



"Friends." © Craig Ritchie.

Getting it right

By Datus Proper

Knowledge of the outdoor world is part of outdoor ethics. Knowing the game ranks with knowing your equipment. To promote this outdoor ethic among our audience, OWAA members must be diligent in verifying the accuracy of all facts and figures.—Mark LaBarbera, chairman

Of all sports, fishing has the largest body of literature, and anyone familiar with it will be aware, by now, that nymphs make up 80 percent of a trout's diet. Or maybe it's 90 percent. Anyhow, most of what a trout eats is nymphs and you ought to be fishing with one.

As bromides go, this one is instructive for three reasons.

First, it has been repeated not only by sellers of nymphs but also by writers from whom readers expect independent, accurate information on the outdoors.

Second, the figures are implausible at first glance. A trout getting 80 percent of its diet from nymphs would have to pass up other food that is widely available in streams—including adult aquatic insects of all kinds, terrestrial insects, sow bugs, snails, scuds, crayfish, minnows, the larvae and pupae of caddis flies and midges, and so on.

Third, this bit of fishy wisdom can be traced to its source without much effort.

(Small errors can be hard to run down, in a sport as old as fly-fishing, but a real whopper is likely to have been invented only once.)

Tracing fishy wisdom

The author was Edward R. Hewitt, who did everything on a larger-than-life scale. In two books (the first in 1934), he cited a finding that "over 80 percent of the trout food consisted of nymphs." Fortunately, Hewitt also gave his source of information—unlike some of his successors. The research on which he drew was done at Cornell University by Paul R. Needham, who surveyed brook, brown and rainbow trout in New York streams.

Outdoor Ethics

For an article published in the April 1990 issue of *Field & Stream*, I went back to Needham's research and found that mayfly nymphs made up about 33 percent of the food items of the trout surveyed. Stonefly nymphs made up another 1 percent. Hewitt would have been accurate if he had said that about 34 percent of the trout food consisted of nymphs.

In the Winter 1991 issue of *Trout* magazine, Robert J. Behnke also compared Hewitt's statement to the original Needham research. A "case could be made from Needham's data," Behnke wrote, "that dry-fly fishing should be more effective than nymph fishing." Behnke mentioned further research by Needham—this time in California—on a trout population that got less than 10 percent of its food from nymphs.

In a sport with intellectual trappings, how could Hewitt's error have been perpetuated over the years?

Perhaps no one dared to question Hewitt at first. Behnke writes that "Hewitt knew it all. He was not about to be influenced by lesser men. Essentially he operated on hubris." But the hubris might have made later writers wary, not confident, if they had checked on the source of their information.

Instead, the error was allowed to feed on itself. Writer after writer repeated it—without attribution—and two generations of fishermen grew up knowing that nymphs are 80 percent of what a trout eats. Or perhaps 90 percent. What started as a mistake became common knowledge.

Lengthening British chambers

Next case in point: shotgun chambers. British "game guns," which many Americans like, typically have 2.5-inch chambers. Standard American shells, however, are 2.75 inches long. For decades, therefore, some American writers have recommended lengthening British chambers by one-quarter inch. The idea seems to make sense (unlike Hewitt's statement on the diet of trout). Unfortunately, I have seen no research to support the recommendation. When I asked a technician at one American powder manufacturer, he was equally unaware of

relevant research. If I have missed something, please let me know.

In Britain, on the other hand, a major manufacturer of shotgun ammunition did the research—and found that 2.75-inch chambers did not, in fact, give lower pressures than those one-quarter inch shorter.

British gun makers do not recommend lengthening chambers, especially if the gun is not reproofed. Alteration of the gun may weaken it, they say, and does nothing to address the real problem—which is not chamber length but pressure. American factory ammunition is loaded to pressures higher than those for which 2.5-inch chambered British guns are designed. This is a short summary of a complicated issue. I did a longer summary in the May/June 1992 issue of *Shooting Sportsman* magazine, drawing on three books by Gough Thomas.

In this case, then, British sources of information are in direct conflict with some American sources—and a writer drawing from the wrong source could be blamed for a dangerously stressed gun. Imagine answering questions from the lawyer of a reader who has recently blown off a finger. "Was your recommendation based on research, Mr. Writer, or just hearsay?"

In practice, the outcome is likely to be less dramatic. A writer who cites sources is forced into a disciplined process—and, as in this case, the conclusion may become obvious.

Citing sources

Notes provide the neatest way to list sources, and one that is almost always acceptable in books, even those aimed at a general audience by a major publisher. I used end notes in my last two books with no objections from the editors.

Computer software now makes the technical problems easy too. You enter the appropriate command and type in the note while the reference is still in front of you. A number appears in the text of your chapter and the body of the note appears wherever you wish—bottom of page, end of chapter or end of book. The note will be numbered in sequence, automatically, even if you move around blocks of text. I do not care for the sound

of *word processing program*, but the one I use (WordStar) saved me days of work on the final, typesetter's version of my last book.

Some magazines accept footnotes too. Others do not. Perhaps we can win over all editors, in time, but meanwhile there are ways of weaving attributions into the text. Readers like the practice, and for good reason. It is a safeguard against hubris, a sign that the writer is not too important to consult the works of others.

And that reminds me. Does fishing really have the largest body of literature in sport? The claim seems logical, and it has appeared in print frequently—but who did the research?

Book author and free-lance writer Datus Proper, of Belgrade, Mont., is a member of the National Affairs and Environment/Outdoor Ethics Committee.

October deadline to apply for RMEF conservation award

Do you know a dedicated conservationist? **Oct. 15, 1993**, is the last day applications will be accepted for the Rocky Mountain Elk Foundation's (RMEF) Wallace Fennell Pate Wildlife Conservation Award. The RMEF Board of Directors established the award in February 1993 in honor of its past president and chairman, Wallace Pate, to recognize his lifelong dedication to wildlife conservation.

The Elk Foundation will present the award annually to individuals or groups who best reflect a similar commitment to protecting precious habitat for elk and other wildlife. Recipients of the award will receive a limited-edition bronze sculpture by artist Jack Logozzo, "Ascent to the Summit."

Contact Aimee Hayes at (800) 255-5355, ext. 442, for application forms. The RMEF executive staff will select the winner and announce their choice during the RMEF's 10th Anniversary International Elk Camp & Exposition in Portland, Ore., Feb. 24-27, 1994.

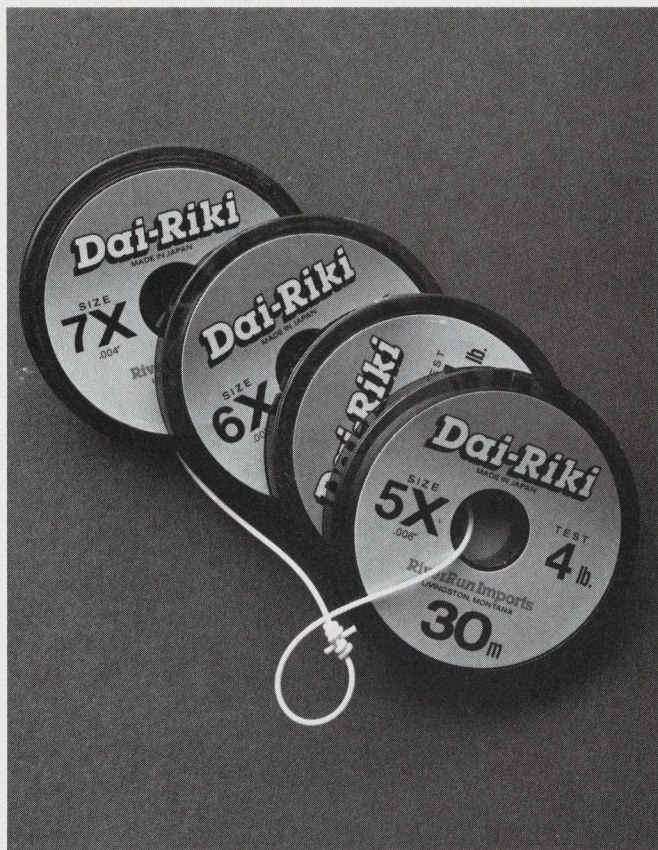
The Rocky Mountain Elk Foundation is an OWAA supporting member.

Great Strength, Small Package

Synthetic monofilament has gone through three or four generations that I can recall. These steps were not always easy to recognize: New materials would be a little better than their predecessors in some qualities, but worse in others. Stren, for example, was stronger than most of the European monos for a while, but diabolically shiny. Aeon and Nylorfi, a few years later, were also strong, but the process of knotting them created little "pigtail" kinks right in front of the hook eye. Several other monofilaments that claimed super strength shared this problem.

But those who make DAI-RIKI must have had some advice from good fly fishermen, because the product is *right*. Dan Bailey's, in Livingstone, Montana, gets the credit for importing and distributing this monofilament.

"Dai-Riki" means "Great Strength," and while that is



accurate enough, it does not tell us much about the maker. A lot of Japanese tackle is arriving here anonymously these days, sometimes under different brand names. It gets hard to track. In the words of a familiar advertising campaign, we need more work that's good enough to sign.

Let's call Dai-Riki the Toyota of tippet materials. If that does not sound like a high compliment, consider that Toyota's reputation for quality has allowed dealers to sell some models for a premium above list price. Dai-Riki is also premium-priced: about two dollars for a little bit of monofilament (on

a spool too big to fit in my fishing vest). The material is good enough to justify some fussing, so I rewound it on practical spools and used it to replace all the other tippet material in my vest.

But that is just one angler's opinion, and opinions on monofilament (as on most tackle) tend to be passionately subjective. Let's be as precise as possible about Dai-Riki's characteristics. That way, if you disagree with my judgment, you'll know why. Please note, though, that these comments apply only to fine monofilament: tippets and the sections just above them. (I personally feel that butt sections are best made with other materials. On that subject, see "Braided Leaders" in the May/June issue.)

Dry knot strength is remarkable. I tested it by knotting together different monofilaments whose diameters had been checked by micrometer. For fishing purposes, this is about the most relevant test available. Dai-Riki that mikes .005" always breaks .006-inch, and sometimes .007-inch, Racine Tortue—my favorite of the previous generation of tippet monos.

Wet knot strength has by now been tested by a couple of hundred wet trout. I have had none of the puzzling breakages that trouble some new materials. I have used .005" (6X) tippets in circumstances that used to call for .006", and if anything the finer Dai-Riki has lost fewer fish. Now one thousandth of an inch may not sound like much, but .006" is 20 percent thicker than .005", and that is enough to make a real difference in the behavior of small flies.

Shock strength is less clear. I have popped off a few fish on the strike, which is not one of my customary afflictions. It may be—I'm not sure—that the finer material I'm now using cannot cushion against a sudden shock quite as well as thicker material of the same nominal tensile strength.

Kink resistance is good. Dai-Riki easily loses its memory of the spool (even a small spool), and it does not form those pigtail curls when knotted. When stretched hard by a big Montana trout, however, the material may pick up a few kinks and is then best changed.

Color is dull and non-shiny, which I would rate as good.

Body is about right too. By this I mean that the material is sufficiently stiff and heavy to resist wind knots and to deliver a fly fairly accurately even when the tippet is long.

If Dai-Riki is the first of a new generation of tippet monos, I eagerly await continuing developments. It looks like a tough season for the trout.

—Datus Propper

A Wader for all Seasons

The simple fact that some 60,000 pairs of them have been made to date should be at least partial explanation for the inclusion here of the Red Ball FLYWEIGHT WADERS. Singlehandedly, Flyweights have done as much for the popularity of stockingfoot waders as monofilament did for leaders. And they've only been around since late 1978 or so. (Grub-

The Rod & Reel Awards



bing around in my tackle closet a few days ago, I came across my first pair; I believe they were prototypes, at that. They're limp, discolored, look like hell. They've been fished in and hunted in and marched through swamps and puckerbrush. They don't leak yet. They just got converted to hip boots, though.)

Early Flyweights were made from 70-denier nylon waterproofed with polyurethane and held together by electronically sealed seams that, in the words on one of R&R's equipment reviews, "look ridiculously inadequate." But of course they're not. There are no overlapped seams or fancy stitching. The ladies who assemble Flyweights (in a creaky old white elephant of a factory in Manchester, New Hampshire) merely align the various swatches of material, then press a foot pedal

that brings the welding arm down. In seconds they make a joint as strong or stronger than the material around it—just as a high-quality steel weld is. Back in 1979 most of us regarded Flyweights with considerable suspicion, not only because of the seams but because the fabric looked so flimsy as well. Our first pair, donned in the office, immediately got the sharp-pencil poke test. When they passed that with no problems—the point not only didn't penetrate, it skidded off—we took 'em out fishing. And it was love ever since, for us and for thousands of other fly fishermen.

For the spring of '82, Flyweights became Flyweight S/T's, for Super Tough. The manufacturer had increased the weight of the nylon fabric from the original 70 to about 200 denier. Surprisingly, the new ones were not three times bulkier or stiffer; to be sure, they were noticeably more "boardy," but the increase was easy to adjust to, especially in light of the implied improvement in durability. Some anglers were wearing through the seams at the heel, and the fabric was susceptible to abrasion from stream gravel trapped in the shoe, so reinforcement there was welcome, too. If you're one of those people whose stride always seems to pull down your socks, you may have similar troubles with these waders. I found that a pair of neoprene wading socks over them not only keeps this from happening, it also serves as a buffer against gravel—the little that does get in between the rubber and the shoe.

Flyweights mold themselves to your legs under the pressure of water, thus providing little resistance to current. They are the most comfortable chest wader around for hot weather, yet their generous cut leaves plenty of room for longjohns, insulated pants, warm-ups, sweat pants and the like. Although the material is not stretchy itself, as is neoprene or latex rubber, the roomy cut helps out again, by providing enough fabric to allow squats and scrambling into boats and over fences. Roominess does more, too: undo your wading belt, and the "bellows effect" will help condensation escape; and there's usually enough room in the uppers to shield a camera from the elements. Since sizes S-M-L-XL are available, Flyweights truly fit almost anyone between five and six and a half feet tall. Ladies love them too.

And what other wader offers comedy? Flyweights have that inflatable air chamber that forms a ring around the wearer's chest, akin to a mini-bellyboat. Of course it won't float any body (nor is it intended to); the maker says it's to help keep water from entering during a ducking. Well, maybe, but we've always managed to draw some laughs on slow afternoons by inflating said doughnut and waddling around like a circus clown. Why not drop the air tube, reduce the price slightly, and get rid of that *verdammt* valve that pokes your sixth rib on the right side?

Flyweights pack down to a negligible bundle that, even with wading shoes, are easy to stow for traveling. Repairs are a matter of applying duct tape or the stuff Red Ball/Hampshire supplies. At the end of the day, turn them inside out, whip them around your head a few times to dry off the condensation, turn right side out again, roll them up and stuff 'em. Wading couldn't be simpler.

Congratulations, Hampshire, for resisting the temptation to fix something that isn't broken.

—Silvio Calabi

The Hair Wing Royal Coachman

By Datus C. Proper

I have a superstitious faith in the scientific method, so before fishing the Gardner River I always check to see what insects are hatching. Having identified the naturals by a careful examination of wing veins and tarsi, I then invariably decide that the perfect imitation is a size 14 Hair Wing Royal Coachman. It may not look quite right to me, but it always does to the fish. And who am I to argue with a brown trout?

Hair Wing Royals weren't very common twenty years ago, when I started using them on that same little Montana river. I can't even remember where I got the idea of substituting calf-tail for duck-feather Fan Wings: it might have been from Mert Parks, but I am not sure he had set up his fly shop in nearby Gardiner, Montana, at that time. I do know for sure that I had practically memorized the complete works of Ray Bergman, and he was big on Fan Wing Royals. They worked as well as he said, but with browns as abundant as they were (and are) in Yellowstone Park and with each set of Fan Wings good for only a trout or two, a fellow could spend more time tying than fishing. Calf-tail hair proved just about as seductive as feathers, faster to tie, and much more durable.

The same fly was apparently evolving in similar fashion all over the country, for today it turns up in the vests of experienced anglers everywhere—and without benefit of

any special publicity. I don't recall seeing much written about the pattern: it just evolved. I'm speaking here not of the heavily dressed Royal Wulff but of the standard dry-fly tie, substituting white hair for feathers—and maybe with a bit of variant influence in the long, stiff hackles. So tied, the Hair Wing Royal has, for many fishermen, replaced the Hewitt Bivisibles as a general-purpose fly. The white hair is far more easily seen than white hackles, and the positive buoyancy is an important bonus. Moreover, the Hair Wing turns out to be one of those rare patterns that works under many conditions in many countries. I keep it right at the top of my foreign-service survival kit. (I can't survive two weeks of conference without some fishing on the side.)

One cold April in England, this was the only dry that worked. It worked again last July in Switzerland and France (and nobody keeps the trout as spooky as the Swiss and French). I wasn't surprised to see Argentine rainbows respond. In the western U.S., the Hair Wing Royal is as useful as the older classics.

Still, it remains something of an insider's fly, for it is rarely available in all-purpose sporting-goods stores. It is not a difficult pattern to tie, but it has some features that are not adapted to commercial shortcuts. Hackles and wings have to be just right, and the peacock bands must be made by a special method to

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Illustrated by John Buxton

crue to the coastal countries producing the fish. Millions of dollars are being spent by these countries on research, propagation, fish ladders, habitat management, and pollution control. It is proper that the fruits of this labor be harvested by the coastal states doing the work and making the investment. Even a substantial reduction of the resource will destroy the livelihood of thousands of people. From time immemorial, the people who inhabited the shores of the Maritime Provinces, Norway, England, Scotland, and Ireland have tended salmon nets at the mouths of rivers. There are in excess of 16,500 nets in the Maritime Provinces. Although figures are not available for the number of overseas nets, it is possible to make an estimate. If the number of people employed by sport fishermen as guides, cooks, and maintenance personnel is added to the number of people engaged in netting, processing, and marketing, the people affected could be in the hundreds of thousands. The loss of income could be many millions.

The salmon-producing nations are subsidizing the Danish fisheries to the extent of the raw material. The Atlantic Salmon Association has estimated the amount of this subsidy to be no less than 70 cents per pound. This must be very profitable for the Danes. The individual Danish fisherman is reported to make as much as \$8,000.00 for a three months' fishing tour. On August 3, 1970, imported Danish smoked salmon was on sale in New York City for \$9.40 a pound. On the same day, Nova Scotia smoked salmon could have been purchased for \$5.50 a pound at Sepp's retail store on St. Catharine Street, Montreal. Some difference! Is there any wonder that the Danes would like to keep doing this?

The investment in salmon and salmon-river restoration in the last decade is rapidly lining the pockets of netmen, processors, and marketers from countries which make no contribution whatever to this rich fishery. At enormous expense

in terms of human effort and money, we sow the seed; at great profit to themselves, they reap the harvest.

Can we be expected to condone the possible destruction of the salmon resource by about three hundred fishermen who manned thirty-five small trawlers in 1969? These fishermen could turn their efforts to fishing for those pelagic species which are not endangered.

Denmark has the legal right to high-seas fishing, illogically justified by the doctrine of "freedom of the seas." But this doctrine is negative, not positive. Freedom of the seas does not give Denmark, or any other nation, the right to over-exploit the Atlantic salmon; it only denies to the state of origin the jurisdiction to restrain Denmark. Formulated at a time when anadromous fish were harvested in small numbers on the high seas, the doctrine needs to be overhauled in light of modern scientific fishing methods.

The position taken by the countries bordering the North Atlantic will be felt in the North Pacific. Japan will become a member of ICNAF in 1971 (any government whose nationals desire to fish in the Northwest Atlantic Convention area may apply for membership). It is expected that Japan will vote with Denmark because she also is heavily committed to high-seas fishing. A weak position in the Atlantic will probably be duplicated in the Pacific. It behooves those people interested in the tremendous salmon resource of the Pacific to become vitally involved in the campaign to save the Atlantic species. And what of the steelhead if its Pacific feeding grounds are discovered?

At the June, 1970, meeting of the ICNAF, the adoption of a one-year amendment will still permit high-seas fishing. It is apparent that ICNAF is powerless to protect the salmon or to deter the dissenters, principally Denmark. The only avenue open to us is economic and political pressure. What can we do about this? Plenty!

Each of us interested in this pos-

sible tragedy must boycott all Danish goods. The principal imports are meat products including hams, bacon, and smoked salmon (about 33 percent of the total); contemporary (Danish) furniture; and manufactured goods including hair curlers (about 5 percent of the total). We must ask our wives and their friends to look at the labels in the marketplace. A campaign slogan could be: Don't buy Danish—Save your Salmon!

There is evidence that the Danish people are concerned about the image of their country. We must reach the Danish public with the message that a small group of their fishermen, supported by their government, is incurring tremendous ill-will for their country. This story must go to the newspapers and the networks. As American citizens, we can write to Danish officials, whose names are listed at the end of this article, and whose positions require that they be sensitive to public opinion.

The Honorable Walter J. Hickel, Secretary of the Interior, is giving careful consideration to a formal determination, under the Endangered Species Act of 1969, as to whether the Atlantic salmon either is an endangered species or whether it should be tentatively designated as such. Formal determination that the salmon is an endangered species would empower the Secretary to ban imports of Atlantic salmon or its products. The Secretary deserves our support and conservationists should indicate what their feelings are. Members of the Congress have the influence to accomplish much. The Department of the Interior and the Department of State have labored diligently to stop the high-seas fishery. But we must persuade our government to intensify its efforts.

The one nonprofit organization in this country, whose activities are devoted exclusively to bring about a total ban on high-seas fishing is the Committee on the Atlantic Salmon Emergency (CASE). By providing accurate information and guidelines to effective action, CASE will work to encourage commitment

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Hair Wing Royal Coachman

withstand fraying. No doubt good ties are available in conscientious fly shops across the country.

For those who prefer to tie their own, the following method will guarantee wings and hackle that stay upright, firm, and properly cocked. Then it helps to use a floatant that adds stiffness (like the old paraffin-naphtha mix or Mucilin line grease). By greasing my leader and cleaning the fly occasionally with Don Du-Bois' Fly-right powder, I can often keep one of these Hair Wing Royals on the leader for hours.

How to tie the Hair Wing Royal Coachman

Hook: Size 12, 14, or 16 in light wire. Mount it in the vise by the top of the bend, not the point, or it may break under the pressure needed to tie in a hair wing. Touch up hook point with a fine abrasive file.

Thread: Red Nymo (shade 0444), unwaxed; and black 6/0 silk, waxed. (On flies size 12 and larger, you can use red Nymo for the whole fly if you don't object to a red head. The trout do not mind.) Start with the red thread and use it for all operations till you get to the hackles.

Tail: Should be long, stiff, straight, and not very bushy. May be of either red-brown hackle fibers or hair, but if you use hair, it should be straight and sparse. Fix tail with a drop of head cement.

Body: Tie in two, three, or four strands from a peacock eye together with a piece of waxed black thread of the same length. Before winding body, tie in wings.

Wings: Wind the thread forward nearly to the eye and then back a bit. (The wings should be tied in about one third of the way back from the eye for best balance.) White calf tail seems to be about the best material. Look for a tail which has fine, fairly short hairs with tiny kinks. Put a drop of cement on the hook shank and tie in a small clump of matched hairs with tips forward, butts backward. It is absolutely essential not to tie the wings in wrong end to, or they will lie back on the shank after you have been casting the fly for a while. Stand the wings up with a few turns of thread in front of them, then divide slightly with an X of thread between two equal bunches. Clip the butt of the hair. Work a

drop of cement into the base of the wings.

Winding Body: Wind the thread back from the wings to nearly in front of the tail. Twist together the peacock herl and the waxed black thread in a counterclockwise direction, making a kind of fuzzy chenille. Then wind two or three turns around the shank in the normal clockwise direction. This will give you a butt that no fish is likely to chew loose. Make the red band in the body simply by winding forward with your red tying thread: no floss required. Wind the second band of peacock at the front of the red band, twisting the herl together with the separate black thread again. Tie off red thread with whip finish and tie in the fine black silk thread, using it for the remaining operations.

Hackles: Should be red brown and stiff—with stiffness more important than color. I prefer feathers a bit larger than normal—say about size 11 or 12 for a size 14 hook. Tie in two of them (three if they are short) by the butt with the dull (light-colored) side up, so that it will face forward when the hackle is wound. This is important. Wind each hackle separately, with roughly half the wraps behind the wing. Tie off hackles in front of the wings and make a small head with a whip finish of about five turns. Put a drop of varnish on the finished head and wait twenty-four hours for the fly to dry. If you are in a hurry, finish off with cement instead of varnish, but the varnish penetrates and holds longer.

The Future of Trout Fishing

dition of some adult brown trout collected in the lower sections (Brothers Pond to Muscote Reservoir). Several trout had thin, snake-like bodies, with large heads and fins. Microscopic examination of scale samples indicated a decline in growth rate and condition.

A 1968 survey substantiated previous findings, revealing most of the adult fish in the lower sections were slow growing. After all the scales were studied and results were tabulated, we found that two-year-old brown trout which had averaged 10.6 inches in other years, suddenly decreased to 8.9 inches. Three-year-old trout showed an even greater

loss; from a mean of 14.0 inches in prior years to only 10.8 inches in 1968. However, the most dramatic finding during the survey was a crash decline in young-of-the-year trout. The fingerling population, normally large and stable, reaching a peak of ± 5800 in 1964, dwindled to a mere 41!

In order to isolate the problem, several adult trout were sacrificed for analysis. Stomach examinations indicated primary food to be tiny midge larvae with only a few large desirable organisms such as minnows, mayfly nymphs, stone fly nymphs or caddis larvae present. As a result of these findings, we began bottom-sampling procedures in April 1969. Our goal was to determine the food base present in the stream with regard to species composition, relative abundance, and importance as trout foods. A Surber Square Foot bottom-sampling device was utilized for the task. Collecting points were selected so that one would be located in each of the three previously described sections of stream. Insects comprising each sample were placed in dated, sequentially numbered containers and preserved with a 70% solution of ethyl alcohol for later studies.

In the laboratory collections were identified and sorted according to scientific groups: e.g., midges (Diptera), mayflies (Ephemeroptera), stone flies (Plecoptera), caddis flies (Trichoptera), etc. At the same time, total counts were made of insects representing the various categories. Finally, the entire mass of each sample was measured volumetrically, by the amount of water displaced in a graduated cylinder.

Initial results, when classified on relative values of good, fair and poor, indicate that the food base per unit area of bottom, in all sampling areas, best fits the latter value. Species composition of samples studied reveals, as demonstrated by prior stomach analysis, that midges predominate. While these are very numerous, they are extremely small and provide less than optimum growth potential for adult fish.

Along with the poor insect base, electrofishing indicates that few minnows are present, thus complicating the forage situation. However, we might note that the yearling

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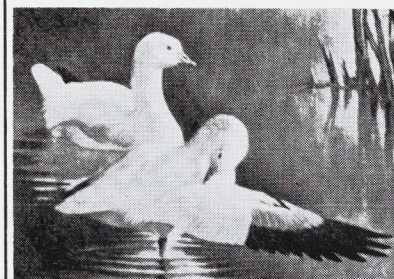
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WHIRLING DISEASE:



Threat to Rainbow Trout By Ben Schley

It took years to cross the Atlantic, but in 1956 the first known case of *Myxosoma cerebralis* in this country was diagnosed in some rainbow trout at Pennsylvania's Benner Spring Research Station.

Following soon after this first outbreak, the disease was again identified in the same watershed at the Lamar National Fish Hatchery—and, significantly, again in rainbow trout. Then in rapid succession it was reported in Connecticut, Ohio, Virginia, West Virginia, and Michigan. More recently, it has been found in Nevada. Federal, state, and commercial hatcheries all suffered. Thousands of infected fish had to be destroyed and the rearing facilities chemically sterilized before production could be resumed.

Because of the strange way it affects its victims, the lay term for *Myxosoma cerebralis* is "whirling disease." It was first noted in Europe in 1903. It is caused by an internal parasite which usually attacks rainbows, although it has been found in brook and brown trout, grayling, and in both Atlantic and Pacific salmon. Brown trout, doubtless because of long exposure to the disease, appear to be quite resistant to it, but they may act as carriers, as do kingfishers, in whose droppings it has been found.

Trout under one year of age may become infected by ingesting the spores of the parasite. Most fish, however, pick up the infection during the first few weeks of life. The earlier the infection, the more se-

vere the effects.

The first symptoms appear forty to sixty days after infection. The fingerling fish begins a whirling, tail-chasing dance and the rear third of its body often turns black. Because the disease invades the cartilage around the auditory-equilibrium organ behind its eyeball, the young trout loses its sense of balance and direction. Often the activity of competing for food stimulates feverish tail chasing and whirling which exhaust the fish for long periods. Though many fish survive the early effects of the disease, they usually become curiously deformed, with twisted heads, humped backs, and emaciated bodies. They compete for food under a severe handicap and because of malnutrition, seldom

Continued on page 27



The Hair Wing Royal Coachman

By Datus C. Proper

I have a superstitious faith in the scientific method, so before fishing the Gardner River I always check to see what insects are hatching. Having identified the naturals by a careful examination of wing veins and tarsi, I then invariably decide that the perfect imitation is a size 14 Hair Wing Royal Coachman. It may not look quite right to me, but it always does to the fish. And who am I to argue with a brown trout?

Hair Wing Royals weren't very common twenty years ago, when I started using them on that same little Montana river. I can't even remember where I got the idea of substituting calf-tail for duck-feather Fan Wings: it might have been from Mert Parks, but I am not sure he had set up his fly shop in nearby Gardiner, Montana, at that time. I do know for sure that I had practically memorized the complete works of Ray Bergman, and he was big on Fan Wing Royals. They worked as well as he said, but with browns as abundant as they were (and are) in Yellowstone Park and with each set of Fan Wings good for only a trout or two, a fellow could spend more time tying than fishing. Calf-tail hair proved just about as seductive as feathers, faster to tie, and much more durable.

The same fly was apparently evolving in similar fashion all over the country, for today it turns up in the vests of experienced anglers everywhere—and without benefit of

any special publicity. I don't recall seeing much written about the pattern: it just evolved. I'm speaking here not of the heavily dressed Royal Wulff but of the standard dry-fly tie, substituting white hair for feathers—and maybe with a bit of variant influence in the long, stiff hackles. So tied, the Hair Wing Royal has, for many fishermen, replaced the Hewitt Bivisibles as a general-purpose fly. The white hair is far more easily seen than white hackles, and the positive buoyancy is an important bonus. Moreover, the Hair Wing turns out to be one of those rare patterns that works under many conditions in many countries. I keep it right at the top of my foreign-service survival kit. (I can't survive two weeks of conference without some fishing on the side.)

One cold April in England, this was the only dry that worked. It worked again last July in Switzerland and France (and nobody keeps the trout as spooky as the Swiss and French). I wasn't surprised to see Argentine rainbows respond. In the western U.S., the Hair Wing Royal is as useful as the older classics.

Still, it remains something of an insider's fly, for it is rarely available in all-purpose sporting-goods stores. It is not a difficult pattern to tie, but it has some features that are not adapted to commercial shortcuts. Hackles and wings have to be just right, and the peacock bands must be made by a special method to

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Illustrated by John Buxton

crue to the coastal countries producing the fish. Millions of dollars are being spent by these countries on research, propagation, fish ladders, habitat management, and pollution control. It is proper that the fruits of this labor be harvested by the coastal states doing the work and making the investment. Even a substantial reduction of the resource will destroy the livelihood of thousands of people. From time immemorial, the people who inhabited the shores of the Maritime Provinces, Norway, England, Scotland, and Ireland have tended salmon nets at the mouths of rivers. There are in excess of 16,500 nets in the Maritime Provinces. Although figures are not available for the number of overseas nets, it is possible to make an estimate. If the number of people employed by sport fishermen as guides, cooks, and maintenance personnel is added to the number of people engaged in netting, processing, and marketing, the people affected could be in the hundreds of thousands. The loss of income could be many millions.

The salmon-producing nations are subsidizing the Danish fisheries to the extent of the raw material. The Atlantic Salmon Association has estimated the amount of this subsidy to be no less than 70 cents per pound. This must be very profitable for the Danes. The individual Danish fisherman is reported to make as much as \$8,000.00 for a three months' fishing tour. On August 3, 1970, imported Danish smoked salmon was on sale in New York City for \$9.40 a pound. On the same day, Nova Scotia smoked salmon could have been purchased for \$5.50 a pound at Sepp's retail store on St. Catharine Street, Montreal. Some difference! Is there any wonder that the Danes would like to keep doing this?

The investment in salmon and salmon-river restoration in the last decade is rapidly lining the pockets of netmen, processors, and marketers from countries which make no contribution whatever to this rich fishery. At enormous expense

in terms of human effort and money, we sow the seed; at great profit to themselves, they reap the harvest.

Can we be expected to condone the possible destruction of the salmon resource by about three hundred fishermen who manned thirty-five small trawlers in 1969? These fishermen could turn their efforts to fishing for those pelagic species which are not endangered.

Denmark has the legal right to high-seas fishing, illogically justified by the doctrine of "freedom of the seas." But this doctrine is negative, not positive. Freedom of the seas does not give Denmark, or any other nation, the right to over-exploit the Atlantic salmon; it only denies to the state of origin the jurisdiction to restrain Denmark. Formulated at a time when anadromous fish were harvested in small numbers on the high seas, the doctrine needs to be overhauled in light of modern scientific fishing methods.

The position taken by the countries bordering the North Atlantic will be felt in the North Pacific. Japan will become a member of ICNAF in 1971 (any government whose nationals desire to fish in the Northwest Atlantic Convention area may apply for membership). It is expected that Japan will vote with Denmark because she also is heavily committed to high-seas fishing. A weak position in the Atlantic will probably be duplicated in the Pacific. It behooves those people interested in the tremendous salmon resource of the Pacific to become vitally involved in the campaign to save the Atlantic species. And what of the steelhead if its Pacific feeding grounds are discovered?

At the June, 1970, meeting of the ICNAF, the adoption of a one-year amendment will still permit high-seas fishing. It is apparent that ICNAF is powerless to protect the salmon or to deter the dissenters, principally Denmark. The only avenue open to us is economic and political pressure. What can we do about this? Plenty!

Each of us interested in this pos-

sible tragedy must boycott all Danish goods. The principal imports are meat products including hams, bacon, and smoked salmon (about 33 percent of the total); contemporary (Danish) furniture; and manufactured goods including hair curlers (about 5 percent of the total). We must ask our wives and their friends to look at the labels in the marketplace. A campaign slogan could be: Don't buy Danish—Save your Salmon!

There is evidence that the Danish people are concerned about the image of their country. We must reach the Danish public with the message that a small group of their fishermen, supported by their government, is incurring tremendous ill-will for their country. This story must go to the newspapers and the networks. As American citizens, we can write to Danish officials, whose names are listed at the end of this article, and whose positions require that they be sensitive to public opinion.

The Honorable Walter J. Hickel, Secretary of the Interior, is giving careful consideration to a formal determination, under the Endangered Species Act of 1969, as to whether the Atlantic salmon either is an endangered species or whether it should be tentatively designated as such. Formal determination that the salmon is an endangered species would empower the Secretary to ban imports of Atlantic salmon or its products. The Secretary deserves our support and conservationists should indicate what their feelings are. Members of the Congress have the influence to accomplish much. The Department of the Interior and the Department of State have labored diligently to stop the high-seas fishery. But we must persuade our government to intensify its efforts.

The one nonprofit organization in this country, whose activities are devoted exclusively to bring about a total ban on high-seas fishing is the Committee on the Atlantic Salmon Emergency (CASE). By providing accurate information and guidelines to effective action, CASE will work to encourage commitment

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Hair Wing Royal Coachman

withstand fraying. No doubt good ties are available in conscientious fly shops across the country.

For those who prefer to tie their own, the following method will guarantee wings and hackle that stay upright, firm, and properly cocked. Then it helps to use a floatant that adds stiffness (like the old paraffin-naphtha mix or Mucilin line grease). By greasing my leader and cleaning the fly occasionally with Don DuBois' Fly-right powder, I can often keep one of these Hair Wing Royals on the leader for hours.

How to tie the Hair Wing Royal Coachman

Hook: Size 12, 14, or 16 in light wire. Mount it in the vise by the top of the bend, not the point, or it may break under the pressure needed to tie in a hair wing. Touch up hook point with a fine abrasive file.

Thread: Red Nymo (shade 0444), unwaxed; and black 6/0 silk, waxed. (On flies size 12 and larger, you can use red Nymo for the whole fly if you don't object to a red head. The trout do not mind.) Start with the red thread and use it for all operations till you get to the hackles.

Tail: Should be long, stiff, straight, and not very bushy. May be of either red-brown hackle fibers or hair, but if you use hair, it should be straight and sparse. Fix tail with a drop of head cement.

Body: Tie in two, three, or four strands from a peacock eye together with a piece of waxed black thread of the same length. Before winding body, tie in wings.

Wings: Wind the thread forward nearly to the eye and then back a bit. (The wings should be tied in about one third of the way back from the eye for best balance.) White calf tail seems to be about the best material. Look for a tail which has fine, fairly short hairs with tiny kinks. Put a drop of cement on the hook shank and tie in a small clump of matched hairs with tips forward, butts backward. It is absolutely essential not to tie the wings in wrong end to, or they will lie back on the shank after you have been casting the fly for a while. Stand the wings up with a few turns of thread in front of them, then divide slightly with an X of thread between two equal bunches. Clip the butt of the hair. Work a

drop of cement into the base of the wings.

Winding Body: Wind the thread back from the wings to nearly in front of the tail. Twist together the peacock herl and the waxed black thread in a counterclockwise direction, making a kind of fuzzy chenille. Then wind two or three turns around the shank in the normal clockwise direction. This will give you a butt that no fish is likely to chew loose. Make the red band in the body simply by winding forward with your red tying thread: no floss required. Wind the second band of peacock at the front of the red band, twisting the herl together with the separate black thread again. Tie off red thread with whip finish and tie in the fine black silk thread, using it for the remaining operations.

Hackles: Should be red brown and stiff—with stiffness more important than color. I prefer feathers a bit larger than normal—say about size 11 or 12 for a size 14 hook. Tie in two of them (three if they are short) by the butt with the dull (light-colored) side up, so that it will face forward when the hackle is wound. This is important. Wind each hackle separately, with roughly half the wraps behind the wing. Tie off hackles in front of the wings and make a small head with a whip finish of about five turns. Put a drop of varnish on the finished head and wait twenty-four hours for the fly to dry. If you are in a hurry, finish off with cement instead of varnish, but the varnish penetrates and holds longer.

The Future of Trout Fishing

dition of some adult brown trout collected in the lower sections (Brothers Pond to Muscoot Reservoir). Several trout had thin, snake-like bodies, with large heads and fins. Microscopic examination of scale samples indicated a decline in growth rate and condition.

A 1968 survey substantiated previous findings, revealing most of the adult fish in the lower sections were slow growing. After all the scales were studied and results were tabulated, we found that two-year-old brown trout which had averaged 10.6 inches in other years, suddenly decreased to 8.9 inches. Three-year-old trout showed an even greater

loss; from a mean of 14.0 inches in prior years to only 10.8 inches in 1968. However, the most dramatic finding during the survey was a crash decline in young-of-the-year trout. The fingerling population, normally large and stable, reaching a peak of ± 5800 in 1964, dwindled to a mere 41!

In order to isolate the problem, several adult trout were sacrificed for analysis. Stomach examinations indicated primary food to be tiny midge larvae with only a few large desirable organisms such as minnows, mayfly nymphs, stone fly nymphs or caddis larvae present. As a result of these findings, we began bottom-sampling procedures in April 1969. Our goal was to determine the food base present in the stream with regard to species composition, relative abundance, and importance as trout foods. A Surber Square Foot bottom-sampling device was utilized for the task. Collecting points were selected so that one would be located in each of the three previously described sections of stream. Insects comprising each sample were placed in dated, sequentially numbered containers and preserved with a 70% solution of ethyl alcohol for later studies.

In the laboratory collections were identified and sorted according to scientific groups: e.g., midges (Diptera), mayflies (Ephemeroptera), stone flies (Plecoptera), caddis flies (Trichoptera), etc. At the same time, total counts were made of insects representing the various categories. Finally, the entire mass of each sample was measured volumetrically, by the amount of water displaced in a graduated cylinder.

Initial results, when classified on relative values of good, fair and poor, indicate that the food base per unit area of bottom, in all sampling areas, best fits the latter value. Species composition of samples studied reveals, as demonstrated by prior stomach analysis, that midges predominate. While these are very numerous, they are extremely small and provide less than optimum growth potential for adult fish.

Along with the poor insect base, electrofishing indicates that few minnows are present, thus complicating the forage situation. However, we might note that the yearling

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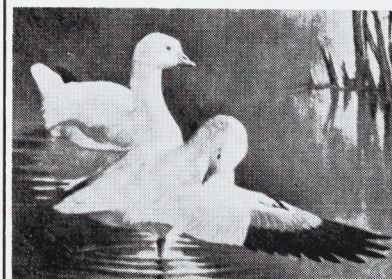
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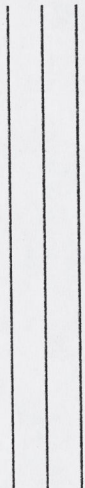
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INTRODUCTION



by Datus Proper

All of us are hunting for something. We have been after it for at least thirty thousand years, judging from evidence that one of us painted on the walls of a cave, and our search shows no signs of slowing. The question before us, then, is not whether to hunt but what to hunt for. We might go looking for a deer, on advice from that cave painter; a brook trout, on advice from Robert Traver; a lion, on advice from Don Quixote; or a sale at

the mall, on advice from Willard Scott. We could even sit in the woods buck-naked and pound on drums, hoping to call something in. I am not making any of this up.

With confusion so widespread in the human race, it is hard to be certain of following the right trail. Fortunately, there is a school of philosophy called cynegetics, and it never fails to distinguish between pursuits that are good, bad, or trivial. Cynegetics is Greek for hunting with a dog—most rigorous of disciplines and one of the more honest, because the dog is in charge of quality control. You cannot fool a dog, or more precisely, you can fool a dog once. After that you are fooling yourself.

If you try to stop at the mall, for example, an experienced dog will advise you to keep driving. His specialty is finding secrets in the fields and woods. He can cover ten times more miles than you or me and pick up scents a hundredfold weaker—or more likely a thousandfold. He uses these skills to detect where a grouse has walked on fallen leaves and then follow up on the clue. A few other predators are, perhaps, able to cover as much ground and smell as keenly as the dog. A very few may even have a brain that makes as much sense of the available information. But none of the others is willing to run in our pack.

A dog was, by far, the first domestic animal. She was probably a bitch pup, just a little less wild than her brothers but still a pack hunter like us humans, and therefore able to make sense of our rules. After some twenty thousand years, her relationship with us is still closer than that of any other animal. The cat sleeps by our fire too, but does not work with us; the horse works with us but does not sleep by the fire.

My dog both lives and works with me. When hunting, he finds a covey of quail and calls me to come and get what we both want. His way of calling is to stand on point, but other kinds of dogs—flushing dogs and hounds—communicate in other ways. What matters is not the breed but the fit between canine and human temperaments, because without that fit, the two cannot mesh as a team.

Personalities match best when a pup is brought up in its natural environment—a human family. Scholars have confused themselves on this point by studying dogs raised in kennels, which

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resemble nothing in canine evolution. To put it in Greek, pups are anthropomorphic. Translated, this means that they have human characteristics—not all of them, but enough that dog and human each understand the common ground, when understanding is given a chance. If you keep a pup in confinement, deprived of family and job, you get an impaired dog, just as you would get an impaired human. Both species hate to live on welfare payments.

If, on the other hand, you raise a dog at your hearth and give it meaningful work, it will become as close to you as any human, and in certain ways closer. Your skills and the dog's are complementary, not competitive. He becomes an extension of your personality—a piece of your consciousness that can run with the wind and stand shaking on scent. At some level the two of you merge into one hunter.

A remarkable thing happens, then. The man/dog bond is almost too close for comfort, like the link between mother and child in the night. My wife used to say that her baby's cry reached her stomach, somewhere—woke her up from deepest sleep, made her get out of bed. I snored on. Once a puppy has wriggled down into my limbic system, however, I'm with him every step. I know when he's in trouble with a fence, when he's just running around having a whee of a good time, and when he's working scent. We are chasing the same pheasant, by then, feeling the same emotions. Exactly the same. I know. We both know.

We must be hunting the right thing.

Datus Proper says he was born in Iowa, raised in Montana, domesticated at schools in New Hampshire, New York, and New Mexico. He survived employment in Angola, Brazil, Ireland, Portugal, and Foggy Bottom, D.C. Datus invariably preferred hunting and fishing to the alternative, such as working and claims to have been run out of every town within four years. He lives today on the banks of a spring creek in the Gallatin Valley of Montana, surrounded by schools of trout, wisps of snipe, sords of mallards, and nides of pheasants.