

Hoagy B. Carmichael Master Builder of the Bamboo Fly Rod

BY MALABAR HORNBLOWER AND WILLIAM S. BREWSTER

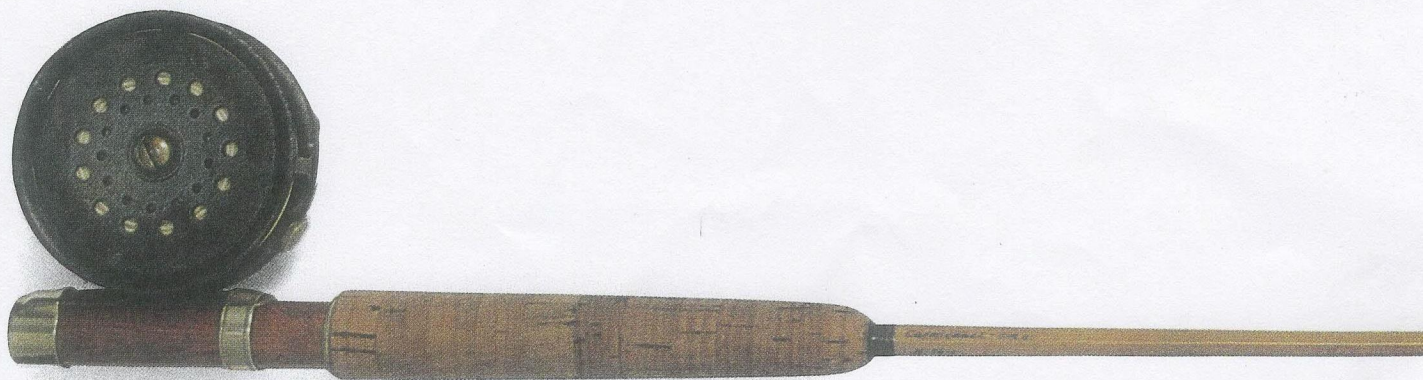
In building a successful handmade bamboo fly rod, two of the most fundamental criteria are the selection and preparation of the bamboo, and the planing of the many tapered strips which, when combined, form the body of the rod. But the rod's construction, like that of many other complex products, also involves the assembly, as well as manufacture, of various components, from the reel seat and cork grip, through the ferrules, which join the wooden sections, to the metal line guides, attached with colorful silk windings, to the final varnishings. The more perfect the marriage of these elements, the more perfect the rod.

In a small studio in Bedford Hills, New York, Hoagy B. Carmichael sits in front of a battered wooden worktable. In one hand is a thin, rough strip of bamboo about four feet in length which he has previously split from a round section of the well-aged, straw-colored stalk, or culm. Using only his eyes, hands and innate knowledge of the remarkable characteristics of cane, he corrects the twists and bends of its nodes—those ridges or joints of the bamboo which are structurally the weakest part—by passing the underside

of the strip over the steady blue flame of a small alcohol lamp. When the strip is sufficiently heated to be malleable, he attempts to remove any offending bends by exerting gentle pressure on the spot simultaneously with both his thumbs. To check the results, he raises the strip to eye level, and glances down its length. He will continue to heat, bend and sight the section until he is convinced it has been transformed into one of many straight elements needed to complete his task.

This essential step is not the first—nor the last—Carmichael painstakingly goes through in order to build his six-sided bamboo rods that anglers consider among the finest and most beautiful made today. One of the very few artisans in the field, he has the manual dexterity, perfectionism, dedication, mastery of and patience for fine detail and craftsmanship that set his fly rods apart.

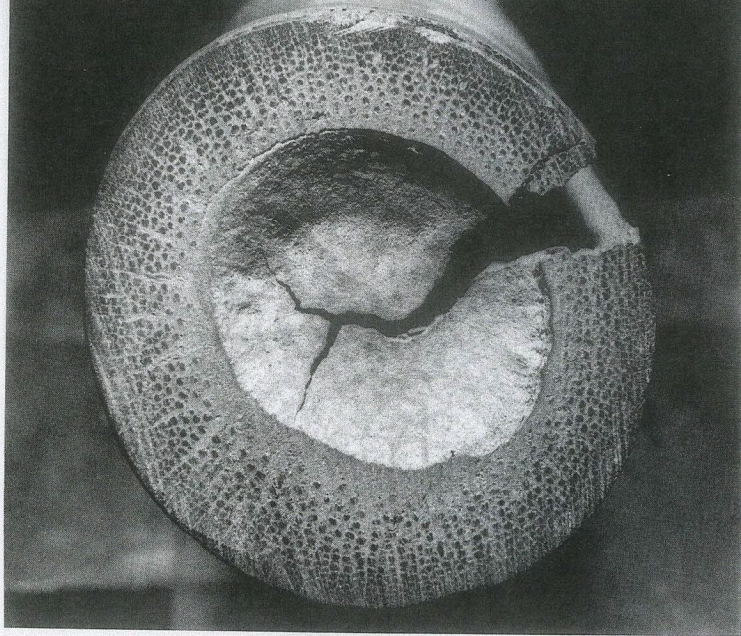
Carmichael expresses his credo succinctly in his book, *A Master's Guide to Building a Bamboo Fly Rod*, written in collaboration with the late Everett Garrison, himself a master fly-rod maker and Carmichael's teacher and mentor. "The important thing to remember," Carmichael writes, "is that the ability of a bamboo fly rod to perform well under all conditions is usually the direct result of the care the maker has put into it." And he, it is immediately apparent





RIGHT: Hoagy Carmichael at his worktable heating a strip of bamboo over an alcohol lamp and bending it to straighten its nodes, or joints, structurally the weakest part of the bamboo. **BELOW:** One part of a prized Carmichael three-section fly rod of Tonkin bamboo, nickel silver, cork, radial wood. When assembled with the other sections shown on the following pages, the rod will measure 7'6" long.





top: The end of a length of bamboo, or culm, seen in cross section. The fibers closest to the rim are denser and stronger than those on the inside and are the key to the strength, flexibility and durability of the delicate bamboo rod. bottom: Filing down the nodes in a vise.

to the observer, takes that care to heart.

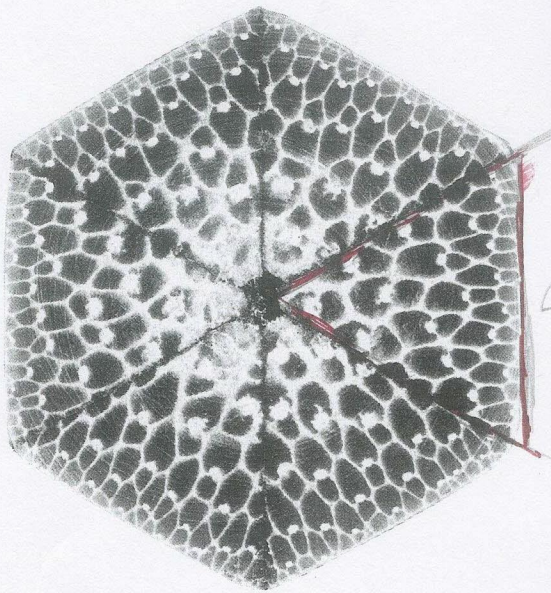
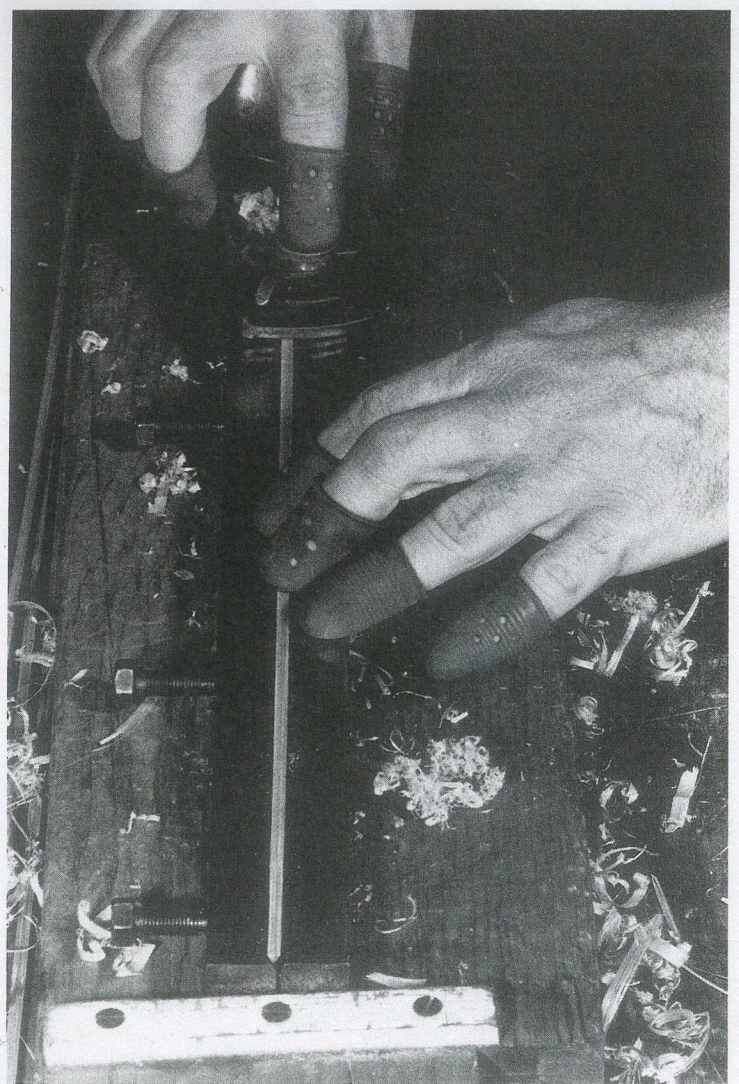
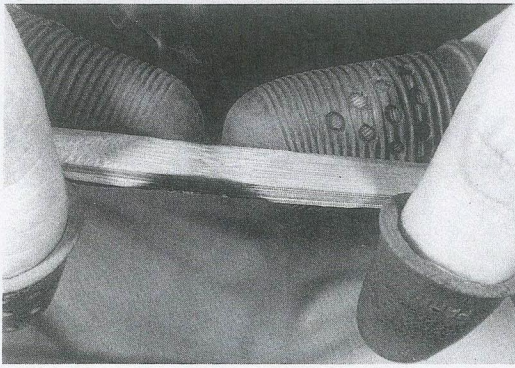
Angling is the practice of fishing for sport, utilizing rod, reel, line, and hook, fly or lure. The words *angling* and *angler* derive from the word *anka* (hook) in Sanskrit, one of the oldest of written languages. In some countries today hooks are still known as angles.

One of the world's most ancient activities, angling was pursued millennia ago by primitive man when existence itself was precarious and life depended on obtaining food by any means possible, however crude. The first hooks were probably not hooks at all but "gorges," pieces of bone with bait which the fish would swallow but be unable to spit out. The first lines were probably vines or plant fibers, and the first rods, flexible saplings.

Only in relatively modern times has angling evolved into sport. But the function of the rod—whether in the hands of early man or the sports fisherman—has remained the same: the rod is a device for increasing the reach of the arm and extending the distance the line and lure can be cast out over the water.

The casting action can be simply described, but, like any art (or sport), it is far more complex in the execution. The angler-fisherman first launches the rod's relatively heavy line directly behind himself with a flicking backwards motion of his forearm. Then, without allowing the line to drop onto the land or water, he reverses the line's direction, with a powerful throwing action, which imparts high forward speed, straightening the line out in front of him and completing the cast. The result is a remarkable transfer of arm energy into high line momentum, sufficient in the hands of an expert to achieve peak line speeds of up to 200 miles per hour and casting distances of 90 feet and more. According to Carmichael, the ultimate rod—which, pressured by his own perfectionism, he feels he hasn't yet achieved—is one capable of a casting action so smooth that

Malabar Hornblower, a free-lance writer from Boston, and William S. Brewster, a hunter and sports fisherman from Plymouth, Massachusetts, have collaborated on two previous articles for AMERICAN CRAFT. They are currently writing a game cookbook, From Field to Feast, to be published in 1987.



← EQUILATERAL?
GLEICHSEITIG?

LEFT TOP: Applying pressure with the thumbs to the bend in the node over heat to straighten it. Rubber cots protect the fingers. ABOVE: Planing the strip down in the finishing side of the steel form. LEFT: Cross section of six strips that will form a rod glued together after each has been planed to a 60° angle.

line and rod unite, and neither dominates the other.

By its intrinsic qualities, the bamboo rod approaches the ideal from the standpoint of casting. Introduced in the mid-19th century as a material for rods, bamboo was initially imported from India. A giant genus of the grass family, bamboo grows in the form of canes. More than a thousand species have been identified, some attaining heights of 40 feet. One variety, known as "Tonkin," cultivated in a 25-mile-square area about a hundred miles northwest of Canton, China, is considered the best. Indeed, in 1931 the botanist Floyd Alonzo McClure became so beguiled by its superior characteristics that he named it *Arundinaria amabilis*, or "lovely bamboo."

Carmichael works exclusively with 8- to 12-foot lengths of the "lovely bamboo," which is composed of multitudes of long, cellulose fibers, thinner than hair, but stronger and lighter than steel. They run parallel to each other for the entire length of the culm and are bound firmly together by a substance known as lignin. The fibers closest to the hard, enamellike outer surface are far denser and stronger than those on the inside and are the key to the strength, flexibility and durability of the delicate bamboo rod. Moreover, the nature and color of the cane surface is such that it responds favorably to repeated applications of varnish, producing a particularly lustrous warm brown finish.

In building a rod, Carmichael listens to the needs and desires of his clients. His designs take into consideration the weight of the line to be cast, the average distance of the casts and the expected resistance of the fish and water, with the rod's length, diameter and tapering being adjusted accordingly. Stiff rods, for heavier lines and fish, generally have larger butt and tip sections proportionally than do the softer, more supple action rods, which have thinner diameters throughout their length. While experience (both his and Garrison's) originally dictated the details of rod construction for various uses, over the years precise and complicated formulas have been developed to make possible uniform, repeatable results. In preliminary conversations, Carmichael will mentally designate which of his 50-odd patterns would best suit his customer, but he remains ready

to modify the design to meet special requirements. Sometimes he tries to talk the client out of certain whims if he feels they are basically wrong. "My hope," he says, "is that because I am making them for individuals with individual demands, I will never make two rods exactly the same."

Carmichael, who is 48, became interested in fly fishing when he was in his late 20s, although he wryly confesses that, as a child, he fantasied about fishing in faraway lands while he practiced casting in the Beverly Hills swimming pool of his father, the songwriter Hoagy Carmichael of "Stardust" fame. Only after a checkered career in golf (he nearly turned pro), a stint in the brokerage business followed by several years in documentary film production did he become interested in fly fishing, which he says appealed to him primarily because it is a noncompetitive sport.

Fly fishing led to rod making, which in turn led to his great friendship with Garrison, about whom he made a movie. Before Garrison died in 1973, they had planned to write an instructive book together to prevent the art of handcrafted rod making from dying out. Carmichael, who inherited all of Garrison's rod-making equipment, was determined to see the project completed. After eight months of intensive writing, with Carmichael working from Garrison's notes and their taped interviews, the book was published in 1977. To his great satisfaction, it has gone into a second printing, with interest in bamboo rod making currently running high. "It's amazing," he muses, "how a little bit of information can spur people on. They revere rods so."

In the same way that he was influenced by Garrison, Carmichael has inspired his own disciples who, as a result of reading his book, have become promising, even very good, rod makers. He watches their progress with pride, claiming their success is "the greatest reward I can have."

Today Carmichael fashions between 16 and 18 rods a year, each of which takes him roughly 60 hours to complete, and for which he charges \$1,500, several times the price of commercially made rods. In the 11 years since he began, he has made well over a hundred. In addition to rod making, he demonstrates building them, repairs them and conducts

OPPOSITE PAGE: Carmichael's mentor, the late Everett Garrison, developed many of his own tools for rod making. He is shown here in the stairwell of his home with "dip tanks" used for varnishing. DETAIL: Bound strips of bamboo undergoing heat-treatment in a retort devised by Garrison. The sections are rolled 180° so that each side gets the same amount of heat.



a vigorous business of selling antique—and used—fishing tackle, principally rods and reels.

As did Garrison before him, Carmichael takes great pains to utilize only bamboo strips which have been cut from the same piece of cane in preparing his six-sided rod. Rods are usually constructed in two or three sections joined together by precision-fitted nickel ferrules; thus the six-sided rod will comprise 12 to 18 separate bamboo strips. (If one includes the spare tip that Carmichael always provides, the total of separate strips can be 18 or 24.)

"Bamboo is a natural fiber and, as with all natural things, no two stalks have exactly the same characteristics. If you want six pieces of bamboo in your rod that will all respond to a bending load in the same way, you must never intermarry bamboo from two different culms."

One of the most arduous and demanding phases in rod construction is the meticulous tapering of the bamboo sections. Carmichael calls it "a precarious science." If the rod's ideal function, as he describes it, is to extend the fishing line and only incidentally cast the fly, there must be enough bamboo in the rod to deliver the power of the cast up to the tip. If a rod is improperly tapered, by the time the energy reaches the tip it has dissipated and power is lost. (Carmichael claims he can diagnose tapering problems by observing the way the line goes out.)

After preliminary planing in a wooden form or jig, Carmichael places each strip in an untapered steel form and planes two sides of it until its cross section forms an equilateral triangle. Next, using an ingenious weight and pulley device invented by Garrison, Carmichael binds each set of six strips together—unglued—into a hexagonal section. Before he can proceed to the tapering planing, the bound pieces must be subjected to a carefully controlled heat treatment in a propane-fed retort. This treatment "drives off excess moisture and resins in the bamboo which tend to keep the cane soft, thereby relieving internal stresses in the six strips." The resulting strips will show increased strength and stiffness and should remain straight. Then, and only then, can the heat-treated strips undergo the final tapering.

Carmichael uses two sets of cold rolled steel planing forms with control screws located at five-inch intervals, which he adjusts according to the tapering he wishes to achieve on the tip and butt sections of the rod. Planing the strips to the final taper is, he states, the most exacting part of the craft of building bamboo fly rods. Using several different planes with well-honed blades in each succeeding phase of the tapering, the fingers always protected from the razor-sharp fibers of the bamboo by rubber cots, Carmichael emphasizes the importance of making passes with the tool in long, steady, uninterrupted sweeps before turning the strip over to begin the second side. (The enamel side is never planed.) Always, he advises, check the pared-down strips for decay or wormholes or "pitch pockets," for gouges or rough nodes. And constantly, he tells us, examine the configuration of the strip so that the cross section of each piece remains an equilateral triangle. For the last stages of planing, he recommends using the finest block plane procurable—a Stanley #9 ½—and planing and rotating the bamboo until it has been pared down to and is level with the steel form. (At the small end of a tip section, the diameter can be as narrow as 50-thousandths of an inch.)

The final tapering process takes Carmichael about 12 hours to perform. Once he did it in a single sitting, but his hands "swelled unbelievably." Usually he tries to finish the task in consecutive days, but says it is not absolutely necessary, provided the humidity remains constant.


Carmichael considers his rods special: "Everybody brings to whatever he does a certain sense of aesthetic value . . . what is personally acceptable. In order to gain a level of perfection, you have to do it the same way every time until you develop an improvement—even if the improvement is minute. I bring my own mix to rod making, my own aptitude and skills, along with my own degree of dedication.

"There is something wonderful in the human hand," Hoagy Carmichael adds. "So much can be translated through the fingers." ■

A Master's Guide to Building a Bamboo Fly Rod is available for \$31 (including postage and handling) from Hoagy Carmichael, 159 David's Hill Road, Bedford Hills, New York 10507.

BELOW: For each of his knockdown bamboo fly rods, Carmichael makes ferrule plugs, which prevent dirt from entering the ferrules when the rod is dismantled. OPPOSITE PAGE: Sports fisherman William Brewster casting with one of Carmichael's fly rods in the shallow streams near Bedford Hills, New York.



A close-up photograph of a person's hands holding a bamboo fly rod and a reel over a stream. The rod is light-colored bamboo with a cork handle. The reel is dark with a wooden handle. The person's left hand is holding the line, and the right hand is holding the rod. The background is a stream with rocks and trees reflected in the water.

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