapeau.com](http://www.odettedrapeau.com)
  - Coleen Curry website: [www.coleencurry.com](http://www.coleencurry.com)