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In this issue:

- page 3 Editorial
by Maurizio Cardamone
- page 6 The bamboo adventures ...
of Floyd Alonzo McClure in China - part II
by Peer Doering-Arjes
- page 20 An idea born from observing... and a
double V-scaper
by Luciano Manfrin
- page 24 I do it like this: prepare the glued strips
for the binding machine
by Thomas Smithwick
- page 28 Lo-o (*Bambusa procera*): An Alternative
Bamboo for Rodmaking - Part 3
by Maurizio Cardamone & Alberto Poratelli
- page 45 Brixia Fly Days
by Angelo Arnoldi
- page 54 Wooden Reel Seat Fillers
by Grayson Davis
- page 57 Lake Soprasasso Excursion
by Davide Fiorani
- page 65 All things Bamboo: Bamboo Trout Nets
and Wading Staffs
by Dave Dozer
- insertions*
some guests of the IBRA gathering

**Bamboo Journal issue 30 - april 2026**

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Front cover:	two giants of rodmaking, Rolf Baginski e Hoagy Carmichael
Photo on page 2:	Walter Rumi in Riva del Garda 2006
Photo on page 83:	Gabriele Gori, Hoagy Carmichael and Marzio Giglio at IBRA gathering 2010

PRELUD



A few days ago, I opened an artificial intelligence chatbot—there are so many of them these days, and they all promise wonders: ChatGPT, Gemini, Perplexity, Claude, Copilot—and typed: "How do you make a bamboo fishing rod?"

The answer came in less than a second. Two pages of fairly detailed technical explanations, in a fluent, professional, confident, and convincing tone. The text ended with an offer to expand on the discussion or develop specific topics further. I read the whole thing carefully, but I had a strange feeling; then I realized: it was the same feeling I get when a novice explains fly fishing to me with too many certainties. Attentive readers will remember that in BJ#25 (May 2023) I tried to amaze you with a short article on "Rodmaking and Artificial Intelligence," revealing only at the end that the entire article had been written—indeed—by an AI. These were my first experiments, and I wanted to test the then-popular AI with a niche topic, something that was hard to find a ready-made treatise on the web, and then force it to assemble a "reasoning."

So, I continued: "But how do you evaluate the quality of bamboo by looking at it and touching it?"

There was a brief digital silence, then: "That's an interesting question. Quality bamboo generally has a smooth and uniform surface..."

We live in an era where everything is optimized, scaled, and globalized. Today, it's possible to choose and order online a graphite rod mass-produced in a warehouse on the other side of the world, with five-star reviews and 48-hour delivery.

However, there's one thing an AI isn't at least for now capable of: spending hours looking at a culm, turning it and testing it between your fingers, trying to see, before even splitting it, how each individual strip of the future rod will come out, trying to understand if that bamboo culm is the right one, imagining that indefinable thing that for an expert maker is a mental project, made up of countless elementary operations, small and large, that must fit perfectly into a complicated design.

Local craftsmanship—and our passion is local in the deepest sense, because it's in the hands of every rodmaker—isn't nostalgia. It's resistance. It's the refusal to delegate judgment to an algorithm.

That said, try asking AI to calculate the taper of a rod with a cross-section different from the one you want to reproduce. I'm not talking about patiently entering all the data into an Excel spreadsheet, doing a few calculations, and interpreting the results: simply write or say the question. It will answer you perfectly and terribly quickly!

Perhaps this is the balance we need to embrace: leave the calculations to the algorithms, and hold on to everything else. The scent of bamboo tempering. The sound of the plane. The almost physical satisfaction of a glued blank, beautifully straight and without any glue lines.

After this food for thought, let's turn to this issue of the Bamboo Journal. You'll find the third and final part of the extensive report on IBRA's experiences with Lo-o bamboo, including casting tests carried out by professional casters using a shared testing protocol. It was a long process—"inspiration and perspiration," as a famous aphorism attributed to Thomas Edison puts it—but we believe it can truly provide members and all Italian and international readers with excellent insights and comparative data, useful for making informed decisions.

This issue concludes with the second part of the interesting article that revealed the story of Floyd Alonzo McClure, an American botanist and an iconic name in the bamboo world in general, and thus in rodmaking.

The invitation a few months ago to contribute to the IBRA newsletter has yielded great results, especially from our "cousins" in the US (who represent the BJ's second largest audience, with over 30% of visits on average in recent years). Thanks to these distant friends, but also to all the authors who have made BJ#30 a rich mix of technical and narrative content. Browse the table of contents and enjoy!

This issue of the Bamboo Journal coincides with the annual gathering, which will once again be held in the splendid setting of Belgioioso Castle. This year's novelty is that the gathering rod will be entirely crafted, with the joint efforts of several rodmakers, during the gathering itself. It's also a great opportunity for newcomers to witness the creation of a fly rod firsthand. This rod will then be the first prize in the annual raffle.





Paul Agostini in Carcassonne

The Bamboo Adventures of Floyd Alonzo McClure in China

Part II

茶秆竹 = Cha Kon Chuk = Tea Stick Bamboo = *Arundinaria amabilis* = *Pseudosasa amabilis* = Tonkin

by Peer Doering-Arjes ¹

McClure's Publications on Tonkin

After the publication of 1925, in which he described various bamboo species in Kwangtung including Tonkin, he published the botanical classification of this previously undescribed bamboo species in 1931 (26; 27) and 1934 (28): "Known as the Tonkin Cane of commerce, its botanical identity has long remained a mystery, and to people in the West even its source was until recently unknown. ... Now that its botanical characters are fully known it appears that this bamboo falls in the genus *Arundinaria* of which it represents a species not hitherto described ... Since this bamboo is thus far known only in cultivation, the question arises as to the wisdom of treating it as a species. Nevertheless, it is so different from any bamboo hitherto described that it should be given a distinctive name. In view of the likelihood that the wild form may be discovered in the course of time, the writer proposes to reserve the specific name *Arundinaria amabilis* for it and to treat the present form tentatively as a variety under the name *A. amabilis* var. *sativa*." (26) (Fig. 18). His boss from the office of Foreign Seed and Plant Introduction was pleased with his publication: "We are certainly gratified to know after all these years the species has been definitely determined." (29)

"Western peoples find this bamboo ideally adapted to the manufacture of the highest quality split-bamboo fishing rods. ... Its culture is apparently confined for some undiscovered reason, to a rather limited area, oval in shape, probably not more than 25 English miles in length, and centering in the little village of Au Tsai in the district of Wai Tsaap, Kwangsi Province ². The region embraces also a small part of the adjacent district of Kwong Ning in Kwangtung province. ... Its columns stand stiffly upright even to the tip and are clothed in short, ascending branches and heavy, dark green foliage [Fig. 18]. The austerity and magnificence of Tea Stick Bamboo are in striking contrast with the feathery, nodding, ethereal habit of the other, more common bamboos in the vicinity. ... The largest culm of this bamboo, which I have found was in a magnificent, apparently mature growth on a gentle slope in the vicinity of Au Tsai. This specimen ... was 13 meters [42.7 ft] in height and 5.7 cm [2.2 in] in diameter, with 44 nodes above the ground. Culms of this size bring more than a dollar each, wholesale. The average culm, however, is probably less than half this large. ... In April, 1925, I observed that flowering culms of this bamboo had appeared in certain groves in the vicinity of Au Tsai, Kwangsi. Returning in 1928 I found the flowering still going on, and apparently more widespread. In 1929 a third trip was made, at which time a splendid series of flowering specimens was secured from the vicinity of Koo Shui, an adjacent locality in Kwangtung. This latter place had been visited in 1925, but no signs of flowering were observed at that time. The plants which flowered did not die, however, but exhibited a progressive suppression of the vegetative activity lasting over a period of several years." (27)

¹ Correspondence address: info@springforelle.de

² Today Wai Tsaap District is Huaiji County (怀集县), 1952 transferred from Guangxi (Kwangsi) Province to Guangdong (Kwangtung) Province

Working for the National Herbarium in the Smithsonian Institution he notes on July 1st, 1935: “For more than 12 years, now, I have been engaged in the study of one of the most important, and at the same time least understood, groups of China's economic plants, namely the bamboos. I interested myself in them in the first place because of their prominence in the everyday economy of Chinese life. I presently discovered, however, that the most fundamental studies, viz., the naming and classification of the group, had only been begun, that's the nomenclature of the bamboos was in great confusion, and that no one was making any serious attempt to put the situation to rights.” (32)

In 1966, when McClure was an Honorary Research Associate for the National Museum of Natural History, he published a textbook about bamboos (31). He says about Tonkin: “Because of the superior technical properties of its culms, *Arundinaria amabilis* held pre-eminent position among bamboos in world trade over a period of about 50 years, beginning late in the last century. During this period, this bamboo supplies the preferred material for split-and-glued fishing rods in England and America, and for hop poles in Germany. ... As observed in the planting established in Canton, China, ... the flowering period lasted for 10 years (1929 - 1939); its termination was accompanied by a gradual recovery of vegetative vigor. Individual flowering culms eventually died after losing their leaves, but the rhizomes remained viable. ... the length of the flowering cycle is unrecorded.” However, the period of flowering he gives here is not congruent with the one he published in 1931 (27). Marden (22) reports, that in 1963 a minute area of the total plantings of three acres flowered. According to information I received from the late Andy Royer and the Cai family, who have decades of experience in the Tonkin trade, the Tonkin has not flowered in the Aozai area since then. Only from Tonkin in cultivation there are herbarium vouchers from later years with flowers from British Columbia from 1991 (NMNH-00412207) and 1992 (NMNH-00501099).

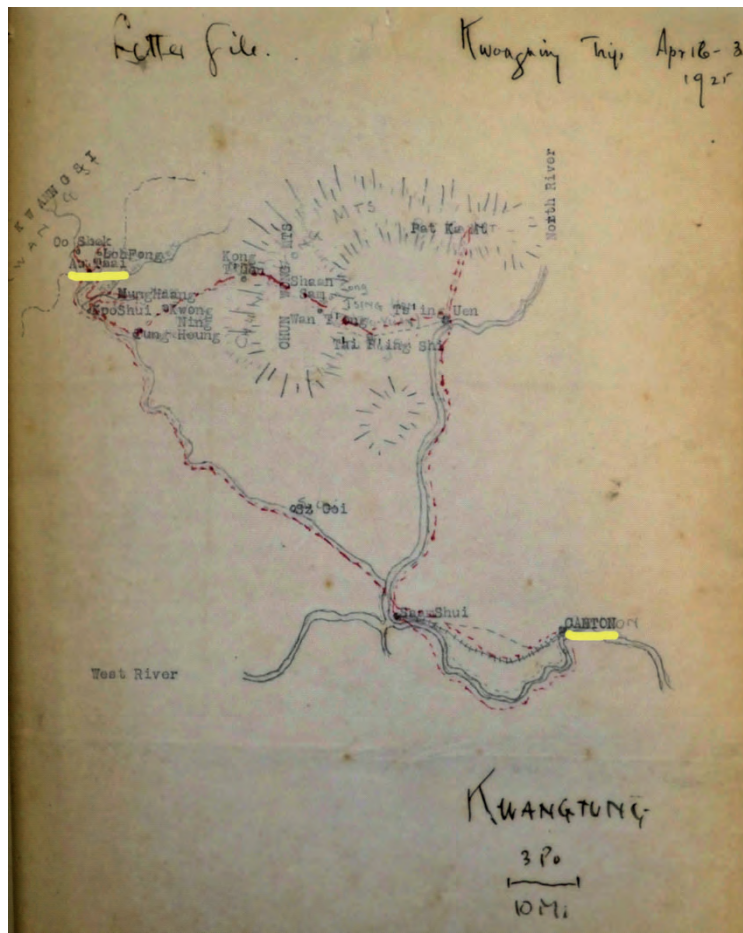


Fig. 16

McClure's sketch of his journey in April 1925 on which he saw Tonkin for the first time.

Au Tsai (top left) and Canton underlined yellow (16)

About the distribution and ecology of Tonkin he wrote (31, page 152): “As far as published records are concerned, *Arundinaria amabilis* is known only in cultivation. The only known area of commercial production is the Kwang-ning District of Kwangtung Province, and the adjacent part of Wai-Tsap District of Kwangsi, China.” However, the World Atlas of Bamboos and Rattans from 2016 says Tonkin is native not only to China but also to Vietnam and introduced in Puerto Rico (33). 2007 Triệu Văn Hùng reported wild *P. amabilis* from Vietnam (34).

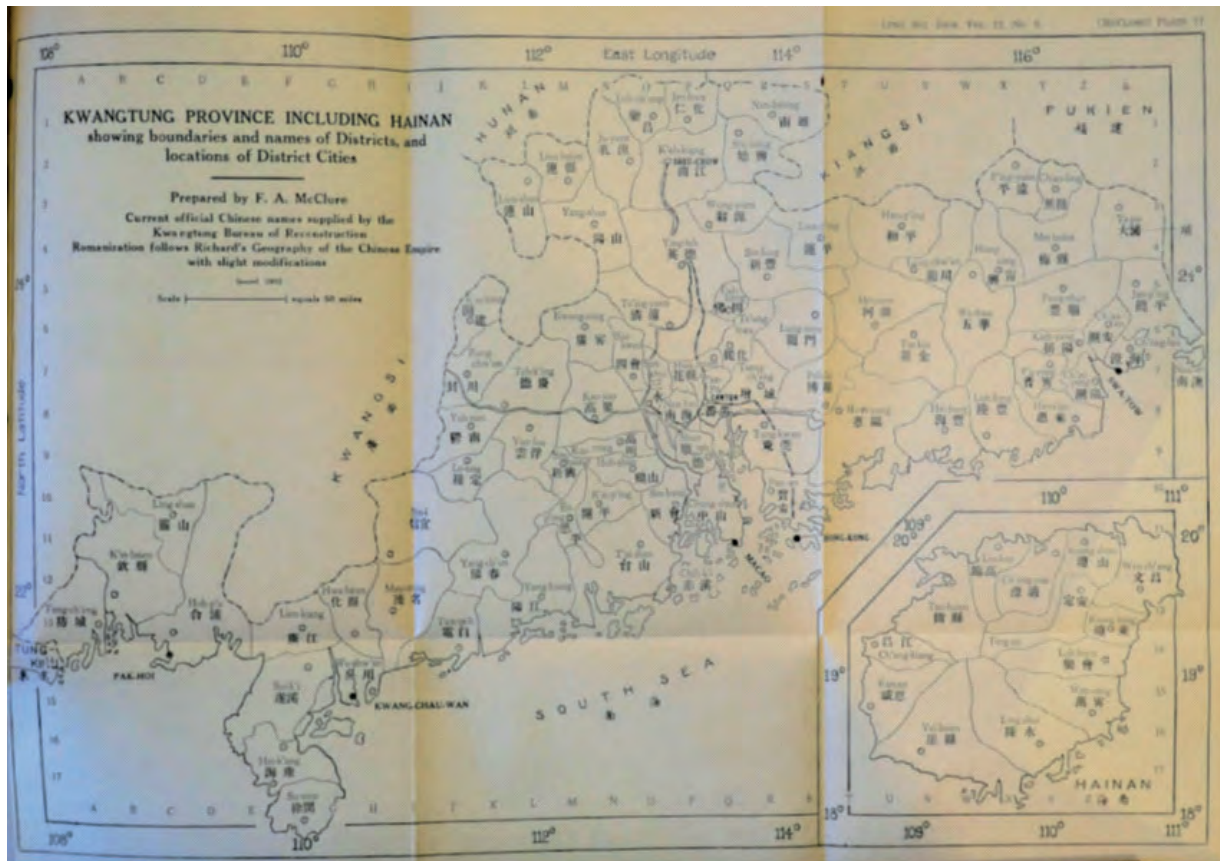


Fig. 17 McClure's 1933 map showing the districts of Kwangtung Province. North-west of Canton is the district of Kwang-ning, where Tonkin occurs. (30)

Arundinaria amabilis was later renamed *Pseudosasa amabilis* by Geng (35). After many years of working with bamboo McClure described how highly complicated it is to correctly classify a bamboo species: “The new demands for evidence from other disciplines means that in order to be up-to-date the collector must abandon the idea that the conventional leafy flowering specimens are sufficient for purposes of description and classification. He must have in mind not only the morphologist but the anatomist, cytologist, chemist, geneticist, biochemist, ecologist, etc., so that material for the study of each entity in as many disciplines as possible may be available under the same herbarium voucher.” (7, page 2)

“How did you get to be good at differentiating bamboos?” asked Fred Gray in an interview. “Well, it took a good long time, I’m still working at it. I did two things. One was to retain some of the propagating material of each number that I sent in and planted there in any old place I could find. I ended up by having over 600 of those so that I could, you know, go back like getting acquainted with people just by looking at them, talking.

And the other thing was, the thing that encouraged me too in this was that the Chinese farmers are able to distinguish one kind from another without the flowers. ... And evidence is piling up, that this is a very immature way of studying the bamboos. It has very bad side effects because collectors are quite content to bring back just a flowering twig, you see. And there are those who have studied bamboos, who say well you cannot distinguish genera on the basis of vegetative characters, you must have the flowers. Well, this does remain true, because of our lack of information. I do not claim that the flowers are not essential, but I claim that at the species level at any rate as a rule in any genus I can distinguish species much more readily from the vegetative characters of the plants than I can by means of the flowers alone." (11)



Fig. 68. *Arundinaria amabilis*. A typical cluster of characteristic culms in a plant of medium stature (20 ft tall) in the midst of a commercial plantation at Au Tsai, Kwangsi province, southern China. The superior technical properties of the bamboos known in commercial circles as tsingli or tonkin cane have been recognized in Europe and in the United States for three-quarters of a century. Product of the plant known to science as *Arundinaria amabilis* (McClure 1931a), these canes were prepared for the Western market (McClure 1931b), by disciplined procedures characteristic of the sophisticated craftsmanship of China—the old China, long respected for its mature cultural traditions and its distinguished artistic productions. McClure photo, 1928.

Fig. 18 Tonkin in Aozai (31, page 153)

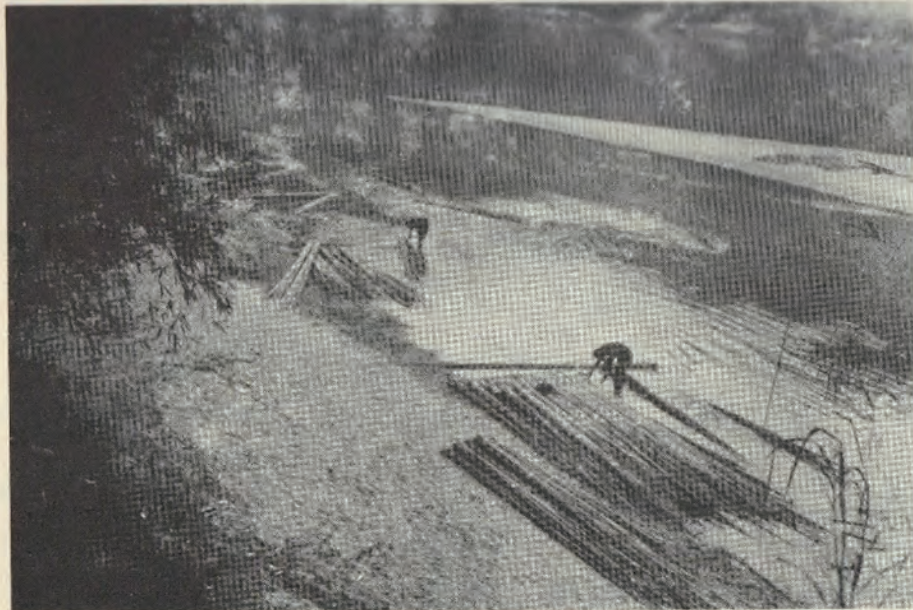


Fig. 69. *Arundinaria amabilis*, vicinity of Au Tsai, Kwangsi province, China: (above) bundles of freshly harvested culms being assembled into rafts for transport to the scouring beach; (below) the beach where the culms are cleansed at once by scouring with sand.

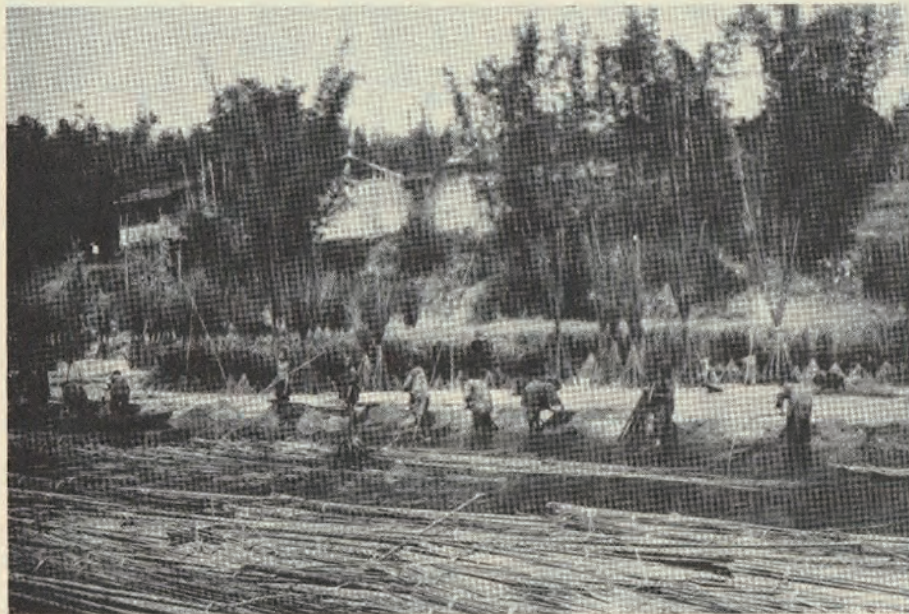


Fig. 19 Scouring of Tonkin culms (31, page 154)

Propagation of Chinese Bamboos

The Office of Foreign Agricultural Relations (OFAR, USDA – United States Department of Agriculture) had field stations in Guatemala, El Salvador, Nicaragua, Ecuador, Peru, Bolivia, and Puerto Rico. McClure did send plants of Tonkin to Mayagüez, the field station in Puerto Rico and to the Barbour Lathrop Plant Introduction Garden in Georgia.

“In 1901 the Congress of the United States passed an Act authorizing the establishment of an experiment station to study agricultural problems of interest to Puerto Rico. ... In 1931, the federal experiment station at Mayagüez has concerned itself mainly with problems of interest to the continental United States. ... Plants are collected from all of the tropical areas of the world and tested to determine their potential economic and ornamental value. They include a variety of species of bamboo, rubber, cotton, and many others. ... Industries for the manufacture of bamboo fishing rods, furniture, and novelties are already established.” (36) (Fig. 20 and 21)

Studies of the culture and utilization of bamboo were started in 1943 at the Federal Experiment Station in Puerto Rico. (37)



Fig. 20 The Federal Experiment Station at Mayagüez in 1951 (36)

It is said that Tonkin does not grow well outside its natural occurrence. However, the 1966 correspondence between McClure, at the time Honorary Research Associate at the Smithsonian Institution, and M. H. Gaskins, the officer in charge at the Federal Experiment Station in Mayagüez indicates good growth outside China as well: “The Orvis company ... is in the market for Toncin cane (*Arundinaria amabilis*), the material par excellence for the fabrication of split bamboo rods, but it has not been available to our domestic users since 1941. This is because communist China has a monopoly on its commercial production, and the importation into the United States of goods from that source is prohibited by our laws. ... The Orvis company it's a leading producer. They have approached me with numerous inquiries and petitions for help over the years. Among my suggestions to them is that they investigate the condition and productivity of two stands of this bamboo that I established in Puerto Rico in about 1948. ...

Since I spent a great deal of time and effort between years 1925 and 1936 in securing the introduction of this bamboo into the United States at the request of the US Department of Agriculture, and since it is, technically, the finest bamboo I have ever become acquainted with, I am personally interested to see it established in production somewhere in the western hemisphere – preferably in the United States. ... If there are available in either of the plantings mentioned above any culms of solid substance (at least 2 or 3 years old) that are an inch or more in basal diameter, would it be feasible for you to send 10 or a dozen 8-foot basal cuts to Orvis ...?” Gaskins replied: “The *Arundinaria* there has grown well and is in excellent condition. An off-hand estimate of the quantity of canes available would not be worth much, but there is no doubt that a minimum of several 100 could be harvested.” Unfortunately, no further correspondence is available about the outcome of this request. (38)

However, Luis Marden, a friend of McClure, visited the station: “I have twice visited this planting at Toro Negro, where today flourish dense groves of several thousand culms, some over 40 feet [12.2 m] high and 2 inches [5 cm] in diameter. I once showed a section of large mature culm from Toro Negro to the late Everett Garrison, one of the greatest rod makers of modern times. He examined the fibre pattern of the cross section critically but shook his head: not up to the Chinese-grown quality, he said. The layer of densely packed fibers at the periphery was not wide enough. ... I once asked Dr. McClure why it was that transplanted bamboo ... grown under conditions ... as near as possible to those of its original home, should still not produce the quality of the native plant. “I do not have the answer,” he said. “It may be a question of the presence or absence of minute quantities of trace elements in the soil. All we can say is that in its original home the plant must find brought together all the conditions it needs to prosper, and some of these conditions or substances, so subtle that they have eluded our analysis so far, are not all present in other places.” (23, page 34)

Regarding fishing rods, interest in bamboo declined rapidly after Shakespeare Co. introduced the first fiberglass rod to the market in 1947. Moreover, in 1950 an embargo of the USA on the importation of Chinese goods went into effect. The field station in Mayagüez is now called the Tropical Agriculture Research Station (TARS).

The other experimental station supplied with Tonkin was the Barbour Lathrop Plant Introduction Garden, US Dept. of Agriculture, Ogeechee Road, Savannah, Georgia. First attempts to send live rhizomes from China failed. Galloway wrote to McClure: “Turning to our records, I find that among your collections, F.A.M. #137 [Tonkin], you found the plant on the Sui River and sent us a number of rhizomes. Unfortunately they all died.” (29)

Linville wrote in his report (39, page 3): “Much of the historical data of the garden has been lost. ... The Bamboo gets low priority in relationship to all the other work that needs to be done to keep the Bamboo Farm & Coastal Gardens open.” In February 1919 the gift of Barbour Lathrop was accepted by an Act of Congress in February 1919 as a Federal Plant Introduction Garden. Its object was the preliminary evaluation of new foreign plants to see if they could be grown in the US. It contained 180 bamboo species. 20 species were still present in 2010, which were received from McClure between 1925 and 1941.

McClure states in his book „*The Bamboos – A Fresh Perspective*” about the garden in Savannah (31, page 156): “After repeated failures, living plants of *Arundinaria amabilis* were successfully introduced into the United States in 1936 ... These plants were sustained, without damage, temperature minima that frequently reach 17 °F, and culms 30 ft [9.1 m] tall were measured in 1959.”



Fig. 21 Map of the Federal Experiment Station at Mayagüez in 1951 (36)

An experiment for paper making from bamboo started in 1953 and was dropped in 1965. The station was closed in 1980 and was taken over by the University of Georgia in 1983 and is now called Coastal Georgia Botanical Gardens. Unfortunately, *Pseudosasa amabilis* is not present anymore. However, the US National Herbarium contains specimens from that station collected by McClure 7 June 1942 (NMNH-00030536) and by Thomas R. Soderstrom 22 May 1978 (NMNH-00030571). For another specimen collected in 1976 a length of 25 feet (7.6 m) is given (NMNH-00030574).

“These experiments in the American cultivation of tea-stick bamboo lost their impetus when fiberglass replaced cane in volume rod production, but our increasing interest in bamboo might reawaken the interest once shown in growing rod-quality Tsing Li in our southern states.” (40, p. 952)

In 1984 Farrelly calls for McClure's plantations to be preserved: “We intend, with the help of all readers who can relate to these tasks: To care for, propagate and use (in local crafts, popular architecture, and ecological gardening) the groves he helped establish from Bethesda to Brazil, many of which are in a state of neglect, that is, to realize their dual purpose as garden-schools and gene banks.” (41, p. 299)

Koppedrayer Bamboo Farm in Odum, Georgia, USA told me that they have a 15-year-old Tonkin plantation that includes culms 40 feet (12 m) long and 3 inches (7.6 cm) in diameter. It would be interesting to compare the breaking strength and flexibility of these and the Chinese variety.



Fig. 22 McClure working on the cultivation of Tonkin in Mayagüez by propagation of the rhizomes. (31, fig. 92b)

Fishing rods

Ivor Davis, a former employee of Hardy Brothers told me in 2016, “The first all Tonkin bamboo rods (salmon, trout, spinning) were produced from 1883 to the present. By the time Hardy entered the market Tonkin had superseded Calcutta Cane.” The bamboo rods in the catalogue of the Hardy Brothers from 1883 are named “hexagonal split cane rods”. (42)

According to Simmonds (43) the first known importation of Tonkin to the USA was just before 1895 by Demarest of New York. The Montague City Rod Company has used Tonkin since 1898 (22, p. 14).

Several rod manufacturing companies corresponded with McClure about his findings. He experimented for hexagonal ski poles and fishing rods with the Montague Co. in June 1943 and the Orvis Co. in February 1944 (44). They used different species of bamboo. It should be of particular interest to rodmakers that he recorded the duration and temperature of the heat treatment.

Montague tempered *Guadua angustifolia* from Colombia and *Guadua superba* from Brazil for fishing rods in three steps:

1. Electric oven, one, two or three hours at 180 °F (82 °C) or 220 °F (104 °C)
2. Flame to choc brown five minutes
3. Electric oven, 22 to 23 hours at 225 °F (107 °C)

McClure commented on the fibers: “*Guadua angustifolia* from Cali, Colombia and Venezuela, and *Guadua superba* from Brazil have marvelous individual fibers.” He also noted Montague’s production of fishing rods: “Manufacturers census: 1938 pieces all sizes 490,000, 1939 all rods [fly, bait casting, and others] 329,000.”

His notes for Orvis read as follows (44):

“17.02.44 The superior behavior of impregnated bamboo over an unimpregnated was brought out by the examples of *B. polymorpha*.

18.02.44

- *Guadua angustifolia* from Cali: oven four days, 150 °F (66 °C) plus one day 225 °F (107 °C) plus two days 275 °F (135 °C).
- *Guadua superba* from Rio: oven two days 150 °F (66 °C) plus two days 275 °F (135 °C). Tested Bakelite-cemented and Bakelite-impregnated rods.
- *Bambusa tuldoidea* from Rio: oven two days 150 °F (66 °C) plus two days 275 °F (135 °C).”

A commentary on these experiments can be found in the book about Wes Jordan: “Some of the early development work Wes [Jordan] conducted on impregnation was conducted with Mr. McClure and the government in an effort to develop stronger, waterproof bamboo ski poles for U.S. troops during World War II. Together they tested many species of Western Hemisphere bamboo, searching for a reliable and inexpensive substitute for Tonkin cane. Several species proved to be adequate for the manufacture of ski poles, but none were found with the required characteristics for rod making.” (45, p. 152)

White reports were positive about another species for rod making: “In the past few years, bamboos growing in the Western Hemisphere have been tested for these special uses. In some cases, certain species, such as *Bambusa tulda*, have been found to yield culms from which very satisfactory split rods can be made.” Photos show the production of split bamboo rods by Wendt & Campbell, Inc., in Mayagüez. (37)

Correspondence between McClure and the South Bend Bait Company, Indiana, in 1950 shows that samples of *Bambusa tulda* from the Mayagüez station were sent to this company to test for the manufacture of fishing rods from it. (46).

In the same year George L. Herter, Herter’s Co., Waseca, Minnesota wrote to McClure: “Through your help we have been able to get dried bamboo of a uniform quality never before brought into this country. ... We are producing bamboo rod sections that in tests are superior to anything previously made in this country. I want to thank you again for the wonderful help you gave us without it we could not have gotten out the book or made the rod blanks we are making.” (47) He does not mention which species of bamboo he is referring to.



Fig. 23 88-125 9

Photographs: 14. Floyd McClure playing bamboo pipe, 1950s

Summary

Very early on in his life, Floyd Alonzo McClure was fascinated by bamboo and became the expert he wanted to be. There is no evidence that he was specifically looking for the origin of Tonkin, but it seems to have been a coincidence that as part of his task of looking for plants in China that could be cultivated in the USA, he passed through the area where this species was cultivated and probably also had its origin.

He was a courageous man who travelled through the Chinese province as Agricultural Explorer, even though he knew: "Banditry is perhaps worse now than it has been for a long time. ... tomorrow I am going to Loh Kong Tung, (famous among the Chinese for fruits and more famous for bandits) to get persimmon scions and seeds, pear scions, chestnuts and chestnut scions." (48)

He classified Tonkin and made great efforts to facilitate its spread by sending plants to various research stations where cultivation seemed promising. The attempts were either unsuccessful or regrettably discontinued. Whether the mechanical quality of the culms, which reached the same lengths of 40 feet (12.2 m) in Mayagüez, and at other locations, as in their natural habitat, was unsuitable for rods is questionable, as apparently no comparative tests were carried out.

McClure made a decisive contribution to the classification and identification of many Chinese bamboo species. His observation that the vegetative characteristics were sufficient to determine the species was particularly important.

It is interesting to note that rod factories used to heat treat bamboo for days. Nowadays, most rodmakers only heat treat for minutes or hours.



Fig. 24 McClure and his wife Ruth, summer 1969, Bethesda, Maryland (49)

Acknowledgements

During and after my research on site, Deborah Shapiro of the Smithsonian Libraries and Archives was always a very co-operative help. I would like to thank Jinghui Luo (罗景慧), Aozai, and Wenjing Jiang, Berlin, for their translations from Chinese and John Rose, Birmingham, for improving my English.

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The author at work in the Smithsonian Institution Archives displaying a book from the Annals of Dong-guan County from McClure's collection (50)



Bob Clay in Charmey

AN IDEA BORN FROM OBSERVING... AND A DOUBLE V-SCRAPER

by Luciano Manfrin



Sometimes ideas don't arise at the workbench, but by chance.

Browsing the internet, I came across a site where Asian artisans were making baskets, hats, and containers woven from very thin strips of bamboo. More than the final result, I was struck by an intermediate step: after splitting the culm into small sections, the artisans further thinned the strips by sliding them over a simple blade fixed in a vice.

The gesture was essential: one hand pulled the strip, the other held it down with light pressure. With each pass, a few tenths of material was removed. No machines, no complex shapes. Just control, sensitivity, and repetition.

Watching that movement, I asked myself:

why not apply the same principle to our bamboo cane strip processing?

And, above all, why not have two blades work simultaneously, directly achieving a 60° roughing in a single pass?

As often happens in the workshop, I started with what I had available



I cut a 60° angle from a piece of wood with a circular saw and attached two Widia cutters, the kind with four cutting edges that many of us use for the Morgan Miller. The idea was simple: create a V with two opposing cutting edges and slide the strip inside.

On paper, it worked.

In practice, much less so..

Once the support was clamped in a vice, the strip began to wobble on the first pass. Vibrations, small bounces, an uneven cut. The wood, too light and elastic, didn't provide the necessary rigidity. Even micro-movements of the blades compromised the smoothness of the cut.

After a few less-than-convincing attempts, the idea was temporarily shelved.

Sometime later, talking to a friend who works in a mechanical workshop, I described the problem.

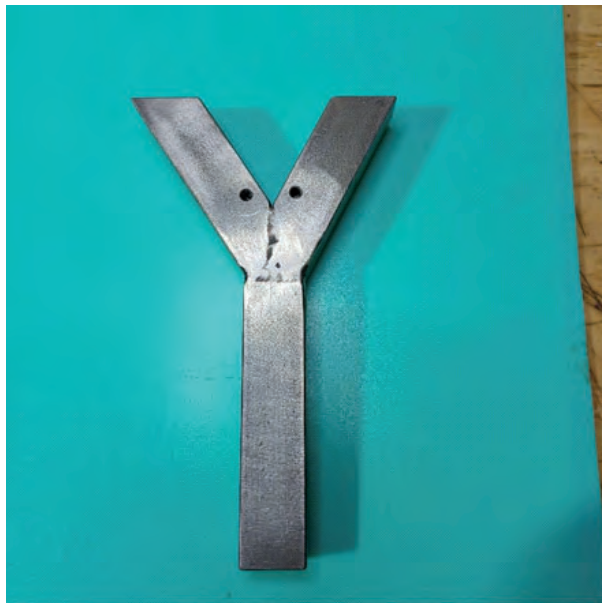
His answer was disarmingly simple:

"The concept is right. It's the structure that doesn't work. You need mass, you need rigidity."

He was right.

I then created a new support entirely out of steel:

- two bars cut at 30°
- one bar cut at 60°
- everything was welded to create a solid and structurally stable V.



Once the body was assembled, I positioned two 11 mm Vidia plates, paying careful attention to one crucial detail: the cutting edge had to protrude about 1 mm from the 60° plane. Enough to remove material, but not so much as to make the cut aggressive: it all depends on the pressure applied with your hand. I then reinforced the area with two small steel plates, drilled holes corresponding to the blade holes, and threaded the body for bolting.

My double V-scraper was born.



With the new tool clamped in the vice, I inserted a rough strip and ran it through.

The difference was immediately noticeable.

No judder.

No vibration.

A continuous, controlled cut.

The steel mass absorbed the stresses, the rigidity kept the blades perfectly aligned, and the strip slid smoothly through the V. With a few passes, a uniform 60° roughing was achieved, ready for the next step.

Anyone who works with bamboo knows how time-consuming it is to prepare the strips before fine planing them on a planiform.

This tool doesn't replace precision work, but it allows you to:

- quickly obtain a 60° section
- reduce preliminary work on the plate
- limit constant sharpening
- speed up the roughing phase

With a little practice, you acquire the right sensitivity in traction and pressure, and the result becomes repeatable.

This double V-scraper wasn't designed as an "industrial" tool, but as a workshop tool: the result of observation, an unsuccessful attempt, technical discussion, and a more mechanically informed solution.

It's a small example of how, in the construction of our bamboo rods, experience and ingenuity are as important as the tools. Sometimes, changing materials, adding mass, or making an idea more rigid are enough to transform it into something truly functional.

And, as often happens, it all began by watching someone work bamboo in a simple, essential, almost ancient way.

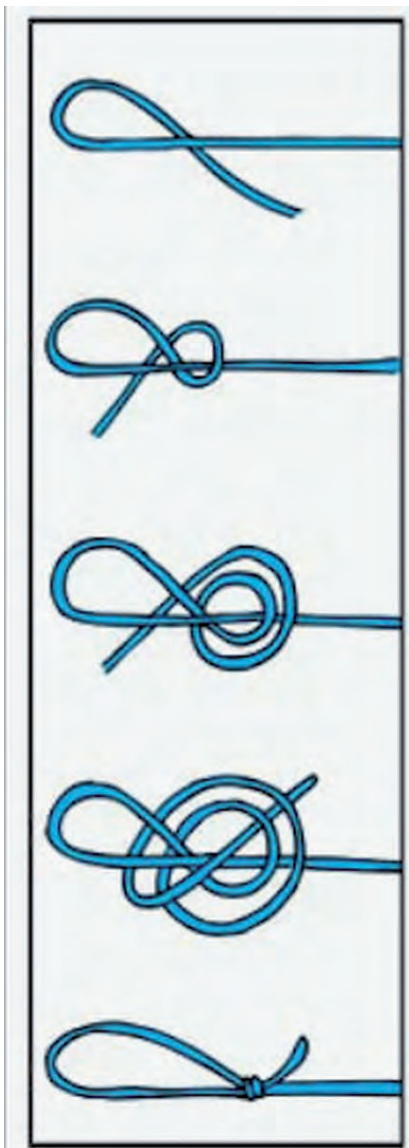


Bjarne Fries in Sarnen

I DO IT LIKE THIS:

PREPARE THE GLUED STRIPS FOR THE BINDING MA- CHINE

by Thomas Smithwick



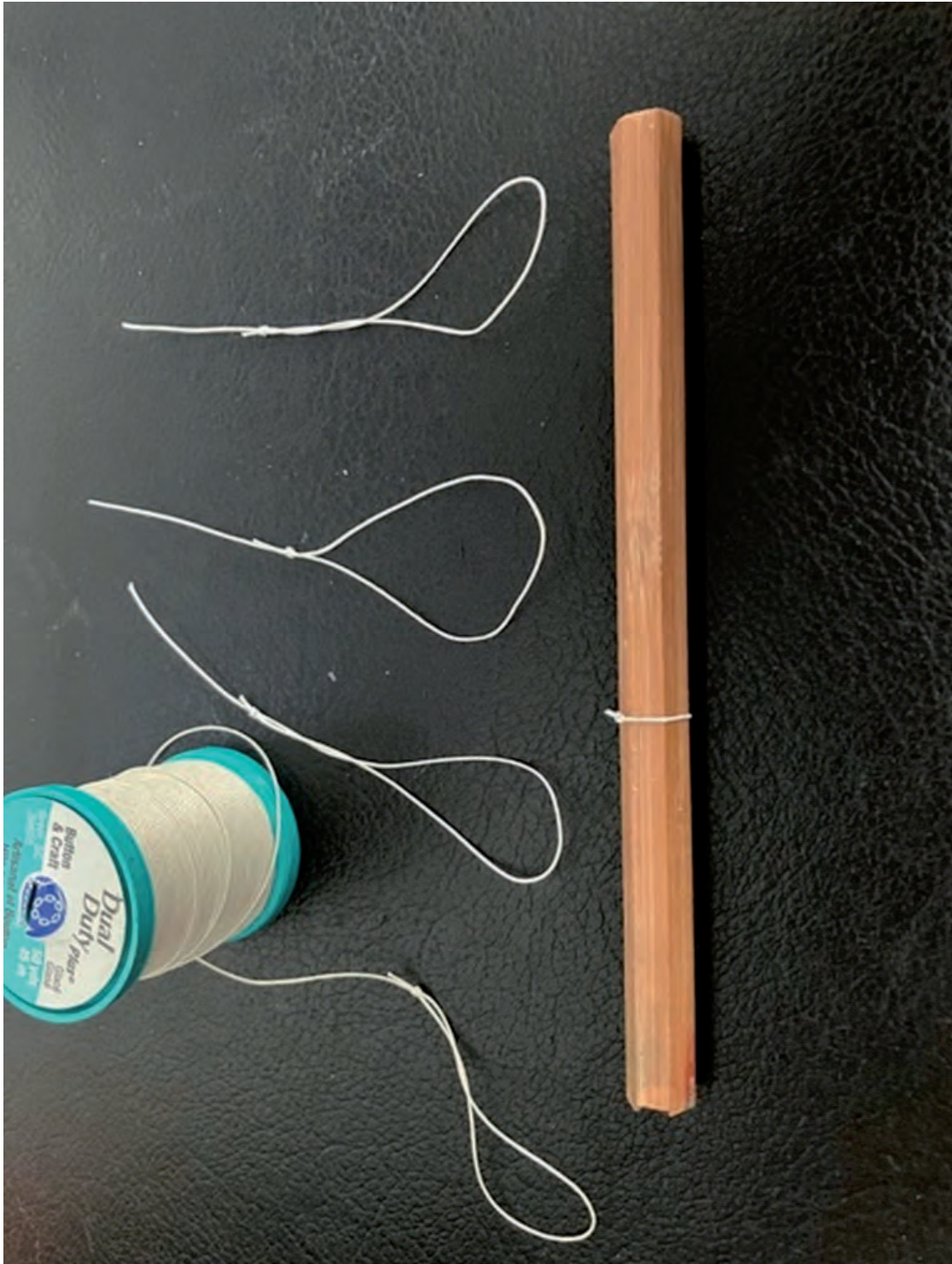
I've discovered a knot I've been using for some time now and find very useful in the gluing process, preparing the strip packet for the binding machine. The knot is called "Double Slip Knot" and you can also find it in the Tenkara USA website.

I use it two different ways. When I spread glue on the strips at the beginning of the glue up process, they are held in place with masking tape. That means when you roll up the strips and go to the binding machine you have to either stop the process a few times to remove the tape, or deal with the tape after the glue dries. Either option is a nuisance.

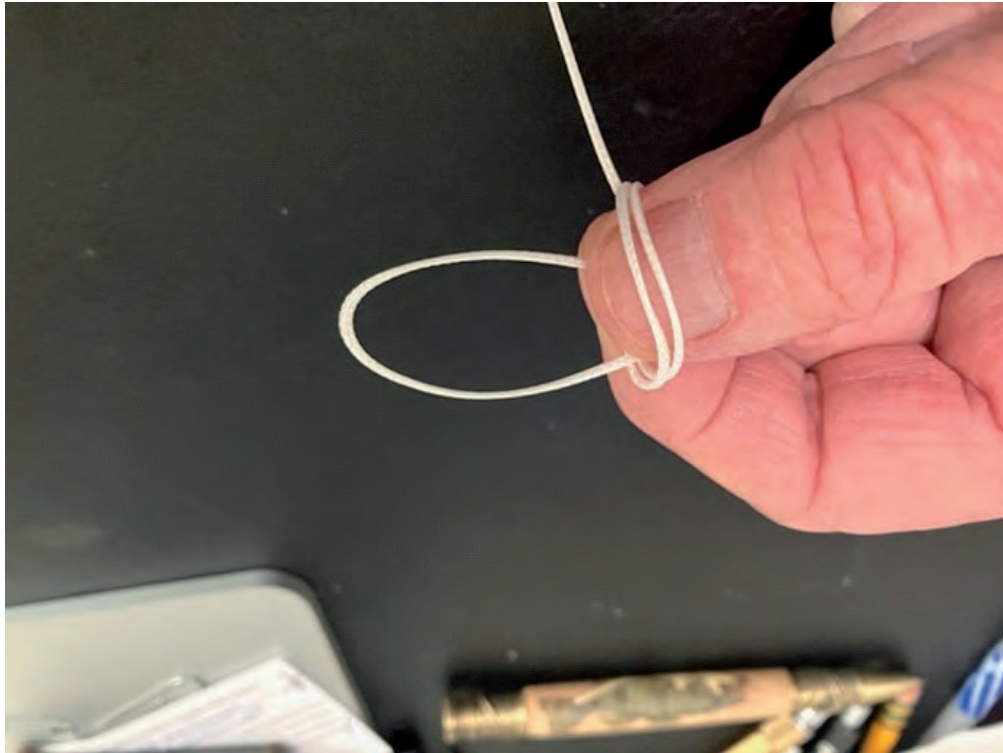
Instead, before I spread the glue on the strips I tie up short sections of binding thread with this loop knot on the end. After the section is rolled up with the glue in place, I slide the loop onto the section next to the masking tape and pull it tight. That is done for each piece of tape. Remove the masking tape. The standing end of each knot is then cut, leaving a short stub to keep the knot from opening. The section can then be run through the binder without stopping, and when the glue dries, the knots are easy to remove from the rod section.

I also use the knot to attach the binding thread to the rod shaft for the binding process. For each section, I have two spools of thread prepared with the slip knot loop on the end, one spool for each binding direction. That way I don't have to tie a knot wearing gloves sticky with glue, which I also found to be a nuisance.

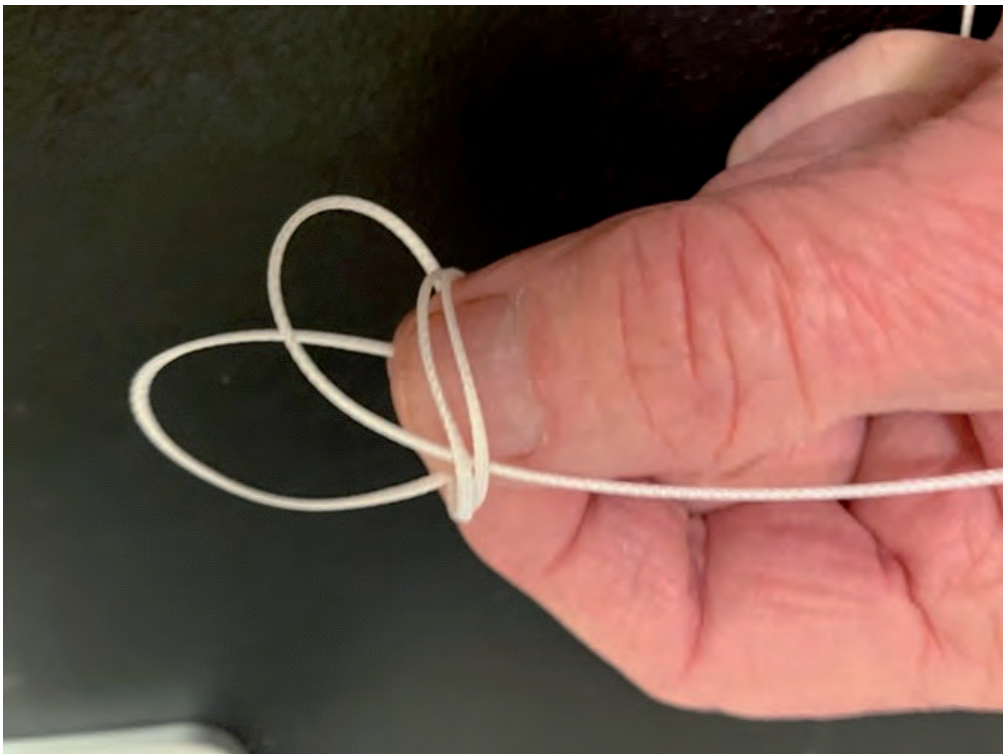
Here is what the loops look like in use. The short pieces are what used after the glue has been applied and the section is rolled up and held together with masking tape. The slip knots are placed next to the tape and pulled tight. Then the tape can be removed, and the knot can be run through the binder. The excess thread is cut away, as you see on the bamboo, just short stubs are left to secure the knot. The spool of binding thread can be easily attached to the section on the binder.



How the knot is tied now. With a little practice, it is quite easy. It is tied it with all the loops in the same direction. The loops are in my left hand, and the end of the thread is in my right hand.



The knot is finished by pushing the end of the thread through the two standing loops from the front, then pulling it snug, but not overly tight.





Jerry Kustich in Sarnen

LO-O (BAMBUSA PROCERA) AN ALTERNATIVE BAMBOO FOR RODMAKING

Part 3

Working with Lo-o; Test Casting

by Maurizio Cardamone, Alberto Poratelli

and with the contribution of: Enzo Afri, Moreno Borriero, Marzio Giglio, Enrico Grasselli, Giovanni Nese, Massimo Paccotti, Saverio Pandolfi, Massimo Pulze, Valerio Santagostino.

Premise

Here you'll find the third and final part of the extensive report IBRA began in 2024, when a structured testing project was undertaken on a new species of bamboo for rodmaking. This new commercially available material has some unique characteristics, and the project's goal was (and is) to offer all Bamboo Journal readers a comprehensive and well-documented analysis from which they can build their own personal experience, if they wish.

In the two previous issues of Bamboo Journal, #28 and #29, the first chapters of the extensive report on various tests conducted on the new material compared to traditional Tonkin were published. For those wishing to refresh their memories, here are the direct links to the articles:

https://www.rodmakers.it/wp-content/uploads/Bamboo_Journal/ITA/BJ28ITA.pdf#page=21

and

https://www.rodmakers.it/wp-content/uploads/Bamboo_Journal/ITA/BJ29ITA.pdf#page=39

Introduction

After the 2024 annual meeting, a small discussion group was formed within IBRA, consisting of several members who had access to samples of the bamboo under consideration. This group included Moreno Borriero, Maurizio Cardamone, Marzio Giglio, Enrico Grasselli, Giovanni Nese, Saverio Pandolfi, and Alberto Poratelli.

The group's goal was to evaluate the potential of the Vietnamese bamboo *Bambusa procera* (Lo-o) as an alternative to *Arundinaria amabilis* (Tonkin) for building split-cane fly rods. The project aimed to produce technical articles for publication in the Bamboo Journal (BJ), rigorously documenting and comparing the material's physical, mechanical, and construction characteristics.

The group's work consisted of sharing ideas, documents, and various materials via WhatsApp for over a year. Messages equivalent to more than 80 pages of text were exchanged, along with approximately 160 images, photographs, videos, tables, and article references, with the aim of objectively evaluating the differences in behaviour based on direct experience, basic physical measurements, and, finally, controlled casting tests.

This final section provides a brief summary of the main points discussed in the chat, which also informed the criteria for designing and building the test rod and established the methodologies for comparative measurements on the materials and rods already presented in Parts 1 and 2.

A chapter will then be dedicated to the valuable notes collected by Alberto Poratelli during the construction of the test rod. The final chapter will be dedicated to the results of the casting tests conducted by three highly qualified testers with two "equivalent" rods made from Tonkin and Lo-o bamboo.

Note: Unless otherwise indicated, the images refer to our Lo-o samples

Identification and provenance of the material, initial density assessments

The material under examination is classified as *Bambusa procera* (called "Lo-o," first classified by Camus in 1922), a species widespread in Vietnam and Cambodia, where it is cultivated primarily for food and industrial purposes. The material corresponds to the so-called "Viet-2" cited in Doering's 2022 study, published in *Power Fibers*, and is to be distinguished from the "Viet-1" (*Bambusa gurgandii*) previously tested by other rodmakers.

Measurements conducted by Alberto Poratelli on 18 triangular strips obtained from half a pole, in preparation for the construction of the test blank, initially revealed a specific weight of approximately 902 kg/m³ before tempering, significantly lower than that of *Arundinaria Amabilis* (greater than 1,000 kg/m³, which reaches 1,100 kg/m³ in glued blanks).



This initial data can be compared with measurements carried out by the laboratory of the University of Hamburg reported in the aforementioned article by Doering, which indicate a density of around 970 kg/m³, but based on measurements taken on 3 mm thick samples. After tempering (185°C, 10 minutes), the strips lost approximately 9% of their initial weight due to water loss, with a dimensional reduction of approximately 5%.



Lo-o bamboo is commercially available in lengths based on the number of nodes: a single internode, two internodes, or six internodes. This may seem strange, but we must consider that the internodal distance of the *Bambusa procera* (Lo-o) species varies from 70 to 100 cm, compared to an average of 40 to 60 cm for *Arundinaria amabilis*, which has the longest internodes, generally located in the central part of the culm.

This data highlights the main feature that will impact rod construction. The construction of three-piece rods is obviously simplified by eliminating the node treatment and strip straightening steps (we're talking about single-handed rods in the most popular lengths today, say 7-8 ft. rods).

At the same time, for this same class of rods, the advantage of not treating the nodes would be nullified if one wanted to create a classic two-piece, where even staggering must be considered differently.

The typical diameter of the Lo-o internode is approximately 65-95 mm, with a circumference that is therefore 1.5-1.6 times larger than the average circumference of the Tonkin rods commercially available for rodmaking. The Lo-o internodal segments supplied to IBRA for testing were all over 90 cm long, straight, and almost perfectly cylindrical. The enamel exhibited a dull surface and several aesthetic defects. The colour was paler and slightly yellower than that of Tonkin.

Elastic modulus

It has already been highlighted that laboratory tests conducted by the University of Hamburg and reported by Doering indicated an average MOE for Lo-o that was approximately 17% lower than that for tonkin. The same study also highlighted the greater statistical variability of this parameter for Lo-o among the seven bamboo species tested. This finding could be of some relevance in relation to the repeatability of a specific cane. Measurements carried out by IBRA, using a dynamometer on tempered and untempered strips of different thicknesses (data presented in Part 1 of the report), qualitatively confirmed the lower MOE for Lo-o compared to AA, as well as the increase in MOE due to tempering in both materials, but there were not enough samples from different culms available to verify the absolute variability.

Hygroscopicity

Moisture loss and resorption tests on samples held in vacuum conditions for a long time and then re-exposed to normal laboratory conditions showed small weight changes (<0.5%), suggesting that Lo-o does not lose water easily under normal environmental conditions, but tends to reabsorb it rapidly. The group members hypothesize that the lower density of the material and the higher percentage of pith observed favour water absorption in Lo-o compared to AA, but the question remains open and requires specific systematic comparative measurements.

Aesthetic and sensorial aspects

Lo-o has a less "warm" and paler appearance than Tonkin, with a less uniform colour: the surface of our Lo-o samples had several spots. The typical AA scent (sweet and pleasant during tempering) is absent. Some rodmakers on the international circuit have confirmed these impressions, also noting that the surface invites perhaps excessive sanding, which almost completely removes the enamel.

The internal surface of the pith, however, was found to be unusually hard. The transverse homogeneity of the cross-sections was considered surprising: the strips obtained from the same rod were visually almost identical to each other, much more uniform than the AA..



Heat Treatment

There is no established protocol for tempering Lo-o, other than AA. In the aforementioned Power Fibers article, Doering mentions steam at 350°F ($\approx 180^\circ\text{C}$) for two hours; Duval used 320°F (160°C) for one hour. For the Brooke test rod, Alberto Poratelli applied 185°C for 10 minutes (i.e., the same method used for his reference AA) with satisfactory results in terms of colour and moisture loss.

Tiger flaming (flame burning) produces aesthetically similar results to AA at the same application times.

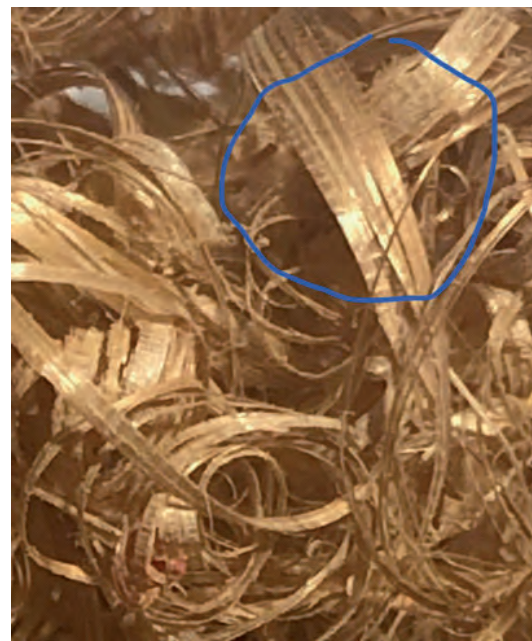


Behaviour during processing

The processing of Lo-o has generated conflicting observations, but they converge on some key points.

Nese reported completing a butt in an hour of work, saving about an hour and a half compared to the average performance with AA. This was largely due to the complete absence of a straightening step: in fact, the Lo-o strips were extremely straight and uniform. The feeling while planing is described as that of a material "with the consistency of pressed cardboard." Planing Lo-o typically produces very long shavings that separate like raffia rather than breaking cleanly as is normally the case with Tonkin.

This behaviour was initially interpreted as a structural weakness. Even the "breadstick test," breaking identical strips of the two materials with bare hands, empirically but clearly demonstrated that the Lo-o strips break cleanly and with much less force than the AA strips, which progressively fray with greater effort. At the same time, when you apply traction to the shavings with your hands, the AA ones break with very little effort while the Lo-o ones are very resistant.



Examples of Lo-o (left) and AA (right) shavings

To explain this phenomenon, a reduced cohesion between the longitudinal fibres and the matrix has been invoked: the plane does not break the Lo-o fibres, but rather detaches them, leaving them essentially intact. However, when planing AA, due to the greater cohesion between the longitudinal fibres and the supporting material, the cutting angle of the blade easily causes them to break.

Here you see Alberto breaking a AA chip (left) and a Lo-o chip with his bare hands. His facial expression suggests the effort involved.



Another observation shared in the chat concerns the “capacity” of cutting the edges of the strips, which is absolutely inferior to the AA (as the hands of many rodmakers know well).).

The nodes are very hard and tend to chip during planing. This makes it difficult to create longer cane sections, which must include the nodes..

Special mention goes to the work carried out by Giovanni Nese, who, with Lo-o and A.A., created two rods with identical tapers, using his signature Paraloid impregnation technique for both. After tempering and impregnation, Giovanni reports that the performance has significantly improved: fraying has disappeared, and the elastic response (repeated bending tests) shows full recovery without permanent deformation. Fiber cohesion has improved, and the performance during processing has stabilized.

Giovanni's work actually occupies a particular niche in the program of these tests and will be documented in a dedicated article that will be published in the next issue of the Bamboo Journal, together with the results of the comparative casting test of the two impregnated rods.

Open issues

- At the end of the chat, several issues worthy of further investigation were highlighted:
- Water absorption: whether and to what extent Lo-o absorbs water more than AA under real-world fishing conditions, and to what extent the lower density and abundance of pith influence water reabsorption.
- MOE variability: the statistically high dispersion of the elastic modulus is the most significant structural defect that emerged. This variability must be quantified at the individual culm level (not just between different culms) and understood whether it is intrinsic to the species or depends on cultivation and harvesting factors.
- Optimal tempering protocol: Tempering temperatures and times are not yet standardized; it is unclear whether there is a risk of degradation of the Lo-O power fibres at high temperatures.
- Mixed use with AA: The possibility of hybrid rods (alternating Lo-O and AA strips, or Lo-O on the tip and AA on the blank) has been proposed to take advantage of the lower mass of the Lo-O in the butt sections, but no prototype has yet been built.

Making the Brooke - Lo-o

As previously mentioned, Alberto Poratelli built two rods for the test, not identical but equivalent: a reference rod made of AA and a Lo-O rod with a 4.5% increased taper compared to the original design (originally developed for the Tonkin). The taper modification was determined using HexRod, inverting the Scully equations to compensate for the difference in MOE and density and achieving theoretically identical power (tail number).

The comparison of the static and dynamic measurements of the two rods has been published and commented on in Parts 1 and 2 of this report (see the links above).

The Lo-O shaft used for the Brooke was 955 mm long, with a diameter of 85 mm at the base and 84 mm at the top of the segment. The wall thickness was 7.7 mm and 6.5 mm, respectively.



The weight of the pole was 994 g (weighing carried out after the pole had been stored for 3 weeks in stable conditions of approximately 26°C and 59% humidity). Calculating its volume as a solid of rotation (which is justified by the lack of irregularity in the nodes), **the average density of the entire culm was determined to be 603 kg/m³.**

After splitting the culm in half, the internal surface appeared irregular (wavy) and had a uniform colour tending towards deep yellow. The material appeared "softer" than the A.A., and 18 x 7 mm strips were easily split from the half pole with a knife, obtaining very regular cuts. Some thin fibres were detached from the edges of the cracks. It seems as if it would have been possible to split as many as 24 strips!

The strips do not require straightening, so the untapered strips with a 6 mm base are planed directly. The interior is lightly smoothed with a pass of the plane: the pith is soft, uniform, and has the consistency of cardboard. At this stage, it is also evident that the cutting power of this bamboo is much lower than that of Tonkin bamboo—a painful experience for many.

An observation that adds to the one already mentioned regarding the tensile strength of the shavings concerns the fine dust produced during planing of A.A. along with the shavings, which is absent when planing Lo-o.

The density determination is repeated on the 18 untapered strips (955 mm long, 6 mm base, and 5.2 mm high). In the laboratory at 23°C and 61% relative humidity, the total weight of the 18 strips is 242 g, equal to an average density of 902 kg/m³ (planing the strips, compared to the entire culm segment, increased the volume percentage of the denser Power Fibers in the pith).

The first heat treatment is then carried out, in an oven at 120°C for 2 hours. Once the strips are removed from the oven, a series of weighings are performed to evaluate the moisture recovery from the air.

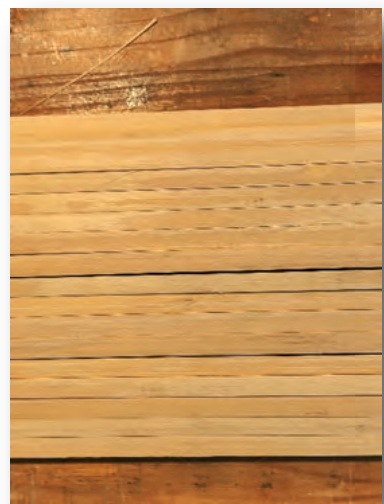
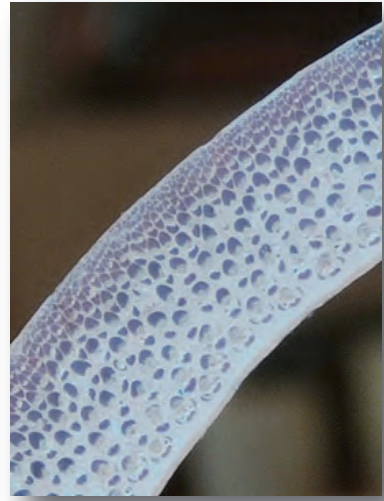
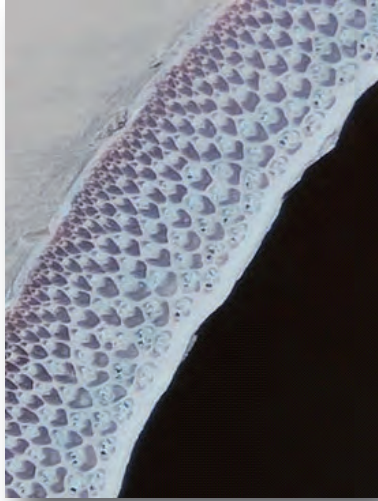
Time	Weight (18 strips) "untapered"	Delta percent
Into the oven	243 g	100%
Out of the oven	221 g	-9.1%
After 2h	222 g	-8.6%
After 8h	224 g	-7.8%
After 24h	227 g	-6.6%

Note: Upon exiting the oven, the height of the strips was also noted to have decreased from 5.20 to 5.07 mm, with a calculated volume reduction of approximately 8.2%.

An entirely empirical test was performed by snapping 250 mm-long strips of A.A. and Lo-o bamboo with both hands. While the A.A. breaks with a noticeable force, with the typical interlaced fraying of the fibres, the Lo-o breaks with less force and with a clean break.

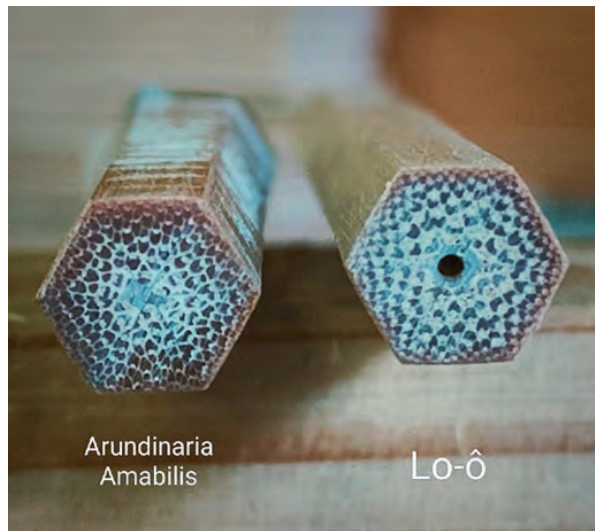
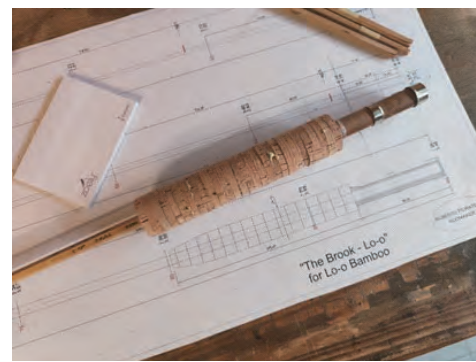
The second heat treatment lasted 10 minutes at 185°C. The weight of the strips immediately after exiting the oven was 221 g, while 14 hours later, when the final taper planing began, the weight had returned to 224 g.

When planing, the material appears to have lost the "softness" that characterized it before the heat treatment. Shavings of 0.23-0.25 mm, very long, are planed without much effort.



The outer surface was sanded with 500-grit sandpaper and cleaned with solvent so it could be attached to the HM backing with double-sided tape, as if there were more oily substances (or waxes?) than on the AA. This would confirm the sensation of a softer enamel when sanding the strips.

The gluing was finally carried out without problems with two-component epoxy, exactly as with the Tonkin version. Writing on the butt presented some difficulty: the India ink tended to spread, indicating a more porous surface than typical of the AA. This problem was solved by vigorously rubbing it with an eraser before writing with a nib and Indian ink.



Casting Tests

For readers wishing to delve deeper into the characteristics of the rods used for the casting test, I refer you to: "Bamboo Journal #28, Lo-o (Bambusa procera) an alternative bamboo for rodmaking, part 1", pages 21 and following.

In summary:

- The rod chosen for the test is the Brook Taper, a 7'6" three-piece, #4 line rod with bamboo ferrules.
- For the Lo-o version, the original taper, obviously designed for Tonkin bamboo, was modified to compensate for the different theoretical average value of the elastic modulus, which is approximately 17% lower (from laboratory tests cited in the 2022 article by Peer Doering-Arjes). The increase was calculated so that the two rods had the same theoretical static deflection, i.e., the same design power, and could therefore be compared with the same line.
- The Brook Lo-o therefore has a slightly larger diameter (approximately 4.5%). The resulting increase in blank volume is completely offset by the lower density of the material, resulting in the weight of the two rods being virtually identical (Bamboo Journal #28, page 26).

To conduct a test that was not simply a collection of qualitative opinions from fishing friends, which are difficult to relate to quantitative parameters and are inevitably subject to biases (preconceived ideas) of both the writers and the readers, a test protocol was developed based on the objective measurement of a few key quantitative parameters. The protocol was adopted/imposed on three official testers chosen from among casters of recognized technical ability: Enzo Afri, Massimo Pulze, and Valerio (Balboa) Santagostino, to whom we extend special thanks not only for their availability to IBRA but also for their consultancy in preparing the protocol.

The decision to entrust the test to "champions" of fly line casting minimizes the effect of "noise" in the measurements that would inevitably be introduced by mediocre casters.

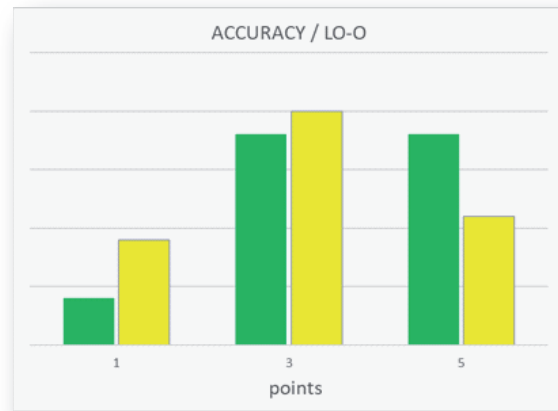
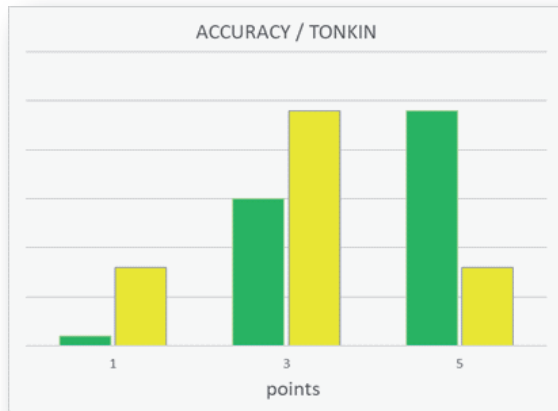
The test protocol includes 6 tests with Scoring, two accuracy tests, at short and medium range, two distance tests, with and without the use of double traction, and finally two scores assigned by the tester for the rod's performance in sustaining the loop, in medium and long range casting.

The first test is accuracy, measured with a target adapted from EFFA standards. The target consists of three concentric circles of 60, 120, and 180 cm in diameter, which assign 5, 3, and 1 point, respectively. The same DT4 line was used for both rods, on the same reel, completed with a standard leader, 250 cm long, ending in a wool tuft (roughly comparable to a fly on a size 12 hook). The accuracy test was repeated with the target at a distance of 8 m (short range) and 12 m (medium range) with sequences of 10 consecutive casts.

President Poratelli supervises the positioning of the target.

In the background, linesman Lulù checks!





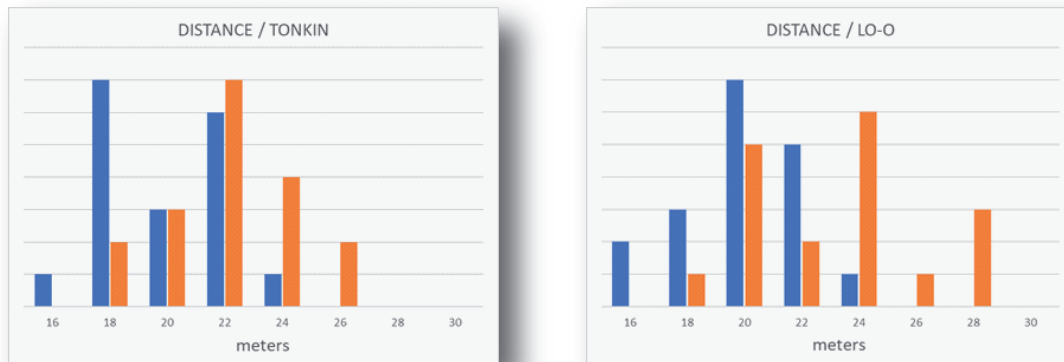
Histograms of the distribution of accuracy test scores (all throws by the 3 throwers), in green the short distance, in yellow the average distance

ACCURACY @ 8 m	AVERAGE (points)	ST. DEV. (relative)
Tonkin	4.2	26%
Lo-O	3.7	36%

ACCURACY @ 12 m	AVERAGE (points)	ST. DEV. (relative)
Tonkin	3.0	43%
Lo-O	3.1	46%

Average values from short- and medium-range accuracy tests, expressed in points, and relative standard deviation (this expresses the noisiness of the data being averaged)

The second test is the maximum distance achieved in the throw. This test is also split, with a first series of simple casts (without hauling), and a second series using the double haul.



Histograms of the distances achieved in the test (all casts by the 3 casters), in blue the simple overhead cast, in orange the cast using the double haul

DISTANCE FREE HAND	AVERAGE (meters)	ST. DEV. (relative)
Tonkin	20.2	9%
Lo-O	20.3	10%

DISTANCE DOUBLE HAUL	AVERAGE (meters)	ST. DEV. (relative)
Tonkin	22.3	10%
Lo-O	23.2	12%

Mean values of casting distance tests in meters and relative standard deviation

In addition to these objective measurements, we also add a score (also split for medium and long distances), which we call "feeling." This score is qualitatively assessed by each caster based on all the casts made for the accuracy and distance tests. The tester is asked to rate the rod's performance on a scale of 0-10 in terms of its ability to convey the correct loading and unloading sensations and to consistently effectively sustain the loop.

FEELING @ short dist.	AVERAGE (points)	ST. DEV. (relative)
Tonkin	7.2	15%
Lo-O	7.1	2%

FEELING @ long dist.	AVERAGE (points)	ST. DEV. (relative)
Tonkin	6.7	9%
Lo-O	7.8	13%

Mean values of the "feeling" evaluation and relative standard deviation

These last evaluations, which are based on a completely empirical descriptive scale, are certainly affected by level bias (due to the personal interpretation of the extreme values of the scale among the different testers), but the average values are still significant in the comparison between the two rods.

What do these average values tell us, and above all, how should we "read" the histograms?

Let's start by saying that the two rods performed very similarly.

The total number of casts in the three tests and the dispersion measured by the standard deviation are not sufficient to support a high statistical significance of the small differences between the average values of the parameters, both for accuracy and distance. The histograms allow us to appreciate the dispersion of the data and the noise of the measurements.



We can say that the Tonkin rod performed better in terms of accuracy at short range, while the Lo-o rod showed slightly superior performance at medium-long range. This data would appear to be consistent with the results of the static bending tests of the rods, which showed actual power slightly greater than that predicted by the design for the Lo-o rod (see "Bamboo Journal #28, Lo-o (*Bambusa procera*) an alternative bamboo for rodmaking, part 1", pages 21 et seq.).

This "error" is essentially explained by the fact that the elastic modulus of the specific culm will always be different from the notional mean laboratory value used in the theoretical calculation.



Conclusions

It's truly difficult to summarize the results of this extensive series of tests in just a few statements. The reader is therefore referred to the final considerations made in the two previous "chapters" of the report, already published in Bamboo Journal #28 and #29.

We must remember that the purpose of this extensive work is NOT to demonstrate whether the new material can replace Tonkin under all other conditions being equal, especially with the same taper: the answer to this question seems obvious and is fully reflected in the elastic parameters professionally measured by the Hamburg laboratory, which we already referred to in Part 1. An average elastic modulus and density lower by 17% and 12%, respectively, represent a significant difference with non-negligible effects.

It's exciting to understand whether this material, by appropriately adjusting the design parameters, allows the rodmaker to create a rod with respectable performance. This isn't a given, even though we know that in some parts of the world, bamboo species other than Tonkin are used, which produce rods of recognized quality.

This seems to be the case for Lo-o bamboo as well.

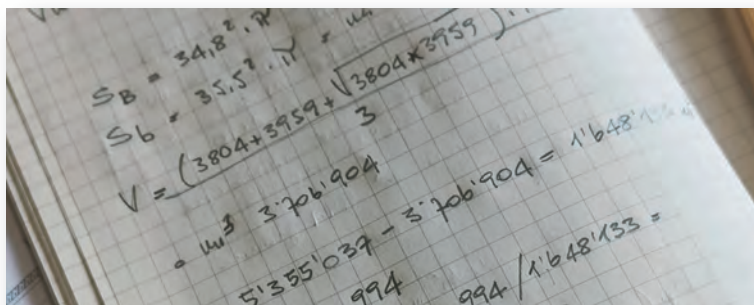
Obviously, casting performance doesn't tell the whole story: the two rods haven't been tested in fishing action or in fish-playing. Such a test, unfortunately, would be difficult to parameterize. The mechanical resistance of the finished rod to extreme stresses at typical critical points (such as when inserting the ferrules) has also not been tested. Only time and the practical experience of many rodmakers (and fishermen) will be able to provide definitive answers.

However, we can add some considerations regarding the "workability" of the material, for example regarding the behavior of the fibers on sharp edges, which will be particularly relevant – for example – in the construction of a square cross-section; the advantages and disadvantages related to internodal spacing; the different behavior in the treatment of nodes (where it is necessary to include them in the construction, for example, to create a medium-length two-piece); and, last but not least, considerations regarding the aesthetic appearance, which is less attractive to some.

The different distribution of power fibers in the cross-section, from the enamel toward the inside of the culm, which we observed in the samples available to us, could actually cause more noticeable differences in behavior in large-diameter rods (for example, in a two-handed rod) that the tests carried out on our medium-short rod did not highlight.

However, the material offers undeniable advantages: its lower specific weight, the extraordinary homogeneity of its cross-sections, the ease of splitting, and the natural straightness of the strips, along with the exceptional length of the internodal section, allow for a substantial reduction in processing times for some projects, while also greatly simplifying traditional phases.

With this work, IBRA hopes to have provided readers with a broad and diverse body of information that is as objective as possible. We trust this will be a good starting point from which to develop your own direct experience. Happy working!





Glenn Brackett in Sansepolcro

Brixia Fly Days

by Angelo Arnoldi



Around mid-January, the second edition of Brixia Fly Days took place in Calvisano, a town in the province of Brescia, which incidentally happens to be my hometown.

Unfortunately, I missed the last edition due to the flu, so I was eager to participate in what many say has quickly become one of the most iconic fly fishing events in northern Italy.

The event's numbers were impressive: 16 local associations, 14 fly fishing clubs, 16 international and 38 Italian fly tiers, 6 casting schools, several manufacturing companies, and 15 artisanal businesses. An ichthyologist and an entomologist were also present and they held workshops.

Of course, IBRA GG couldn't miss such an important event, and in fact it had its own space, managed by the tireless Silvano Sanna, where his rods and those of Franco Francucci were exhibited. On Sunday, some valuable pieces from Romano Godi's collection were added. Many other IBRA members also participated, even if they weren't exhibiting their creations.

What I liked most about this event, however, was that there were no sales areas, people were mingling, talking, chatting, it seemed more like a bar than a fair...

As one of the organizers said, people come to Brixia Fly to meet, share stories, and pass on a passion that unites generations. In my opinion, they hit the nail on the head.

Let's take a look at some photos from the event...





The IBRA table



Mirco trying to hide behind some rods



Giovanni



The fly tying lane



Silvano and Mauro



There was also a member of the fairer sex



Fantastic nets by Tenkara Berghem



Reels on the Experience Italian Style casting school



Other IBRA members



Water colour flies, beautiful



Books



Photos taken at the beginning of the demonstration, there were still few people... later it was packed..



During this event, I was happy to see old acquaintances again, Valerio, or rather Balboa, first and foremost, but I also made some simple social friendships in person.

One of these makes really nice reel seats and handles.

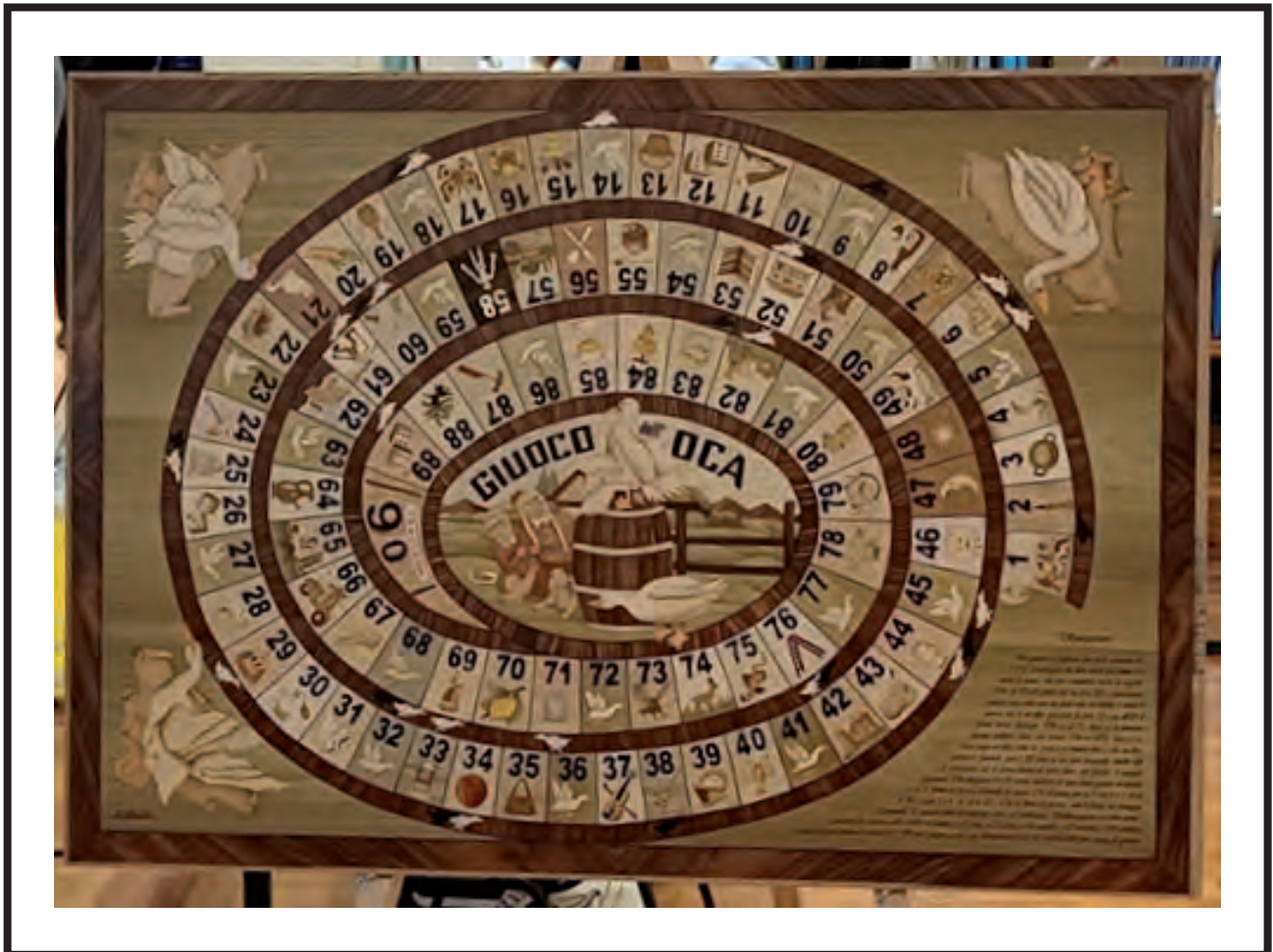


And then there was him... the president and jack-of-all-trades of my club...



now more than fishing he does this stuff... they are wood inlays.

This is a real wonder



Well, in conclusion, it was a great event; it was much needed around here.

I hope next year will be as successful as it undoubtedly deserves.





Hoagy Carmichael in Sansepolcro



wooden reel seat fillers

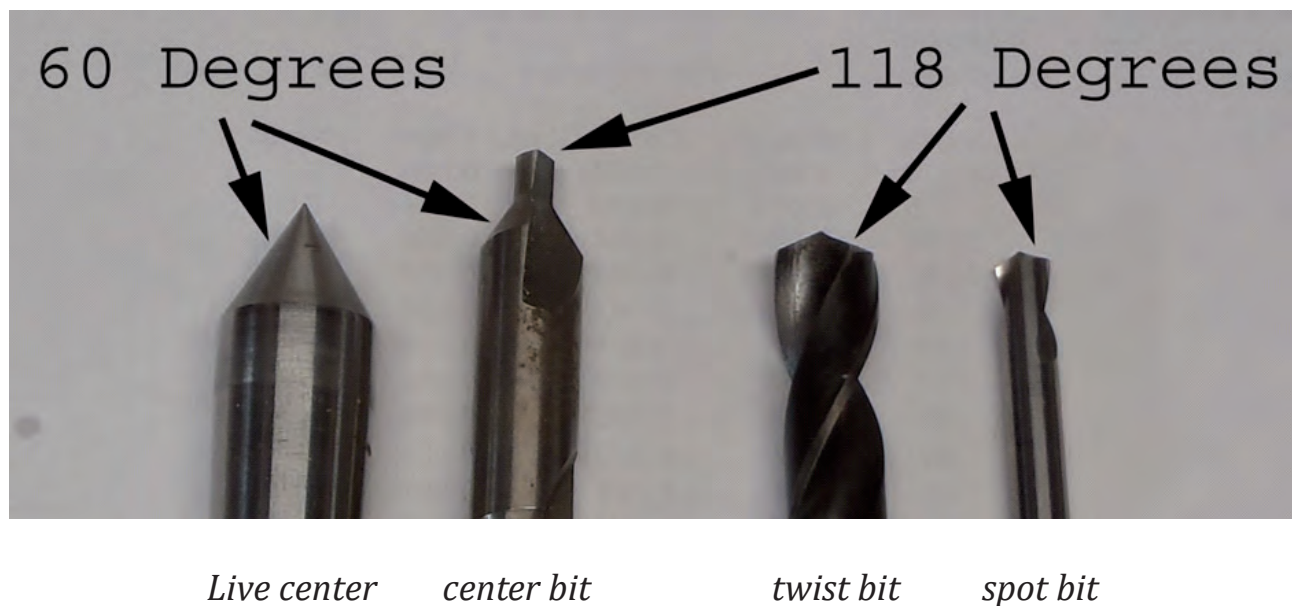
by Grayson Davis

Drilling

One perverse law of nature is that the most beautiful chunks of wood arrive in my shop with small ends and angles anything but square. They can be very challenging to drill! The methods I used on them were occasionally successful, but too often disappointing.

A YouTube video from a pen turner set me straight. Try his method; you will like it. Mark the spots where you want each end of the hole. Center drill one and spot drill the other. (The center bit produces shoulders to fit a live center. The spot bit leaves a hole to fit a twist bit.) Put your drill bit in the lathe chuck and your live center in the tailpiece, then mount your awkward blank between them. Grip the blank with large channel lock pliers. At slow speed, drill the blank by cranking the live center toward the chuck. Stop a little over halfway through and reverse the blank.

It works every time for me. I go very carefully. You will also, right?

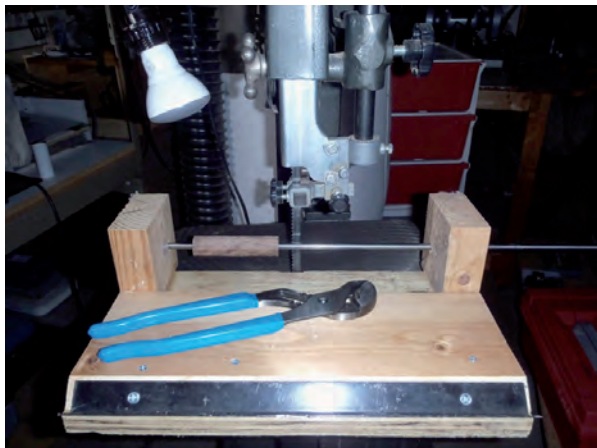




Roughing

Even with proper drilling, wooden fillers may require many passes in the lathe before they become cylindrical. Those beautiful wooden burls may crack and split with heavy feeds. Roughing them on the bandsaw can reduce your prep time. Here is a wooden jig which clamps to the bandsaw table. The jig supports a piece of drill rod of the same diameter used for drilling out the blank. The position of the platform must be adjusted to obtain the blank diameter desired. Those channel-lock pliers grip the near side of the blank, out of the path of the saw blade. Four or five passes typically produce a blank ready for turning. The time spent adjusting the platform will become less significant if you rough several blanks before disassembly.

Again: it works every time for me. I go very carefully. You will also, right?





Per Brandin in Sansepolcro

Lake Soprasasso Excursion: Trekking and Bamboo Fishing



by Davide Fiorani

Introduction

The trekking and fishing trip to Lake Soprasasso with Gianpiero Bertolini began with an enthusiastic phone call:

"Hi Davide, if you come up, we can go for a trek to Lake Soprasasso to see if the brookies are still around. It's a two-and-a-half-hour hike and it's worth it!"

I immediately accepted, ready for this excursion into the wild—or so I like to think of it—Val di Rabbi, in Trentino.

That's how the trekking and fishing trip with Gianpiero came about.

The ascent route

It's now late August of last year. We set off at 7:30 a.m. from a point at 1,245 meters above sea level, where Fausto accompanies us in his off-road vehicle (permission from the forestry department is required to use the road). The starting point is near the Malghetta forest hut, after the bridge over the Rabbits stream, following the SAT 121 trail. From there, we can already admire the spectacular Valorz waterfalls.



The day is cloudy and brisk. We strap on our backpacks and begin a gradual climb through a sparse larch forest, passing the Valorz waterfalls



The trail then begins to steepen. After about two hours, we reach the Malga Casera bivouac, where we take a short break before making the final climb. Dark chocolate is a must.



A final half-hour effort and we arrive at Malga Soprasasso, right above the lake.

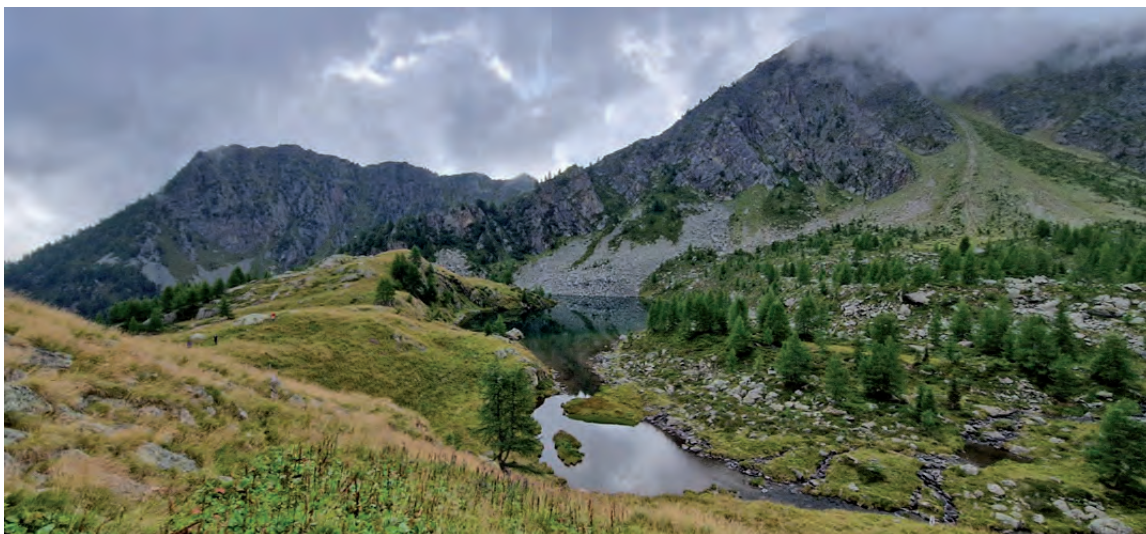


The route is over 3 km long with an elevation gain of over 900 meters, reaching the lake's 2,177 meters: a moderate physical challenge, immersed in pristine nature.

Arriva and preparation

The ritual photos, the change of sweaty T-shirts, and we immediately set up our bamboo rods: Gianpiero brought a 7'0" #3, I brought a 7'6" streamer rod, a choice that later proved to be perhaps a bit too optimistic.





We descend to the lake, a small body of water measuring approximately 200x90 meters, nestled between paragneiss rocks (medium-high grade metamorphic rocks, derived from the transformation of pre-existing sedimentary rocks) in the Cevedale Mountain Group. There isn't a living soul!



A quick glance: a couple of rises and we see brookies near the shore.

We're thrilled.



Fishing for brookies

Gianpiero begins to stalk the first fish, staying away from the shore so as not to disturb them. He uses a size #18 fly with an opossum tuft and catches the first fish, small but lively.



Given the size of these brookies, I need to revise my streamers because I wasn't expecting them to be so small. I find a couple of #12s in the box and use those: in the end, they'll be a good selection. The strikes keep coming, and only the "bigger" fish stick to the hook.

It's a succession of catches: every now and then we have to move because we disturb the other fish, which try to hide in other areas, but these, unfortunately for them, are always within our reach.



Three hours of fishing in this alpine lake surrounded by meadows and glacial remnants: we're satisfied and decide that's enough.



Return and end of the day

We stow our gear in our backpacks, fill our water bottles at the spring near the mountain hut, and get ready. This time, we have to descend a little over five kilometres to the village of San Bernardo, where we left the car.





Once we reach the bottom, we remove our boots, get in the car and head back to Dimaro to our base camp. Beer.

Practicing catch and release is one thing but needing something to eat, we start thinking about dinner. We opt for an excellent venison fillet, roast potatoes, a nice piece of cheese from Malga Mondènt, and a good local beer..



Great. Tomorrow we'll be ready for the next adventure.



Tim Anderson in Sansepolcro

All things Bamboo: Bamboo Trout Nets and Wading Staffs



by Dave Dozer

Building bamboo nets and wading staff

I've been building bamboo fly rods since 2005, but six years ago, my wife surprised me with a challenge: could I build her a trout net and a wading staff out of bamboo? I suggested using engineered bamboo plywood—the kind used for furniture and flooring—but she quickly countered, "I want them made from the same Tonkin bamboo culms that you build your fly rods from."

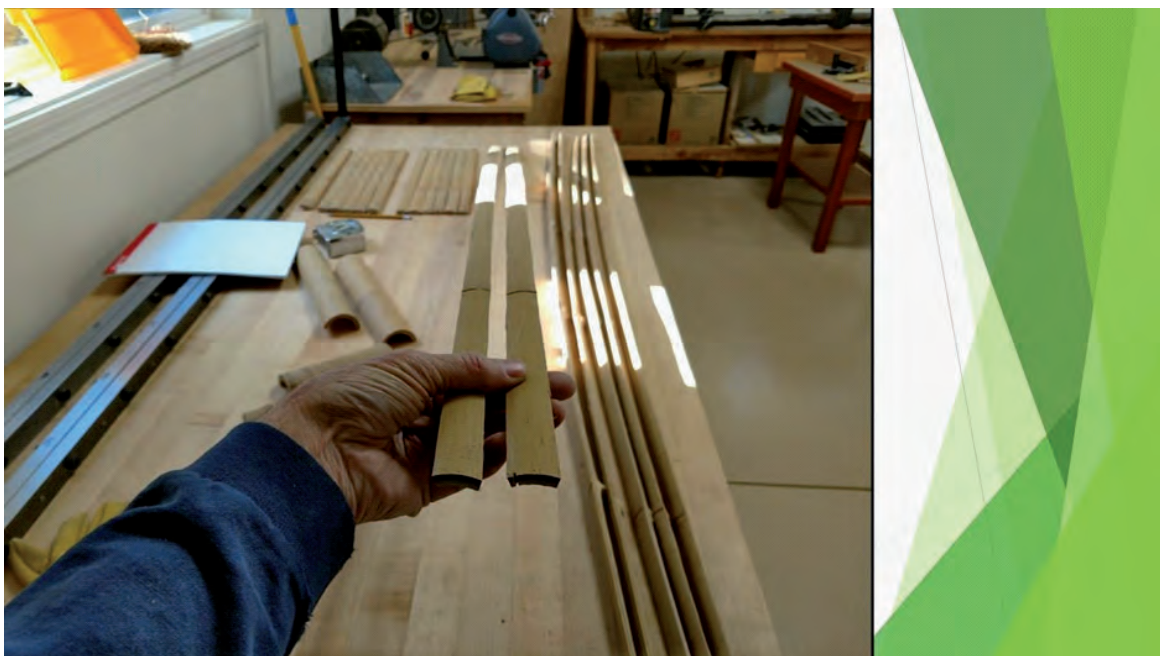
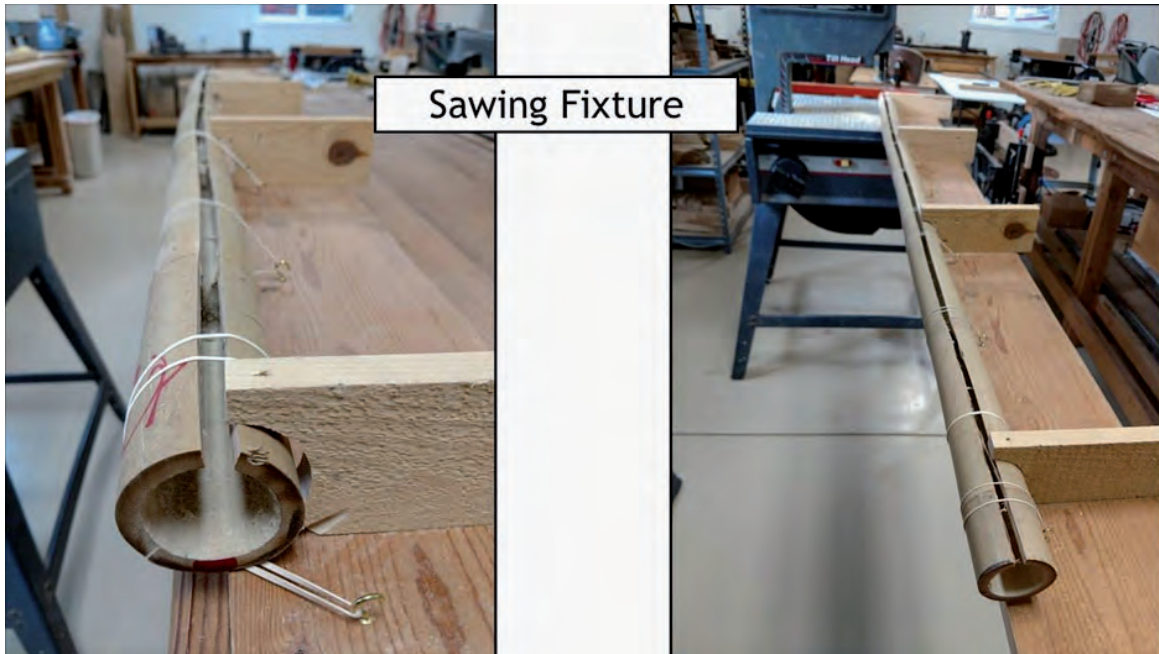
So, there was my quandary: how do you take a 12-foot-long culm of bamboo and turn it into a trout net and a wading staff? Reluctantly, but also a little excited by the challenge, I agreed to give it a try.

Though I'd never built a net before, I was familiar with the steps. And if I thought of a wading staff as a sort of "very large bamboo fly rod," I already had a few ideas brewing. I decided to tackle the net first, eager to see what I could learn along the way.

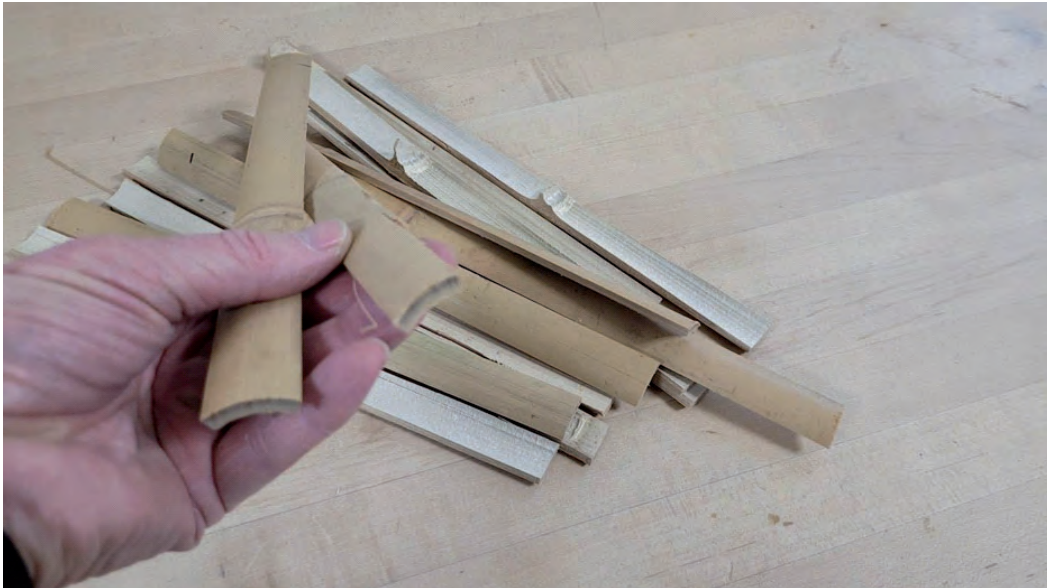
Building a Bamboo Trout Net

A net would need several long, thin strips glued together to form the hoop, while the handle would require thicker pieces. I set my sights on an overall net length of about 27 inches, with a 10-inch handle—about 2 inches wide and three-quarters of an inch thick. The biggest challenge? The naturally curved, uneven wall thickness of a bamboo culm. That's what would really test my skills.

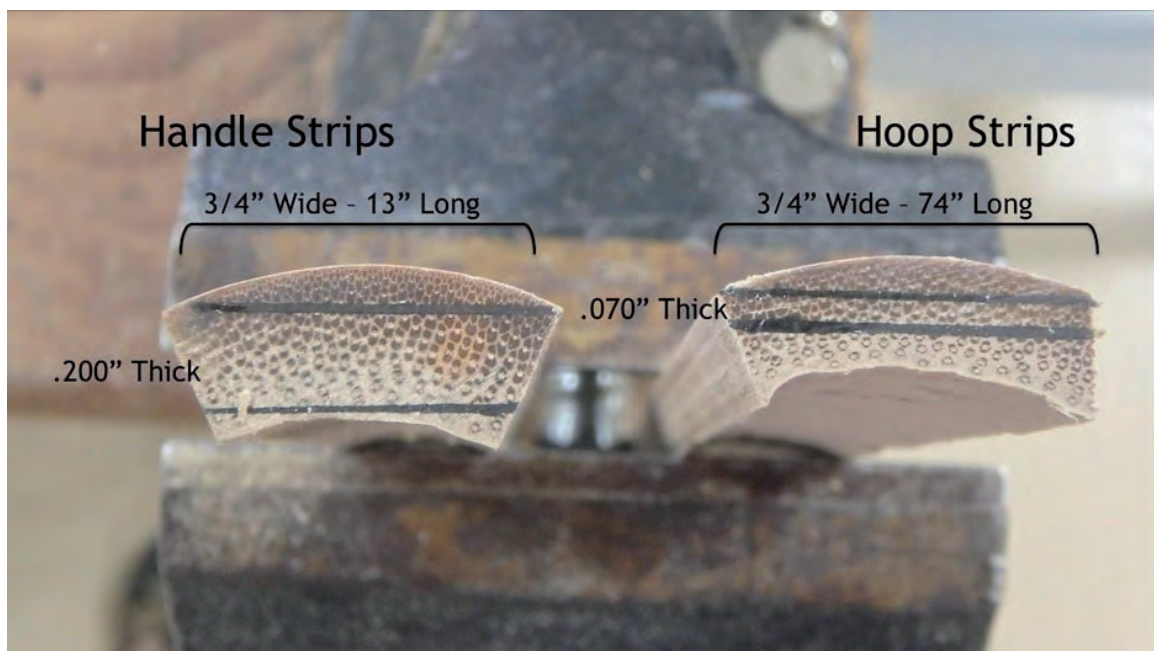
Strips for the hoop section: After studying commercially made graphite nets and crunching some numbers, I figured out that the hoop strips needed to be about 74 inches long to span the entire length of the handle. I'd need five strips, each about three-quarters of an inch wide. My first attempt at splitting these long strips from a culm was a lesson in frustration—they just wouldn't split straight. Determined, I built a custom jig for my bandsaw, and that made all the difference.



Strips for the handle: The shorter strips for the handle—only about 13 inches long—were much easier to split. It's always nice when part of a project goes smoothly!



Sanding strips to thickness: Next came the time-consuming but satisfying process of thinning all these strips to the right dimensions. Through plenty of trial and error, I found that hoop strips needed to be just 0.070 inches thick so they could bend around the frame during glue-up. The thickest handle strips I managed were about 0.200 inches. My trusty drum sander earned its keep here, making quick work of the job and saving my arms a lot of effort.

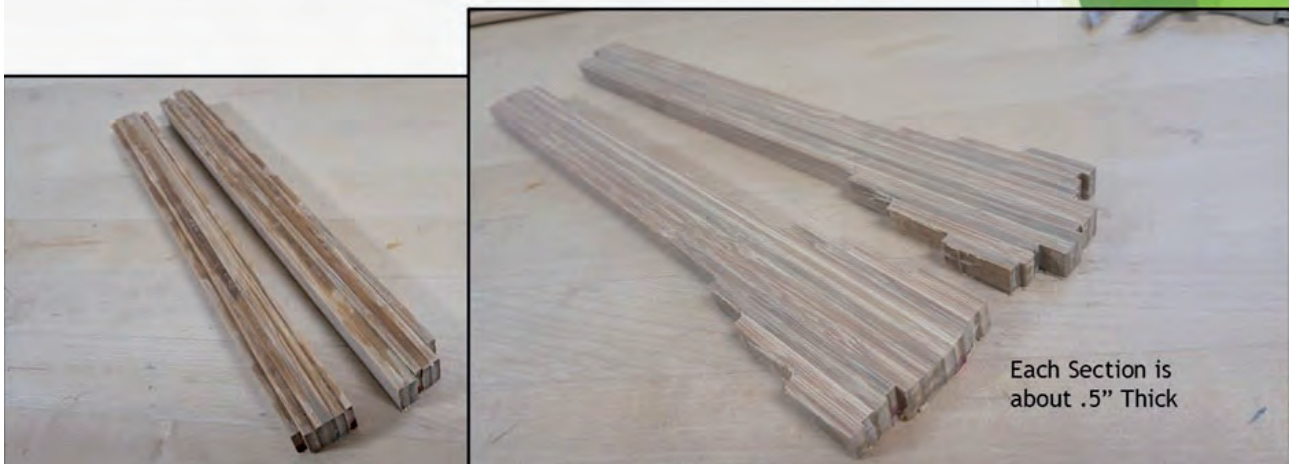


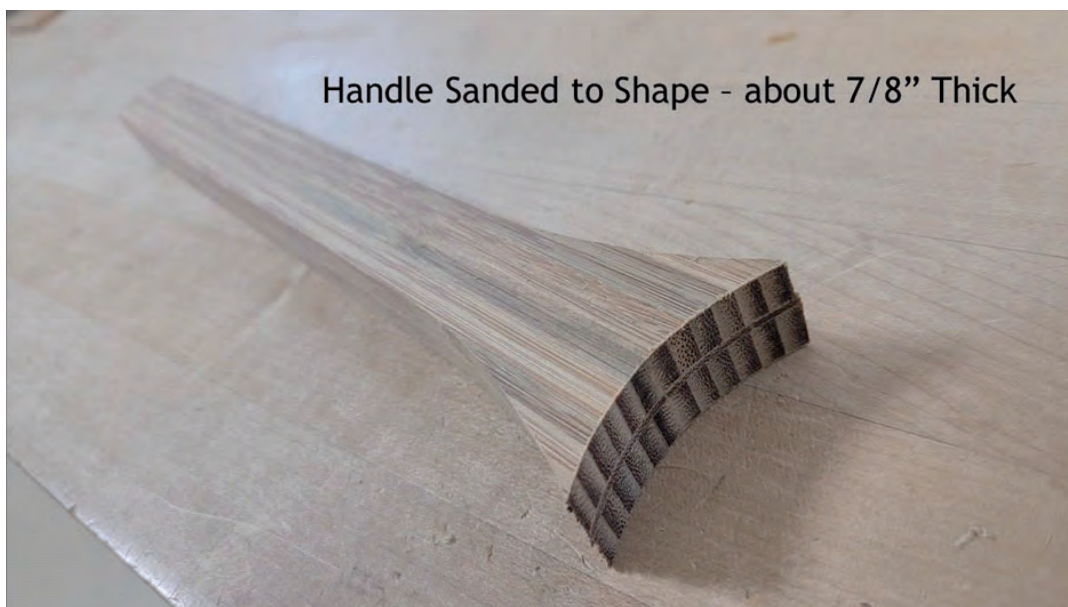




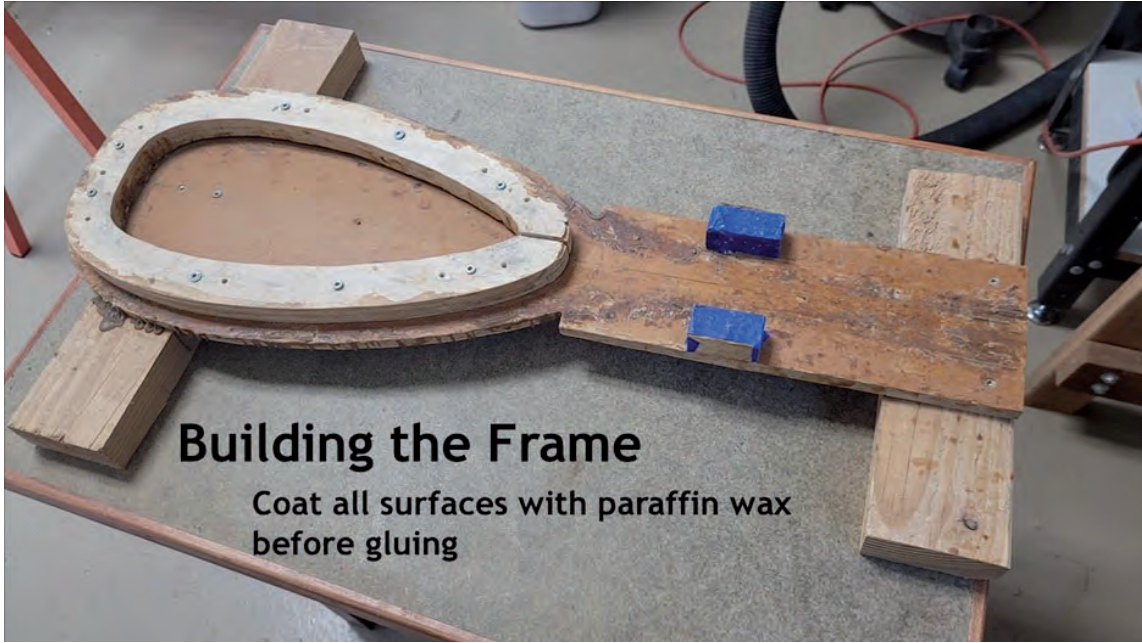
Forming the Handle: To get the handle to three-quarters of an inch thick, I designed two matching handle sections, glued them together, and used TiteBond III as my adhesive. Each section had six strips glued side-by-side, with extra smaller strips added where the top of the handle would be wider. For a bit of flair, I also glued thin strips to the inside surface of one handle section—strictly for cosmetics. After sanding the inner faces smooth, I glued the two halves together. (If you look at the images, you'll see the handle taking shape step by step.)

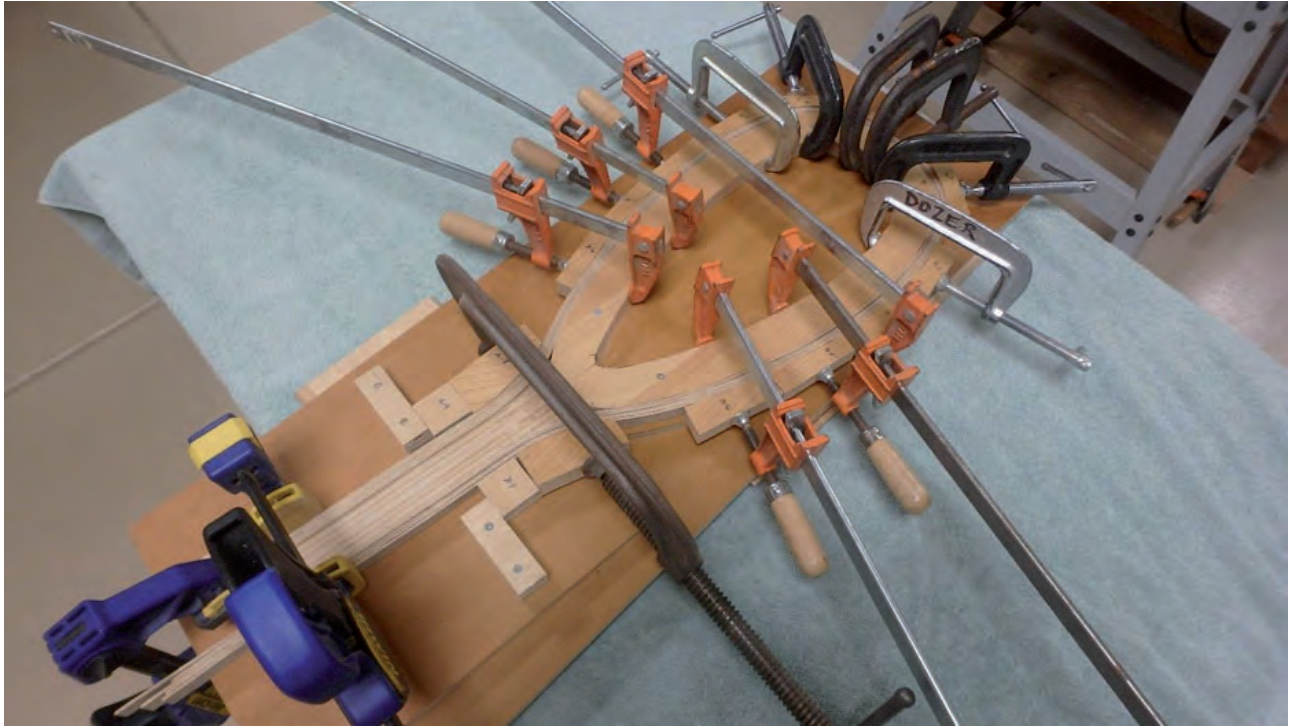
Gluing Handle Strips With TiteBond III



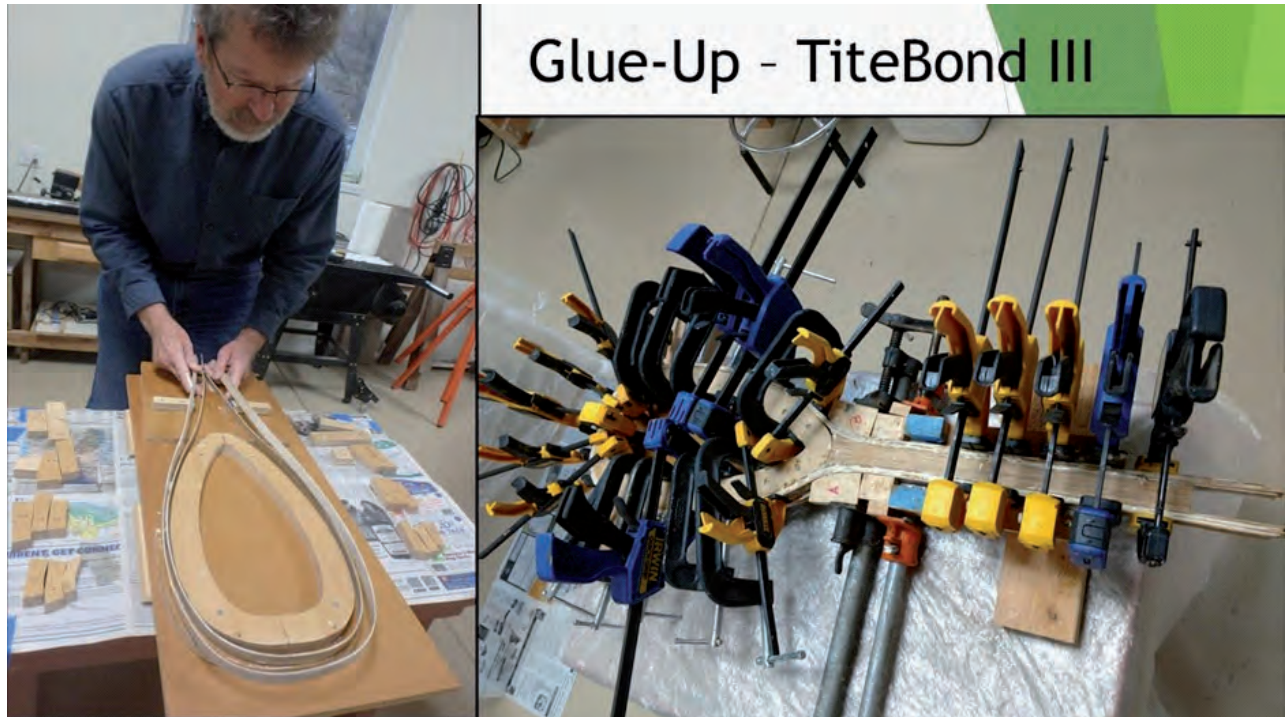


Gluing The Net: This was the moment of truth—bending the hoop strips around a fixture to shape the net and gluing them to the handle at the same time. My first test run was a bit dramatic: the thin strips broke at the nodes! A little research and some trial runs showed me that pre-bending was the secret. In traditional building of wood nets steam is used to make the strips more flexible, but I found soaking my bamboo strips in hot water for two hours worked just as well. I clamped them in the fixture overnight (no glue yet), and by the next day, they'd relaxed into shape—holding just enough of the curve to make assembly much easier.





Glue-Up: This is the part where things got a little messy! I used TiteBond III as an adhesive, which is easy to work with, cleans up well, and cures waterproof. The rest of my build process is much like making a standard wood net: glue-up, scrape off dried glue, shape the handle, cut a thread groove on the hoop with a router, drill holes for the net, sand all surfaces, varnish with TruOil, and finally attach the net bag. If you're following along in the photos, you'll see these steps in action.







And the final shaped and sanded 'ready to varnish' net:



Finished Bamboo Net -



- * 10 thin coats of TruOil
- * Tie on the Net Bag
- * Tie on a Lanyard



Conclusion:

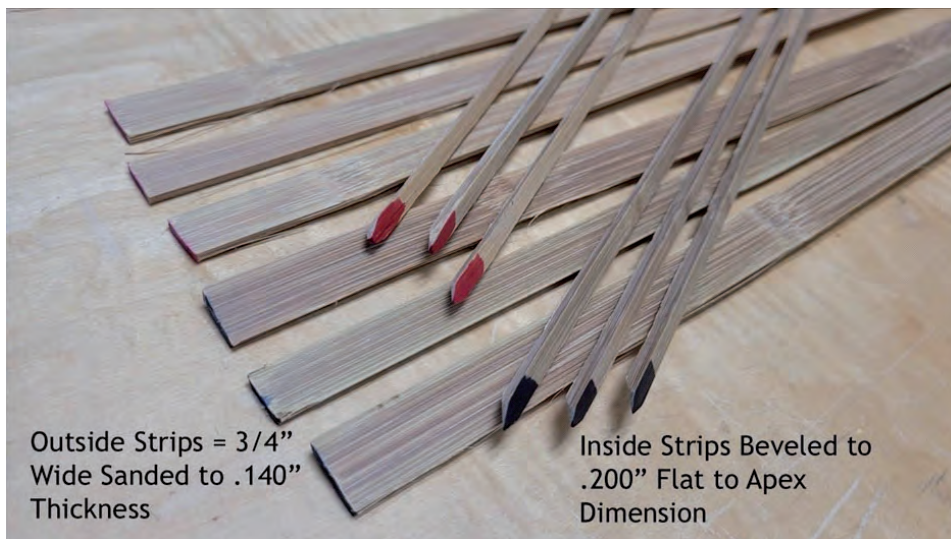
In the end, bamboo turned out to be an exceptional material for nets. My biggest revelation? These nets feel incredibly light in the hand, yet impressively strong. Of course, working with bamboo's round, uneven surfaces made cutting flat, parallel strips my toughest challenge. But with patience—and a trusty drum sander—I was able to craft something I'm proud of. If you're thinking of tackling a project like this, don't underestimate the value of good tools and a willingness to experiment. If you have further questions about these Bamboo Nets, you can contact me at: bamboopursuits@gmail.com.



Building a Bamboo Wading Staff

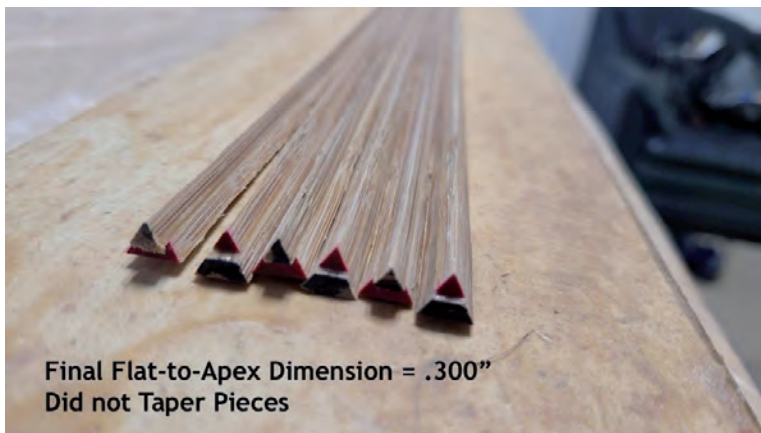
Design Approach: For the bamboo wading staff, I decided on a solid, single-piece design rather than a collapsible one. I modeled it after a traditional six-sided, hex-shaped bamboo fly rod, complete with a cork handle. The hardest part was making it thick enough to be sturdy—about 0.6 inches flat-to-flat—which meant using a double-built design: twelve bamboo strips in total, six wide outers and six narrow inners. Unlike fly rods, I didn't bother with tapering or heat treating these strips, trusting in bamboo's natural strength.

Two culms were cut to the desired length of about 54", and then hand split into strips that were about 3/4" wide. All the strips were then sanded down on both sides on the drum sander to a final thickness of 0.140" thick. Six of these strips were set aside for the outer pieces of the wading staff. The remaining six additional strips were beveled on a Bellinger Hand Planers Friend to a flat-to-apex dimension of 0.200"; these were the six inner strips for the wading staff.

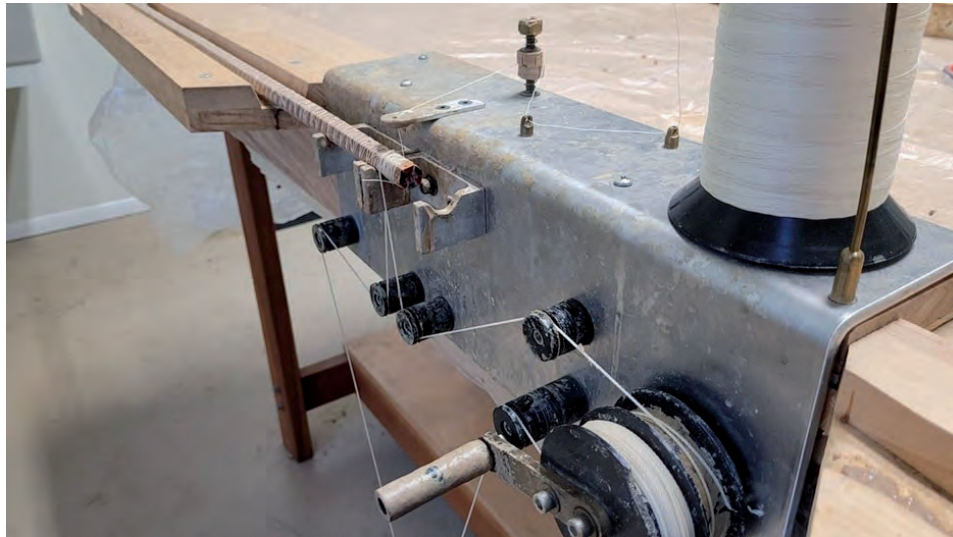




I glued the inner and outer strips together with TiteBond III, staggering them in a 3x3 pattern for extra strength. After glue-up, I rough-planed the edges of the outer strips to about 60 degrees, which made the next step—beveling with the Belling Hand Planers Friend—much smoother. I beveled the finished blank to a flat-to-apex dimension of 0.300 inches.



Once the strips were prepped, I did the final glue-up with my single-string binder, this time using Unibond 800 for extra durability. After removing the binding thread and sanding the staff smooth, it was time to add the grip and finishing touches.



I glued a six-inch cork grip onto a mandrel and turned it on the lathe to a classic Full Wells shape. For the bottom end cap, I machined a custom piece from Delrin—a detail that makes the staff both tough and quiet on the riverbed. Delrin, for those unfamiliar, is a tough, stable plastic that's inexpensive and easy to machine—perfect for a wading staff that's going to see a lot of action. Brass is another option for the bottom end cap, but it's pricier and can be noisy against rocks. For the finishing touches, I machined a brass fixture for the bottom of the cork grip (to attach a retractor), turned a top end cap from English Walnut, and added decorative thread wraps below the grip. Before assembling the parts, I dipped the bamboo in six coats of Semi-Gloss Marine Spar Varnish, then put everything together for a final build I was proud to test on the water.





Wading Staff
Components



Dipped Varnish - 6 Coats of
Semi-Gloss McCloskey Man
O'War Marine Spar Varnish



Thread Wraps and English Walnut End Cap

Conclusion:

Having built many bamboo fly rods, it was rewarding to apply my experience—and my favorite tools—to this new project. The drum sander was a lifesaver once again. The most challenging part was the double-built strip design, something I'd never tried on my rods. But in the end, I learned a lot and created a wading staff that's both functional and beautiful. Also, I found that using bamboo in this design gave me a wading staff that is extremely strong, and it floats as well. If you're a fellow craftsperson, I hope my journey inspires you to experiment with your own builds.

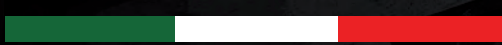


Jeff Wagner in Sansepolcro



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