

# The American Fly Fisher

Volume 14 • Number 1 • WINTER 1988



## Last Cast



It is with some regret that I inform our readers that this will be the last issue of the *American Fly Fisher* for which I will function as editor. I have enjoyed my tenure in this capacity and am grateful to the Museum for allowing me the opportunity to publish articles and essays that I felt were necessary to a proper understanding of fly-fishing history in North America. In four years' time, I managed to cover quite a bit of ground (albeit, mostly in the nineteenth century), and I think I said most of what I planned to say. In the interest of the Museum and the *American Fly Fisher*, it's time for me to step down—fresh insight, new blood, a new perspective, and all that. Those of you who have

been associated with the Museum for some time have seen the *American Fly Fisher* mature considerably. From Hogan to Schullery to Ledlie, each of us put his own particular stamp, his own personality into this endeavor, and each strived to make his effort more professional. I think (naturally) we were eminently successful. The *American Fly Fisher* has been a vehicle for the publication of accurate, historically significant writings relating to the development of fly-fishing in North America. It has become a true journal, whose high quality has been a direct reflection of its staff and, most important, of its contributors.

I would especially like to thank Richard Hoffmann, Verlyn Klinkenborg, Jim Brown,

John Orrelle, Paul Schullery, and Allan Hassall for their frequent, extensive, and scholarly contributions to the *American Fly Fisher*. I am also indebted to Urch and Marge Gültepe for preparing our fine index (vol. 11, no. 1). The artful touch of Martha Merwin, who has done our typesetting and designed the magazine's layout, was much appreciated. Many, many thanks also go to Diana Morley, our copy editor, for tackling the garbled sentences, misspellings, and problems with grammar.

So that's it gang; I wish every success to your new editor, and I hope that he or she—in a weak moment—will allow me to submit an article from time to time. §



# The American Fly Fisher

WINTER 1988 Volume 14 Number 1

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# Where the Action Is: Part II

by Graig A. Spolek



Having quantitatively defined the mechanical properties of fly rods in terms of stiffness and frequency for the first part of his series (*American Fly Fisher*, vol. 13, no. 4), Graig Spolek now compares these properties in contemporary fly rods with those of the nineteenth and early twentieth centuries. According to Spolek's experimental studies, rod stiffness has not changed substantially in the last century, while rod frequency has increased dramatically. Spolek also suggests that now, with a method for accurately measuring the mechanical behavior of fly rods in hand, a new, more accurate and highly quantitative system for the rating of fly rods could easily be developed: a numerical system with scales for both stiffness and frequency. After a brief introduction, the details of his unique experiments are described, and the results, particularly as they relate to the evaluation of the fly rod, are discussed in depth. We hope that Spolek's efforts in this area will not be taken lightly and that they

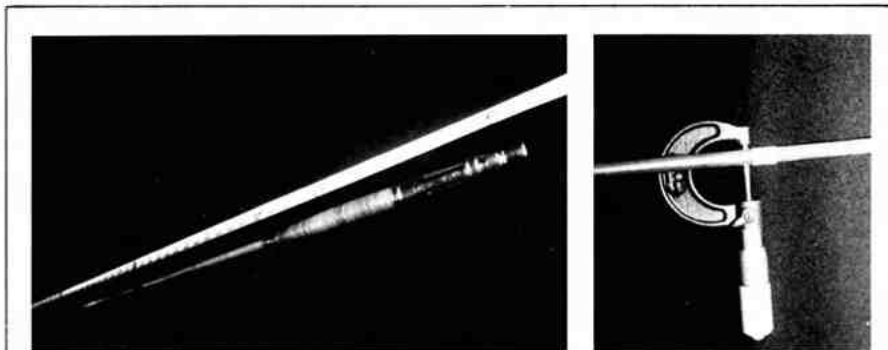
will have considerable impact on fly fishers as well as rod manufacturers. It's time to take action on "action." Once and for all, let's rid ourselves of this imprecise, overused fly-rod description and champion the cause of stiffness and frequency.

## Evolution of the Fly Rod

In the first article in this series, arguments were made that the mechanical performance of a fly rod can be completely described by knowing just two factors: stiffness and frequency. These two factors were used because they have precise meanings and indicate the way a rod will respond to the two main demands placed on it during fishing: fish-fighting capacity and casting effectiveness. When one is fighting a fish, the fly rod absorbs the shock that a lunging fish imparts to the line, preventing the fish from breaking the line by these efforts; it puts a static demand

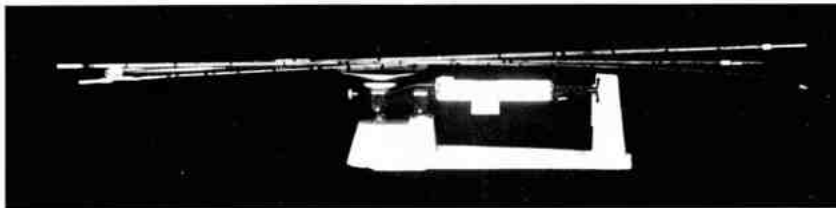
on the rod. The rod's ability to absorb the energy of the fish's fight is characterized by the stiffness. One selects rod stiffness according to the size of the fish sought, choosing a rod with high stiffness for salmon, and choosing a more limber rod for trout. The rod's frequency, on the other hand, reflects its ability to be cast, the dynamic activity of fly-fishing. During casting, the rod is loaded by the caster's motion, but it unloads on its own and at its own speed. The rod's frequency is a measure of this unloading speed. The rod with a high frequency will deliver the high line-speed that is necessary for long-distance casting. The high frequency often makes the rod more difficult to cast and complicates delicate fly presentation; thus, sometimes a rod with a lower frequency is selected when fly presentation or casting ease is more important than distance casting.

Today's fly rod offers us the choices of sophisticated design: high or low stiffness and high or low frequency. Generally, then, we choose a rod depending on the quarry we seek and on our casting skills. This latitude of choice has not always been available. Early fishers used rods that were very crude, in some cases no more than cut saplings. As fly-fishing became more popular, the rods became much more sophisticated. Rod materials were selected for their strength and the ease with which they could be turned into rods. Such hardwoods as white ash, ironwood, lancewood, and greenheart became popular choices for solid wood rods; these were usually turned on a lathe. They were strong, flexible, and very handsome; but they suffered in that their solid bodies contributed little to their function besides excess weight. The logical progression of rod development was the use of a material that concentrated its strong fibers near the outside surface of the rod; a suitable candidate for this was bamboo. While raw bamboo exhibits this property, the diameters and tapers of the cane are at Mother Nature's whim and are not always the best for fly rod performance. More uniform mechanical properties for rods were obtained by cutting strips of bamboo, tapering them individually, and gluing them together. Rod designs using four-strip, five-strip, six-strip, and eight-strip construction were tested with varying success; the six-strip design eventually emerged as the most popular. Initially, bamboo obtained from



The length of each rod was measured with a tape measure.

Rod diameters were measured with a micrometer. The rod length was divided into ten equal segments, marked with white tape, and diameters were measured at each mark in order to determine the rod's taper.



The weight (or mass) of each rod was measured with a triple beam balance.

the Calcutta region of India was used, but then the bamboo from the Tonkin region of China proved to have superior qualities. Years later, even the Tonkin cane rods were improved by an impregnation process that increased the rods' durability and perhaps even their performance.

Fiberglass rods were the first to be constructed solely of synthetic materials. Initially, these rods were of solid fiberglass, but like the solid wood rods, they were too heavy. Thus hollow fiberglass rods were soon developed, and these revolutionized the fly rod industry. They could be manufactured at much lower cost than bamboo rods, and they possessed very consistent properties—more consistent than bamboo with all its natural variations. Furthermore, it became easier for rod designers to obtain the stiffness and frequency they sought, because a rod's length, diameter, and taper could be easily controlled. Although a major one, the only problem with the hollow fiberglass rod was its weight; the stiffness-weight ratio limited the frequency that could be achieved in a rod of reasonable mass and length. Modern graphite rods obviate the problem. Using graphite of varying density and modulus, today's rod designer can create almost any stiffness and frequency in a rod that a fly fisherman desires.

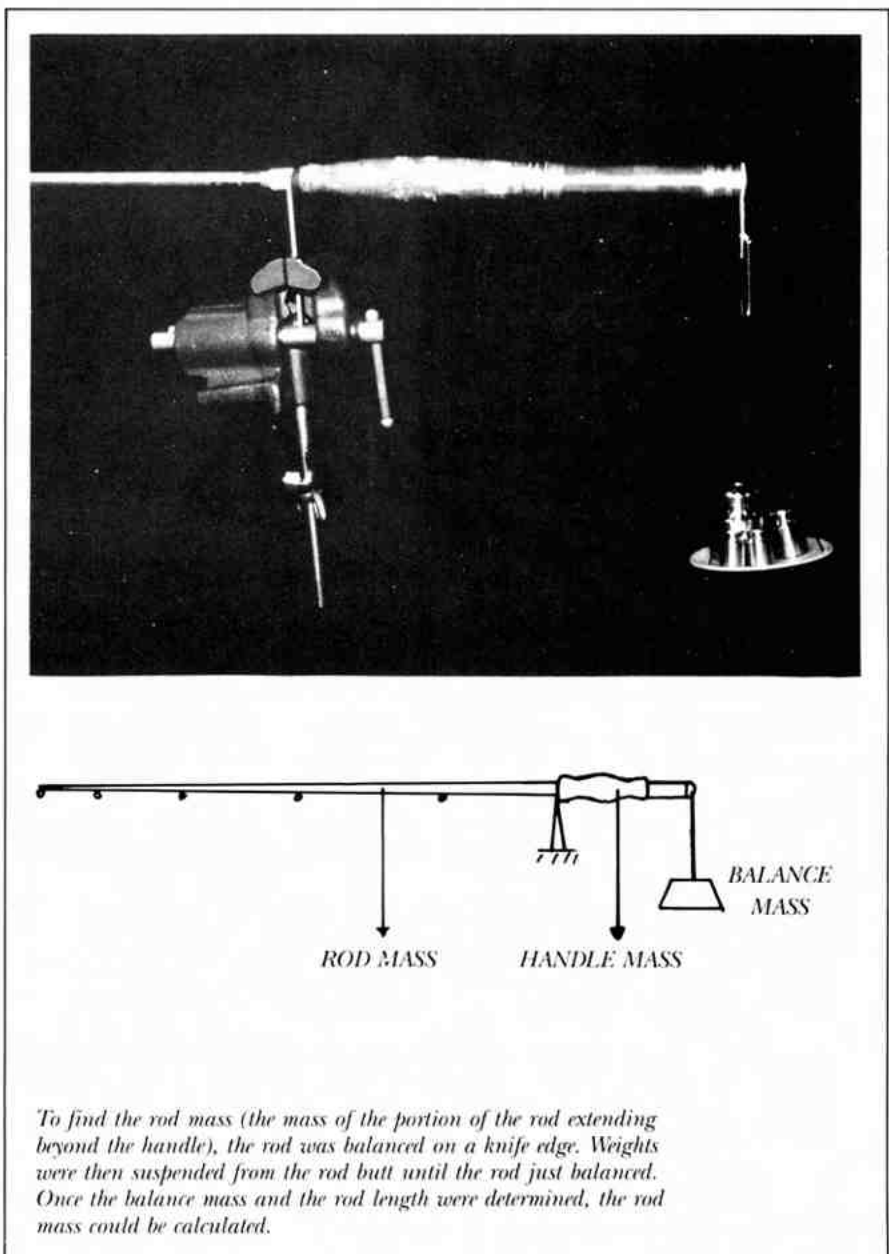
In short, then, because of the materials and the limited technology available, early fly rods had the appropriate stiffness for handling a particular range of fish, but a rod's frequency could not be precisely controlled. More specifically, I would guess that the early rods had much lower frequencies than their modern counterparts. The purpose of this article is to describe the process by which I tested this hypothesis. I conducted an experimental study to measure rod behavior. I will explain how these tests were performed and present the results of the test so that you can draw your own conclusions on whether you agree with my hypothesis. Finally, I will propose a new rating scheme for fly rods that is more consistent and complete than the current method.

#### Rod-Testing Procedure

Testing the changes that have occurred in fly rods requires, of course, a collection of rods of different ages. Such a collection was assembled (see table on page 7). In order to avoid comparing apples with

oranges (as much as possible), the rods chosen had similar lengths and similar stiffnesses (e.g., what would be considered trout rods rather than salmon rods). The rods had been constructed with a variety of construction techniques and materials. The primary source of rods was the American Museum of Fly Fishing, whose generous loan of rods made this study possible. A few rods were also selected from the

author's collection, primarily to provide more samples of modern rod-technology. In all, sixteen rods were tested, but two of these proved to have the very high stiffness of salmon rods, so they were not used for other comparisons. A complete description of each rod and its characteristics is given (see table). The overall objective of the test program was to determine the mechanical performance of each rod. In





order to do this, several different measurements were made. Physical properties, such as length, weight (mass), and taper, were measured. Rod stiffness was also determined as well as the change of stiffness for each rod (see the *American Fly Fisher*, vol. 13, no. 4, for the first article of this series and for a discussion of this stiffness change). Also, the dynamic performance of each rod was determined by measuring the rod's natural (or resonant) frequency, and the amplitude of vibration at this resonant condition.

#### Physical Properties

**Length:** A tape measure was used to measure the *overall length* of the rod (see photograph). Of greater importance for mechanical performance is the length of the rod that actually undergoes flexing during casting and fish-fighting. Since the enlarged handle essentially eliminates flexing of this portion of the rod, the *rod length* was measured from the winding check to the rod tip. The rod length was then divided into ten equal segments, and each segment was separated by a white tape marker. These ten-percent marks are illustrated in the accompanying photographs.

**Taper:** For each rod, the diameters were measured (with a micrometer) at the rod butt, the tip, and at each of the ten-percent positions. For cane rods, the diameter was measured across the flat surfaces on which the guides were mounted (see taper plots on page 9).

**Weight:** The overall weight (*overall mass*) for each rod was measured with a triple beam balance (see photograph). Again, it is the mass of the portion of the rod extending beyond the handle that is of greatest importance for mechanical behavior. This *rod mass* could not be measured directly, since the handle could not be removed from the rod. Therefore, the following indirect method to approximate the rod mass was used:

Each rod was balanced on a knife edge positioned right at the base of the handle (see accompanying illustration). The rod was balanced by suspending weights from the butt of the handle. By finding how much weight (*balance mass*) was necessary to just balance the rod on the knife edge, the rod mass could be calculated. This calculation required two major assumptions: (1) the handle is of uniform diameter and density, and (2) the rod taper is uniform. It is clear that these two assumptions aren't really accurate for some of the rods, but the errors introduced aren't enormous, either. The method was tested by using the procedure to calculate the rod mass for an expendable graphite rod. The handle was then cut off and the rod mass was measured directly. The difference between the two methods was less than three percent.

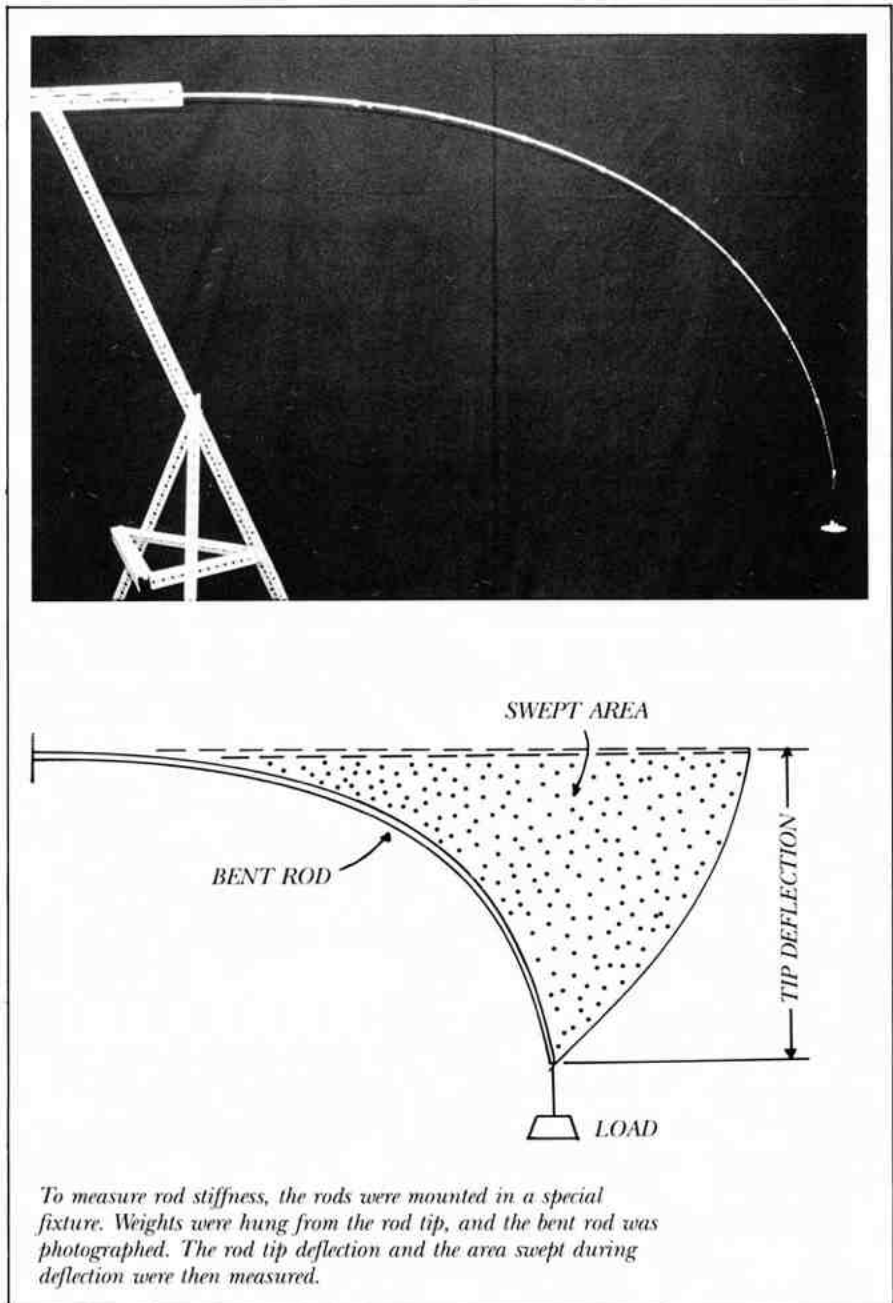
So this procedure for calculating the rod mass should be adequate to allow relative comparisons of rods even if the values are not exactly correct.

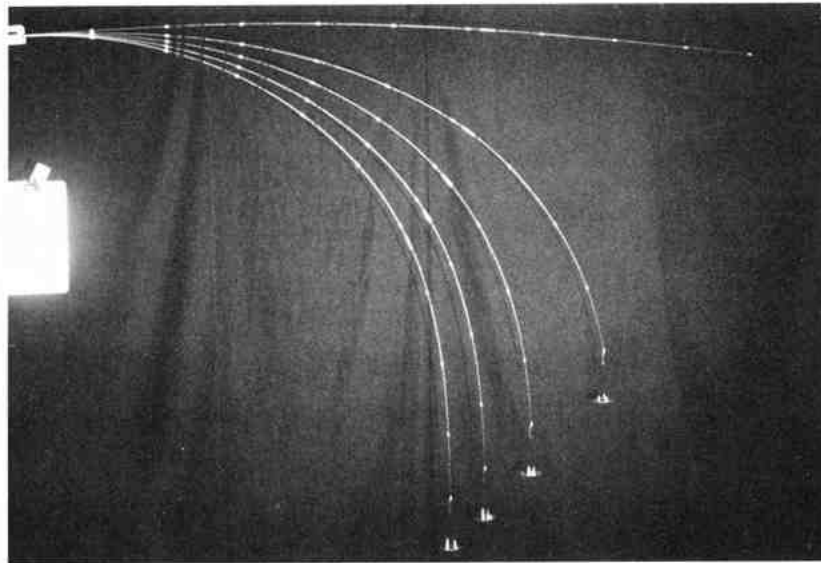
#### Stiffness

The stiffness is defined as the amount of load applied to the rod to get a given amount of tip deflection. So the test procedure is essentially just that: load the rod and measure the tip deflection. A special test fixture was constructed to hold the rods by the butt (representing the way they are held during fish-fighting). A rod was clamped at its butt so that the unloaded rod was cantilevered horizontally. Once the rod was mounted, the angle of the butt was adjusted so that the butt and tip were in the

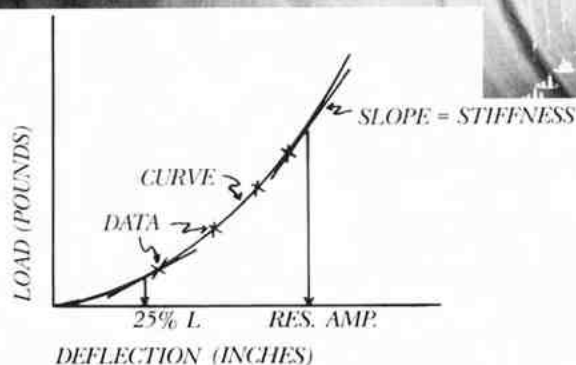
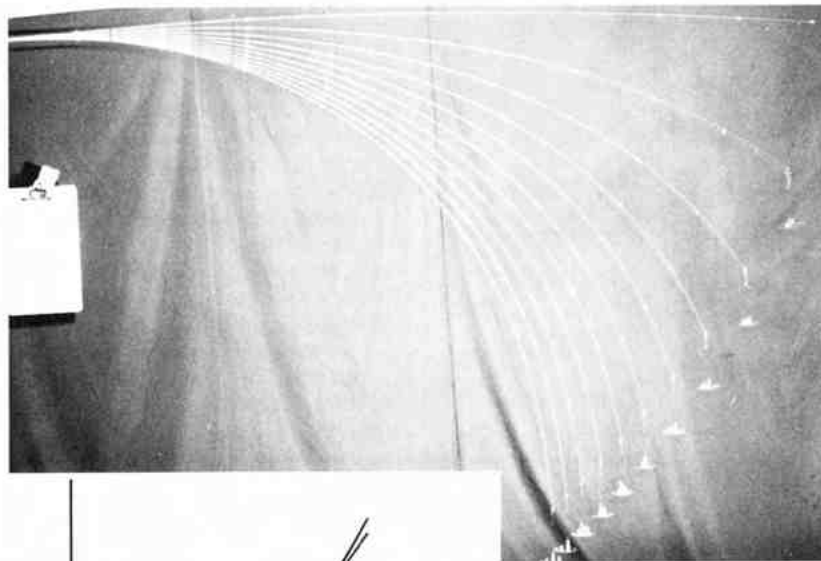
same horizontal plane. This adjustment was necessary to account for warp in some rods and for the deflection due to the rod's own weight.

During testing, the rod was loaded by placing lab weights onto a pan hung from the rod tip. The loading caused the rod to bend with the tip deflecting downward (see illustration). The amount of weight was recorded, and the bent rod was photographed. The photographs were then analyzed by computer to calculate the rod deflection. Two methods of calculating rod deflection were used: (1) the vertical tip deflections were measured and then divided by the rod length to yield deflections normalized for all rods, and (2) the areas swept by the rod during deflection were measured and then divided by the





Each rod was loaded with four different weights. This is a multiple-exposure photograph of a single rod with loads that increase in equal increments.



This photograph shows multiple exposures of a rod loaded with weights in uniform increments. Notice how the rod deflects progressively less with larger weights. This illustrates how the rod's stiffness increases with more deflection.

A curve through the data was used to calculate the rod's stiffness at different amounts of deflection.

length squared to yield normalized deflections. (The second method has greater technical validity, but is more complicated than is necessary for this study. Hence, it was not used for analysis.)

Since the rod's stiffness increases as greater loads are applied, four different loads were applied to each rod. The amount of load for each rod was based on the individual rod masses. The applied loads were one, two, three, and four times the rod mass. Multiple-exposure photography was then used to record on a single picture the rod deflections for the four loads (see photograph).

### Frequency

Measuring the natural frequency of a fly rod is more complicated than one might initially suppose. Some factors to be considered are:

1. There are actually an infinite number of natural frequencies at which a fly rod will vibrate. All of them cannot be measured. Fortunately, the lowest, or fundamental, frequency is the most important one for casting; this was the one measured.
2. A rod's frequency depends on how the rod is held at the butt. We often see someone wriggle the butt of a rod and examine the rod's pattern of oscillation. But wriggling the butt back and forth is not the casting motion, so it does not test the rod as it would actually be used. A more representative butt motion is cantilever motion, whereby the butt is moved back and forth but not allowed to rotate. Because this motion is very difficult to perform manually, I used a machine for this purpose.
3. A rod's motion, whether during casting or vibration testing, is very strongly affected by air drag. If air drag were mathematically simple, one could "pluck" a fly rod like a guitar string and then count the frequency of the vibrations as they died out. But, of course, air drag is not simple, so one must measure the rod frequency as the rod is forced to vibrate in a repeatable pattern. A rod-shaking machine with repeatable motion was required.
4. A rod vibrates differently if it is moved with differing motions. The input motion that most exactly matches the rod's motion, thereby giving the best measure of rod vibration, is a sinusoidal motion. Sinusoidal motion is very easy to describe mathematically and very difficult to produce mechanically. The rod-shaking machine (*vide ante*) was developed to generate this motion.

After much design time, testing, and redesign, a rod-shaking machine to deliver

the required motion was finally developed. For this apparatus (see illustration), the rod was mounted vertically and clamped at its butt so that the butt could not rotate. The butt was moved back and forth horizontally with pure sinusoidal motion. That motion was generated by a motor that ran at a constant speed and by a Scotch yoke that converted rotary motion into translational motion. The input vibration frequency for the rod was controlled by changing the motor speed.

During a test, the rod was securely mounted in the clamp, then the motor was turned on at low speed. The motor speed was stepped up sequentially to cause the rod to be shaken at higher frequency. At each step, the amplitude of the rod-tip motion was observed. When the shaking frequency matched the rod's natural frequency, the rod-tip motion had its greatest

amplitude; subsequent increases in the motor speed caused a decrease in rod-tip amplitude. When the rod was vibrating at its natural frequency, the resonant frequency was measured with an oscilloscope, and a screen was moved into position so that the rod tip just touched it during its vibration. The machine was then shut down, and the distance between the screen and the rod at midstroke was measured; this distance was the resonant amplitude.

### Results

From the rod data obtained (see summary of results), it is obvious that the fly rods tested exhibited a wide range of traits. While the sampling of rods is not exhaustive, a wide range of rod materials was examined: lancewood, greenheart, Cal-

cutta cane, Tonkin cane, fiberglass, and graphite. The date or era assigned to each of these materials is only approximate, for they were likely used before and certainly used after the date given. The purpose of the date is to place the use of each material in historical perspective so that the chronology of the evolution, if there is one, can be identified.

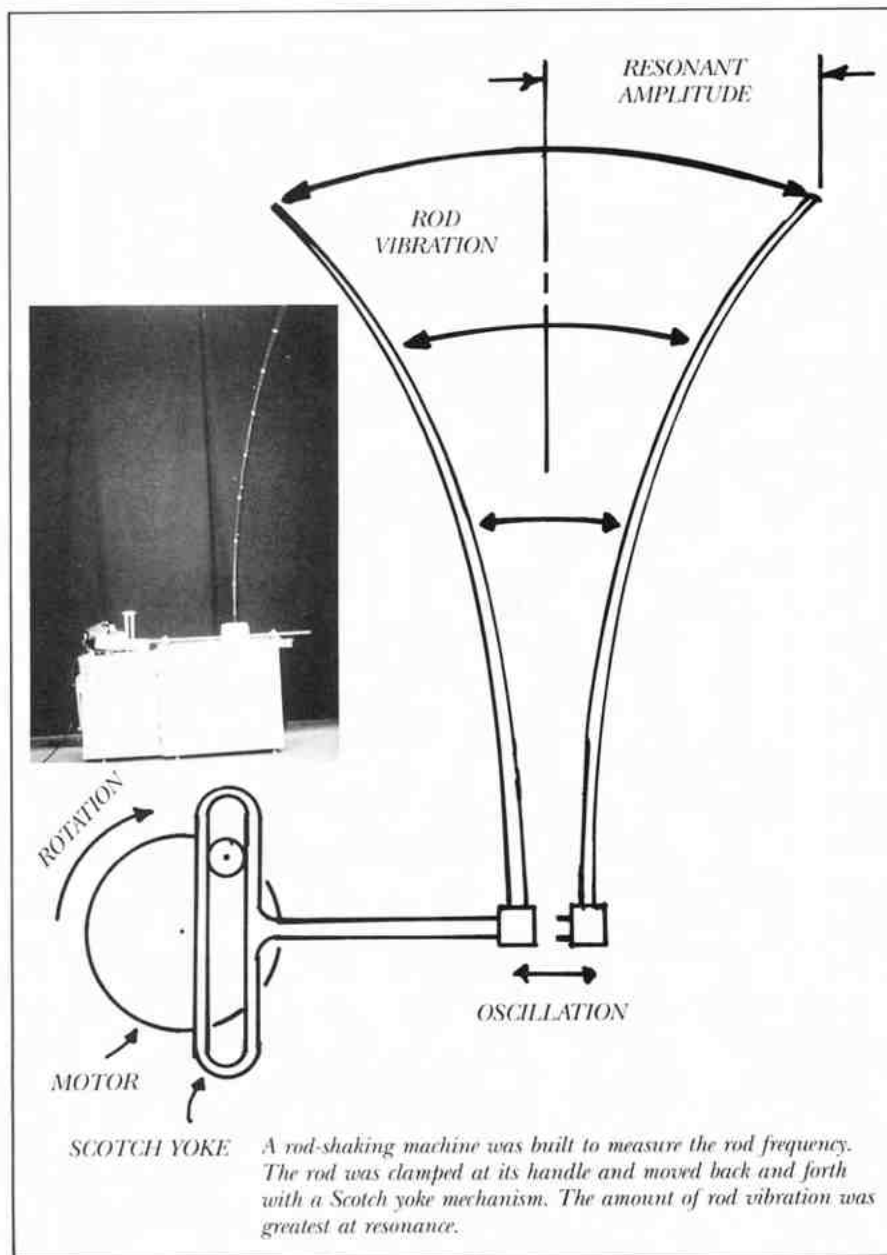
For the most part, all of the rods tested were of comparable length. The average length was approximately nine feet (a range of eight to ten feet).

The weights of the rods (overall mass) vary considerably, the newer graphite rods weigh about 80 grams, while the comparable lancewood or early bamboo rods weigh more than 200 grams, or 2.5 times as much! Two of the rods weighed 300 grams, but these were salmon rods that would be expected to be more massive.

The diameters of the rods also show a great deal of variability. The graphite rods have butt diameters in the range of .25 to .30 inches; the bamboo rod butt diameters range from .35 to .45 inches; and the hardwood rods have diameters in the range of .50 to .80 inches. Since the stiffness of the rod varies inversely with diameter raised to the fourth power (see part one of this series), it is easy to see that the graphite rod with a diameter half that of a lancewood rod must use a material with about sixteen times the modulus. Or, put another way, rod designers had to find a material with sixteen times the inherent stiffness just to reduce the diameter by a factor of two. With this perspective, we can begin to understand the limitations that face future rod development.

Besides the differences in butt diameters of fly rods, their tapers vary considerably. For each of the rods tested, the rod taper has been plotted on a common scale. It is clear that the tapers for graphite rods are very straight and uniform, while the tapers for some of the hardwood and bamboo rods are quite erratic. This inconsistency can, in part, be attributed to the three-piece construction and the abrupt diameter changes at the ferrules that are common in these older wooden rods. It should be noted that the taper variations plotted for the hardwood and bamboo rods tested are probably unique to these rods, and if different rods were tested, different tapers would have been measured. Hence, these rods probably exhibited vastly different casting and flexing behavior when fished, and their performance could not be anticipated until use. In this respect, our modern glass, graphite, and boron rods offer far more predictability in field performance.

Before we can compare the stiffness of rods, we must carefully define the stiffness we are comparing. As has been emphasized throughout, the stiffness of a rod depends on how much deflection the rod experiences. This effect becomes most



**SCOTCH YOKE** A rod-shaking machine was built to measure the rod frequency. The rod was clamped at its handle and moved back and forth with a Scotch yoke mechanism. The amount of rod vibration was greatest at resonance.



apparent when we look at the patterns of deflection for progressively increased load (see accompanying photograph). When loading is increased in uniform steps, the rod deflects less and less, which indicates a correspondingly increased stiffness. If we plot the deflection vs. load (see illustration) for a rod and obtain a smooth curve through those data points, the slope of that curve represents the stiffness of the rod. As the slope increases progressively, so does the stiffness. This procedure—plotting the curve and finding the slope—was performed for all rods tested. The slope was then calculated at two different tip deflections: (1) when the rod tip deflected twenty-five percent of the rod length (25% L), and (2) when the rod tip deflected the amount measured at resonant vibration (Res. Amp.). Of these two, the former proved to be a more consistent indicator of

rod stiffness and was used for comparisons.

Let us now compare rod stiffness. Excluding the two salmon rods (rod no. 7 and rod no. 13), the stiffness of all rods was in the range of .0064 to .0168 pounds per inch. When we plot the change of this stiffness with the year of manufacture (see illustration), no progression is apparent. The data is widely scattered because of the differences in the rods, but a curve representing all of the data is basically flat. We must conclude that the rod stiffness has not changed dramatically, but rather has remained essentially constant with the passage of time.

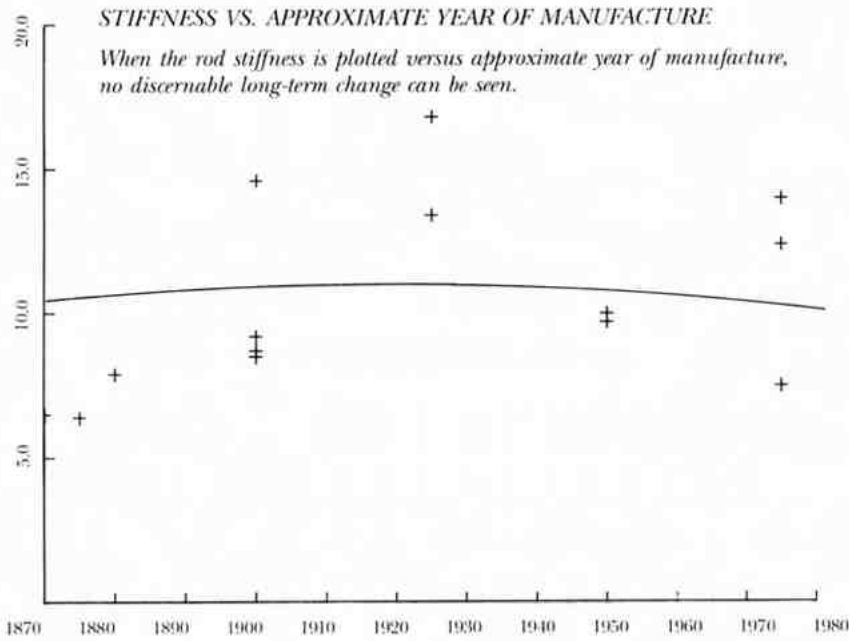
Next, examine the changes in rod frequency. The rod frequency is somewhat easier to define than stiffness because it does not change with deflection (actually it changes slightly, but we will ignore that

effect for simplicity). The frequency is expressed as the number of oscillations that the rod undergoes per second, or cycles per second. For the rods tested, the frequency varies from 1.2 to 2.6 cycles per second. When we plot the change of the frequency with time (see illustration), the progression is immediately obvious. The low-frequency rods of a hundred years ago have been replaced by the high-frequency rods of today. The curve representing the data shows this increase clearly. The curve also seems to show that the frequency increase has been slowing down recently. Being careful to not read too much into this small amount of data, I am tempted to interpret this slowing down effect as our approach to the technical limit of currently available materials. While it is possible to build a higher frequency rod with modern materials, we must keep in mind that it

#### SUMMARY OF RESULTS

Rod Manufacturer	Rod Number	Material	Technology date*	Overall length (inches)	Length w/o grip (inches)	Overall mass (grams)	Mass w/o grip (grams)	Balance (inches)	Stiffness-25%	Stiff. res.	Frequency
Lamiglas	1	graphite	1975	96.0	88.0	83.0	35.3	101.5	0.0075	0.0132	2.47
Unknown	2	fiberglass	1950	75.0	65.0	84.5	27.6	31.0	0.0097	0.0190	2.57
J. S. Sharpe orig. wooden rod	3	Tonkin cane, impreg.	1950	90.5	81.5	113.5	79.0	213.5	0.0134	0.0259	2.44
Shakespeare	4	fiberglass	1950	93.0	82.5	105.7	66.0	128.0	0.0100	0.0250	2.62
Orvis	5	Calcutta cane	1875	131.5	119.5	204.0	114.0	312.0	0.0064	0.0194	1.22
Forrest and Sons	6	greenheart	1880	127.0	117.5	205.7	159.0	547.0	0.0079	0.0251	1.37
Vom Hofe (?)	7	greenheart	1880	105.5	92.0	298.3	204.0	356.0	0.0266	0.0701	2.00
Silkien	8	cane	1900	109.0	99.5	144.0	97.0	300.0	0.0085	0.0257	1.49
Chubb	9	lancewood	1870	120.5	109.0	207.0	117.0	297.0	0.0065	0.0288	1.18
Orvis	10	cane	1900	108.0	97.0	153.0	88.0	216.0	0.0087	0.0268	1.43
H. L. Leonard	11	Tonkin cane	1900	114.0	104.0	173.0	81.0	214.0	0.0146	0.0260	1.77
Abbey and Imbrie	12	cane	1900	118.0	105.0	227.5	114.0	227.0	0.0092	0.0277	1.58
Abbey and Imbrie	13	lancewood	1870	104.0	90.5	324.5	184.9	301.0	0.0298	0.0694	2.38
Orvis	14	graphite	1975	107.5	97.5	86.0	53.5	150.0	0.0124	0.0186	2.41
Shakespeare	15	graphite	1975	107.5	94.0	146.0	67.9	113.0	0.0140	0.0207	2.60
Orvis	16	cane, impreg.	1950	112.0	101.0	211.0	132.5	359.0	0.0168	0.0422	1.96

\*These dates were supplied by the author. The rods were loaned by the Museum to the author for testing. Unfortunately, the dates of manufacture of the rods are not known precisely. The author has estimated the date when the particular rod technology was developed, and these dates are not really accurate. The older rods are circa 1900 or before. The lack of precision in assigning dates in no way detracts from the author's arguments.



must still retain the stiffness and weight features necessary for effective fishing. Thus, we may be approaching the practical limit to rod frequency and increased line speed.

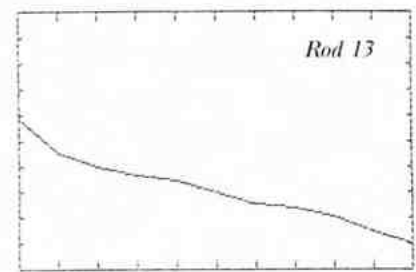
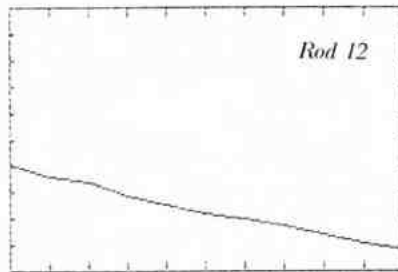
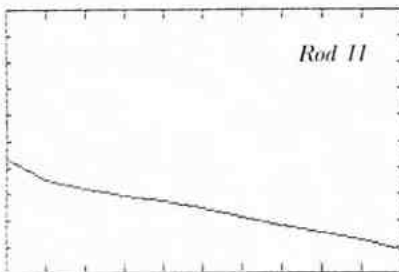
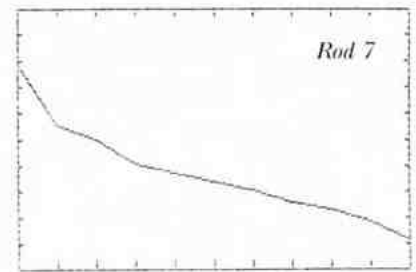
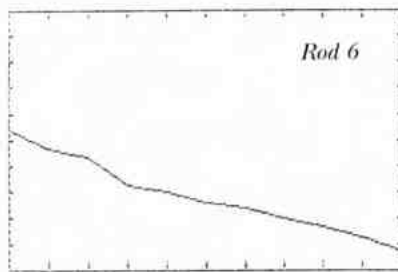
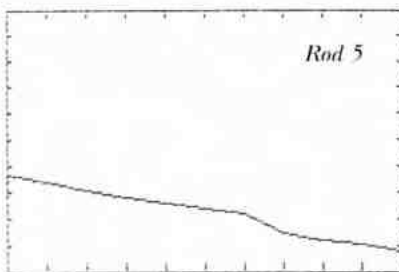
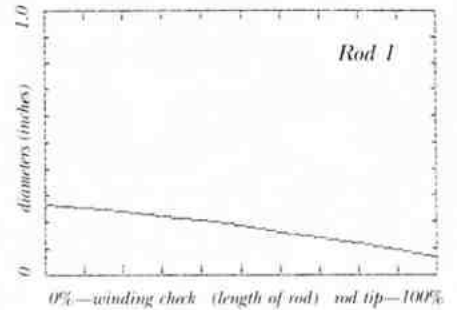
**Conclusion**

So what have we discovered about the evolution of fly rods? First, I think that it is clear that rod stiffness has not changed very much, while rod frequency has increased dramatically. In our fly-fishing efforts, this translates into easier casting. Furthermore, it appears that we are approaching a limit to increased frequency or improved casting with the rod materials currently available. Any improvements that we can reasonably expect in the near future will probably be small compared to the giant steps taken when fiberglass and graphite first appeared.

And now that we have a better understanding of the factors that affect fly-rod performance, perhaps we can now con-

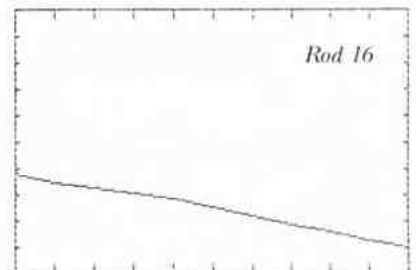
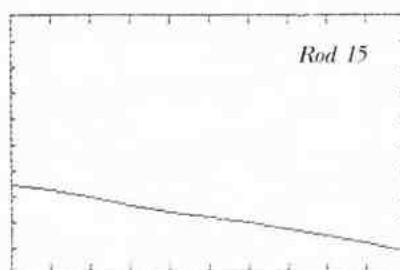
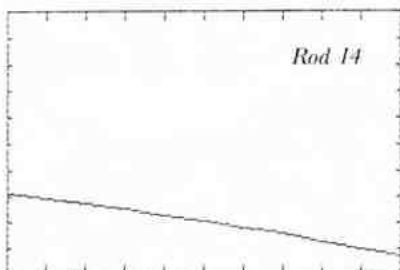
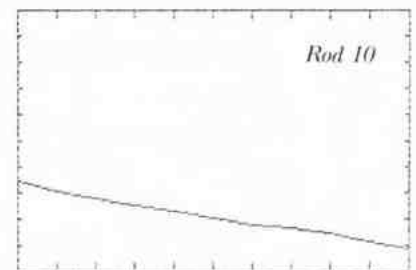
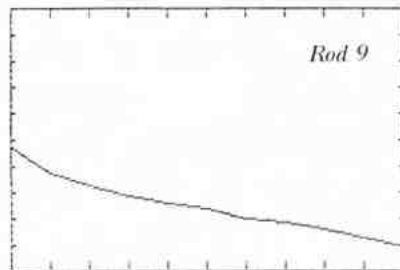
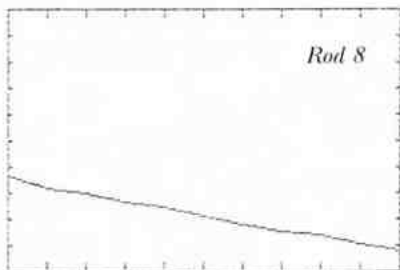
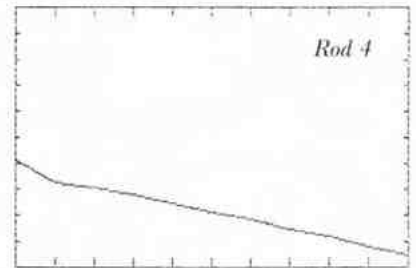
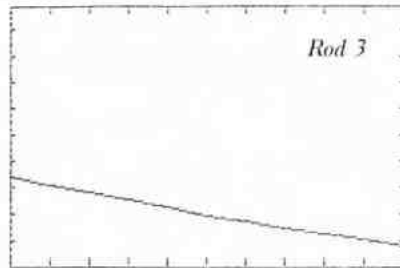
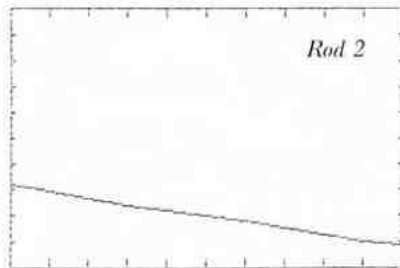
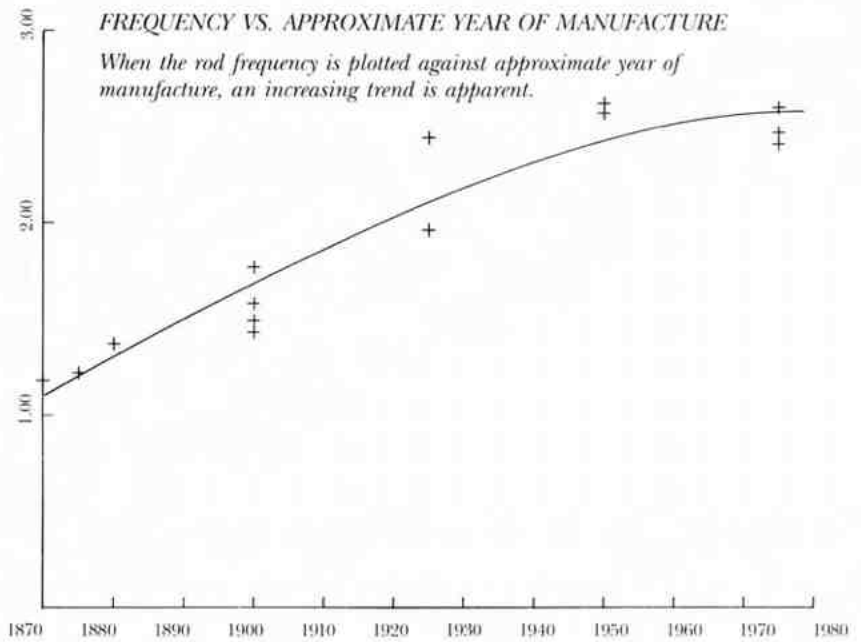
**ROD TAPERS**

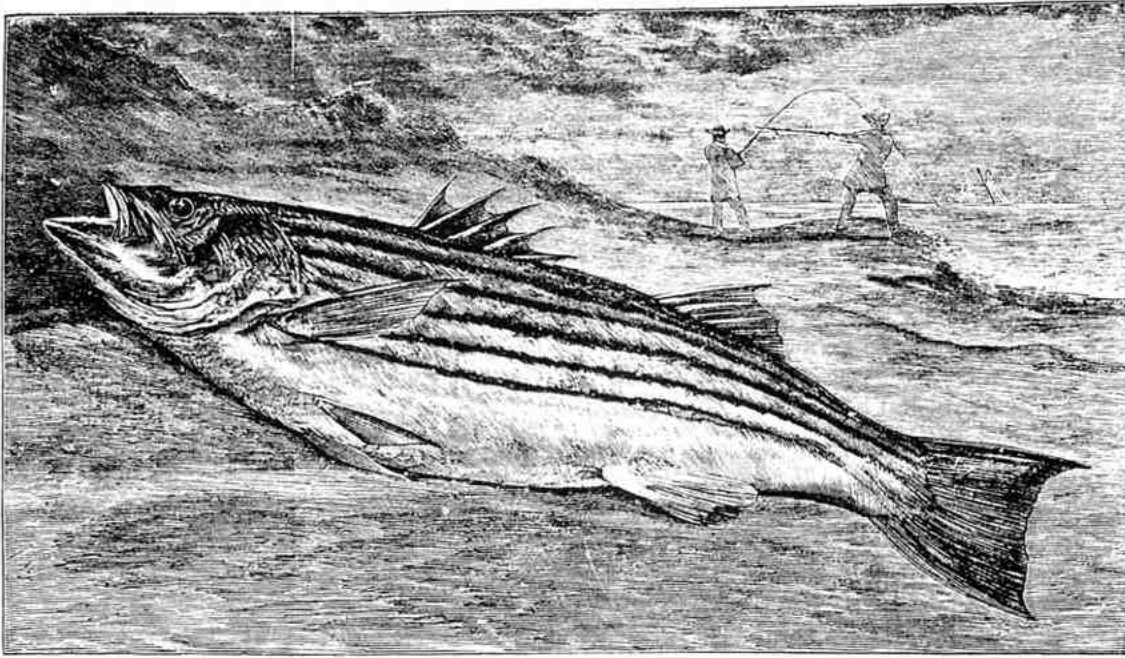
*Plots of diameters versus distance from winding check for the rods studied. For simplicity we have labeled the axes of the rod-taper plot only for Rod 1.*



sider a quantitative method for rating fly rods. Currently, rod ratings are very subjective. They indicate the line weight that the rod casts best, as determined by a panel of expert casters. This rating includes some aspects of both the stiffness and frequency of the rod. Furthermore, the current system is inaccurate because as we have demonstrated, the rod's stiffness and frequency are separate and independent. No single rating value can accurately represent both factors.

A new rating method is therefore needed for fly rods. It must include an indicator for *both* stiffness and frequency. Thus, two rating values, rather than one, must be employed. A numerical system that uses, for example, a 1 to 10 scale for stiffness and a 1 to 10 scale for frequency (much the same that we currently use a 1 to 10 scale for line weights) would suffice. It would take us a while to get used to the system; but once we had taken this step we would have in hand an accurate, quantitative method for a priori assessing the way a fly rod will perform in the field. §





## A Brief Note on “Trout Fishing”

by *Warder H. Cadbury*



“Trout Fishing,” (1853) by Junius Brutus Stearns (1810 to 1885), has some tantalizing secrets. Though evidently intended as a group portrait, the identities of the fishermen are unknown, as is the geographical locale of their trout stream. Furthermore, the painting is the prototype of a very similar canvas done only four years later that depicted the portrait painter Charles Loring Elliott and his literary friends, Lewis Gaylord Clark and Frederick S. Cozzens. The second painting is part of the von Kienbusch collection at Princeton University.

In each painting, the configuration of the rocks and waterfalls and background landscape is the same, suggesting a specific place. At one time it was thought to be Trenton Falls, a popular nineteenth-century resort just north of Utica in central New York, but the pictures simply don't match the deep gorge and thick woods of that scenic attraction. It might be a view farther upstream on the West Canada Creek as it flows down from the Adirondacks, but this is sheer speculation.

Stearns was a portrait painter by profession, but his enthusiasm for fishing prompted him to do at least eleven sporting paintings.<sup>1</sup> There is, for example, a fine still life (1853) with trout and tackle and a vignette of a stream fisherman in the background at the Toledo Museum of Art;

and a striped bass in the frontispiece of Genio C. Scott's *Fishing in American Waters* (1869) is after a Stearns canvas (see above).

The painting reproduced here was for many years in the home of Harry T. Peters, an enthusiastic sportsman who took it upon himself to compile a catalog of the prints of Currier & Ives in two thick volumes. This picture shared the walls of a special room with three large paintings by Arthur Fitzwilliam Tait, who was a friend of Stearns and fellow sporting artist. Indeed, this composition of fishermen dressed in gentlemanly elegance and perched on rocks midstream was echoed by Tait a decade later in his Currier & Ives lithograph, “Brook Trout Fishing, ‘An Anxious Moment.’” Tait's original painting, incidentally, has its secrets too, for it has not been seen for a hundred years.

“Trout Fishing” recently sold at auction for \$66,000. §

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*Warder Cadbury is a professor of philosophy at the State University of New York at Albany. He recently published a book on Arthur Fitzwilliam Tait and his paintings titled Arthur Fitzwilliam Tait, Artist in Adirondacks.*

1. See the article by Millard F. Rogers, “Fishing Subjects by Junius Brutus Stearns,” in *Antiques* (August 1970), pp. 246-250.





1873

J. G. Thompson

1873

1873

1873

# The Perfect [Fly] Rod

by Charles F. Orvis



*In a preceding article, Craig Spolek gave us the means to quantitatively describe the mechanical behavior of fly rods in terms of stiffness and frequency. Theoretically, then, using his methodology, it should be possible to accurately describe the perfect fly rod for a particular type of fly-fishing in these strictly objective, mechanical terms. Obviously, this approach does not take into account the fly caster's unquantifiable, subjective preferences—often more intuitive than rational—so on a practical level the task of defining the perfect fly rod is impossible. Over the years, however, many have tried. We include for your perusal an early attempt. The following piece, authored by Charles F. Orvis, appeared in the May 25, 1878, issue of the Chicago Field (vol. 9, no. 15). Orvis advises us that a three-piece rod of ash and lancewood weighing from eight to ten ounces is perfect! While Orvis does not specifically use the term rod action, his use of stiffness and elasticity is just about as fuzzy. We wish to thank Robert Kohrman for bringing this article to our attention.*

Editor Chicago Field:—At your request I give you a few of my ideas of a “fly rod.” The materials of which a rod is made are of the first importance. I think for the butt, fine, well-seasoned, second-growth ash is the best, because it is light, elastic, strong, and is not apt to warp. For the second joint and tips I consider lancewood better than anything else. I have tried many woods, but fail to find anything better. Hornbeam is not elastic enough, except now and then a stick. It grows in Vermont in great abundance and perfection, and is exceedingly good for heavy rods. It is a well-known fact that many kinds of wood are elastic when in large pieces, but when cut down to two or three grains they lose their elasticity, and after being bent several times will remain so, and never again have that fine, steel-like spring.

Bamboo has all the qualities for a fine rod, but all bamboo is not elastic, and it is not easy to tell until made into a joint a good piece from a poor one. Again, when a good piece of bamboo is cut into strips and glued together, much of the real elasticity is lost; still not so much but that if it could be made to stay perfectly it would make the finest kind of rod, but the great trouble with the split bamboo rods is that they are so very liable to get out of order. The least portion of varnish off and the water gets

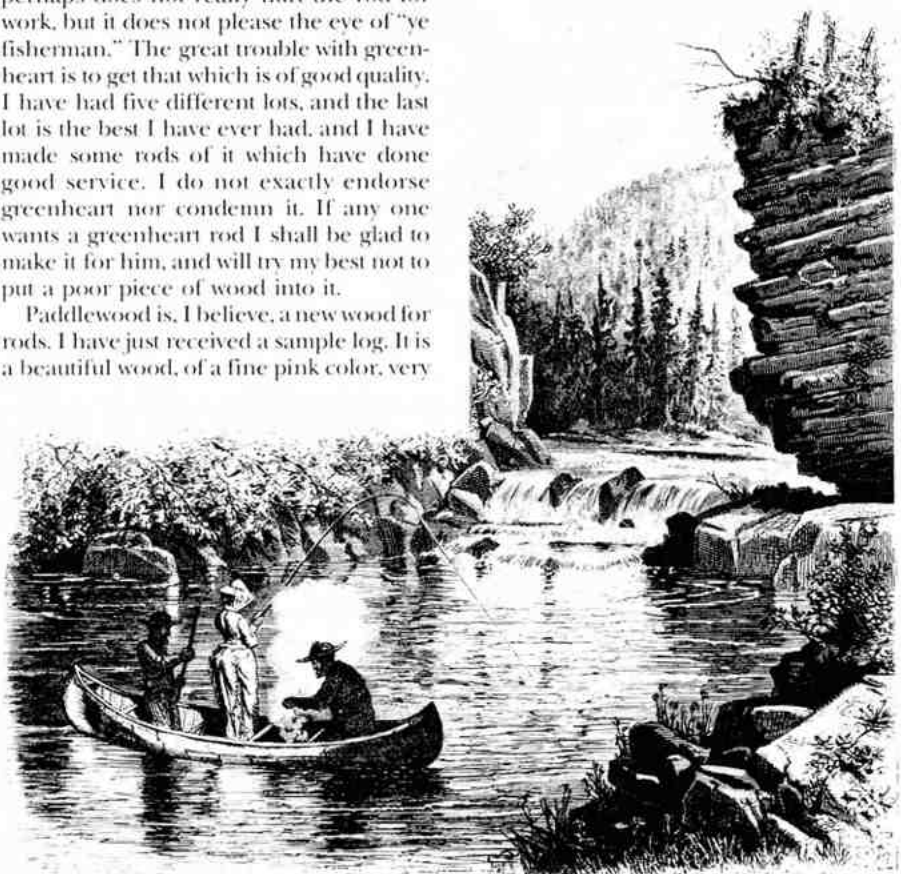
into the glue, and your fine split bamboo is useless, and of all the rods to repair a split bamboo is the worst; nothing short of a new joint will make a good job, satisfactory either to the owner or maker. Then, again, a split bamboo will not bear to be stepped upon any more than any other fly rod, and when such an accident does happen, there goes \$40!—enough to purchase four \$10 fly rods—one to step on, two to make glad the hearts of your friends, and a good rod left, all for the same money. I received a letter from a celebrated salmon fisher, in which he says: “I have never yet found a varnish that will entirely keep the moisture from the glue of split bamboo.”

Greenheart, a wood of which much has been said and written, is a wood that has many good qualities, but some not so good. It is very elastic, with a steel-like spring, very quick and sharp, and a rod made of this wood in the hands of many fishermen will do splendid work; but it is apt to warp out of shape after the rod is all made, which perhaps does not really hurt the rod for work, but it does not please the eye of “ye fisherman.” The great trouble with greenheart is to get that which is of good quality. I have had five different lots, and the last lot is the best I have ever had, and I have made some rods of it which have done good service. I do not exactly endorse greenheart nor condemn it. If any one wants a greenheart rod I shall be glad to make it for him, and will try my best not to put a poor piece of wood into it.

Paddlewood is, I believe, a new wood for rods. I have just received a sample log. It is a beautiful wood, of a fine pink color, very

fine grained, hard, and finishes up very handsome. I think it will prove a splendid wood for rods. It will certainly make a very beautiful rod. I shall very soon get a rod out of it, and try it myself, and will write you what I think of its qualities.

A single handed fly rod, one for general use, should be about as follows: ten to eleven feet long and in three joints or pieces, of course if it were convenient to carry a rod in one piece from ten to eleven feet long about the country, that would be the perfect rod, but as that is out of the question, we make them in pieces, and after trying all numbers I have decided on three as the best. Four loads down the rod with too much metal and is but little more compact, besides the more ferules the more liable it is to get out of order; a rod in two pieces is very objectionable, as in the centre there is dead weight or a stiff place which a ferule would cause. It appears to







me that a rod from ten to eleven feet long springs about right in each joint when in three pieces, anyone will notice that the butt of a good three-jointed rod springs in proportion to the rest of the rod, which would not be the case if in four joints, as the ferule would be *just* where the spring should be. The great fault of many fly rods is that the butt is much too stiff which quality makes the rod cast a line by the spring of the second joint and tips; this makes casting hard work, and throws the strain on the weakest parts of the rod. Those rods which are made so very heavy in the butt must be made so light in the second joint and tips in order to cast a line at all, that it makes the matter a great deal worse. It is no sign of a good rod that the tops are worked down to the size of a knitting needle; better leave the tips as large as possible without spoiling the balance of the rod. All the strength is wanted that can be retained. A fine fly rod should be so

constructed that there is *no* weak spot that can possibly be avoided. It should spring evenly from tip to hand, and should, by all means be stiff enough in the second joint to "take up" quickly and finely when the fisherman "strikes" at "a rise." These weak-backed rods, which, because one can bend them double, are supposed to be just the thing, are very nice for show; but I can cut a tag alder which will do the same thing, and yet not be much of a fly rod. What we want is a light, elastic, even-springing rod strong as possible, with the least amount of timber in it to make it so; one that will cast a line with ease and accuracy and at the slightest touch pick up the line quickly, as I believe in "striking" your fish and not waiting for the fish to do it for you. I think the weight should be from eight to ten ounces. Most men ought to be able to handle such a rod all day and return to camp happy if they had luck, and not grumble if the contrary was true. The ferules and mountings should be of German silver, because it is strong, stiff and will not corrode and trouble about getting the rod apart. The ferules should be well fitted, the outside ferule driven on the wood firmly, about one-half its length. The inside ferules should be so fitted as to just enter the others and go snugly all the way, to make it fit perfectly tight and firm. The end of the inside ferule or the end of the joint *should not be made with a dowel* or tapering portion to fit into a hole or socket in the wood of the other joint, as if it does fit (which is not often the case) it is a contrivance to throw the rod apart, and if it does not fit it is a great damage done to the rod, as the water gets into the socket and the wood soon loses its strength and breaks short off at the end of the ferule. I know this is against the practice of most rod makers, except myself, and they say a rod will not stay together without the dowel piece. All I have to say is, *I know better*. I have made rods over twenty years and never in a single instance have I had a complaint about my rods casting apart. I don't think much of a rod which has to have loops arranged on each ferule so that the joints can be tied together with a piece of silk. This is the English style, and I think the dowel piece a part of the same kind of work. There are but few, even with good sportsmen, who think much about the care of a rod when not in use; they will rub, oil, polish, put in a nice, dry cloth case and then in a leather case, their fine, double

breech loader, or pet rifle and watch it with the utmost care, that not a speck of dust may form on the finely finished surface, which is all right—I do the same; but what kind of care do they give their nice fly rod just purchased? This is it, they thrash away, expecting they can take any kind of fish trout, bass, pickerel, suckers, eels, almost anything that has fins, and if the rod breaks, they say: "That man put a poor piece of timber into that rod, I'll never buy another rod at that place again." They will get the sack to their rod wet, and after fishing all day, they don't think to straighten each joint carefully, but into the wet sack it goes; they tie it up tight as possible, jump into the carriage and off, get home, hurry into their good clothes, go down to supper, tell over the day's sport, and so through the season, the last day the same as the first. Then the rod is, perhaps, put on top of a book case or high shelf, in a house warmed by a furnace; anywhere out of reach, "so the children won't get it." Next Spring they overhaul their tackle and think it very strange that the "nice fly rod" looks so shabby; perhaps they put it together and it rattles and cracks and perhaps snaps, then they are "cheated again; poor timber, badly put together," etc., etc. Gentlemen, please keep the sack to your rod dry, straighten each joint before placing it in the sack, tie lightly so as not to crook the tips and second joint, and by all means do not put your rod away when the season is over without seeing that it is in good order, straight, dry, etc., then put it in a cool, dry place, and your rod will not disappoint you when you take it out in the Spring.

I will say only one thing more, it is this: I do not think anyone can make a good fly rod, except he is a good fisherman himself.

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# The Brook Trout and Its Capture: Part I

by John Harrington Keene



Wildwood's Magazine, a short-lived, yet significant sporting miscellany published by Fred Pond, was mentioned previously in the American Fly Fisher. In the July and August issues of 1888 (vol. 1, no. 3, p. 114, and vol. 1, no. 4, p. 171, respectively), appeared a two-part article, "The Brook Trout and Its Capture," by John Harrington Keene. We realize that by this time you are probably getting tired of hearing about Keene (see the American Fly Fisher, vol. 13, no. 1, and vol. 13, no. 2) whose Victorian prose has an effect similar to maple-sugar candy. But bear with us for a moment. If you can transcend the high sucrose level of Keene's heavy prose, you will find discussions of imitation theory, mayfly entomology, dry-fly fishing, and fly-tying materials that were extraordinary for their time. We note, too, that according to Keene, dry-fly fishing was being practiced in the environs of San Francisco in the late 1880s! So who still says that Theodore Gordon was this country's father of the dry fly? And are the Catskills really where it all began?

"Trout are emblems of quiet, calm and gentleness, such as love not to be in troubled waters or to be tossed to and fro by the blustering of wicked and malevolent spirits, but rather live quiet at home than enjoy abundance thro' labor and trouble," says Randal Holme.

With the advent of spring comes trout fishing. Wherever the trout is found this is the case, and to spring trout fishing must be awarded the palm as the chief of all

angling. There are several reasons why this is so. First, the winter has given place to bright sun, the songs of birds and the greenery of foliage. The dark cold days during which the whole creation more or less was in a state of hibernation, have passed, and the marvelous latent forces of nature are kindling with rapid life. The debility which more or less affects mankind admits of change to vigor and the whole animate creation seems sensible of a similar fact. Man discovers empirically—without much scientific reasoning—that it is good to be out and about, and the angler turns naturally to trout fishing, hardly conscious that he is doing so. It is an instinct precisely on an equality with the more personal intentions of the whole of humanity. Who does not remember that

In the spring a fuller crimson  
comes upon the robin's breast,  
In the spring the wanton lapwing  
gets himself another crest,  
In the spring a livelier iris  
changes on the burnished dove,  
In the spring a young man's fancy  
lightly turns to thoughts of love.

In the same natural way the thoughts of the fisherman turn to the beautiful trout, and as abstinence enhances the pleasures of achievement, the proposition is self-evident that the first captures from the gurgling sun-lit brook are of more piquant value than any succeeding ones. Anyhow, whether the proposition be self-evident or

not to the tyro as it is to the angler, it can be scored as a certainty. Spring trout fishing is *par excellence* the fishing of the year.

The brook trout we are specially referring to at this moment. Just as soon as the snow is fairly out of the water the enkindled energy of this fish is apparent. The fatigues of the autumnal and winter domestic duties are past and with returning warmth the vitality of the fish is increased and the wasted tissues call out for food. It needs no Bridgewater treatise now to convince us of the admirable adaptation of the means to the end in this case. Coincidentally with this revivification and demand for food on the part of the fish, comes the supply. The water larvae, conscious of what the old nature-poet Lucretius terms the "invisible beginnings of life," emerge from their embryo states and according to their species and inherent laws of being, come forth in the imago state to be eaten—or reproduce their species and die.

As this little essay is intended above all to be educational, let us for a brief while consider the personal history of the fish which exercises so great an influence over so large a class of mankind at this season of the year. Under the comprehensive term *trout* there is grouped an immense family—which may, however, one of these days, be reduced to one or two species of many varieties. The tendency of ichthyological research is that way, and the sooner it gets there the better. In the meantime the amateur fisherman need not trouble himself about the fine distinctions of the scientists. The brook trout (*s. fontinalis*) is the member of the family of piscine Apollos I wish to talk about now, and to a large extent what is true of him is true of most of the family.

Of the general history of the variety known in this country little can be said. It was here without doubt when Americus Vespucci and Christopher Columbus arrived, and doubtless poor "Lo" also found him swarming the brooks and rivers when he first emigrated to these bountiful lands. Nor is the ancient history of the



European brook trout more traceable. The latter fish is a brown trout, and side by side presents a different appearance to the *fontinalis*. Indeed, there is a simulacrum of divergence between these two and the appearance of the typical John Bull and Uncle Sam. The European trout (*s. fario*) is more bulky and runs like the beef-fed Englishman more to belly than does the American *fontinalis*, whose contour unless derived from the waters overflowing with food of the Maine and other lakes, is lithe and graceful, wiry and agile. There is also a difference in the temperament of the trout from English slow-flowing rivers, which is expressed by Randal Holme in the quotation from that marvellous old book, "The Academy of Armory," heading this chapter. The *fontinalis* always seems to me to be the veritable "Green Mountain Boys" of fish. Though their congeners are more stubborn—they have more dash and vim—whilst the Old World trout sucks in the fly often with almost imperceptible effort, the latter will take it with a dash and splash which often suggests the idea that the trout is rather flipping the bait with its tail than endeavoring to secure it.

It does not in effect matter much what ancient history is possessed by trout, and though I have waded through all the books and mss. on angling in the library of the British Museum, and could doubtless go deeply into unimportant details touching the antediluvian, or other equally remote history of fishes, but I forbear, as serving no particular object at this time. It is sufficient that according to the book of Genesis the waters brought forth the fish and the birds and for the rest perhaps the origin of the trout may be as set forth in Mickles' "Syr Marten," thus:

For once she lived a nymph of  
spotless fame,  
In an obscure retreat, and Truta<sup>1</sup>  
was her name.  
It chanced that in a flowery path  
she strayed,  
Where a clear river with the  
pebbles played,



And just disturbed the silence of  
the shade.  
Truta, now seated near the  
spreading trees,  
Enjoys the coolness of the passing  
breeze:  
In the clear stream she casts her  
modest eye.  
And in a fillet her fair tresses lie.

While in the solitude she thus  
remains,  
And dyes her beauteous face with  
various stains,  
It chanc'd the robber Lucius<sup>2</sup>  
through the shade  
With eager eyes perceived the  
lovely maid.  
He saw and loved her riches on  
her lovely face—  
For both her dress and form  
appeared with equal grace.  
The nymph now heard the  
rustling with affright,  
She saw a man and trembled at  
the sight.  
Swiftly along the winding shore  
she fled,  
And cried and vowed and called  
the gods to aid.  
Truta despairing sought with  
trembling speed  
A rock that overhung the watery  
mead.  
Hither she bent her course, the  
summit gained,  
And thought her virtue now might

be maintained  
Cheaply with loss of life. While  
here she stood  
And just appeared to leap into the  
flood,  
Lucius approached, and while he  
held behind  
Her flowery nets that fluttered in  
the wind,  
Changed into fish, and equal fate  
they bore,  
And though transformed in shape  
yet as before.

<sup>1</sup> Trout    <sup>2</sup> *Esox Lucius*, the pike.

Whether we accept this version or not, it is certain the distribution of the trout is a wide one. Sir J. Malcolm found it on a mountain in Persia, Heber in the Himalayas, and Parry in Melville Sound; so that it may be almost said, so far as the angling commonwealth is concerned, to be ubiquitous.

As with all fishing, there are three methods of trout capture. Incomparably the most dainty and elegant is fly-fishing with the artificial fly; next comes bait-fishing, and then follows trolling. Trolling is practiced rather for the autocrats among trout—big fellows like those of Lake George—and rarely is it put in practice for the brook fish, though really I don't know why, there being considerable art in spinning or trolling the minnow. To fly-fishing, however, all sportsmen endeavor to turn, if the conditions are at all allowable, and the whole principle of the use of the lure is



perhaps completely summed up by the late Mr. Francis Francis, thus: "the first and last object of the fly-fisher is to show as much of the fly as possible and as little of anything else."

Assuming that the reader is a neophyte in the practice of fly-fishing let us here plunge *in medias res* of the subject and succinctly declare its most approved methods.

First, let us begin with its name—Fly-fishing. Why "Fly"? Because the semblance of a fly is used to lure the fish.

Now let us enquire as briefly as possible what flies are here meant. And the enquiry is fraught with more meaning than at first appears. They are imitations of those born of the particular water in which the trout are found—or they should be. Not imitations of insects that have never been seen *in propria persona* nearer than some English river three thousand miles away. Yet the majority of the flies in use by American fishermen are usually made after patterns of English insects furnished by British angling authors. Can anything be more egregious? Such flies as the March Brown, Cochy bonddhu, Silver Horns, Green Drake, etc., have absolutely no actual counterpart on the streams of this country, yet they are imitated and catch fish. Indeed anything will catch fish on occasions, if it sufficiently resembles the general form and movement of a living insect, but the principle is startlingly wrong and its continuance cannot be justified. The result of this haphazard procedure is that instead of

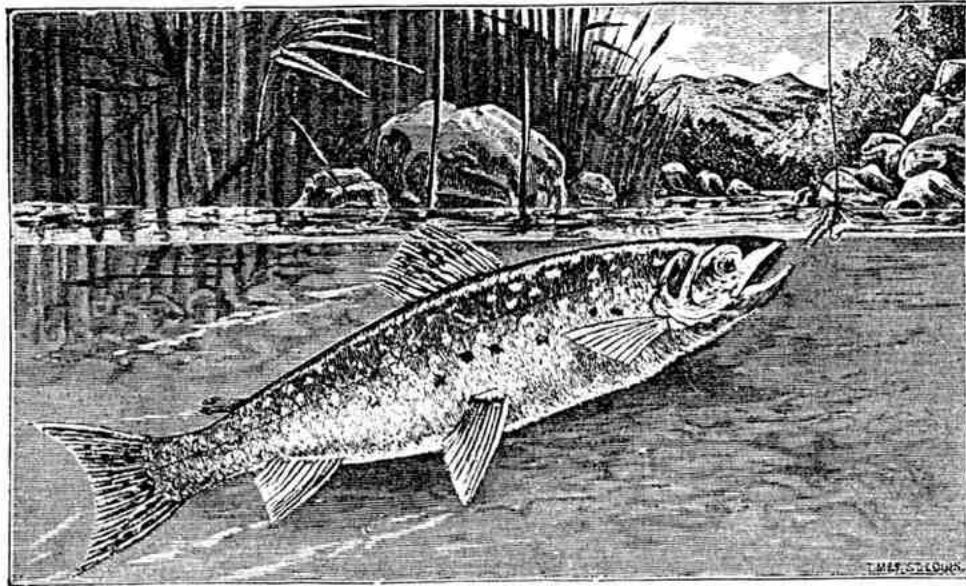
there being certain standard imitations of specific American insects, there are a thousand and one different kinds totally foreign and existing only because of the ignorance of both fly-maker and fly-user, who consumes them. The worst of it is there does not seem to be any way of doing away with them except one for which there is no royal road and that is, a careful enumeration and description of the water flies of this country compiled in a similar manner to Ronalds' *Flyfisher's Entomology*, which has done so much for intelligent fly-fishing in England.

Speaking comprehensively, the flies taken by trout are of two orders, the nerve-winged (or *hemiptera*) and the down-winged (or *phyganeidae*). Added to these are the several varieties of grass-hoppers and crickets and some beetles. It is with the delicate nerve-winged dress and specimen that the fly-fisher has chiefly to do, and indeed his imitations are ten of these upright-winged flies to one of the flat-winged order. This proportion is, of course, unreasonable but it has *some* foundation in fact.

The following is an outline of the life-history of a representative of the upright-winged order of flies. It is first dropped as an egg on the surface of the water. If not devoured during the next few months of its existence by predaceous beetle larvae and other marine monsters, it eventually becomes a tiny lizard-like creature, varying according to the species from a light, yel-

lowish brown to a dark olive green. Its food is the microscopic animalcules of the water—crustacea, such as the *cyrope quadricornis* and other minute organisms, in the catching of which it shows considerable tact and cunning, though its movements are not remarkable for their agility or facility. At last, after a period varying from one to twenty months—rarely more, I think—the last change in the life cycle of our gauzy fly approaches. The gracious influence of spring has ripened the embryo powers; its legs and wax-like body have assumed strength and muscular development; its wings folded in exquisitely compact space across the thorax, are ready for expansion, and one fine morning when the warm ray has lain its beneficent light upon the quaint creature a few minutes, the extremest development is reached. The larvae, instinct with the approaching change, so typical of man's emergence into the aeons of immortality, rises buoyantly to the surface of the water; the old skin or slough splits open, and with a rapidity perfectly marvelous the gauzy wings are unfurled, and the fly posing itself for one instant in the ineffable life-giving sunshine, finds its power of floating in the air, and thence sails upward to its aerial nuptials, leaving the slough to pass on to decomposition and destroyal.

Not always is this one change from the larvae to the imago all. With some of the nerve-winged insects—the so-called "Canada soldier," so plentiful on Lake Erie late in the summer, for example—an intermediate state intervenes between the larvae and the imago, which has been termed the *pseudimago*. In this the perfect form of the final insect is assumed, but it has yet another skin to shed ere it can be termed perfect. Practically, the difference between the duns and spinners, so-called, is occasioned by this intermediate change. This fact is a central one, however, and should be borne in mind by the fly-fisher; the upright-winged flies are born of the water and evince no fear of drowning. If you observe one floating down the water you will find he seems to enjoy it—entirely unlike the house-fly, who has by some



errant inattention fallen in your milk jug, and is slowly drowning with many kicks and pitiful struggles.

The down-winged flies (*phryganidae*)—which are very useful also to the angler—are also water-flies, but their life presents a great difference to that of the *neuroptera*. The female usually lays her eggs on a leaf overhanging the stream. The sun hatches this in due time, and a queer, six-legged, maggot-like creature drops off into the water, as unprotected as a new-born infant, and just as naked. It soon, however, gathers round it accretions of stick, leaf, pebble, etc., and forms a case—hence its present name among the juveniles of England: caddis or case-worm. Its food is almost exclusively vegetable, as far as my observation leads me to infer. During the period of its existence, and after a time—which may be protracted to several years by low temperature and exceptional retardation of development—it becomes less restless. Finally it ceases its slow but unremittingly constant search for food, and closes up the mouth of its shell with a sort of gluten secreted by itself—probably a silk-like fluid, hardening in water—and remains quiescent for a time. After this it cuts its way through, and emerges a fly, with body always considerably fatter than that of the *neuroptera*, and wings that are either quite flat on its body, or roofed slanting like the roof of a house.

There are several of the true land flies that are caviare to trout; of that there

is no question. Probably nearly all the house flies—of which there is a prodigious number of species—are acceptable, and we know the filthy cow-dung fly is quite a *bonne bouche*. I do not think fish are such very accomplished entomologists as to be able to discriminate between the varieties of the horse-fly or between the many close resemblances to be found in the nerve-winged species, but I don't see why they should not be quite able to tell from its behavior whether a given insect is to the manor born as it floats on the surface, or whether it is not—in a word, whether it is a land-fly or a water-fly. From many years of close observation I am persuaded they can indeed.

## The Brook Trout and Its Capture: Part II

The *imitations* of the members of the families of flies and insects indicated in my

last paper are used in fly-fishing. Being imitations they should be good ones. Of this fact there ought to exist no doubt. Yet there are people who persist in condemning the "exact imitation" theory and practice of fly-making as objectionable. A fly-maker of the old school thus writes in a recent number of the *American Angler*: "The exact imitation theory has advanced considerable of late years, and pictures life with such confidence as to suggest a variety of this fly [gut-bodied fly] with the form of six legs (the compliment nature allows) and claims it possible for the fish selecting such an imitation precisely as if it were a living fly (another stretch of the imagination). Such a likeness may appear all right when viewed out of the water, none will dispute, but in clear, well-fished waters, from a bird's-eye point of view, it is natural to suppose that such an imitation would be likely to startle and awake suspicion because of the conspicuity of the hook and lifeless form of the body extending over the bend with no elastic fibres of the matchless cock's hackle to cover its nakedness and give a life-like appearance."

Making allowance for the lack of precision in the foregoing passage, it may be said there are several fallacies in it. If the exact imitation is exactly what its name implies, it is hard to find where "the stretch of imagination" comes in, which supposes the fish capable of mistaking it for the real insect. I by no means despise the hackle for legs in a fly, because the currents of



water setting against the elastic fibres render them tremulous and hence life-like, though be it said the fly intended to be imitated by this movement does not struggle at all. It simply uses its legs to steady itself, and thus steadied floats down until taken in by the fish, or until ready to ascend in the air, mate, lay its eggs, and so fulfill its cycle of existence. It may be granted that the ordinary method of presenting the artificial fly must be reformed to suit the exact imitation; that I do not deny. It has already been reformed in England, where exact imitations are presented upstream and allowed to float down without movement, exactly like the natural insect. If this were tried—as in California, in the neighborhood of San Francisco, it has been tried and successfully—we should hear no more about the fish being suspicious of a lure which to the critical human eye is a perfect imitation of the natural lure.

In the limits of this article it is manifestly impossible to touch more than the fringe of this important and interesting subject, but I hope to fully expound the "exact imitation theory" and practice in a work I am now rapidly preparing, to be published by Nims & Knight, of Troy, N.Y. It may be, however, taken as an absolute quantity that I am entirely in favor of imitating the various flies to be found at or near the water containing the trout one is fishing for. These flies are very similar to those of Europe, and I am assured from personal experience so purposely varied as to eliminate the possibilities of error, that intelligent imitations of a few of the chief day and evening flies will always bring sport commensurate with the care expended in the imitation.

There will always be flies of no definite imitation and yet killers. Such are the Coachman, the Professor and the Grizzly King. These are valuable because there are no substitutes as such, based on a rational plan of manufacture. If the Professor does not "take" one may try a Coachman or Grizzly King (*et hoc genus*) and so go on empirically to find out what

will "take." The intelligent angler, however, (and the advanced "exact imitationist" would do this) picks a dun or spinner with his landing-net from the water, sits down and imitates it, and thereafter kills fish. If he does not, he varies the shades and size of his flies, not the colors and forms in a haphazard way. Herein surely he behaves as a rational being, acting from what premises his observation has afforded him. And to sum up the whole thing: all I seek to promulgate in the exact imitation theory is an application of the rules of common sense. If you fish with an imitation, let your imitation be uncompromisingly exact; don't be satisfied with less because some ignorant fly-maker can't make an exact imitation, and if the old style of presenting the lure does not do justice to the similitude, then reform the presenting—"oh, reform it altogether" (to quote Hamlet's advice to the players,) and bring about a really scientific method worthy of the gentle craft in the nineteenth century.

As may be gathered from the preceding I am in favor of a floating fly, as opposed to the usual kind which, after the first throw, usually sinks some few inches in the water, and is drawn through it with a series of convulsive jerks and twitchings supposed to give life and vivacity to the fly. I am willing to admit that with the ordinary fly this procedure is necessary because it will not float anyhow after it becomes water-logged, nor will any fly do so. The necessity therefore becomes apparent for a style of tying which obviates the evil and allows a greater buoyancy, and an easy drying of the line between each cast, so that it readily floats and delights the eye alike of the fisherman and the fish by its life-like appearance. There are several ways unpracticed by the old school of fly-tiers which give the desideratum. One is, and I tie nearly all my flies this way, to give a double quantity of wing—that is *two* each side of the fly instead of one. The water always has a tendency to reduce the speed of a wing, and a fly after it has been used is usually quite different to an unused one.

This addition of wing obviates this shrinkage and adds to the buoyancy. The bodies of the flies also—whether they be of the orthodox or reformed pattern—are made of lighter material such as deer hair, straw (stained), cork and quill. Silk is one of the worst materials to use if a correct imitation be desired. It changes in a hundred ways on contact with the water, according to shade and method of dyeing.

A floating fly, therefore, should be thrown on the water with the least possible splash, and be allowed to float uninterrupted. When it has floated as far down as desirable it may be picked up quickly and dried in the air—waving the rod twice or thrice for this purpose and then again delivered and allowed to float. If the stream be not too swift, it is desirable to always fish up stream, raising the point of the rod as the fly floats down. Why fish up stream? In a word, because the fish lie with their heads up stream and take their food in this way, and because they cannot see behind them. Every optical law forbids it. *Verbum sat sapienti!*

Concerning the throwing of a fly I have nothing to say, for lo! is not all about it written in the book of the Chronicles of the late tournament? Of the weapons producing the least fatigue and most comfort in a day's fishing, I may be allowed to say something. In order to say this something with the greatest possible emphasis, I will describe my own, viz:—presuming that I have critically examined, perhaps a greater number of appliances than probably any other angler in either this country or Europe during the last fifteen years. Not, however, till I came to America did I understand what genuine ease and comfort in a rod meant. There is no comparison between the solid wood and cane built rod; the latter is out of sight and far away the superior. My own work-a-day conjuring wand is a six-foot hexagonal cane, weighing seven and one-half ounces, and about ten feet six inches long. It is of Spalding's make, and is a magnificently made weapon and reliable in every way. My reel is one of the improved automatic reels,





and was furnished by the same firm. I am aware that there is quite a dispute as to the merits of this said reel, but I can only here repeat what I have often said before, "The automatic reel is the finest fly-reel in existence." It gathers up the line and allows the left hand to be free to handle the landing net, and I feel certain that when its use has once been understood, no fly fisher will do without one. My line is an English one named "Foster's Acme," and contains a core of copper wire, which increases its weight without making it bulky. The result is one can cast in the very teeth of the wind and get the line out straight every time. Conroy, of Fulton street, New York, is the American agent for this really splendid line.

Of course I use fine gut for the leader. I have no sympathy with coarse tackle heavy enough to tow a boat. A gossamer leader, and tiny floating fly completes the outfit, and a better one, or one more practicable need not be sought for, for it cannot be found.

There is one improvement in rods, however, which deserves notice before dismissing this part of the subject. I refer to the new Horton steel rod. This implement is far the greater improvement on the earlier attempts with metal. It consists of a wood handle, as in the ordinary rod, and a series of steel tubes which telescope one in the other, and are beautifully tapered and tempered. I have one of these rods which I use on rough, windy days, and it is a remarkably powerful and yet light weapon,

weighing but ten ounces. The line passes up through the rod, and hence no matter how thick the brush through which one is obliged to travel there are no guides or rings nor loose line to become entangled and cause delay and annoyance. The price of these rods is about half that of the split cane, and with ordinary care should last a lifetime.

The whole question of fly-fishing is one in which one ounce of experimental practice is worth more than a wagon load of theory. The chief and really indispensable requisite is a knowledge of the haunts and habits of the fish. Given these and the angler will rarely fail to find sport. Fine tackle is good but an accurate knowledge of the fish is better; fine tackle alone will never catch fish.

Bait-fishing for trout is in comparison with fly-fishing very poor work, but it is not necessarily therefore to be utterly condemned. To artistically "swim a worm" is quite difficult and is a widely different thing from the ordinary method of bait-fishing. It consists in throwing the worm either up or down stream, according to circumstances, and doing so with care and skill so that the bait is not broken, and the delivery is gentle and precise. There is a knack also in hooking the bait with this style of angling which is not ridiculously easy to acquire. Then the preparation of the bait should be an operation requiring care and intelligent design. The best species of annelid is the opaline red-tinted *lumbricus*, with the scarlet line running

from head to tail, not the large, black, fat lob-worm. This latter is good enough for bull-heads and eels, but by no means is it the best bait for the "lusty trout." The kind of worm I refer to can be picked from the lawn after a shower, and should be placed in damp clean moss. This cleans them of the soil, and they acquire transparency and extreme toughness after a few days, which the fresh gathered bait does not possess. They must not be kept too long in moss or they will starve; a little fresh milk poured over them now and then is much relished, and seems to greatly improve their appearance.

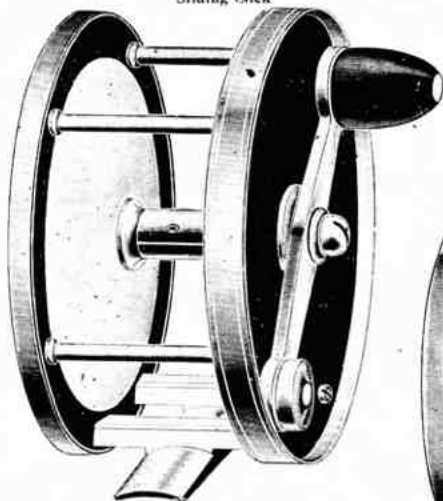
Trolling for brook trout is rarely practiced in this country. In England a minnow properly attached to a gang of hooks and trolled, is looked upon as a most deadly procedure, and on most trout preserves it is forbidden. The tackle consists of small triplet hooks and they are arranged on the Pennell, Francis or my own pattern, and are supplemented by a gut leader adorned with a sufficient number of swivels to allow of free gyration without "kinking."

If the tackle be small enough, as it should be, there is no reason why it should not be used freely in American water in the absence of fly-fishing. I have had remarkably good sport with this style of angling, and personally I rather prefer it to worm fishing. The bait can be cast from the reel, or with the line drawn off and coiled in a figure 8 in the left hand. The latter is probably a more scientific method.

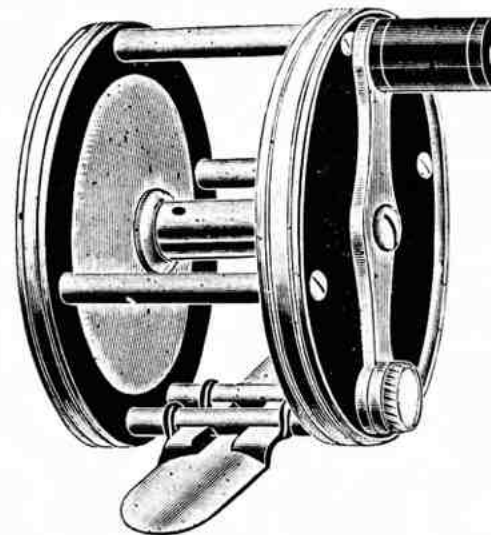
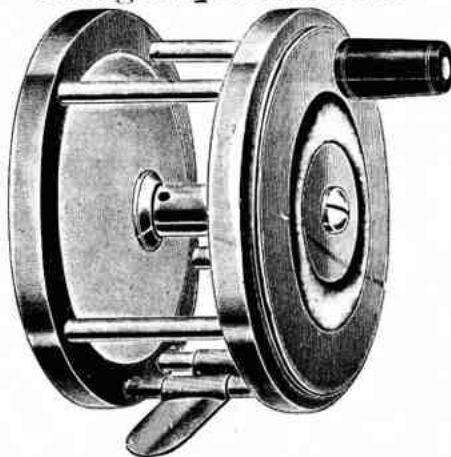
The whole arcana book of trout fishing consists in rather the mental construction of the angler than in the manner and method of the process. The fish is a convenient peg, so to say, on which we hang the *doler far niente*, and render the day's sport in its pursuit halcyon and superlative. The sport itself may be insufficient but there is always some recompense in the effort made and in the close communion with "dear nature's self." Not always do large bags and great results crown the angler's desire. Too often it is far otherwise, and yet the true angler never feels like giving up fishing because of poor sport. §

## Pflueger's Salmon Reel

Fine Quality Rubber, Metal Bound, Single Action with Back Sliding Click



## Pflueger's Salmon Reel



At left: two reels from the 1889 Pflueger catalog. Plates 1 and 2

Above and opposite page: four Pflueger reels (circa 1889). Plates 3 through 6

# Pflueger (as in "Flew-ger") Reels

by John Orrelle



Still relatively inexpensive, sturdy, and very reliable, Pflueger fly reels have probably been involved in catching more fish from American salmon and trout streams than any other commercial brand of contemporary fly reel. To those of us currently passing through mid-life, our trust-worthy, stream-worn Medalists are among the most revered of all our fly-fishing impediments. With worn silver in places, chipped paint in others, these originally satin-black line-reeling devices readily conjure up visions of gigantic brown trout and enormous salmon. We are grateful to John Orrelle for allowing us to publish an excerpt from his recent book on reels (*Fly Reels of the Past*), which deals not only with the popular Medalist model but also with other Pflueger fly reels. Excellent illustrations and sound research are combined here, giving the reader a highly informative piece that places these reels in proper historical perspective.

For those of us who grew up in the early 1950s, the name Pflueger (established around 1870 as the Enterprise Manufacturing Company) was generally associated with bait-casting tackle, particularly high-quality reels used for

both fresh water and ocean fishing. Among serious bass anglers, for example, the Pflueger Supreme was the premier casting reel. Many readers will recall the marvelous satiny finish of this reel and its overall high quality. Packaged in a luxurious velveteen bag, there was even a hidden compartment in the reel for storing an extra pawl—a nice feature that seemed not only practical but to young boys, mysterious and magical.

The Supreme was a casting reel that symbolized a long tradition of high-quality bait-casting reels manufactured by this firm. At the turn of the century, Pflueger casting reels were equal to the best, showing thorough attention to detail and finish. At the same time, fly reels were not significantly improved upon. The fact that at this early date Pflueger was concentrating primarily on casting tackle indicates the accelerated interest in this sport and the inverse lowered priority of fly tackle. Aside from firms that had remained traditionally oriented to the production of fly tackle only, the majority of manufacturers were turning their efforts increasingly to bait-casting tackle.

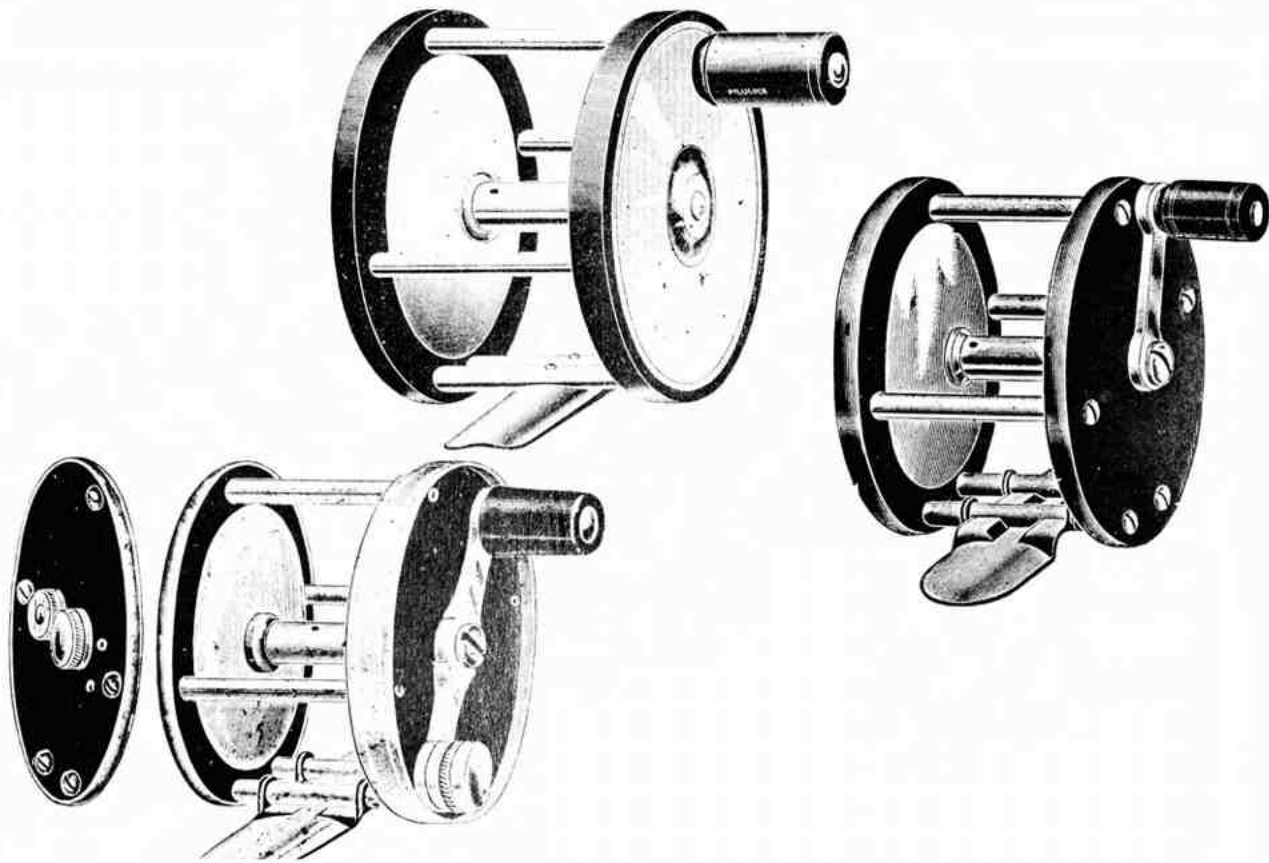
Such had not always been the case. In the 1880s and 90s, Pflueger offered a large variety of reels, a great many (if not the majority) of which were fly reels. Indeed, they were among the

most prolific reel manufacturers of the period, rivaled only by Vom Hofe. A review of Pflueger reels of this time illustrates the impressive number of different styles and models available, ranging from inexpensive single-action reels to the highest quality salmon reels.

Plates 1 and 2 show two Pflueger salmon reels advertised in 1889. Both were top-of-the-line reels and each came in three sizes, 3½, 4, and 4½ inches (plate diameter) and could be ordered in either German silver or nickel-plated brass. These were the most expensive reels available from Pflueger with the largest sizes selling between fourteen and sixteen dollars, slightly higher in price than Vom Hofe reels of comparable size.

Plates 3 through 6 show additional but less costly reels of the same period, all of them designed for fly fishing. Most of these reels were priced from one to four dollars, and were offered in sizes ranging from 2 to 3 inches in diameter. All incorporated hard rubber in their construction (a few were made entirely of this material) and came with or without the balanced crank handle.

It is often difficult to distinguish some of these Pflueger reels from those of other manufacturers of the day, especially Vom Hofe. One distinctive feature that does seem uniquely Pflue-



ger is the fancy cranking arm illustrated in Plate 7. Pflueger used the diamond-shaped arms such as found on reels of Vom Hofe and other reel-makers, but most of the evidence suggests that these same manufacturers did not use that of the Pflueger design (Plate 8 shows in greater detail the variety of cranks and handles used by Pflueger).

At the bottom of the Pflueger line were those reels illustrated in Plate 10—stamped, mass produced reels that could be ordered by the gross. All of these reels could be used for bait-fishing or employed as economy reels. The cheapest one (upper left) sold for about ten cents per reel. Tens of thousands of such reels were made by Pflueger and other companies (e.g. Hendryx and Pennell) and were very common. In the mid-1920s Pflueger was advertising these reels collectively as the "Portage" group, including the Seminole, the Osage, and Excell (earlier reels were simply stamped "Pflueger" on the footplate, while the more recent ones are stamped with the trade names of the Portage group). The reel pictured on the right is equipped with a ring-clamp, a very old method of securing a fishing reel to a rod. Plate 11 shows a slightly more expensive version (a fifty-cent reel) with a balanced crank handle.

By the mid-1920s Pflueger had intro-

duced four moderately priced fly reels that became very popular: the Egalite, Hawkeye, Delite, and the Golden West (Plates 12, 13, and 14). Of these four, the Egalite bears the distinction of having end-plates made entirely of aluminum, whereas the other three all used hard rubber in plate construction. The Egalite was a "one-dollar" reel and came in five sizes ranging from the smallest 2 inch version to the largest 3 inch size. The Hawkeye and the Golden West were made in a single 2½ inch size (with a spool width of either ¾ or 1½ inch) while the Delite came in both a 2¼ or 2½ inch size with a spool width of 1 inch.

Excepting the newly introduced Medalist, the Golden West was the best general purpose fly reel offered by Pflueger at this time, and its higher price (\$8.00 in 1927) was probably warranted by its more elaborate construction, which featured end-plates constructed of hard rubber interwoven with aluminum (like other manufacturers, Pflueger had found aluminum an extremely vexing metal for reel construction.)

Two other notable reels were the Progress and the Sal-Trout, both skeleton-type reels that were made for many years (Plate 15 shows the Sal-Trout). The Progress was a light-weight reel measuring 2¼ inches while the Sal-

Trout was a much sturdier reel measuring 3¼ inches in diameter and weighing a hefty 9 ounces (although advertised as suitable for both trolling and fly fishing, it was a bit heavy for most trout rods).

The Medalist (Plate 16) is Pflueger's most enduring fly reel, although its longevity, like that of the armadillo and opossum, has hardly been the result of its beauty. Still, one can argue that the earliest models (introduced around 1925) could at least pass muster; the "Diomolite" line guard, the amber handle (taking on a nice patina with age), and the oval spool pillars did give these first models a certain baroque character, although these features disappeared all too quickly. Perhaps the best that can be said of the Medalist is that when first made it did measure up to the initial claims of Pflueger: it was simple in design, strong and reliable, easily taken apart, and relatively inexpensive. Originally it was offered in three sizes (2¾, 3¼, and 4 inches), could be ordered in either right or left hand models, and was priced at around \$6.00 for the smallest size (1928). On a more subjective note, those who know this reel remember it for its slow, soft click—a subdued sound like that of train wheels on a distant track.

*(continued on page 22)*

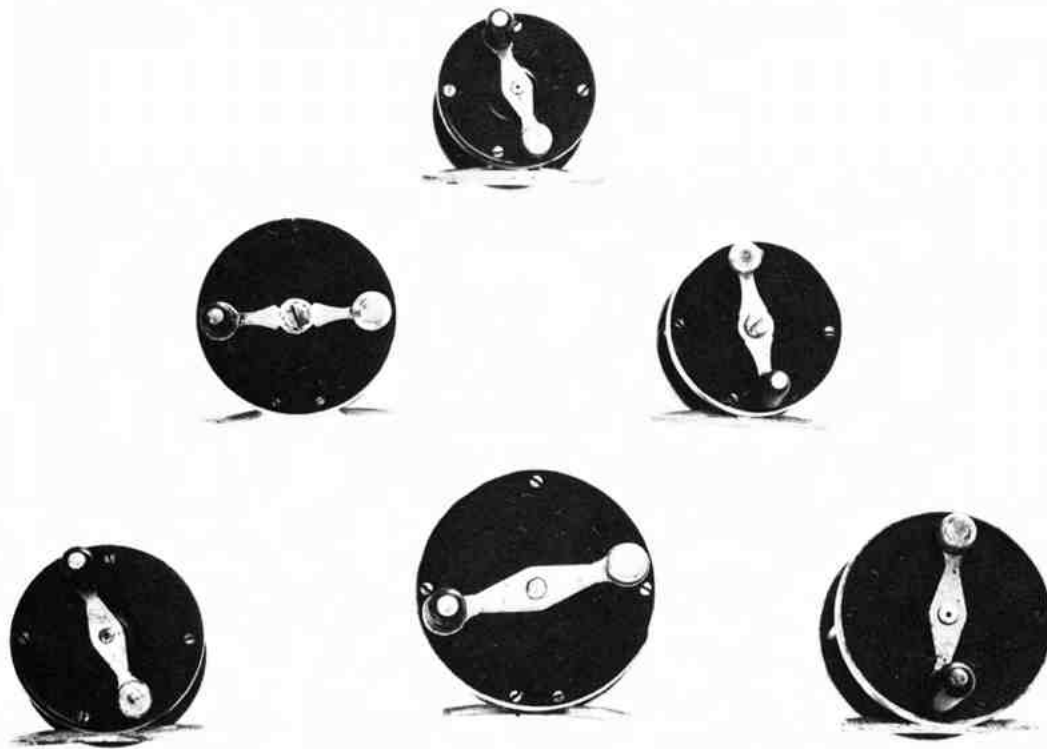


Plate 7. The two reels in the middle row are by Pflueger. The remaining reels are Vom Hofes. Note difference in handle shapes. (All reels circa 1890)

### PFLUEGER'S BALANCED REEL HANDLES

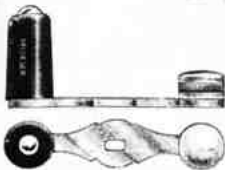
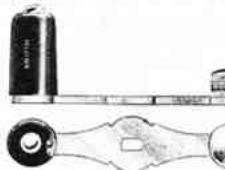


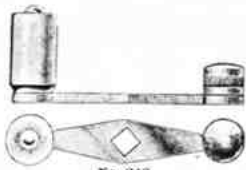
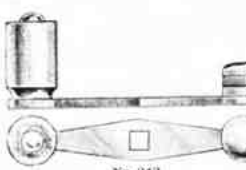

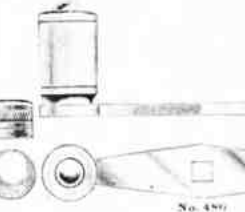
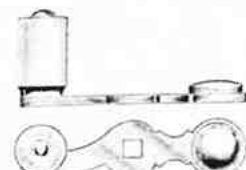
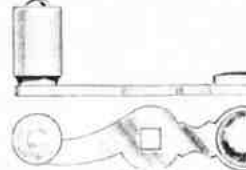
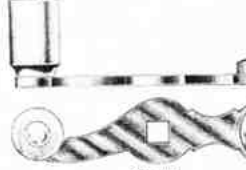







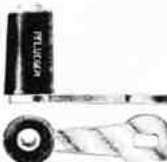
			
No. 112 40 Yard Handle	No. 113 60 Yard Handle	No. 114 80 Yard Handle	No. 115 100 Yard Handle
Brass, Black Composition Handle, Each 25c Nickel, " " " 25c " White " " 25c	Brass, Black Composition Handle, Each 25c Nickel, " " " 25c " White " " 25c	Brass, Black Composition Handle, Each 25c Nickel, " " " 30c " White " " 30c	Brass, Black Composition Handle, Each 25c Nickel, " " " 30c " White " " 30c
			
No. 242 40 and 60 Yard Handle	No. 243 60 and 80 Yard Handle	No. 244 80 and 100 Yard Handle	No. 499 150 Yard Handle
Nickel Hard Rubber Handle, Each 25c " White Ivory " " 30c	Nickel Hard Rubber Handle, Each 25c " White Ivory " " 30c	Nickel Hard Rubber Handle, Each 30c " White Ivory " " 30c	Nickel Hard Rubber Handle, Each 30c " White Ivory " " 30c
			
No. 102 40 and 60 Yard Handle	No. 103 60 and 80 Yard Handle	No. 104 80 and 100 Yard Handle	
White Ivory Handle, Each 45c " Silver White Ivory Handle, " 50c	Nickel, White Ivory Handle, Each 40c German Silver, White Ivory Handle, " 50c	Nickel, White Ivory Handle, Each 45c German Silver, White Ivory Handle, " 50c	

Plate 8. Pflueger reel handles from 1889 Pflueger catalog



# PFLUEGER'S SINGLE ACTION REEL HANDLES

 <b>No. 11</b> 25 Yard Handle	 <b>No. 12</b> 40 Yard Handle	 <b>No. 13</b> 60 or 80 Yard Handle	 <b>No. 15</b> 100 Yard Handle
Brass, Black Wood Handle, Each 6c " " Composition Handle, " 10c Nickel, " Wood, " 10c " " Composition, " 14c	Brass, Black Wood Handle, Each 6c " " Composition Handle, " 10c Nickel, " Wood, " 10c " " Composition, " 14c	Brass, Black Wood Handle, Each 8c " " Composition Handle, " 10c Nickel, " Wood, " 10c " " Composition, " 14c	Brass, Black Wood Handle, Each 10c " " Composition Handle, " 14c Nickel, " Wood, " 14c " " Composition, " 18c
 <b>No. 72</b> 40 Yard Handle	 <b>No. 73</b> 60 Yard Handle	 <b>No. 74</b> 80 Yard Handle	 <b>No. 75</b> 100 Yard Handle
Brass, Black Composition Handle, Each 10c Nickel, " " " 14c	Brass, Black Composition Handle, Each 10c Nickel, " " " 14c	Brass, Black Composition Handle, Each 10c Nickel, " " " 14c	Brass, Black Composition Handle, Each 14c Nickel, " " " 18c

## PFLUEGER'S BALANCED REEL HANDLES

 <b>No. 152</b> 40 Yard Handle	 <b>No. 153</b> 60 Yard Handle	 <b>No. 154</b> 80 Yard Handle	 <b>No. 155</b> 100 Yard Handle
Brass, Black Composition Handle, Each 14c Nickel, " " " 20c " White " " " 26c	Brass, Black Composition Handle, Each 14c Nickel, " " " 20c " White " " " 26c	Brass, Black Composition Handle, Each 14c Nickel, " " " 20c " White " " " 26c	Brass, Black Composition Handle, Each 20c Nickel, " " " 26c " White " " " 30c

Plate 9. Pflueger reel handles from 1889 Pflueger catalog

162 THE ENTERPRISE MANUFACTURING CO., AKRON, OHIO, U. S. A.

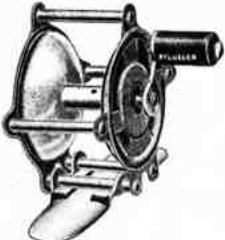
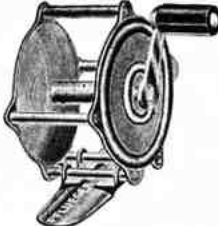
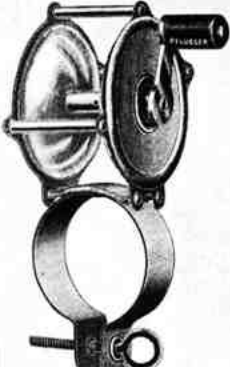
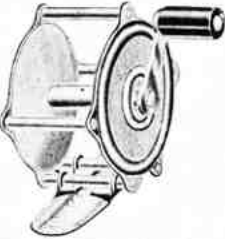
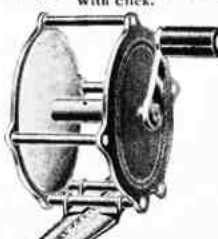
<p><b>Pflueger's "Leader" Reel</b> Single Action, With and Without Click.</p>  <p>Sold in Gross Lots Only</p> <table border="1"> <thead> <tr> <th>Brass Dipped</th> <th>Yards</th> <th>Pillar</th> <th>Disk</th> <th>Per Dozen</th> </tr> </thead> <tbody> <tr> <td>No. 1042 Without Click</td> <td>40</td> <td>1 inch</td> <td>2 inch</td> <td>\$15 16</td> </tr> <tr> <td>" 1052 With "</td> <td>40</td> <td>1 inch</td> <td>2 inch</td> <td>15 94</td> </tr> </tbody> </table> <p>Packed—One-half dozen in a box.</p>	Brass Dipped	Yards	Pillar	Disk	Per Dozen	No. 1042 Without Click	40	1 inch	2 inch	\$15 16	" 1052 With "	40	1 inch	2 inch	15 94	<p><b>Pflueger's Single Action Reel</b> With Click.</p>  <table border="1"> <thead> <tr> <th>Brass Dipped</th> <th>Per Dozen</th> <th>Polished Brass</th> <th>Per Dozen</th> <th>Polished Nickel Plate</th> <th>Per Dozen</th> <th>Yards</th> <th>Pillar</th> <th>Disk</th> </tr> </thead> <tbody> <tr> <td>No. 31</td> <td>\$1 47</td> <td>No. 21</td> <td>\$1 66</td> <td>No. 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32	1 75	" 22	1 94	" 32	2 00	40	1 inch	2 1/2 in	" 33	1 95	" 23	2 08	" 33	2 20	60	1 inch	2 1/2 in	" 34	2 10	" 24	2 31	" 34	2 42	80	1 inch	2 1/2 in	" 35	2 42	" 25	2 62	" 35	2 74	100	1 inch	2 1/2 in	" 36	2 76	" 26	3 20	" 36	3 45	150	1 inch	3 in	<p><b>Pflueger's Single Action Reel</b> With Ring Clamp and With or Without Click.</p>  <table border="1"> <thead> <tr> <th>Brass Dipped</th> <th>Yards</th> <th>Pillar</th> <th>Disk</th> <th>Per Dozen</th> </tr> </thead> <tbody> <tr> <td>No. 1001</td> <td>25</td> <td>1 inch</td> <td>1 1/2 in</td> <td>\$2 00</td> </tr> <tr> <td>" 1002</td> <td>40</td> <td>1 inch</td> <td>2 in</td> <td>2 32</td> </tr> <tr> <td>" 1003</td> <td>60</td> <td>1 inch</td> <td>2 1/2 in</td> <td>2 62</td> </tr> </tbody> </table> <p>Polished Nickel Plate</p> <table border="1"> <thead> <tr> <th>Yards</th> <th>Pillar</th> <th>Disk</th> <th>Per Dozen</th> </tr> </thead> <tbody> <tr> <td>No. 1011</td> <td>25</td> <td>1 inch</td> <td>1 1/2 in</td> <td>\$2 00</td> </tr> <tr> <td>" 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Plate 10. Small single-action reels from 1889 Pflueger catalog

Plate 11. From 1889 Pflueger catalog:  
four sizes, 2", 2 1/4", 2 1/2", 2 3/4",  
price, \$4.73 per dozen in 2" size

Plate 12. Pflueger Egalite fly reel (circa 1929)

Plate 13. Pflueger Hawkeye reel from 1929  
Pflueger catalog

Plate 14. Pflueger Golden West fly reel  
(circa 1929)

Plate 15. Pflueger Sal-Trout (circa 1925)

Plate 16. Pflueger Medalist (circa 1928)

Plate 17. Pflueger Gem reel (circa 1925)

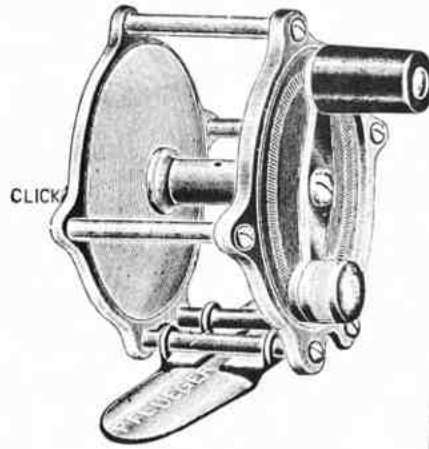


Plate 11

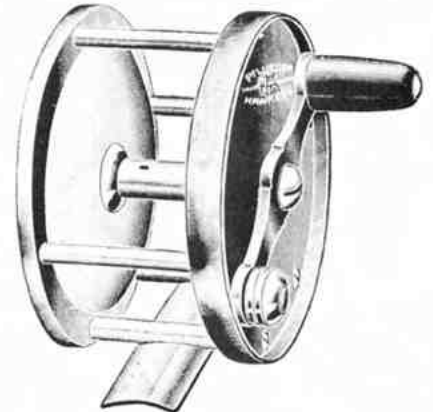


Plate 13

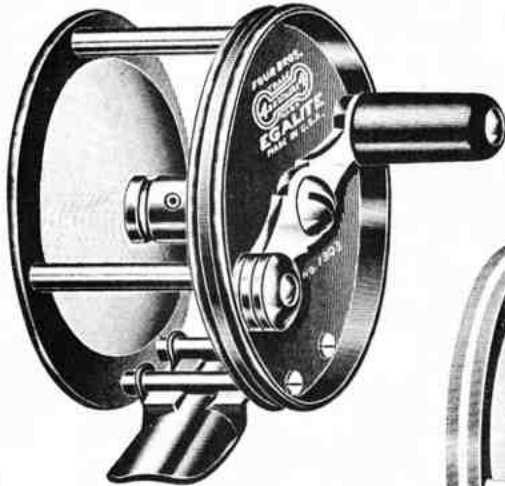


Plate 12

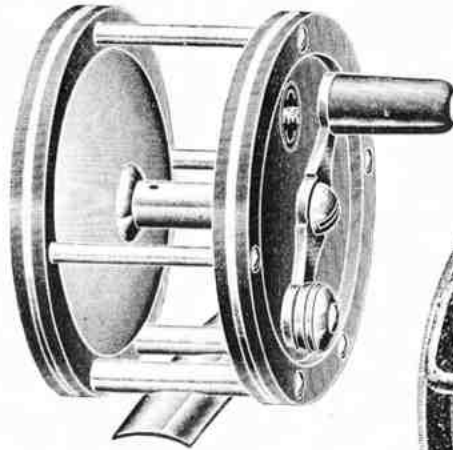


Plate 14



Plate 17

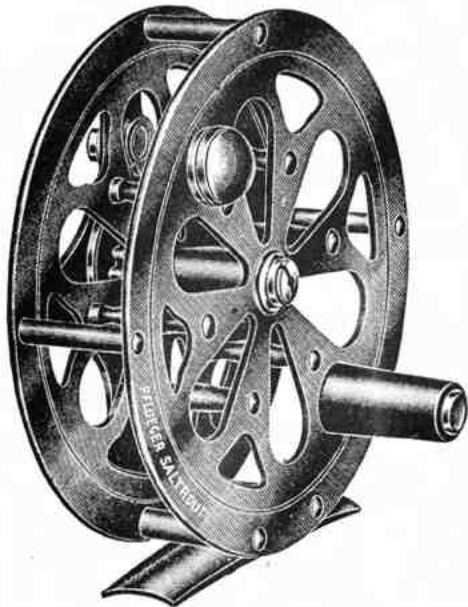


Plate 15

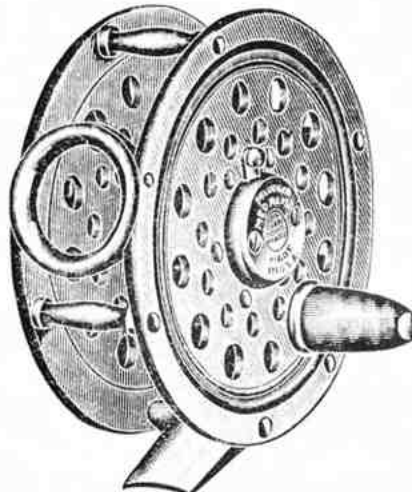


Plate 16

Opposite page: Pflueger trademarks  
(circa 1920 to 1930). Plate 18

LUMINOUS

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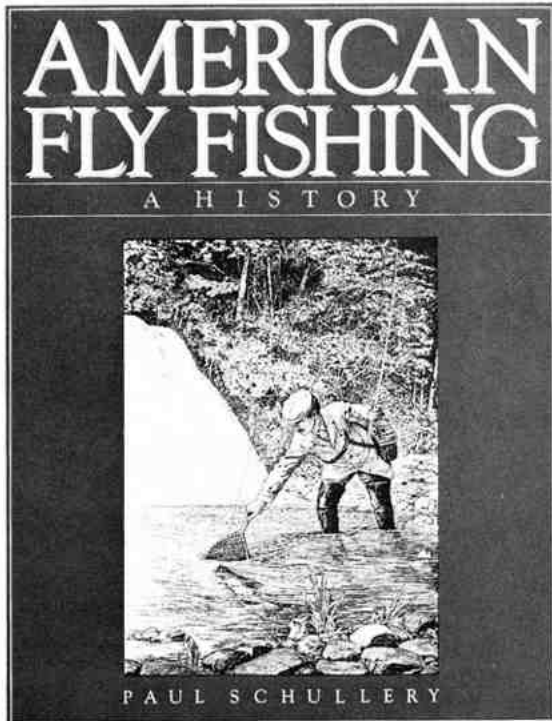


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The impact of technological advances in tackle and fly patterns on fly-fishing history is covered in depth as well as the incorporation of European fly-fishing traditions into our own. The author was executive director of the American Museum of Fly Fishing from 1977 until 1982. A trained historian and widely traveled angler, his articles have appeared in numerous national periodicals, and he is the author of more than a dozen other books. This important work was commissioned by the Museum and published in cooperation with Nick Lyons Books. Proceeds from the sale of this book directly support the Museum in its work to preserve and protect the rich heritage of fly-fishing.

- Large 8½" x 11" format with 278 pages
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# Museum News



## Annual Meeting Adopts Collection Policy

It didn't rattle the windows or bring tidal waves over the bonefish flats, but in the twenty-year history of the American Museum of Fly Fishing it was a significant moment. At the Annual Meeting of the membership and trustees of the Museum, held in Marathon, Florida, on December 5, 1987, a "first-ever" Collections Policy was adopted unanimously for the Museum.

In a nutshell, a collections policy for any museum describes (1) what the museum collects, (2) how the museum collects it, and (3) how the museum gets rid of something it doesn't want. Although everyone rightly assumes the American Museum of Fly Fishing to be collecting just what its title states—fly-fishing history—there has heretofore never been any written policy governing the growth and administration of the museum collections.

Museum collections, ours included, are both an asset and a liability. The asset attributes are the most obvious in that the American Museum of Fly Fishing collections are the basis for our exhibits, research, and other educational programs. On the liability side, we spend thousands of dollars every year to maintain records, preserve, exhibit, house, insure, and otherwise keep our collections in the best possible condition. As the aggregate fair-market value of the American Museum of Fly Fishing collection is now close to one million dollars, this is no small matter. (In some larger museums, the question is so significant that a donation for their collections may not even be accepted without an accompanying cash endowment for maintenance of the object.)

At any rate, the new American Museum of Fly Fishing Collection Policy helps to define the charter purpose of the Museum "...to collect, preserve, study, and exhibit fly-fishing tackle, flies, rods, reels, rod-making tools, works of art, books, and other related memorabilia for education of the general public on the history of fly fishing."

The same policy defines some of the criteria to be considered before an object is accepted for our collections:

1. The acquisition must conform to the Museum's collecting objectives.
2. If for sale or lease, the staff must arrange funding before the purchase or

lease.

3. A fair-market value must be determined between the parties.

4. The Museum must be in a position to care properly for the proposed acquisition.

5. The significance of the material or objects must be determined.

6. The materials or objects must, if possible, be documented as to provenance.

7. All moral, legal, and ethical implications of the acquisition must have been considered.

8. If possible, no acquisitions will be encumbered by less than full literary rights, property rights, copyrights, patents or trademarks, or have physically hazardous attributes.

9. Acquisitions must, in general, be free from donor-imposed restrictions.

10. Whether acquisitions are offered for accessioning or developmental purposes of the Museum must be determined in advance.

11. The present owner must have a clear title.

We have quoted at some length from the new policy to give the membership a glimpse at some of the thought and work entailed in accepting the seemingly simple donation of a rod or reel to our collections. It's not so simple as it might first appear!

Our Collections Policy, which amounts to seven single-spaced pages, was drafted by Director John Merwin, who first surveyed comparable policies in force at various museums around the country. A draft copy was submitted to the American Museum of Fly Fishing's Policy and Program Committee in May of 1987, and within that board committee Paul Schullery (former director of this museum), Chris Cook (director of the Addison Gallery of American Art in Andover, Massachusetts), and Alan Phipps (former director of the Denver Museum of Natural History) were most helpful with their suggestions for changes.

We'll doubtless have more to say about this policy in future issues, but all of us meanwhile can be very proud of the giant step forward the adoption of such a policy represents. Interested members may obtain a copy of this document by writing the Museum office. Please enclose four dollars per copy to cover photocopying and mailing costs.

## "Anglers All" Opening in Denver

"Anglers All," this museum's highly acclaimed traveling exhibit on the history and lore of fly-fishing, is scheduled to open at the Denver Museum of Natural History in Denver, Colorado, on March 30 and is set to continue on display there through July 31, 1988. The exhibit was originated by this museum in cooperation with the California Academy of Sciences in San Francisco in 1985, during which time it was enjoyed by more than one million viewers. In 1986 the exhibit was shown at Chicago's John G. Shedd Aquarium. "Anglers All" also just completed a showing of several months at Philadelphia's Academy of Natural Sciences.

The exhibit continues to feature such noteworthy items as a 1653 first-edition copy of Izaak Walton's *Compleat Angler*. Also included are items from this museum's Presidential collection and tackle of such other famous personalities as Zane Grey, Daniel Webster, Ernest Hemingway, and Harry "Bing" Crosby. "While such items are of and in themselves very worthy of display, we also have an ulterior motive in using them in "Anglers All," Museum Director John Merwin explained.

"Many thousands of people visit our traveling exhibit who have never fished in their lives. But even as non-fishers, they recognize figures such as Zane Grey and Daniel Webster and are drawn into the exhibit by those names. Then they encounter more detailed displays on the history of rodmaking, literature of angling, reel development and so forth, all designed to give an understanding and appreciation of fly-fishing history."

As "Anglers All" showings have progressed from one museum to another in major American cities, the exhibit has evolved and grown. One new addition that came as a result of a suggestion made by the Philadelphia Academy staff is a special "Children's Section" in which items of fly tackle (no rods or sharp hooks) and clothing are scattered about an old rowboat. In this area, the thousands of children who visit any given major museum every season can try on and get the feel of fishing vests and hats, reels, pillowlike "stuffed" fish and, in general, get their hands on a real piece of the fly-fishing world.

For those wondering about future "Anglers All" showings, we're pleased to

## Join the Museum

### Membership Dues (per annum\*)

Associate*	\$ 25
Sustaining*	\$ 50
Patron*	\$ 250
Sponsor*	\$ 500
Corporate*	\$1000
Life	\$1500

Membership dues include the cost of a subscription (\$20) to the *American Fly Fisher*. Please send your application to the membership secretary and include your mailing address. The Museum is a member of the American Association of Museums and the American Association for State and Local History. We are a nonprofit, educational institution chartered under the laws of the state of Vermont.

## Support the Museum

As an independent, nonprofit institution, the American Museum of Fly Fishing must rely on the generosity of public-spirited individuals for substantial support. We ask that you give our institution serious consideration when planning for gifts and bequests.

## Visit the Museum

Summer hours (May 1 through October 31) are 10 A.M. to 4 P.M. daily. Winter hours (November 1 through April 30) are weekdays 10 A.M. to 4 P.M. We are closed on major holidays.

## Back Issues of the *American Fly Fisher*

The following back issues are available at \$4 per copy:

Volume 6.	Numbers 1, 2, 3 and 4
Volume 7.	Number 4
Volume 8.	Numbers 2, 3 and 4
Volume 9.	Numbers 1, 2 and 3
Volume 10.	Numbers 1 and 2
Volume 11.	Numbers 1, 2, 3 and 4
Volume 12.	Numbers 1 and 3
Volume 13.	Numbers 2, 3 and 4



# The American Museum of Fly Fishing

Post Office Box 42  
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Vermont 05254

# Museum News

say that we now have a contract with the Bell Museum of Natural History in Minneapolis for a display there in the spring of 1989. Discussions are also taking place with a major museum in New York City and also other museums around the country concerning future bookings, but as yet no other dates have been set.

As a footnote to the whole "Anglers All" program, one of the most often asked questions about the exhibit is where the name came from in the first place. The answer: In 1984, while working on the development of the exhibit, Director Merwin was staring late one night at his bookshelf, trying to find inspiration for a catchy, marketable exhibit title. The inspiration, and the name, came from an anthology of angling stories by the late John Taintor Foote.



## Don Johnson is New Museum Curator

We're delighted to report what may be one of our most important "acquisitions" ever—Donald S. Johnson, former director of the Des Plaines (Illinois) Historical Society and now our new curator and editor, who joined the museum staff in September 1987.

While working with the Des Plaines group on an intermuseum loan during 1987, we became increasingly impressed with the voice on the other end of the phone. It seemed this fellow not only knew what he was about as far as museums were concerned, but also happened to be a fly fisherman. So when, in the course of one conversation, he let it drop that if we were ever looking for a curator he'd be interested—well, we were interested, also. When it became apparent last fall that we

would be able to hire a curator, Don was first in line.

He holds a B. A. from Northeastern Illinois University where he majored in history and became a member of Phi Alpha Theta, the international honor society in history. He also holds a master's degree in history from the University of Illinois at Chicago. At the time he joined us in Manchester, he was a Ph.D. candidate in history at Loyola University of Chicago.

As director of the Des Plaines Historical Society and Museum, Don was responsible for the Society's budget, grants, programming, newsletter, and so forth. He had also worked for several years for the Society on accessioning objects to their collections, interpretation and conservation of the Society's physical, archival, and photographic resources, research coordination and tours of the Society's facilities.

Don is the author of one book, *Des Plaines: Born of the Tallgrass Prairie* (Windsor Publications, 1984) and a variety of magazine articles. He was a commissioner of the Kennicott House Restoration Commission (Grove National Historic Landmark, Glenview, Illinois); a board member of the Ernest Hemingway Foundation of Oak Park, Illinois; and is a past president of the Des Plaines Chapter of the Izaak Walton League of America.

He has canoed and backpacked extensively in Alaska and Canada, especially in the Hudson's Bay area. In conjunction with his graduate studies on British history, he has spent considerable time in Britain and Ireland. He is also a Marine Corps veteran.

Don, who is 37, now lives in Pawlet, Vermont, with his wife, Meg, and two young children. Numerous museum members, through his answers to their research inquiries, have already become aware of his cheerful demeanor. To those who haven't, we offer the following:

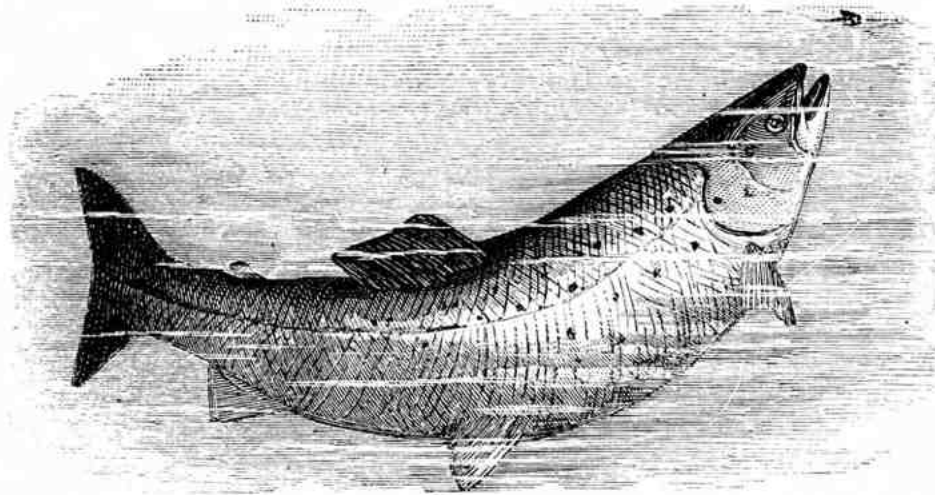
Don arrived just in time to help us get "Anglers All" off to the Philadelphia Academy. At about 1,500 pounds of freight, this is no easy matter. One of the crates is about 14 feet long and contains an antique Adirondack guideboat used in the exhibit. We usually store this in a neighborhood barn when it's not on the road. One of Don's first tasks was joining us in a 4WD pickup to go get the crate.

After slushing past the manure pile and into the barn, we were huffing and puffing back to the truck with the crate.

"Say, Don...(huff, puff, grunt)...did they teach you about this in museum school?"

We almost dropped the crate for all the laughter at his end. And at that time we realized the museum collections to be in good hands.

—John Merwin



# The Brook Trout and Its Capture

*by John Harrington Keene*

Cheerily in the morning bright  
Cometh the angler down the meadow,  
Rosily flushed in the dawning light—  
Seeking the pool that lies in shadow.  
Drenched in the cool and sparkling dew  
He nears the gurgling, plashing rill;  
He parts the brushwood—peeping through—  
And drawing back, like a rock is still:

Then—daintily falls the fairy fly,  
Softly kissing the dimpling eddy;  
Lazily floats it, light and dry,  
To where a trout is waiting ready.  
Lo! now he takes the gaudy lure  
With plunge, and grim heroic strength,  
He fights, but cannot long endure—  
Both pluck and strength are gone at length:

Then—merrily goes the angler on,  
Casting around the downy feather;  
Ardently mounts the golden sun,  
Making a noon of glowing weather.  
Still trout on trout doth follow fast,  
The creel fills as the day wears on,  
And fuller yet, until at last  
There is no room for even one.

Then—rosily flushed in sunset-light  
Tramps he homeward through the meadows,  
Fitfully lit by glow-worms bright,  
Glancing amid the evening shadows.  
Bland Peace sits calmly in his heart,  
His dear-loved home he hails with joy,  
And hastens in, glad to impart  
A sweet content without alloy. §

