

From Tree to Book



Untitled selection of books, 1991 to present. 3 x 3 x 2 to 5 x 7 x 2 (7.6 x 7.6 x 5 to 12 x 17.8 x 5 cm).

Handmade paper, Chinese white hemp, leather, smoked buckskin, bronze, woods: California live oak, Oregon maple, Oregon oak, yew; pack-sewn double cords, leather spine. The small book at the far right has a hemp spine.

Photo by Ralph Bartholdt.

I was a somewhat disenchanted young man when I disembarked my ship in Barcelona in 1970 after leaving my on-board pantry-boy job. My desire to see the world led me to Europe where I was surrounded and magically infected by permanence and durability, what I call a tried-and-true quality. I was immediately drawn to the old—the way people lived centuries ago and how they made the items they needed for everyday living. The more I saw, the more I became interested in looking at things that have lasted over the centuries. It all peaked for me when I saw the Lindesfarne Gospel at the British Museum. I ended up visiting it every day for a month. It ignited my just plain love of the book.

Within a year I was branded with an uncompromising passion for the pursuit of recreating the great books of the wooden-board era. If you've seen a book from 1500 AD or earlier that's still in good shape, you understand. This was the golden age of good materials and structure being put to the test by a typically thick, heavy binding—a book with lots of support that still opens well. Called the Gothic style, the books are made by the drawn-on-boards method, where the closed covers leverage the spine, and clasps are incorporated as standard book furniture.

In 1921, the great Dard Hunter displayed "the book harmonious" at the Smithsonian. It was a whole book

"made by the hand of one man," recreating the old paper, type, and printing. Independently, I came up with a similar vision. I live a life of general self-sufficiency, which couples nicely with building books from the ground up. I'm able to provide all the elements of the book from what I grow, find in nature, or salvage. I grow flax and hemp and process them into thread and cord, make paper from old linen fire hoses, make parchment and leather, salvage wood from the tree to become the bookcover, and finally make the clasps from recycled brass and bronze.

The paper of the wooden-board era was made from fiber pounded to a pulp with a water-powered stamp mill. In 1990, Jack Thompson and I built such a mill below my pond. (Jack and I have co-taught *The Technology of the Medieval Book*, a hands-on workshop held at my place, for 10 years.) This further authenticated the paper I use since it comes from pre-1700 technology. I've been fortunate to have a loving partner, my wife Melody, who shares my self-sufficient tendencies. Using a spinning wheel, she makes strong and beautiful thread from raw flax fiber.

My technique is primarily about materials and structure. If you've been curious about wooden bookcovers, I hope this short chapter will help your understanding of using wood for books. Because wooden bookcovers aren't locked into place by fasteners or glue, which allows them to move more freely, they need to be made in a more precise way than other wood constructions. Even though I will be focusing on using hand tools for what I call, "the tree to the book," those who buy their lumber or are machine woodworkers should also benefit.

I like to remind my students that the origin of the word for book as an object is closely connected to the tree. If you look in the dictionary and trace the word "book," it comes from the word for beech in many languages. The Germanic root of book is *bok*, which also is the word for beech tree. In Old English, *boc*, is also a beech. Beech has a smooth bark and is easy to carve. The evolution of the book most likely progressed from carving figures or letters into the tree itself for the purpose of

communication, to making tablets of beech that were carved into, to wood covers made of beech that protected a text block.

As I've traveled the country, I'm amazed by the amount of prime wooden bookcover material that is wasted by nature and "progress." Including pieces of firewood, there are greatly under-utilized resources of wood to salvage. A proper description of the best lumber for bookcovers would be air-dried, quarter-sawn, vertical-grain from a straight-grained tree also cut with the grain. Wood with these attributes, well known in the old days, is nearly impossible to purchase today.

In splitting wood one both reads the grain and eliminates unwanted areas. In general, quartering is the natural way that wood cracks on its own. When the wood is split or quarter-sawn (following the straight grain) it provides the most stable and strongest use of the material. The very center of the tree is the most unstable. The ultimate quartered wood has the longest medullary rays, which are made up of the wood grain that allows a tree to breathe from the heart to the outside. This grain runs perpendicular to what we usually consider grain. Oak is famous for having large medullary rays. The Italians call them mirrors; the English, silvery grain. The medullary rays are very subtle in many woods but can clearly be seen with slight magnification or by raking a light across the surface. Nature provides an easy guide to finding



Untitled selection of books, 1991 to present. 2 x 2 x 2 to 4 x 5 x 2 inches (5 x 5 x 5 to 10.2 x 12.7 x 5 cm). Hand-made paper, commercial paper, brass, leather, woods: apple, yew, larch, Oregon maple, Oregon oak; pack-sewn double cords, leather spine; colored ink foreedges in the experimental stage. *Photo by Ralph Bartholdt.*



these rays since wood generally cracks parallel to the rays as one cleaves the wood.

The hewing hatchet, or carpenter's side axe, was commonly found in a carpenter's toolbox before World War II. It can quickly prepare splits for the band saw or jointer, or in the case of nice-splitting wood, it can flatten one side of a thick stave so the machine planer can do the rest. This first step of rough flattening with the ax is a long lost link to working with quality materials. You could say working this way was a casualty of the industrial age. Once you flatten a side with an ax so it won't rock on a flat surface, you cross a significant historic barrier that takes you back to the old ways.

I first flatten the inside of the cover, that which faces the text. I leave extra length and thickness so I can easily detect any warp. Then I let it cure. High tannin woods such as oak and walnut will be harmful to paper if not fully cured. Wood historically used for preparing and holding food such as birch, beech, maple, or sycamore are more paper-friendly and require less curing time. If in doubt, I insert a temporary thin paper barrier between

the cover and text block and exchange the covers if the temporary paper becomes stained.

Curing wood is an art because there is so much variation in the nature of wood, even within the same tree. To oversimplify: beware of sudden changes. Green wood needs good air circulation and moderate dryness to cure. It will crack if dried too fast (though a little cracking on the ends is OK) or will mold if dried too slowly. Wood will always swell and shrink when exposed to different humidity, but a good piece of cured wood will remain flat once it's gotten used to its surroundings.

When clasped, even a large book will keep its shape no matter the humidity. This was important in the old days when books were rare and carried from place to place. It was necessary to have covers that could withstand traveling as well as extreme changes in climate, making the drawn-on-boards method ideal because it pulls the spine round, and squeezes air out. Because of this, it's very important to shape the inside of the board at the hinge to match the shaped shoulder of the text block. After I do this, I take down the

outside of the covers near the hinge to make a smooth transition from spine to board.

Clasps make a special book even more special while protecting and preserving the binding and what's inside. Clasps were standard during the wooden-board era, but they are seldom made today, even for extremely valuable old books that once had clasps. Some of the reasons for this are the use of book boxes for conservation, the stability of today's climate control, and just the extra time, tools, and non-bookmaking skills involved in making clasps. There are many styles of clasps and I've chosen to illustrate one of the more common types in my Hands On section. It has a riveted brass hinge plate and catch plates, leather hinges, and a curved metal hasp.

When considering materials for a clasp, be sure to try a magnet on them. You want to avoid plated brass or bronze. Not only is the steel in it not as malleable as other materials, the corrosion from steel is quite damaging. Oddly a lot of old books were compromised in the moment of achievement, and are missing clasps because they had been attached with iron nails, and all that's left is black, rotten holes.

I find most of my brass and bronze at recyclers or at used building suppliers. It's cheap, it's old (to me that means more dependable), and tarnish is no prob-



Untitled, two-tone wood, 1998 to present. 4 x 6 x 2 (10.2 x 15.2 x 5 cm). Handmade paper, bronze, leather; Oak with tapered, dove-tailed splines of darker yew wood; construction is the same as used in historic antiphonals, no glue is used. *Photo by Ralph Bartholdt.*

lem. I use materials that are a dime's thickness and less. With old brass, I find I can bend it 360° without it breaking, pound sheet stock thinner, and make catch pins. Now that's malleable! However, modeler's shops should have some good new sheet for hinges and rod for rivets.

For working with wood and brass, I strongly suggest owning a farrier's rasp, a medium file, mill bastard, and smooth duct file. The farrier's rasp, used for shoeing horses, also beautifully shapes and flattens the edges on binder's board. When filing, file with the teeth pointed away from the tang (where the handle is) and with the file biting into the material. I often scold my students to "clean your files often if you want to get much done." When cleaning them, it's important to brush across the grooves between the teeth.

Clasps can hinge from either the top or bottom cover, making it a matter of personal choice. The ancients rarely recessed rivets and clasps into the cover since it was a lot of extra work, but I think it makes for a beautiful finish, not to mention being more neighborly to other books when shelved. You may notice my hasps curve in to match the curve of the fore-edge. This not only makes them easier to fit when you are attaching them, the curve of the hasp can be adjusted to tighten or loosen the fit of the cover to the text block as the environment (mostly meaning the humidity) thickens or thins the book. This is my invention, one of those serendipitous happy errors, developed after I made the hasp too long.



Untitled selection featuring hinge plates, 1998 to present. 3 x 4 x 2 to 5 x 7 x 2 (7.6 x 10.2 x 5 to 12 x 17.8 x 5 cm). Alum-tawed deerskin, leather, brass, bronze, woods: Oregon white oak, yew, California oak; pack-sewn double cords, leather spine. *Photo by Ralph Bartholdt.*

About the Artist

JIM CROFT has been making books for three decades, being a specialist in making books the "old-way." In 1987, Jim, along with Jack Thompson, began a two-week workshop at Jim's rural homestead in Idaho to teach *The Technology of the Medieval Book*. Book artists and enthusiasts who participate learn to build a book from the ground up, which includes making alum-tawed leather from goat skin or deer hides, fashioning and carving the covers, making parchment, and fabricating brass clasps. Jim is also renowned for his fine hand-crafted book-making tools. Jim gives workshops around the country on making the Gothic book and on toolmaking. He has taught at Penland School of Crafts and the Paper and Book Intensive.



39. End nippers cut the pegs and cords on the outside of the cover, then they're trimmed with a knife using a gentle sawing motion.



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