

The American Fly Fisher

Journal of the American Museum of Fly Fishing



WINTER 2012

VOLUME 38 NUMBER 1

The Modified Stuff Fish Dreams Are Made Of



Sara Wilcox

Annie Perkins enjoys her husband Leigh's surprise at learning he would be honored by the museum.

SOME OF THE stuff fish dreams are made of is natural. Other stuff isn't exactly *unnatural*, but it's altered in some way or completely manufactured. Pretty much anyone fly fishing today approaches the water loaded with both natural and synthetic materials.

Enter Jim Hardman, a guy who knows things about stuff. He's a retired manufacturer of industrial adhesives and associated dispensing machinery whose great-grandfather and grandfather were involved in the rubber industry. He's also a former trustee of this museum who has shared his expertise with us while cataloguing our reel collection. Hardman knows a lot about the history of synthetic materials that eventually found their way into fishing tackle, and he's written a comprehensive piece to begin to educate the rest of us. We'll be presenting "Synthetics in Fishing Tackle: What's in the Mix: Natural Rubber, Gutta-Percha, and 'Modified Stuff,'" in two parts. Part I, which introduces us to gutta-percha, mud, and hard rubber, begins on page 2. Part II, which will run in Spring 2012, covers celluloid, Bakelite, phenolics, and modern-engineered plastics.

In winter, thoughts of summer are never far away. This issue harks back to the Summer 2011 issue with two pieces that continue discussions begun there. After the appearance of Richard Jagels's "Bangor Pool Peapods: Reviving a Tradition and River," a museum visitor who picked up the issue contacted the author with some interesting information. Jagels tells the story in a letter on page 25. And Austin W. Hogan comments on Ken Cameron and Paul Schullery's "A New Early Date for American Fly Fishing" and shares Austin S. Hogan's

1961 proposal that Sir William Johnson was the first American fly fisher. For more on that, turn to page 18.

Narrowing our focus to the personal, John Mundt continues his Keepers of the Flame series, in which he profiles all sorts of people preserving our sport in creative ways. This issue features Gene Bahr, a taxidermist who has made the shift from traditional taxidermy to the production of catch-and-release carvings (page 20). Then, getting first-person personal in a Telling Tails piece, Trustee Emeritus Gardner Grant, now in his eighties, talks about how aging has affected his fishing and how fishing has affected his aging in "Live to Fish, Fish to Live!" (page 21).

The museum staff never rests. We hosted our annual Fly-Fishing Festival in August (page 24) and awarded Paul A. Volcker, former chairman of the Federal Reserve, the 2011 Heritage Award in New York City in September (page 22). At our fall membership and board of directors meeting in October, we dedicated the Leigh H. Perkins Gallery (see inside back cover), sharing a delightful and celebratory evening with Leigh in the process.

KATHLEEN ACHOR
EDITOR

We welcome contributions to the *American Fly Fisher*. Before making a submission, please review our Contributor's Guidelines on our website (www.amff.com), or write to request a copy. The museum cannot accept responsibility for statements and interpretations that are wholly the author's.



Our Mission:

The American Museum of Fly Fishing promotes an understanding of and appreciation for the history, traditions, and practitioners of the sport of fly fishing. It collects, preserves, exhibits, studies, and interprets the artifacts, art, and literature of the sport and uses these resources to engage and benefit everyone.

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The American Fly Fisher

Journal of the American Museum of Fly Fishing

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ON THE COVER: *Molded from mud, a synthetic material often mistaken for gutta-percha, this salmon-size reel face plate shows lathe chatter, probably the result of too wide a tool and too high a speed. From the collection of Hoagy B. Carmichael, with permission.*

Statement of Ownership, Management, and Circulation

The American Fly Fisher (publication number 0084-3562) is published four times per year (Winter, Spring, Summer, Fall). Editor is Kathleen Achor. Complete address for both publisher and editor is The American Museum of Fly Fishing, P.O. Box 42, Manchester, VT 05254. The journal is wholly owned by the American Museum of Fly Fishing. Total number of copies: 1,600 (average number of copies of each issue run during the preceding twelve months; 1,800 actual number of copies of single issue published nearest to filing date). Paid/requested circulations (including advertiser's proof and exchange copies): 1,418 (average; 1,533 actual). Free distribution by mail: 0 (average; 0 actual). Sales through dealers and carriers, street vendors, and counter sales: 0 (average; 0 actual). Free distribution outside the mail: 120 (average; 120 actual). Total free distribution: 120 (average; 120 actual). Total distribution: 1,538 (average; 1,653 actual). Copies not distributed: 62 (average; 147 actual). Total: 1,600 (average; 1,800 actual). Percent paid and/or requested circulation: 92.2% (average; 92.7% actual).

The American Fly Fisher (ISSN 0884-3562) is published four times a year by the museum at P.O. Box 42, Manchester, Vermont 05254. Publication dates are winter, spring, summer, and fall. Membership dues include the cost of the journal (\$50) and are tax deductible as provided for by law. Membership rates are listed in the back of each issue. All letters, manuscripts, photographs, and materials intended for publication in the journal should be sent to the museum. The museum and journal are not responsible for unsolicited manuscripts, drawings, photographic material, or memorabilia. The museum cannot accept responsibility for statements and interpretations that are wholly the author's. Unsolicited manuscripts cannot be returned unless postage is provided. Contributions to *The American Fly Fisher* are to be considered gratuitous and the property of the museum unless otherwise requested by the contributor. Copyright © 2012, the American Museum of Fly Fishing, Manchester, Vermont 05254. Original material appearing may not be reprinted without prior permission. Periodical postage paid at Manchester, Vermont 05254; Manchester, Vermont 05255; and additional offices (USPS 057410). *The American Fly Fisher* (ISSN 0884-3562) EMAIL: amff@amff.com WEBSITE: www.amff.com

POSTMASTER: Send address changes to
The American Fly Fisher
 P.O. Box 42
 Manchester, Vermont 05254

Synthetics in Fishing Tackle

What's in the Mix: Natural Rubber,
Gutta-Percha, and "Modified Stuff"

Part I

by James Hardman



Figure 1. Union (Civil War) picture case.
Although called gutta-percha cases, these were
not gutta-percha; they were compression molded
from shellac mixed with fine sawdust.

In this two-part article, James Hardman offers us a history of the stuff that reel side plates and fly-rod grips are made of: man-made or -altered stuff. Part I introduces us to gutta-percha, mud, and hard rubber.

THE VERY BEST historians seem to have open minds, and they are continually seeking and embracing new evidence in the pursuit of accuracy. As with politicians, what they say can be remembered for a long time . . . and sadly, errors can endure and even become revered as gospel.

The world of fly fishing struggles with proper identification of construction

materials, especially the synthetics. Celluloid is routinely confused with ivory. Elephant ivory is confused with walrus ivory. Delrin is confused with hard rubber. And how often have we been told that early fly reels were made of gutta-percha? As Ronald Reagan put it, we "know so much that just isn't so."

I recently saw a fine little parts cabinet for sale. "Those knobs are gutta-percha," the dealer said. "How do you know that?" I asked. I guess I pinched his ulcer because he glowered at me and said, "I'm a professional, and I know these things!"

Well, they were not gutta-percha, but the name *gutta-percha* seems to resonate with antique dealers. They will tell you that Civil War Union picture cases were made of gutta-percha (Figure 1). Perhaps

a few were, but for the most part, these cases were molded of "mud"—in this case, a mixture of natural resins, including shellac, blended with pigments and wood flour.

We can't always rely on what we read or what we are told, but we can do our best to avoid perpetuating errors.

In the tackle trade, manufacturers have always experimented with new materials; new technology could not be overlooked. The industry was market driven. Manufacturers did their best to provide quality products at a reasonable price, and success hinged largely on buyer perception.

Advertising could do just so much, although we certainly smile at some of the testimonials and guarantees of excellence. Some claims were actually under-

Illustrations/figure credit goes to James Hardman unless otherwise noted.

statements; for example, automobile manufacturers would sometimes intentionally understate engine horsepower. You didn't want to own a 30-horsepower car and be passed going uphill by a car rated at only 21 horsepower.

With or without advertising, some materials proved successful, and others were tried and rejected. We have some understanding of the history of these materials, and identification is not all that difficult.

GUTTA-PERCHA

Gutta-percha was one of the early alternatives to traditional rod- and reel-making materials (e.g., wood, ivory, cork,

horn), and it attracted a lot of attention when it was introduced in the late 1830s. Although it is sometimes called a synthetic because of the techniques of manufacture, gutta-percha (or balata rubber) is not a synthetic at all.

Gutta-percha is a natural product obtained from the latex or sap of various rubber trees indigenous to Southeast Asia, especially the Malay Peninsula. After collecting the latex (Figure 2), the moisture was driven off, and the raw gutta-percha was rolled into balls or baled for shipment. After shredding and washing, it was heated and masticated in machines that looked like taffy mixers, where coloring ingredients could be added. The hot, viscous mass was rolled out repeat-

edly to vent any entrapped air; then it was ready for hot molding.^{2,3}

Extruders for gutta-percha were developed in the late 1840s. Early on, gutta-percha was used for insulating underwater cables: the stuff is almost non-biodegradable, it is water insoluble, and sea creatures don't chew on it.⁴

Typical products molded from gutta-percha include small buckets, funnels, flasks and bottles, doll's heads, and buttons. Thousands upon thousands of buttons were produced from gutta-percha. The wares pictured in Figure 3 are typical of such products manufactured during the 1850s and 1860s.⁵

Talk about impact resistance! Gutta-percha was used in golf balls, first as the



Figure 2. Gutta-percha is chemically similar to natural rubber and is obtained from the sap or latex of various species of rubber (caoutchouc) trees. Like maple syrup, the sap is collected in buckets. Source: Wikipedia, http://en.wikipedia.org/wiki/File:Latex_-_Hevea_-_Cameroun.JPG.



Figure 3. Typical products molded from gutta-percha during the 1850s and 1860s. Note the natural satin finish. Gutta-percha offered wonderful resistance to biodegradation. Source: Jim Jones Collection: Atlantic-Cable.com website.



Figure 4. A gutta-percha golf ball. These "gutties" had remarkable impact and slash resistance.



Figure 5. New technology! When heated to the boiling point of water, gutta-percha softened and could be squeezed into a mold. The result was carved or checkered grips without the time and expense of carving. Courtesy of Rock Island Auctions, with permission.

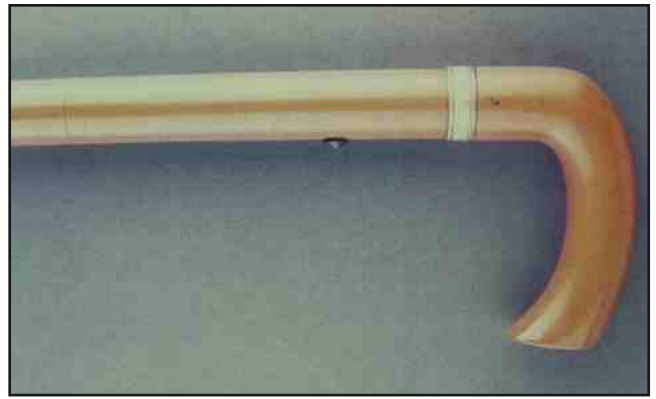


Figure 6. Gutta-percha was naturally a deep brown to black, but pigments could be added for lighter colors. Here, a Remington cane rifle is covered with gutta-percha for insulation and protection. Courtesy of Elliott Burka, American Society of Arms Collectors, with permission.

entire ball, later as just the cover material because of its toughness and resilience. Original “gutties” (Figure 4) are highly collectible, and a good, original specimen can today fetch up to \$3,000.^{6,7}

With the advent of vulcanized natural rubber, gutta-percha slowly lost market favor. The industry today is but a shadow of its former size. It is still molded into little artistic figurines, and because it is resistant to biodegradation, it is still used by dentists to fill root canals.^{8,9}

Some fly reels, especially British reels, used gutta-percha for handle grasps. In salmon rods, gutta-percha was used for the knobs on fighting butts; these proved durable—indeed, they were tough and did not harden and crack as did later soft-rubber knobs. Some fly rods and bait-

casting rods are found with gutta-percha reel-seat spacers, but they are rarities; although durable, these spacers were heavier than wood and not as attractive.

The advantage of molding gutta-percha was the ability to produce finished shapes, sometimes fancy shapes, without the need for subsequent machining. The Sharps Co. of Philadelphia used gutta-percha grips on some of their four-barrel pocket pistols; hot gutta-percha could be squeezed into a mold to create the beauty and complexity of carved grips without the expense of carving (Figure 5).

Although engraved and fancy shapes are not as prevalent in fishing tackle as in firearms, gutta-percha did find acceptance where molding could be justified. Related products included drawer pulls

on fly cabinets, pocket entomologist magnifier handles, sheath knife handles, pocket hook hone handles, and even as an insulating coating over metal tubing in canes and wading staffs.

With use and wear, gutta-percha loses its shiny mold luster, and grips take on a soft, satin sheen. Gutta-percha is a relatively hard substance, about the hardness of the cover of a golf ball; it is tough and gnarly. It can be polished, but not nearly as well as hard rubber. Hard rubber can be polished to a mirror finish; pipe stems are a good example.

The natural color of gutta-percha is a deep brown to black (varied with the species of tree and its location), but the addition of various pigments allowed production of lighter-colored products;



Figure 7. “Mud” was mixture of hot-melt resins similar to rosin or shellac that could be molded. Hardness was adjusted by the choice of resins and diluents; pigments offered a broad range of colors.



Figure 8. The surface detail of products molded from mud was excellent. This is the surface of a Littlefield, Parsons & Company picture frame.



Figure 9. Mud was durable enough for telephone handsets but lacked heat resistance. Placing an object molded from mud near a stove invited warping and melting.



Figure 10. A multitude of games (like the combination lock puzzle shown here), automotive accessories, and household products were molded from mud.



Figure 11. To this day, Smith & Wesson presentation cases are erroneously called gutta-percha cases. Not so—these cases were molded of mud.



Figure 12. As with many Civil War picture cases, Smith & Wesson presentation cases were molded by the Littlefield, Parsons & Company from shellac and wood flour.

a coral-colored gutta-percha cane rifle is pictured in Figure 6.

Without destructive testing, gutta-percha can often be identified by its soft and sometimes granular surface texture, what might be called a *leathery* look. Remember, gutta-percha was generally compression molded (the hot polymer was forced into the detailed recesses of a hot mold). It could easily be drilled for things like mounting screws, but again, the primary advantage was molding without the need for subsequent machining.

Temperature sensitivity is one of the reasons gutta-percha was never extensively used by tackle makers. Park a reel too near a hot pot-bellied stove and the side plates could soften and deform.

One of the tests for gutta-percha is touching it with a hot needle. If the nee-

dle penetrates, the sample is likely gutta-percha and not hard rubber. Rubbing gutta-percha on your trousers results in no odor of hot rubber, as in the case of vulcanized rubber or ebonite. Filing Delrin or nylon leaves a shredded edge, a thin film of torn polymer, but gutta-percha, especially when compounded with fillers, files more like wood or hard rubber.

MUD

A step down in quality, but huge in terms of industrial use, was a class of products known as mud. This material is often confused with gutta-percha.

Mud is a classic example of an almost-lost technology. Even the name has disappeared from the reference books (perhaps because it was considered degrading),

although the men in the trade 100 to 150 years ago used the term *mud*.

There is no set formula for mud, but in general, it is a mix of various natural resins akin to shellac or rosin with some fillers and coloring agents added. By filler, I mean ground-up mined calcium carbonate, sawdust, or even kitchen flour, which was added to the molten base resin. After cooling, the solidified mud was ground up into little chips and was ready for molding (Figure 7).¹⁰

Mud could be purchased commercially from many sources. Suppliers offered formulations in various melt temperatures and colors in order sizes from 50-pound bags right up to railroad cars. In later years, mud was injection molded, but most custom molders used simple steam-heated compression molds. The



Figure 13. The beautiful orange mottled side plates of circa 1877 Philbrook & Paine fly reels are often declared to be hard rubber, but, in fact, they are molded of mud. From the collection of the American Museum of Fly Fishing.

Figure 14. In manufacture, chips of orange and black mud were sprinkled into a steam-heated mold, where they melted and comingled to create the mottled pattern.

Figure 15. Impact resistance was adequate to allow stamping of H. L. LEONARD, MAKER.

chips were sprinkled in, the resin melted, and the ooze (or mud) was pressure molded into the desired shape.¹¹

Surface detail was generally excellent (Figure 8), and costs were minimal; the greatest cost was that of the mold itself. It took an artisan to carve, polish, and fit an iron mold. Simple molds were cast over patterns made from various compositions of clay, and more expensive molds were hobbled from hardened steel masters. The presses used to create molds were similar to the paper presses often seen in antique shops; they had two platens and a screw with a hand wheel on top.

Men in the trade would have scoffed at the notion that most Civil War Union picture cases were molded from gutta-percha. They would have known that they were mud. U.S. Patent 11758, issued 3 October 1854 to Samuel Peck, not only details the composition of these picture cases, but provides a pretty fair definition of mud: the cases are “composed of gum shellac and woody fibers or other suitable fibrous material dyed to the color that may be required and ground with the shellac between hot rollers so as to be converted into a mass which when heated becomes plastic so that it can be pressed into a mold or between dies and made to take the form that may be imparted to it by such dies.”

Neat stuff, this mud. It was commonly used for telephone handsets, ignition boxes, toys and games, doll heads, and certainly early pistol cases (Figures 9 and 10). Although commonly called gutta-percha cases, Smith & Wesson purchased their fine presentation cases from frame makers, primarily Littlefield, Parsons & Company in Massachusetts. Detail was excellent, and these cases are highly prized by collectors. The name *gutta-percha*





sticks, but again, these cases were molded from mud (Figures 11 and 12).

The beautiful mottled side plates on the 1873-era Philbrook & Paine and Leonard fly reels are often mistaken for gutta-percha or hard rubber, but these mottled orange and black side plates were molded from mud (Figures 13, 14, and 15).

Rejected "Philbrook & Paine" reel side plates, along with many other parts, were recovered from under the floorboards of the Elm Street Payne shop. Found dumped among the ashes under the stove, how and why these discarded parts came to be there is a matter of conjecture; certainly they were carried from Maine and were likely moved two or three times. Most are defective but tell a significant story: they reveal techniques of manufacture (Figure 16).

In manufacture, a raised-pillar nickel-silver reel frame, rough-machined with drilled pillar-screw holes, was set in a steam-heated, cast-iron mold in its appropriately shaped cavity. Orange and black granules of mud were sprinkled onto the hot mold surface, where they melted and comingled; shardlike grain structure reveals the shape of the granules, and some streaked or swirl patterns are observed, possibly created by poking with a pointed stick.

Rarely are patterns uniform; some reels have thoroughly streaked patterns, others seem to show no streaking at all. Either different employees were involved or they were experimenting with different melting techniques (Figure 17).

The mold lid was squeezed down over the guide pins, probably with a press, forcing the mold shut as entrapped air and excess resin oozed out through ventilation ports and through the parting seam. Pressure forced the resin (the mud) to fill the frame face and interlock into frame recess grooves. Shrinkage was likely a problem. Punch marks in the

Figure 16. A group of unfinished Philbrook & Payne reel parts, undoubtedly made in Maine, but recovered from under the floor of the Elm Street Payne rod shop in Central Valley, New York.

Figure 17. Different patterns are observed, some with swirls, some without. This was perhaps the result of different techniques of manufacture or simply different employees. From the collection of Hoagy B. Carmichael, with permission.

Figure 18. Punch marks provided a mechanical lock to help avoid rotation or looseness with shrinkage. From the collection of Hoagy B. Carmichael, with permission.

Figure 19. In compression molding, the excess hot mud oozes from the mold into the pillar holes predrilled in the frame. The shape of the buttons reveal the mold construction and position of unused locating pins.



Figure 20. Note the rough edges of the frame plates. The castings were dressed and finished subsequent to molding operations.

Figure 21. A white powder, probably talc, is found on the interior of several discarded plates; this would seem to be a mold release, likely added to ease prying the mold open. From the collection of Hoagy B. Carmichael, with permission.



interior of some frames can be noted; these provided extra mechanical lock to secure the face plates (Figure 18). Excess ooze often filled the drilled pillar holes, and little buttons of hardened resin disclose the shape of unused locating pins. Steam heat was shut down, and the mold was allowed to cool before opening and popping out the frame with its mottled face. A white powder akin to talc is seen on the inside faces, probably added as a mold release (Figures 19, 20, and 21).

To the best of my knowledge, no original molds have been preserved. A friend tells me that he apparently had an original mold that for years he used as a doorstep; he described the raised pillar mold cavity perfectly, even the steam ports. Oh, so sadly, it was discarded some years ago; as a doorstep, it was heavy and unwieldy.

Obviously, several molds must have existed; mottled side-plate reels are found in sizes ranging from small trout reels right up through salmon reels. Please: if you know of the existence of such a mold, share your knowledge and photographs!

Two distinct models or variants of these mottled side-plate reels have been identified: those manufactured with two distinct layers of mud and those manufactured with a single, homogeneous mottled composition.

Those reels with two layers of resin had a second layer of dark brown resin backing up the mix of orange and black granules exposed on the reel face (Figures 22 and 23). Why this construction? It could be that the second layer was a composition that afforded better impact resistance or reduced shrinkage—or perhaps it was simply less expensive than the orange and black blend. Most of the reels with two layers appear to be early in production, those marked PHILBROOK & PAINE, and were



Figure 22. A Leonard salmon reel plate. Note the fine shrinkage fissure at about 8 o'clock. The shrinkage of mud as it solidified would have been accentuated with larger diameters. From the collection of Hoagy B. Carmichael, with permission.

Figure 23. An early reel with two layers of mud; the orange and black mixture was used against the face of the reel, the supporting brown composition was unseen inside the reel. The second layer may have been a formula to add impact resistance or reduce shrinkage. From the collection of Hoagy B. Carmichael, with permission.



Figure 24. An iron lathe fixture for locating and holding a plate assembly while turning and facing to final contour. Boring for the center bearing and polishing could also have been performed during this setup. From the collection of Hoagy B. Carmichael, with permission.

usually fitted with a mottled orange and black grasp. Later reels—those with a single, homogeneous layer—were generally fitted with a black hard-rubber grasp and often stamped LEONARD.

Many of the earlier reels have faces that are granular or leathery in appearance, actually showing the size of the premelt granules. These side plates were not subjected to further machining; the frames were simply cleaned up, and they were ready for the installation of bearings and click components. Most side plates, seemingly later in production,

had both interiors and exteriors final machined after demolding. Figure 24 shows an original turning jig, and Figure 25 shows a reject plate with lathe-chatter lines in the face. The frame rims and raised pillars were final finished after molding (note the rough edges in Figures 19 and 20).

Mud had its drawbacks, especially shrinkage in cooling and its tendency to crack and chip with high impact, much like dropping an old 78 RPM shellac phonograph record. Mud had the advantage of very low cost and excellent sur-

face detail, but when it got hot, it would remelt.

How do you identify mud? Again, holding a hot needle in pliers, gently touch the sample in an out-of-the-way place. If it easily melts, it is probably mud. If it softens but does not really melt, it could well be gutta-percha. If it does not melt or soften, the sample is likely hard rubber or a phenolic composition (Figures 26 and 27).

The test for hard rubber, by the way, is to rub it briskly on your pants and quickly smell it; it will have the smell of warm rubber. Gutta-percha doesn't have

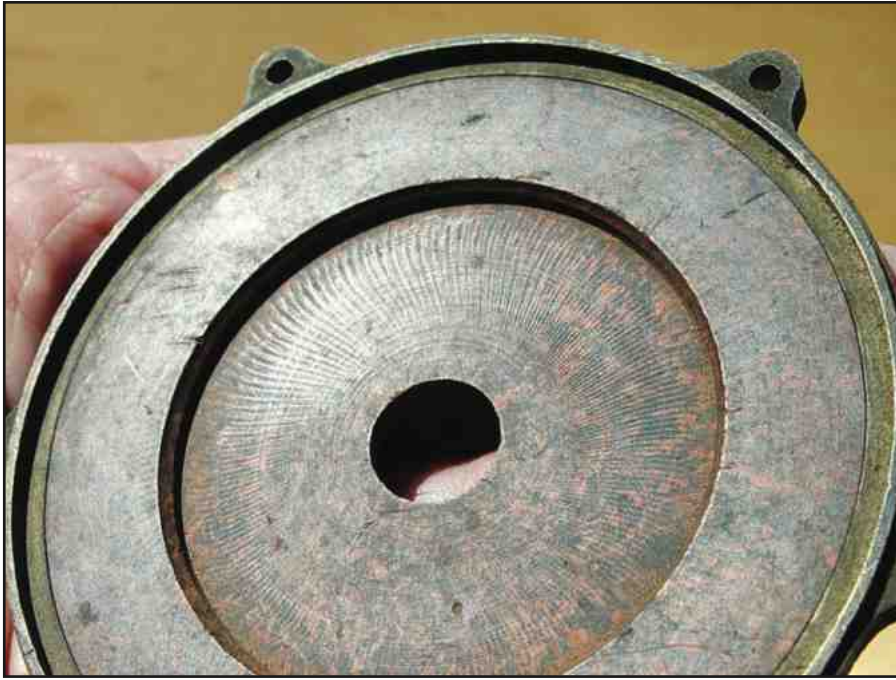


Figure 25. A salmon-size face plate showing lathe chatter in the surface finish, probably the result of too wide a tool and too high a speed. From the collection of Hoagy B. Carmichael, with permission.

that odor. But beware: if you rub mud on your trousers, it could warm up and smear.

HARD RUBBER

The big winner in the tackle industry was hard rubber, or ebonite (*ebonite* was the English name, also commonly used here in the United States). Hard rubber

became a material of choice for reel side plates, reel grasps, and, in some cases, for rod handles, reel seats, and spacers.

Natural rubber, like gutta-percha, is obtained from the sap of rubber trees (see Figure 2). The difference between natural rubber and gutta-percha seems minimal—both are chemically 1,4-polyisoprene—just the orientation is different. Natural rubber is *cis*-1,4-polyiso-

prene, and gutta-percha is *trans*-1,4-polyisoprene. But oh, what a difference when natural rubber is vulcanized.¹²

In the early years, little was known about the differences in the latex produced by the two hundred or so known species of rubber trees. Some trees produced natural rubber, others produced gutta-percha. Natives would score the bark and collect the sap or latex in buckets in the same way Vermonters collect sap for maple sugar; they would dip paddles into it, dry it over a fire, and then peel off the smoked sheet and package it into bales. Early production was slow and expensive; a more efficient way was to coagulate the latex with vinegar (acetic acid) and then squeeze out the unwanted liquid in a filter press.¹³

Unlike gutta-percha, which was tough and gnarly in its raw state, natural rubber was soft and gummy. Uses for raw natural rubber were limited. Shoes could be coated with raw rubber to waterproof them, but getting them warm spelled trouble. Raw rubber has the consistency of chewing gum, and walking on hot pavement was out—the rubber would soften like taffy and stick to a sidewalk like grim death.

But Charles Goodyear changed everything. He added sulfur to the raw rubber and found that with heat, a chemical reaction occurred (vulcanization), allowing rubber to retain its desired shape even when warm. Goodyear was not the first to experiment with sulfur, but his approach was practical, and he received his patent in 1844.¹⁴



Figure 26. A simple test for mud involves gently probing with a hot needle to see if it melts.



Figure 27. The hot needle should be applied in a hidden area to avoid surface damage.

A little sulfur produced stretchy rubber, and more sulfur produced hard rubber (ebonite). The sulfur and other ingredients had to be incorporated or “mixed” into the highly viscous crude rubber, using heavy two-roll mills. Figure 28 shows the two-roll mill used in my own family’s rubber business.

Larger mills were common for rolling out sheet stock and removing entrained air. A typical Farrel three-roll calender is pictured in Figure 29.¹⁵

The compounded rubber was cut into appropriately sized pieces that were

pressed like dough into heated compression molds. According to an 1896 article in the *Journal of the American Chemical Society*, “It takes every impression; it does not melt, but heat softens it to the consistency of taffy . . . a greater heat vulcanizes it” (Figure 30).¹⁶

I don’t mean to dwell on the processing of natural rubber. But understand this: *all natural rubber was not the same*. Not only were there many species of trees, but gathering and refining was in no way consistent. Some crudes were contaminated with dirt, bark, wood splinters, and

stones, which obviously affected the price paid. But all this stuff was included in the mix and very much affected the quality of the hard rubber produced. In truth, quality was never a sure thing. Even the sources of rubber added to the confusion. With increasing demand, rubber trees were exported from Southeast Asia to new plantations in Brazil. It was said that the Brazilian distribution ports were “inhabited by an international assortment of human driftwood and desperados.”¹⁷ It is little wonder that there was little or no standardization. And all



Figure 28. A two-roll mill used to mix sulfur and compounding ingredients with raw rubber in the solid. After vulcanizing, the hardness of the cured rubber varies with the sulfur concentration.

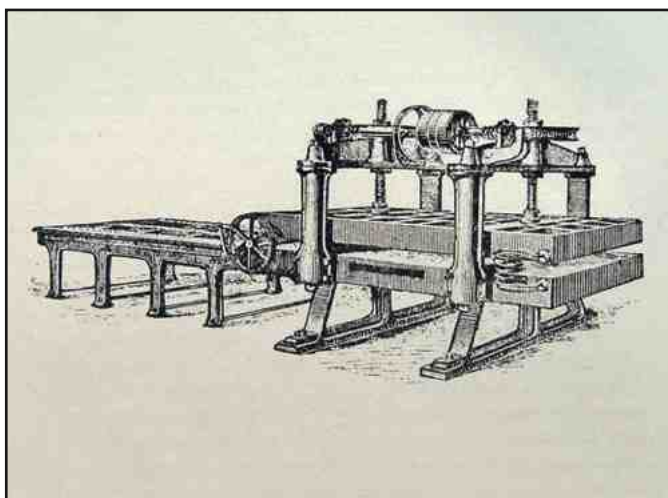


Figure 30. Simple compression molds required high-pressure steam to heat and vulcanize rubber products; the process was smelly and took about four hours for each molding. Source: Franz Clouth, *Rubber, Gutta-Percha and Balata* (New York: D. Van Nostrand Company, 1903), 144.



Figure 29. Three-roll calenders rolled rubber compounds into sheets before being cut up for compression molding. Source: Franz Clouth, *Rubber, Gutta-Percha and Balata* (New York: D. Van Nostrand Company, 1903), 248.



Figure 31. The Hardman family was involved in the rubber trade. This is a c. 1895 picture of the old factory in Belleville, New Jersey.

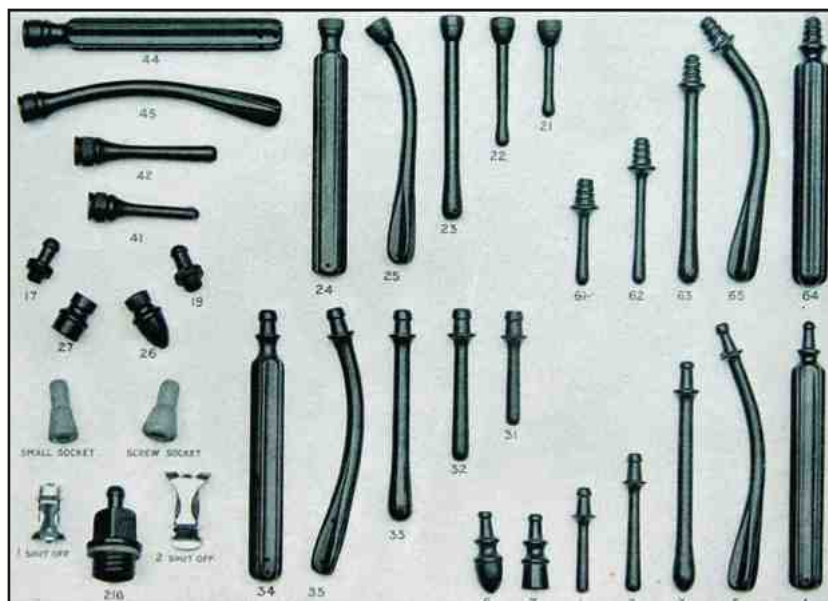


Figure 32. Hardman molded hot-water bottles and hard-rubber drug sundries, including enema and douching nozzles.



Figure 33. The factory in Belleville, New Jersey, burned in early 1906 and put four hundred people out of work.

Figure 34. The original factory was never rebuilt, but Herbert Hardman (my grandfather) continued molding hard rubber.



these variations affected the quality of the side plates, grasps, and rod components incorporated into fishing tackle.

My family was involved in the rubber industry (Figure 31). My great-grandfather and grandfather supplied a broad line of hot-water bottles and hard-rubber drug sundries to the trade. Figure 32 pictures typical enema and douching nozzles.¹⁸

The family business in Belleville, New Jersey, grew until a fire in 1906 put four hundred people out of work. The factory was underinsured and was never rebuilt, but my grandfather continued in the business and did what he could with what little he had (Figures 33 and 34). Partnered with a friend, he manufactured smoking pipes, golf club heads, and automobile tires (Figures 35 and 36). In later years, on

his own, he molded battery boxes and formulated hard-rubber settings for the manufacture of paintbrushes.

Figure 37 shows Dr. Scott's Electric Hair Brush, which was produced in England. The box says it cured headaches in five minutes and that these products were in daily use by the Queen and the Prince and Princess of Wales. The racy legged pipe in Figure 38 is molded from hard rubber.

Hard rubber was received by the tackle industry with great enthusiasm. It was light and strong, it was resistant to water, it did not corrode, and it polished up to produce a most appealing product. And blessing upon blessing, it was inexpensive, abundant in supply, and easy to machine.

Companies including American Hard Rubber in New York City supplied hard

rubber as a raw material in the form of sheets and bar stock. Any shop with a lathe and a milling machine could purchase vulcanized stock and fabricate parts from hard rubber.

Pritchard used hard rubber for a unitized rod handle and reel seat, covered by a patent in 1881 (Figure 39). These could have been molded to final shape, but it is more likely that they were machined from bar stock. The shape lends itself to simple lathe turning, and the flawless finish would suggest lathe polishing.

Grasps were easily machined from bar stock, and side plates could be turned from flat stock. Edward Vom Hofe surely did his own lathe work; protective nickel-silver rims were pressed over turned hard-rubber side plates and pinned into

This Is The Pipe

THAT GIVES YOU
ALWAYS

A DRY, SWEET SMOKE

*The Pipe
that is Noted
for its Perpetual
Fragrance*



\$1.50

mounted with Sterling Silver Stem Band and packed in Specially Constructed Handsomely Decorated Box

Mailed to any address post paid, upon receipt of above price

Hardman & Wright
Belleville, N. J.

Figure 35. By 1910, my grandfather was molding hard-rubber smoking pipes and shaving brushes.

Figure 36. Hard-rubber golf club heads were manufactured, but wood proved a more popular material.

The price of the **Hardright** driver or brassie, with best quality clean grained hickory shaft and leather-wrapped hand grip, complete is,

\$5.00

We forward, charges prepaid, to any address in the United States by parcel post. To other countries by express.

When not otherwise specified, length of shaft, (including driver-head) is 44 inches. Weight 13½ ounces.



Either the Driver or Brassie Head only, without shaft \$3.50 each prepaid.

(Life-size cut of head)

MANUFACTURED EXCLUSIVELY BY
HARDMAN & WRIGHT
BELLEVILLE NEW JERSEY

position (Figures 40 and 41). Many reels—the later Walkers and many trade reels—used drop-in rims to simplify construction.

It is apparent that many considered integrally molded side plates—combining nickel-silver or aluminum frames with molded hard-rubber inserts—to be superior construction. The number of reels exhibiting this construction testifies to its acceptance.

Kosmic reel side plates have the name **KOSMIC** in proud letters standing above the plane of the plate; this was not stamped in but rather engraved in the face of the mold. These plates were molded in situ, and each plate went through its own mold cycle (Figure 42). Likewise, the raised pillar Leonards and many reels from Julius Vom Hofe (and Kopf, and so many others) had their hard-rubber side plates molded into premachined locking recesses in the frames. These hard-rubber side plates were not simply turned to diameter and pressed in, they were *molded* in (Figure 43).

But in spite of the popularity of molded hard-rubber side plates, I seriously doubt that many makers, if any at all, did their own molding. Molding was specialized work and was likely outsourced to custom shops.

Understand that molding was terribly smelly and expensive; it took about four hours at 275 to 400 degrees to vulcanize

a set of frame plates. Without evidence to the contrary, I suspect that custom molders did all of this work—it was not done by the reel makers in the assembly shops of the day. If you were going to justify your own molding operations, you had better be pretty large to cover the costs and inconvenience. Even Colt and Smith & Wesson outsourced their grip-manufacturing operations.¹⁹

And this introduced a problem: quality control. Because recipes were propri-

etary, because techniques were in-house secrets, and because the market was competitive and price sensitive, quality and composition varied all over the lot.

Manufacturers of flexible rubber products abounded; they made boots and flexible rubber hose and raincoats. Goodyear licensed processors, and manufacturers like Converse, India Rubber Co., American Hard Rubber Co., Christopher Meyer, Providence Rubber, Revere Rubber, Woonsocket Rubber, Cleveland



Figure 37. A hard-rubber hairbrush from England, said to cure headache in five minutes. From the collection of Richard Littlefield, with permission.

Rubber, and Boston Rubber Shoe became household names. During the 1870s, Christopher Meyer alone produced more than 50 million hard-rubber buttons per year—all this before the growth of the huge automobile tire industry, including Goodyear, Goodrich, Armstrong, Dunlop, and Cooper.²⁰

But custom molders of hard rubber—companies willing to supply small production runs—were far fewer in number. Were it not for the drug sundry and firearms industries, custom shops would have had far less business, and in situ molded side plates on fishing reels would likely have been a rarity.

Most reels are free from molded embellishment, although rope designs are found on some reel plates and I have

seen an English reel with a molded-in leaf design. Reel makers didn't choose molded hard rubber for the benefit of ornate carving or company logos or checkering. Reel makers wanted the benefit of unitized construction, not embellishment. Embellishment on reels was for the most part tasteful and reserved, such as concentric contoured grooves around bearing caps. The Julius Vom Hofe multiplier in Figure 44 is a good example of a reel receiving extra rim knurling during fabrication from plate stock.

But not all custom molders of hard rubber were small; the major suppliers of hard-rubber stock surely did custom molding if business volume warranted their involvement. The India Rubber Co. and American Hard Rubber (the maker

of "Ace" hard-rubber combs) were very much involved with custom molding. The American Hard Rubber Co. letterhead (on a letter dated September 1898) lists the India Rubber Comb Co., the Goodyear Hard Rubber Co., the Butler Hard Rubber Co., and the Goodrich Hard Rubber Co. as subordinate corporate entities, which gives some indication of the flux and turmoil of changing corporate ownership toward the end of the nineteenth century.

Not all hard rubber was black, but carbon black was a preferred ingredient because of its ability to associate with the rubber during vulcanization; carbon black actually added reinforcement. But the technology was available to produce lighter colors if desired; the fact that



Figure 38. A racy hard-rubber pipe. From the collection of Richard Littlefield, with permission.



Figure 39. 1881 Pritchard patent fly-rod grip, Abbey & Imbrie.



Figure 40. Edward Vom Hofe multiplying reel: best-quality nickel-silver and hard-rubber construction.



darker colors were chosen speaks more to a marketing decision than manufacturing capability. Samples of white hard rubber are shown in Figure 45.

The mottled red and black hard-rubber handgun grips used by Smith & Wesson and others were absolute eye-catchers. Creating the swirl pattern was an art in itself in terms of blending and molding technique (Figure 46). In spite of public acceptance of these colors and the appealing Philbrook and Payne mottled side-plate reels, black has been the enduring color of choice for fishing reels. Polished and handsome, black hard rubber had the look of quality.

Companies in the rubber-molding business had their own secret recipes, and changing suppliers was risky business. Who knew what a new supplier might be changing to reduce costs? And no one was willing to talk about formulation or recipe. My great-grandfather shared his secrets with no one; his formula book was coded so that no one could look at it and determine what he was doing. The end-use applications were listed, but both his ingredients and his suppliers were in numerical codes (Figure 47A and B).

The rubber industry was populated with practical men who had a wealth of experience. The advertisement on the cover of the June 1883 issue of *Science* magazine (Figure 48) states that the superintendent of the Revere Rubber Co. had experience going back forty years to the beginning of the rubber trade. That's what molders had to offer: experience. When it was learned that the Goodyear Rubber Co. had hired a chemist, they became the brunt of trade humor and ridicule. My grandfather remarked, "What would a rubber company want with a chemist?"

Despite all their practical know-how, formulators didn't know everything. You may find a reel with white speckles on the hard-rubber side plates. This is sulfur bloom. The compounder put in too much sulfur, and the excess migrated or bloomed to the surface over time. The

Figure 41. Edward Vom Hofe salmon reel. Full nickel-silver rims protect hard-rubber side plates.

Figure 42. A Kosmic reel with rope pattern and name in raised letters, which were not machined in, but molded in.

Figure 43. John Kopf (William Mills) multiplier. Hard rubber was durable, resilient, and strong enough to support the various control features required on many reels.



Figure 44. Julius Vom Hofe multiplier with embellishments applied after molding. Hard rubber was easy to engrave, roll imprint, and stamp with makers' names and trade logos.



Figure 45. Not all hard rubber was black, although carbon black was a superb reinforcing filler. Lighter colors could be provided.



Figure 46. Smith & Wesson mottled red and black hard-rubber grips were impressive and handsome. Although not commonly encountered, these grips were often fitted to Smith & Wesson's nickel-plated arms.

speckles don't harm anything, and they are easily wiped off. But it is an indication that compounding was short of perfection.

One last comment on hard rubber: in spite of its strong reputation, hard rubber was, and is, moisture sensitive and season sensitive. Dimensional stability was a problem. My father was a ham—an amateur radio operator—and told of owning a radio with a rectangular hard-rubber front panel. That panel swelled and contracted with changes in humidity; he had to loosen the four mounting screws to prevent the panel from buckling and binding the control knobs.

Reel side plates with metal restraining rims, such as those manufactured by Edward Vom Hofe, are sometimes found

with warped or swollen hard-rubber side plates, the result of rubber expansion. And some reels show separation of the hard rubber from their metal frames as a result of shrinkage. My grandfather would try to "age" blocks of hard rubber to stabilize them before machining. I personally have machined hard-rubber side plates only to have them expand or contract, rendering them useless.

Hard rubber also oxidizes, especially in sunlight, changing surface color from a shiny black to a dull brown. Antioxidants were added to minimize this tendency, but again, it was a problem. Don't buy into Vaseline treatments or impregnation with chassis lube to rectify this. The surface has been compromised, and no grease is going to restore it. A

careful rubbing with a nonabrasive polish such as Simichrome or Flitz will remove the surface layer of oxidized rubber, restoring a darker appearance. But be cautious. Overpolishing can dish flat surfaces, round over sharp screw-hole corners, and destroy collector value.

Hard rubber was wonderful stuff, but proper compounding was absolutely critical. We can only imagine the hassles in quality control when compositions and molding techniques were closely guarded secrets.

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Part II of this article—which covers celluloid, Bakelite, phenolics, and modern-engineered plastics—will appear in the next issue.

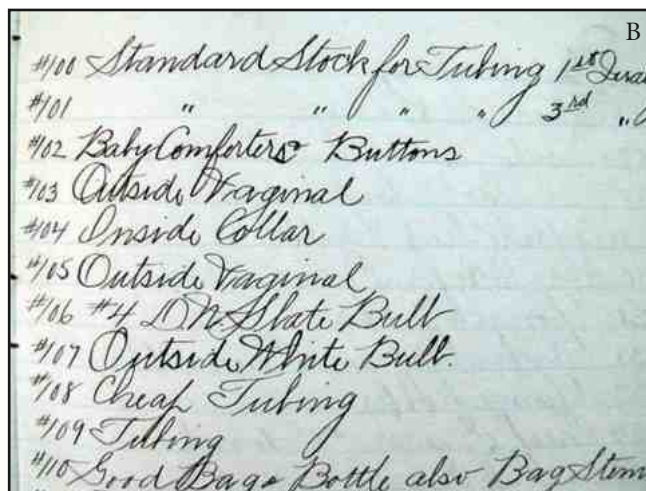
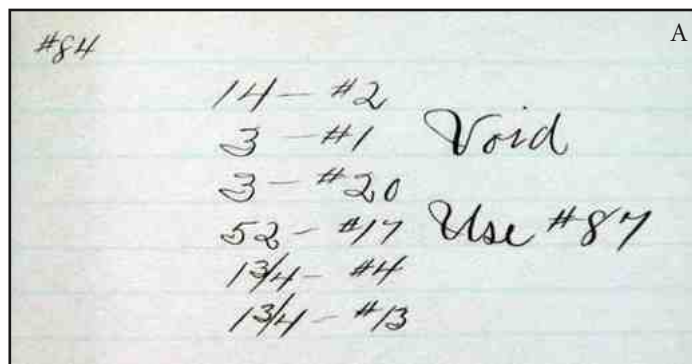


Figure 47A and B. Rubber formulations were held secret. These are pages from my great-grandfather's formula book; both suppliers and ingredients are in code.

ENDNOTES

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14. *Ibid.*, 138, 147, 153.

15. *Ibid.*, 248.

16. "A Visit to the Cleveland Rubber Company," *Journal of the American Chemical Society* (August 1896), 49.

17. Andrea Dragon, "Rubber," in David O. and Bessie E. Whitten, eds., *Handbook of American Business History* (Westport, Conn.: Greenwood Press, 1997), 265.

18. The Hardman Rubber Company catalog, c. 1895.

19. Personal conversation with Roy Jinks,

Smith & Wesson historian, Wilmington, Delaware, September 2007.

20. Dragon, "Rubber," 267.

Figure 48. The June 1883 cover of Science; the Revere Rubber Co. advertises their great experience. That's what molders had to offer: experience.

On “A New Early Date for American Fly Fishing”

by Austin W. Hogan



Figure 1. A watercolor painting by Austin S. Hogan of historic fly patterns, from “Fly Fisherman’s Bicentennial 1761–1961,” *The Conservationist*, April–May 1961.

Row 1 (Colonial period): Black Gnat, Cowdung, Partridge and Orange; Row 2 (Colonial period): Red Spinner, a Soldier Palmer, a Hackle, a Dun; Row 3 (American, 1840): Porter’s Piseco Lake fly, his brilliant Red Hackle, his long Green Drake; Row 4 (American, 1845): a Yellow Drake, Brown Mealy Moth, a Mayfly with detached body, Blue Jay; Row 5 (American, 1850): a Dun, a Hackle, a Dun with upright wings; Row 6 (American, 1850): Bee, Drake, Red and Green, a lure; Row 7 (American, 1865): (the Roosevelt adaptations of English dressings) the Great Stone Fly, a Blue Dun, Cowdung; Row 8 (American fancies, 1870–1890): Seth Green, Reuben Wood, Cheney, Oak Stewart (all bass flies); Row 9 (American, —) Grannom, a Scarlet Ibis, Royal Coachman; Row 10 (American, 1890): Adirondack, Montreal, a streamer, the Barnwell (for bass); Row 11 (American, 1900–1925): a May Fly, Bivisible, a nymph; Row 12 (American, 1890–1925): Mohawk Valley bucktail, a lure by Louis Rhead, a streamer fly, a hackle streamer.

IN “A NEW EARLY Date for American Fly Fishing” (*The American Fly Fisher*, Summer 2011, vol. 37, no. 3, 16–17), Ken Cameron and Paul Schullery make a noteworthy conclusion that the earliest American fly fishers were “visitors” of British birth, not local residents. Austin S. Hogan (in “Fly Fisherman’s Bicentennial 1761–1961,” *The Conservationist*, April–May 1961, 46–48, 45, and back cover) proposed that Sir William Johnson, one of these British visitors who became an American resident for nearly forty years, was the first American fly fisher. Hogan based this on many references to fishing in the Johnson archive, but was quite rightly criticized by historians as he could not produce an archival citation indicating that Sir William cast a fly.

Austin S. Hogan’s notes on Sir William Johnson’s Fish House, fishing the Sacandaga, and Lieutenant John Enys’s fishing trip to the northeast Adirondacks are collected as carbon copies of typewritten summaries (and some verbatim copies) of letters, records, and printed matter that he studied. The notes of interest to “A New Early Date . . .” are found in the earliest of twenty-six “chapters” of Hogan’s notes in a set titled “An Angler’s American History.” Donna Harp, who has retired from the publications department of the laboratory where I was once employed, scanned and translated these notes into Microsoft Word format. I have edited them. The comments here are based on this edited copy.

60. I was told of a singular advertisement which was in a Hartford paper last fall of a Mariage which Actually took place at that place which Ran thus. Last Sunday was Married at the Church in this place Mr. Daniel Dolittle, to Miss Sarah Lovit, bothe of this parish.

The Connecticut River as well as all those to the North East of it abound in very fine Salmon which they cure and send to the Southern Markets as there are none taken to the Southward not even in the Hudsons River which is so very Near.

There was a grammar school in Hartford in 1787, but no college.

There were great quantities of salmon and shad in the Connecticut River during the seventeenth and most of the eighteenth centuries. In 1795 a dam was erected at South Hadley which prevented the salmon from swimming to their breeding areas.

A Information provided by Michael G. Fitch, Connecticut Historical Society.

Figure 2. Passage (A) in Cometti's *The American Journals of Lt. John Enys* citing known presence of salmon in the Connecticut River in the 1700s and (B) subsequent notation by Austin S. Hogan.

Pg 336 B

Conn. River Atlantic
Salmon - not account to
mention no salmon in
Hudson R.

The small painting (Figure 1) included here was taken from Austin S. Hogan's 1961 article, "Fly Fisherman's Bicentennial," in New York State's *Conservationist* magazine. He had studied fly patterns and hook types of the eighteenth and nineteenth centuries for more than ten years at that time, and this illustration is the heart of the article, showing fly patterns of several historic periods. The painting is unusual in that it is one of two known to me that include a listing of lure names. He used the dates of the Fish House and Castle Cumberland—which are well established by accounts of visitors to Sir William Johnson in Jephtha Simms's *Trappers of New York* (J. Munsell, Albany, N.Y., 1871 [reprinted by Harbor Hill Books, Harrison, N.Y., 1980])—to infer that Sir William had fly fished in the Sacandaga Vlaie two hundred years before. This entry is found in Hogan's research notes: "Johnson enjoyed his pleasure house (Castle Cumberland) for three years, passing away in 1774. . . . The inventory of his estate, in the Fulton County Archive lists '1 small box of fish tackle (a fly box?)—fishing rod in a bag, belt, &c.'"

Austin S. Hogan took considerable criticism for this speculative proposal from several quarters. His notes indicate that he did not broadly speculate on this; Sir William appears to have been a fairly serious fisherman, and the bagged rod indicates it was probably imported.

The American Journals of Lt. John Enys (edited by Elizabeth Cometti and published by the Syracuse University Press in

1976) were presented to the Archives of Canada by Enys descendants in 1967. The Adirondack Museum obtained access to the journals and supported Cometti's publication of Enys's record of fishing and his tour of postrevolutionary America. Austin S. Hogan also studied the Enys journals and reviewed a prerelease copy of the book. He inserted notes in several places, like the one seen in Figure 2B. He found that Enys noted no pioneering effort to reach the streams entering Lake Champlain from the Adirondacks—evidence that such fishing trips may have been made by Royal Army Officers from Montreal for many years.

Enys found a salmon fishery on the Connecticut River, but none on the Hudson. He notes only the commercial curing of salmon (Figure 2A), but the fish were there for the taking by English visitors, if not the residents.

Cameron and Schullery present a viable hypothesis that English visitors were the first American fly fishers. Sir William Johnson was one of these "visitors," arriving in 1735 and staying forty years; his nomination as the first becomes less speculative when this is considered.

The Connecticut River Valley was settled for more than one hundred years before the South Hadley dam ended salmon runs upstream of it. A search for both the first visiting and first resident fly fisher in this locale might be productive.

Gene Bahr: From Taxidermy to Wildlife Creations

by John Mundt

Gene Bahr



Gene Bahr with a sleek Atlantic salmon reproduction.

Gene Bahr



A Gene Bahr three-dimensional brook trout.

TAXIDERMY. TO THE fly fisher, the word can evoke images of rustic cabins, grand lodges, or cluttered den rooms. The dusty and often flaking skin of a trophy fish caught many seasons ago was originally form mounted on a wooden panel with a tarnished brass plaque describing the relevant details. For centuries, the taxidermist has been a regular part of the angler's world. Museum member Gene Bahr is one professional who continues to carry on the art—and traditions—of creating angling trophies in a modern and fascinating way.

With the widespread practice of catch-and-release angling, today's angler no longer has to dispatch a hard-won fish and place it on ice for transport to his or her favorite taxidermist for preservation. A netted fish can be quickly measured, photographed, and released back into the water from which it came. The data and pictures are then forwarded to Mr. Bahr at his studio in Sebago, Maine, to be transformed into an elegant representation of the released fish, and the angler has an enduring reminder of a cherished moment.

Gene has been at the forefront of the transition from traditional taxidermy to the production of *wildlife creations*. His creative instincts were nurtured and honed at the knee of his artist grandfather while growing up in rural Alabama. He began his career as a taxidermist in 1976, and he took up fish

carving in 1984. By 2000, he had ceased performing traditional fish taxidermy and devoted his efforts exclusively to this catch-and-release fish carving. His lifelong study of fish anatomy and color, along with a catalog of the hundreds of fish that have passed through his studio, enables Gene to produce highly authentic representations for his clients. "Fish carving is my passion and life's work," he told me.

Gene's offerings include three-dimensional fish carvings, wall-mount carvings, paintings, and bronzes. He'll even air-brush an image on your automobile or motorcycle. Species range from salmonids to blue-water giants like mako shark and blue marlin.

Gene Bahr is a true keeper of the flame. He has bridged the gap between the past world of traditional taxidermy and today's production of wildlife creations for those practicing catch-and-release angling. The heritage of our sport continues to be preserved and enriched by artists like him. For more information about Bahr's work, visit www.genebahr.com.



John Mundt is president of the Anglers' Club of New York and a former trustee of the American Museum of Fly Fishing. He lives in Simsbury, Connecticut.

Live to Fish, Fish to Live!

by Gardner Grant



Gardner Grant holding a 15-pound permit that he caught on 22 March 2004.

LIVING TO FISH was certainly the case when I was a kid: at age five with worms and a bait-casting rod, at twelve with a fly rod, then on through the years to my current senior status. My wife, Ellen, often says of our early married years, “He told me he liked to fish. I thought it was just some childhood thing that he would get over. Boy, was I wrong!”

It is no exaggeration to say that I am a passionate fly fisher. This phenomenon needs no explanation to those who live it, for whom it is almost a way of life, and it is well known to members of the museum.

Fast forward to my “golden years” (and I hope all fellow anglers will get there): the year 1996 was a watershed year for me. I was seventy, had survived four total hip replacements and a major cancer surgery, and now confronted prostate cancer and a prostatectomy. Unfortunately, it was too late, the cancer had spread, but the gurus at Memorial Sloan-Kettering kept me going with a good quality of life. That translates as many wonderful days on the water, both fresh and salt. By fall 2007, the cancer had metastasized, the outlook was grim, and I commenced weekly infusion chemo. Peripheral neuropathy, a side effect, rendered my legs pretty feeble.

Life had changed, but not the passion. I installed a motorized chair to the basement and the fly-tying bench, but faced the reality that normal wading days were over. No more rocky trout or salmon waters; no more bonefish flats. Adjustments were necessary. I belong to a trout club in nearby Connecticut. The river has pools and runs with sand and gravel bottom. If you can walk at all, you can fish them. Yes, there are problems getting in and out of the stream, but I have solved that by doing most of my fishing with my buddy, Keith Fulsher, who is eighty-nine (I am eighty-five). We both live in Westchester and share the easy drive to and from our club, where we are known as the odd couple. Keith can’t see, and I can’t walk. We often fish side

by side. If the fly needed is smaller than a no. 14, I tie it on for him, and his strong right arm helps me in and out of the stream.

In the winter, I spend four months in Jupiter, Florida, where I fish the Loxahatchee and nearby intracoastal waterway. No longer able to fish my own boat, I sold it and fish with a guide on his boat two days each week. Fortunately, he installed a leaning post, which allows me to climb up on the foredeck, stand, and cast safely. (If you are entering those “golden years” with legs and balance a bit diminished, and you are planning a tarpon, bonefish, or other skiff-fishing trip, ask if the boats you will use have this feature.)

Now that you know how I continue to fish, please understand this is just the physical expression of the force that enhances quality of life and lends excitement to my days. We often hear that an intense interest in some hobby can lead to a longer and happier life. Amen to that. In my view, there is no activity that engenders more passion and commitment than fly fishing. Weekly chemo is no fun, and from experience, I can tell you that in a very real sense, I fish to live! Thinking about it, reading or writing about it, talking about it, tackle tinkering, and tying flies—all corollaries of this marvelous sport—happily fill my hours. I work out twice a week with a trainer to prolong my ability to stand and cast a fly. When that is gone, sitting and throwing with a spinning rod can’t be all that bad.

There is an old proverb to the effect that the Lord does not subtract from one’s lifespan the hours spent in fishing. Let’s simplify that a bit: fish to live!

~

Gardner Grant is a trustee emeritus of the museum. This piece was previously published in a slightly different form in the Spring 2011 issue of the Bulletin of the Anglers’ Club of New York. Reprinted with permission.

Paul A. Volcker Receives 2011 Heritage Award



Left: Paul Volcker explains how fly fishing was an important part of his childhood and how the preservation of fishing resources is vital to future generations.

Photos by Kim Murphy



Right: Volcker accepts the museum's 2011 Heritage Award from Board of Trustees President James Heckman.

IN THE WORLD of economists, Paul A. Volcker is recognized as one of the elite; in the world of fly fishing, Volcker is acknowledged as an important advocate for the environment and for the sport. For his contributions to fly fishing and the environment, the American Museum of Fly Fishing selected Volcker as the fourteenth recipient of our coveted Heritage Award. The presentation took place at the Yale Club of New York City on September 13 and was attended by nearly 170 supporters.

Born in 1927 in Cape May, New Jersey, Volcker was raised in the town of Teaneck, where his father was the township manager. As a youngster, Volcker was introduced to fly fishing by his father, himself an avid angler. During these formative years, bass fishing was his focus.

Volcker studied economics at some of the world's most influential universities, including Princeton, Harvard, and the London School of Economics. At the conclusion of his studies in 1952, Volcker became an economist, first with the Federal

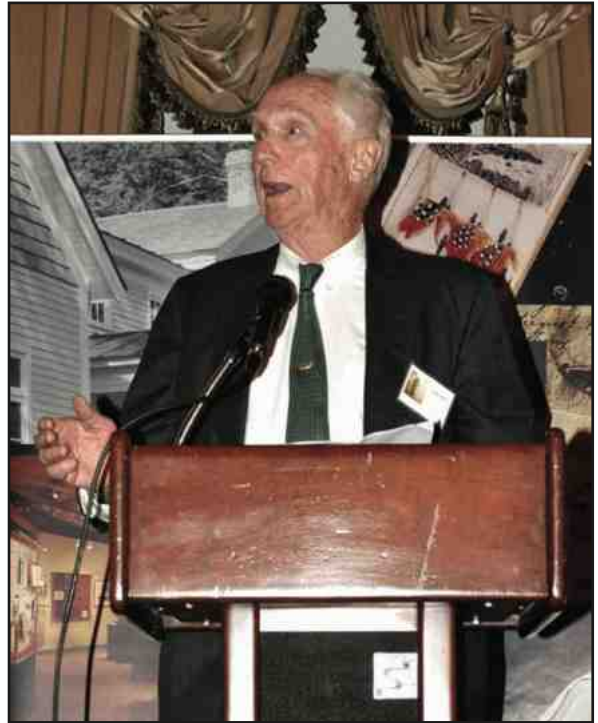
Reserve Bank of New York, then with Chase Manhattan Bank. From 1962 through 1974, Volcker worked for the private sector as well as the U.S. Treasury Department, where he eventually became the undersecretary for international monetary affairs. He returned to the Federal Reserve Bank of New York as president. Then, in 1979, President Jimmy Carter—also a passionate angler—appointed Paul Volcker chairman of the Federal Reserve. Volcker continued in this capacity under the subsequent Reagan administration until 1987.

Following his appointment at the Federal Reserve, Volcker worked as a corporate advisor, chaired the Independent Committee of Eminent Persons, undertook corruption investigations for the United Nations, chaired the board of trustees for the Group of Thirty, and became a member of the Trilateral Commission. Volcker most recently served two years as chair of President Obama's Economic Recovery Advisory Board and retired from this position in January 2011.

Kim Murphy



Kim Murphy



Yoshi Akiyama



Clockwise from above: Trustee Brad Mills, a close friend of Paul Volcker, introduced the honoree by recounting some of their salmon-fishing adventures.

Master fly tier Roger Plourde designed this fly, dubbed the Sir Volcker, to honor Paul Volcker.

The museum is grateful to all those who attended and made the Heritage Award dinner such a success.

Throughout his illustrious career, Volcker has continued to fly fish. He has combined his passion for angling with his ability to bring public awareness to various conservation and preservation issues. Volcker has worked on behalf of the North Atlantic Salmon Fund to promote the restoration of wild salmon to their native waters. He is on the board of directors of the Atlantic Salmon Federation, and while he was chair of the National Commission on the Public Service, he recommended that agency resources be combined to better preserve the environment.

Volcker has traveled the globe in pursuit of catching fish on a fly and to promote policies to preserve our fishing environment. He has fished from the Catskill Mountains region of New York to the waters of Iceland, but fishing for Atlantic salmon in Canada's Restigouche River remains his favorite place to cast a line.

The museum gratefully acknowledges the tremendous efforts put forth by the dinner committee, including Duke Buchan III, Robert Ceccarino, Jane S. Cooke, Guy Davies, George Gibson III, Gardner L. Grant, Karen Kaplan, Beverly W. Landstreet, Bradford Mills, David Nichols, Erik R. Oken, R.

Stuyvesant Pierrepont, Clifford Press, Eric W. Roberts, Philip Sawyer, Robert G. Scott, Dr. Gary Sherman, and Joan Salvato Wulff. Marketing support to promote the event was donated by the Anglers' Club of New York, Holland & Holland Ltd., the Orvis Company, and Urban Angler Ltd. We also appreciate the many supporters who donated items offered at the live and silent auctions: the Addeo Family, Steve Bretell, Chris Carty of Windlough Farm, Robert Cochrane, Tom Colicchio, Bert Darrow, Hope Davis, Deborah Dawson, Paul Dixon, El Pescador, Tim Grell, Erik Madigan Heck, Holland & Holland Ltd., Lionel LLC, Sara Cedar Miller, Housatonic River Outfitters, Lyn Kohls, Bill Leary, Walter Matia of Curlew Carvings, Jim Morgan of the King Fisher Society, Megan Murphy, Joe Mustari of Mazman Charters, the Orvis Company, Frederick Polhemus, Dr. and Mrs. Stephen Sherman, Kathryn Asahino Tait, Jacques Torres, Lt. Col. Neil Murphy and the U.S. Marine Corps, Paul A. Volcker, Meredith Warren, and Dave and Emily Whitlock. Many thanks are extended to auctioneer Eli Rodriguez for volunteering his services.



Fly-Fishing Festival

OUR ANNUAL Fly-Fishing Festival is always one of our favorite summer events, and this year was no exception. For four years, we have gathered on the museum grounds to celebrate fishing with both the Manchester community and the visitors from near and far who come off the river to celebrate with us. This year, guests not only saw a variety of vendors and craftsmen and -women demonstrating their art, but also participated in a casting competition at our pond and heard lectures from Casting for Recovery and the Battenkill Conservancy in our library.

This day would not be possible without the many community sponsors who help support it. Thanks to the Orvis Company, Finn & Stone Insurance, the Vermont Country Store, r.k. Miles, Berkshire Bank, People's United Bank, TD Bank, Mulligan's of Manchester, Mrs. Murphy's Donuts, and Manchester Discount Beverages.



Kim Murphy



A visitor peruses a display of angling antiques.

Kim Murphy



Museum Trustee Bob Scott was this year's winner of our casting competition. He was the best to hit all four of the targets using a fiberglass Shakespeare rod from our "Casting with the Legends" vintage collection.

Kim Murphy



A young man scrutinizes his newly created clown fly.

Quinnlyn Murphy



This assortment of flies undoubtedly enticed many an angler as he or she strolled past the vendor displays.



LETTER

During my research for the article “Bangor Pool Peapods: Reviving a Tradition and River” (Summer 2011, vol. 37, no. 3), I kept hoping I would eventually find a photograph of peapod builder Karl Andersen. Although I found photos of two of his sons, Ralph and Edmund, no photo of Karl surfaced. Therefore, I was very surprised when I received a phone call from Bob Nelson of Cape Porpoise, Maine (someone I had never met), who revealed that Karl Andersen was his great uncle—and he had photographs of him!

By sheer chance, Bob and his wife had been visiting friends in the Manchester area during the summer of 2011. An avid fly fisherman, he stopped to visit the museum. While there, he chatted with Executive Director Catherine Comar about Kathy Scott (one of the women featured in the current exhibit, *A Graceful Rise*) and Scott’s husband, David Van Burgel (who had taught Bob the art of fly-rod making). As he was leaving, Cathi offered him a copy of the Summer 2011 issue. When Bob got home and opened the magazine, he suddenly realized that he was reading a story about “K.I.” As Bob told me, K.I. was how the family spoke of Karl I. Andersen. Bob has researched his family genealogy quite thoroughly but never knew that K.I. was a boat builder.

After our phone conversation, Bob graciously scanned two old photos of Karl Andersen and e-mailed them to me. One is a formal sitting with Karl and two brothers. (He is seated on the right; Hans Johnson is on the left, and Tom Johanson is in the center. The brothers all took different names when they immigrated.) The other shows Karl in a boat in Panama (where he helped to build the Panama Canal, according to Bob). He is holding two alligators (crocodiles?) that he apparently shot using the gun lying in front of him (Bob says he was an avid hunter). The boat is almost certainly one of his peapods, as evidenced by the spacing of the ribs. I would guess he built it in Maine and shipped it to Panama. This would be much more likely than the possibility that he took his heavy building form and cedar and canvas to Panama.

In another twist of fate, Bob Nelson took a boat-building class at the WoodenBoat School in Brooklin, Maine, a few years ago, and periodically reads *WoodenBoat* magazine, but missed the issue in which my article first appeared. If it had not been reprinted in the *American Fly Fisher* (and if Bob were not a fly fisherman), we might still be waiting for a photograph of Karl Andersen to surface.

Richard Jagels
Winterport, Maine



Photos courtesy of Bob Nelson





Museum News

Casting Pond Improvements

The museum continues to make improvements around the casting pond. After a site review by the Natural Resources Conservation Service of the U.S. Department of Agriculture, we were approved for funds to remove the invasive plants along the banks of the back stream (which eventually deposits into the Batten Kill). Over the three-year grant period, this will enable wildlife to again use these natural resources for subsistence. This past fall, the low-growth bushes were removed, and the overgrown weeds in the yard were trimmed and maintained. Most of the fish that were restocked in fall 2010 survived the winter weather and the high waters brought about by Tropical Storm Irene. As always, the public is encouraged to cast a line or two in the pond (and to practice catch-and-release so others can enjoy!).

Mark Your Calendars for the Anglers' Club Dinner

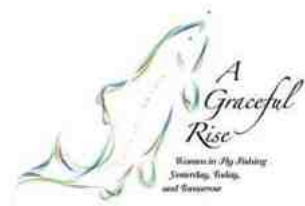
On Thursday, March 8, the museum will hold its annual fund-raiser at the Anglers' Club of New York. This year's event will honor longtime trustee and world-renowned sporting artist Peter Corbin. Mr. Corbin has been a strong supporter of the museum and has traveled the world promoting our educational mission; for ten consecutive years, Corbin organized an annual event, Friends of Corbin Shoot, to raise funds for us. Check our website at www.amff.com for additional information about the Anglers' Club event.

Dennis Thomas



A Graceful Rise Exhibition Catalog

The museum is pleased to announce that funds have been secured from sponsors David and Meg Nichols and the Richard K. Mellon Foundation to publish a catalog to complement our current exhibition, *A Graceful Rise: Women in Fly Fishing Yesterday, Today, and Tomorrow*. The catalog will include profiles of each of the



women featured in the exhibit as well as some of the images and personal artifacts brought to our gallery. Go to www.amff.com to purchase a copy today.

In the Library

Thanks to the following for their donations of titles that have become part of our collection: Nick Lyons gave us a copy of Vincent Lal's *La Femme Truite: le Coup du Soir et autres histoire de pêche*, with watercolors by Marie-Annick Dutreil (Quai des Plumes, 2009). Medlar Press sent us Terry Lawton's *Marryat: Prince of Fly Fishers* (2010) and two books by Andrew Herd, *Angling Giants: Anglers Who Made History* (2010) and *The History of Fly Fishing* (2011). And Coch-y-Bonddu Books sent us Terry Griffiths's *The Essential Kelson: A Fly-Tyer's Compendium* (2011).

Fit to be "Tyed" will feature four fly tiers teaching their favorite fly patterns on four Saturdays in January and February. These sessions will offer patterns for beginners as well as seasoned tiers—come to one, or enjoy them all! Be sure to check our website for more information and for our complete 2012 event schedule.

BACK ISSUES!

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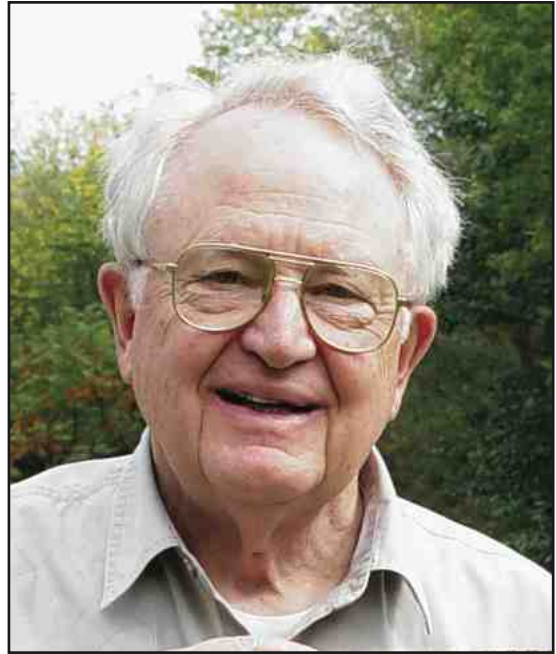
Back issues are \$10 a copy for nonmembers, \$5 for members.

To order, please contact Sarah Moore at (802)362-3300 or via e-mail at smoore@amff.com.

CONTRIBUTOR

Jim Hardman is a retired manufacturer of industrial adhesives and associated dispensing machinery; he is a machinist and has studied, collected, and restored early reels for forty years. He has served on the board of the American Museum of Fly Fishing, made presentations at meetings of the National Fishing Lure Collectors Club and the Northeast Antique Anglers Show, and contributed articles on early reels in *Fishing Collectibles Magazine* and the *Old Reel Collectors Association Journal*. Additional interests include the restoration of early gas and steam engines and collecting early spark plugs. He resides with his wife Patricia in Dorset, Vermont.

Kathleen Achor



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THE BROOKSIDE ANGLER

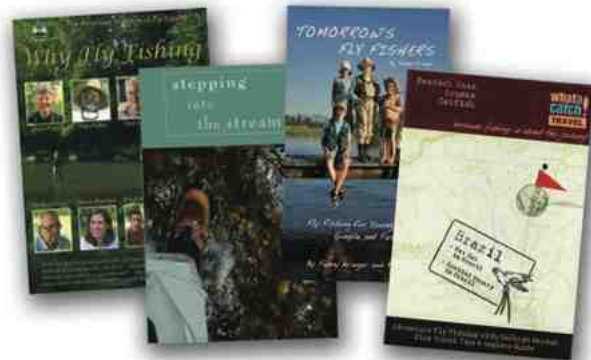
From AMFF logo merchandise to unique gifts for any angler, the museum's store, The Brookside Angler, has something for everyone. Either visit us in person or shop online at www.amff.com.



We're now offering items commemorating the groundbreaking new exhibition *A Graceful Rise*, including hats and aluminum bottles featuring the exhibition logo designed by museum Deputy Director Yoshi Akiyama.



Museum logo merchandise—which includes hats, t-shirts, travel mugs, and a reusable shopping bag—is a great way to show your support.



Also available is the museum's award-winning DVD *Why Fly Fishing*, as well as instructional and inspirational DVDs from *A Graceful Rise* participants Fanny Krieger, Barbara Klutinis, and Kathryn Maroun.



School of Fish glasses from Rolf Crystal are some of our most popular items.

Honor Thy Father

THE YEAR WAS 1966. The place was a New York City meeting of the Theodore Gordon Flyfishers. The discussion took place between Hermann Kessler, then art director of *Field & Stream* magazine, and Leigh H. Perkins, the man from Cleveland, Ohio, who had recently purchased the Orvis Company. Kessler approached Leigh and told him about the historic angling treasures he found in the attic of Orvis while doing some research. He suggested that these treasures were worthy of a museum—a museum that focused on the history of fly fishing.

A mere six months later, Leigh moved forward with Kessler's suggestion, and the foundation of the American Museum of Fly Fishing was set. He gathered an impressive board of trustees, which included Arnold Gingrich (founding editor of *Esquire* magazine), Hermann Kessler, Helen Shaw, Harry Darbee, and Wes Jordan, to name a few. Leigh was especially instrumental in those early years. He supplied a home and staff for the museum at the Orvis store, and he commissioned the renowned landscape and sporting artist Ogden M. Pleissner to paint *Lye Brook Pool*. Although Pleissner held the copyright to that image, Leigh was able to receive permission to make 400 prints and sell them to fund the museum's nest egg.

During the forty-three years since the museum's founding, Leigh has attended countless board and committee meetings, reviewed endless financial spreadsheets and exhibition plans, fostered the development of an award-winning journal, witnessed the museum become a part of the community, and supported the expansion into our current location to meet our growing needs. He stood alongside the museum through its ups and downs, strongly believing that the history of fly fishing was important to preserve.

To honor Leigh for his outstanding support, the museum has named the exhibition gallery the Leigh H. Perkins Gallery. The dedication ceremony took place October 22 at the dinner held during the annual membership meeting in Manchester. Thanks to the efforts of his wife, Annie, many of Leigh's family, friends, colleagues, and admirers attended the event to surprise him and help celebrate.

Thank you, Leigh, for your dedication, guidance, and support over these many years. From infancy through adulthood, we hope this child has done you proud!

CATHI COMAR
EXECUTIVE DIRECTOR

Photos by Sara Wilcox



Leigh Perkins receives his own copy of the new gallery sign from Board of Trustees President James Heckman.

A closer look at the sign that now greets visitors as they enter the Leigh H. Perkins Gallery.





The American Museum of Fly Fishing

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THE AMERICAN MUSEUM OF FLY FISHING, a nationally accredited, nonprofit, educational institution dedicated to preserving the rich heritage of fly fishing, was founded in Manchester, Vermont, in 1968. The museum serves as a repository for and conservator to the world's largest collection of angling and angling-related objects. The museum's collections, exhibitions, and public programs provide documentation of the evolution of fly fishing as a sport, art form, craft, and industry in the United States and abroad from its origins to the present. Rods, reels, flies, tackle, art, books, manuscripts, and photographs form the basis of the museum's collections.

The museum provides public programs to fulfill its educational mission, including exhibitions, publications, gallery programs, and special events. Research services are available for members, visiting scholars, students, educational organizations, and writers. Contact Yoshi Akiyama at yakiyama@amff.com to schedule a visit.

VOLUNTEER!

Throughout the year, the museum needs volunteers to help with programs, special projects, events, and administrative tasks. You do not have to be an angler to enjoy working with us! Contact Sarah Moore at smoore@amff.com to tell us how we would benefit from your skills and talents.

JOIN!

Membership Dues (per annum)

Friend	\$10,000
	\$5,000
	\$1,000
Sponsor	\$500
Business	\$250
Benefactor	\$100
Associate	\$50

The museum is an active, member-oriented nonprofit institution. Membership dues include four issues of the *American Fly Fisher*; unlimited visits for your entire family to museum exhibitions, gallery programs, and special events; access to our 7,000-volume angling reference library; and a discount on all items sold by the museum on its website and inside the museum store, the Brookside Angler. To join, please contact Sarah Moore at smoore@amff.com.

SUPPORT!

The American Museum of Fly Fishing relies on the generosity of public-spirited individuals for substantial support. Please contact us if you wish to contribute funding to a specific program, donate an item for fund-raising purposes, or place an advertisement in this journal. We encourage you to give the museum consideration when planning for gifts, bequests, and memorials.