

Field & Stream
Spread—Left

Issue
Date
Story Title

9/94

The Original Trout
by Datus Roper

Article scheduled for 9/94 issue.
call Teann with corrections ASAP.
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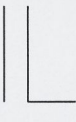
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B

rown trout. One knows, right away, that such a name comes from some distant place and time. If we were to name it today, we'd choose a designer label, something with truculence, glitter, syllables—like cutthroat, say, or golden, or rainbow. But the brown is the original trout, and it does not need to prove anything. This is the fish that led humankind to invent fly fishing, which is a role comparable (in the eyes of anglers) to that of wheat in building civilization.

Three quirks of biology and history explain

Brown trout is a dummy blurb. Fill in space as needed.



angler }
you and I can watch.

the brown trout's effect on us humans.
First, the rise. This fish feeds on insects near the surface of the water, where it can be seen.
Second, selectivity. The brown rejects artificial flies, making us try ever harder to imitate the natural insect.
Third, tradition. People have been fly fishing, and writing about it, since long before the discovery of America.

Getting a Rise
What we humans call the surface of the wa-

ter is, for a fish, the surface of the air. Insects get stuck in this boundary between worlds, and trout feed on the insects. Biologist Robert Bachman describes the brown trout as "a fish that has evolved to capitalize on a very specific diet: a relatively helpless adult aquatic insect, loaded with high nutrient value—eggs."
The trout, in turn, has high nutrient value for humans, who have long tried to deceive it by wrapping hooks in feathers and fur. Today, we have the technology to keep our artificial lures afloat, and dry-fly fishing has become the



Please do not turn away new potential ideas. Good ideas .



Field & Stream

Single—Left

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most popular of methods. Historically, flies probably got soaked after a few casts and sank below the surface. Even so, they still imitated surface insects and the trout rose to take them.

The brown trout's rise made fly fishing a game of wits played out in plain view. Anglers developed better and better equipment, and as far back as 500 years ago, sophisticated flies were already in use. In order to survive, brown trout became clever, which in the oldest sense means, according to my dictionary, "expert to seize, dexterous." Bob Bachman demurred when I once suggested that the brown trout seemed to possess the gift of rational thought. Well, all right—no fish reasons like man, but centuries of angling pressure have forced the evolution of a trout that can cope with humans.

The Fish That Chooses

Just when you think that you finally have the hang of flyfishing, you find a more desirable, more unobtainable trout. There is always one farther upstream that you are not clever enough to fool. Nick Lyons writes that what he loves most about the brown trout "are his eating habits—habits so fastidious, so snobbish, that I'd probably abhor them in humans."

Even innocent trout sometimes "concentrate on just one species" of food, writes Bob Bachman, adding that he "believes they do it to feed more efficiently." We added a complication when we made fake flies that looked like real ones. A trout that could not discern the difference would have been removed from the gene pool.

All of the insect-eating trouts are selective on occasion. Day in and day out, however, most of us find that brown trout are the most demanding. It is not a coincidence that the trout which has known us longest is the most careful of the food it eats—or that its selectivity has been the subject of volumes of books. This choosiest of fish has caught the fancy of authors from Aelian, in the 2nd century A.D., to Zern in the 20th.

The Great Tradition

Over all the centuries, fly fishing has remained unchanged at its core. The same could be said of falconry and of the chase, which may have even longer histories. All three sports were widespread in Europe during the Renaissance, but over time their literature dwindled—with one exception. In Britain, an angling tradition took shape, flourished, and spread to her colonies.

Within the last century, the fly-fishing tra-

dition has colonized most of the world's trout zones as well. Hisatsugu Haneda, Preben Torp Jacobsen, and (probably) most fly fishermen have come to share not only a specific method of angling, but a common attitude toward the sport—one that did not originate in any particular country. It takes a remarkable fish, and a powerful idea, to convert the world.

A woolly old natural philosopher named Izaak Walton portrayed anglers as gentle spirits, which shows that he did not know many fly fishermen. We are in fact a feisty tribe, and I may have stirred up old arguments by writing about rising trout and selectivity. Tradition is an even more emotive topic. We adore tradition at fairy-tale level, as we do royalty, but we do not invite it to go fishing. Unlike royalty, tradition comes along uninvited.

What is unusual about the fly-fishing tradition is that it has two dimensions: art and science. The artful side includes skills and tackle, which can get complicated if we wish—and we usually do. Rods, reels, and especially flies are such delicately appealing objects that they are collected even by non-anglers. The art of fly fishing is the theme of many books on the subject, also.

Science is a careful way of seeing nature, and one of its rules is that observation must be guided by a theory. Traditional fly fishing proceeds from the theory that trout are most likely to take an artificial fly resembling the natural food of the moment. It is a valid theory—simple, elegant, and accepted by many, but not all, anglers. Those who fish with imitative flies test the theory constantly.

The theory of imitation accounts for many of the fly-fishing books. Compare the abundance of angling entomologies, for example to the scarcity of literature on the pheasant—another clever species from the Old World. The bird reached America at the same time as the brown trout and remains, perhaps, equally popular. Pheasant hunting takes art and passion and a very clever dog, but there is one basic difference from trout fishing: you take a shot as soon as you flush the bird. When you have spotted your trout, you must still persuade it to eat, and that is where the science comes in.

Do you wonder what American fly fishers were like before they imported the selective brown trout? Well, 202 anglers sent letters to Mary Orvis Marbury in the 1880s. These have been reprinted in the beautiful book titled *Favorite Flies and Their Histories*. To flip its pages is to visit a land of shady streams and native brook trout. A few of the contrib-

THE BIOLOGISTS'S BROWN TROUT

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Individual trout of all ages from young of the year to eight years had much the same feeding pattern. They rarely got enough to eat, so from dawn to dusk, April to October, they were always on the lookout for food. There were short flurries of more intense activity during mayfly hatches and spinner falls at dusk in May and June.

Of more than 15,000 "feeding events" that Bachman recorded, only some 7 to 13 percent took place at the bottom of the stream. The rest of the events were divided about equally between food on the surface and midwater. Many nymphs and pupae were present on the bottom, but they were hard to see and many were hidden in spaces between the rocks. Food items in "the drift," on the other hand, were silhouetted against the sky and therefore easier to see.

"To you anglers who like to dredge the bottom with weighted nymphs," Bachman wrote, "I can only remind you that the trout in Spruce Creek took less than 15 percent of their food off the bottom and moved a much shorter distance from their lies for bottom food than for food in the drift."

Bachman does not claim to have described all possible brown trout adaptations. Anglers have been fascinated by "cannibal" browns—big old individuals that eat other fish, sometimes after dark. The behavior observed by Bachman is, however, the one that has accounted for most fly-fishing literature over the centuries.—D.P.

imitated no insects

utors, especially from Pennsylvania, seem to have been skilled fisherman, but most sound as if they would not do very well today. They rarely describe their method of stream-fishing, perhaps assuming that there was only one: casting down and across the stream with big, fancy wet flies.

Of course, those were innocent times. Or were they? Native brook trout were easier to catch than browns, clearly, but the anglers in the book wrote highfalutin' prose and their flies were stiff, stylized, and gorgeous—as close to decadence as to innocence. Charles Dudley Warner (one of the contributors) wrote that "the trout fly is a 'conventionalized' creation, as we say of ornamentation. The theory is that, fly-fishing being a high art, the fly must not be a tame imitation of nature, but an artistic suggestion of it."

Warner's notion was not theory at all, in the scientific sense, and his ornaments burned out quickly. None of them are widely used now, in the original wet-fly form. But I do not mean to suggest that the century-old flies were worse, in some absolute way, than modern ones. By Charles Dudley Warner's standard of artistic ornamentation, the old flies were as good as or better than the new. The 1880 flies took more skill to tie than most on the market today. They meant as much to

their users, too. But they ~~wouldn't have meant anything to a trout.~~

Fly fishers might have continued to prefer Charles Dudley Warner's "high art," but for the trout that arrived from Europe in 1882. Writer John McDonald calls what happened next "the brown trout revolution in America." The revolution spread westward from New York and Pennsylvania, and by 1927, Park Ranger Scotty Chapman was using dry flies to catch fussy brown trout in Yellowstone Park (see "An Artist With the Fly Rod," August 1994 Field & Stream). Anglers everywhere began tying flies to match natural insects found in the stomachs of trout—a process recommended by the Treatyse of Fishing with an Angle in the 15th century. The New World had become part of the great tradition.

Perhaps no fish can be said to think. The brown trout, at least, made us think.

About 2000 words,
including sidebar

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THE BROWN TROUT AND THE GREAT TRADITION

This is the fish that made us think.

Brown. One knows, right away, that such a name comes from some distant place and time. If we were doing it today, we would choose a designer label -- something with truculence, glitter, syllables. We would call our new species a cutthroat, say, or a golden, or a rainbow. But the brown is the original trout, and it does not need to prove anything. This is the fish that led humankind to invent fly-fishing, which is a role comparable (in the eyes of anglers) to that of wheat in building civilization.

Three quirks of biology and history explain the brown trout's effect on us humans.

First, the rise. This fish~~s~~ feeds on insects near the surface of the water, where you and I can watch.

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Getting A Rise [Out Of Him]

What we humans call the surface of the water is, for a fish, the surface of the air. Insects get stuck in this boundary between worlds, and trout feed on the insects. Biologist Robert Bachman describes the brown trout as "a fish that has evolved to capitalize on a very specific diet: a relatively helpless adult aquatic insect, loaded with high nutrient value -- eggs."

The trout, in turn, has high nutrient value for humans, who have long tried to deceive it by wrapping hooks in feathers and fur. Today, we have the technology to keep our artificial flies afloat, and dry-fly fishing has become the most popular of methods. Historically, flies probably got soaked after a few casts and drifted in mid-water. Even so, they imitated surface insects and the trout rose to take them.

The brown trout's rise made fly-fishing a game of wits played out in plain view. Anglers developed better and better equipment, and by five hundred years ago, sophisticated flies were already in use. In order to survive, brown trout became clever, which in the oldest sense means, according to my dictionary, "expert to seize, dexterous." Bob Bachman demurred when I once suggested that there was something spookily rational about the brown's decisions. Well, all right -- no fish reasons like a human. Centuries of angling pressure have, however, forced the evolution of a trout that can cope with us.

The Fish That Chooses

Half the fun of fishing for rising trout is seeing the object of your lust right there, playing catch-me-if-you-can. The other half is discovering that you can't. When you begin to think that you have the hang of fly-fishing, you find a more desirable trout. There is always one somewhere upstream that you are not clever enough to fool. Nick Lyons writes that what he loves most about the brown trout "are his eating habits -- habits so fastidious, so snobbish, that I'd probably abhor them in humans."

I surmise that we taught the trout to be selective by exaggerating a natural characteristic, in much the same way that we bred pointing dogs to exaggerate the wolf's pause before pouncing. Even innocent trout sometimes "concentrate on just one species" of food, writes Bob Bachman, adding that he "believes they do it to feed more efficiently." And all trout are extra-wary at the top of a stream, even in a wilderness. They know that they are vulnerable, up there, to natural predators. We added a complication when we made fake flies that looked like real ones. A trout that could not discern the difference would have been removed from the gene pool.

All of the insect-eating trouts are selective on occasion. Day in and day out, however, most of us find that brown trout are the most demanding. It is not a coincidence that the trout which has known us longest is the most careful of the food she eats -- or that her selectivity has caused us to write volumes. This choosiest of fish has caught the fancy of authors from Aelian, in

the second century A.C., to Zern in the twentieth.

The Great Tradition

Over all the centuries, fly-fishing has remained unchanged at core. The same could be said of falconry and the chase, which may have even longer histories. All three sports were widespread in Europe during the Renaissance, but their literature dwindled, over time -- with one exception. In Britain, an angling tradition took shape, flourished, and spread to the colonies with the English language.

See new 4

Within the last century, the fly-fishing tradition has colonized most of the world's trout zones. Hisatsugu Haneda, Preben Torp Jacobsen, and (probably) you have come to share not only a method of angling but an attitude toward the sport -- one that did not originate in any of our countries. It must have taken a remarkable fish, and a powerful idea, to convert the world.

About now, however, we need to pause for a cool-down. A woolly old natural philosopher named Izaak Walton portrayed anglers as gentle spirits, which shows that he did not know many fly-fishers. We are in fact a feisty tribe, and I may have stirred old arguments by writing about rising trout and selectivity. Tradition is an even more emotive topic. We normally call on it only to create atmosphere, or to sanctify what we mean to do anyhow. We adore tradition at a fairy-tale level, like royalty, but we do not invite it to go fishing. Unlike royalty,

tradition comes along uninvited.

What is unusual about the fly-fishing tradition is that it has two dimensions: art and science. The artful side includes our skills and tackle, which can get complicated if we wish -- and we usually do. Rods, reels, and especially flies are such delicately appealing objects that they are collected even by non-anglers. The art of fly-fishing accounts for many of its books, too.

Other sports, however, can also claim their share of art -- but the science of fly-fishing is unique.

Science is a careful way of seeing nature, and one of its rules is that observation must be guided by a theory. Traditional fly-fishing proceeds from the theory that trout are most likely to take an artificial fly resembling the natural food of the moment. It is a valid theory -- simple, elegant, and accepted by many anglers, but not all. Those who fish with imitative flies test the theory constantly.

No other sport is scientific in the same sense, as far as I know. People involved in other sports have inquiring minds too (being often the same people), and every modern sport gets help from scientific research. But only fly-fishing is guided by a theory.

The theory of imitation accounts for many of the fly-fishing books. Compare the abundance of angling entomologies, for example, to the scarcity of literature on the pheasant -- another clever species from the Old World. The bird reached America at the same time as the brown trout and remains, perhaps, equally

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Of course, those were innocent times. Or were they? Native brook trout were easier to catch than browns, clearly, but the anglers in the book wrote highfalutin prose and their flies were stiff, stylized, and gorgeous -- as close to decadence as to innocence. Charles Dudley Warner (one of the contributors) wrote that "The trout fly is a 'conventionalized' creation, as we say of ornamentation. The theory is that, fly-fishing being a high art, the fly must not be a tame imitation of nature, but an artistic suggestion of it."

Warner's notion was not a theory at all, in the scientific

sense, and his ornaments burned out quickly. None of them are widely used, now, in the original wet-fly form. (The Royal Coachman has survived by turning into a dry fly.) But I do not mean to suggest that the century-old flies were worse, in some absolute way, than modern ones. You have to decide whether flies should be designed to please trout or people. If people, then the old flies were as good as the new -- better, by Charles Dudley Warner's standard of artistic ornamentation. The 1880 flies took more skill to tie than most on the market today. They meant as much to their users, too.

Fly-fishers might have continued to prefer Charles Dudley Warner's "high art," but a trout that was new to this continent arrived from Europe in 1882. Writer John McDonald calls what happened next "the brown trout revolution in America." The revolution spread westward from New York and Pennsylvania, and by 1927 Scotty Chapman was using dry flies to catch fussy brown trout in Yellowstone Park. Anglers everywhere began tying flies to match natural insects found in the stomachs of trout -- a process recommended by The Treatyse of Fishing with an Angle in the fifteenth century. The New World had become part of the great tradition.

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(Sidebar on next page)

(Sidebar)

The Biologist's Brown Trout

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The brown trout Bachman observed would dash for cover if startled. When feeding, however, they occupied the same lies day after day, and the feeding sites were often in bright sunlight, far from overhanging limbs or other cover.

Individual trout of all ages from young of the year to eight years had much the same feeding pattern. They rarely got enough to eat, so from dawn to dusk, April through October, they were always on the lookout for food. There were short flurries of more intense activity during mayfly hatches and spinner falls at dusk in May and June.

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Brown Trout

Unused material from
F&S version of brown.

Proper

Some is also in original brown file.
(Sidebar)

The Books of the Great Tradition

Time has a way of sorting out the good books, like good music. Check the prices of early editions by Aldam, Davy, Edmonds & Lee, Flick, Halford, Harding, Harris, Jennings, Mackintosh, Marinaro, Mottram, Pritt, Pulman, Ronalds, Sawyer, Scotcher, Shipley, Skues, Theakston, Wade, and Woolley. This is a very short list of authors who are safely deceased but still modern. They have the art, some of them, but they also come close to a dictionary definition of science: "The observation, identification, description, experimental investigation, and theoretical explanation of natural phenomena."

Americans -- La Branche, Hewitt, Jennings
[Origin of dry fly -- from brown trout draft. Not used in version sent to F & S.]

Fly-fishing evolved for the most part around the rise. The books seem clear on this point, once you learn to read them. You have to avoid getting side-tracked by a fascinating old debate on the origins of dry-fly fishing. Jack Heddon in England and Paul Schullery here have helped to clear up the confusion, which is not to say that either would agree with me. My conclusion is that the Dry Fly originated in 1886, precisely. In that year a gentleman named Frederic M. Halford wrote a book providing the necessary mythology. There was no dry-fly fishing before Halford. There was no Greece before Homer. There were, of course, Greek-speaking people before Homer, and some of them were

probably fishing for brown trout with floating flies, but back then nobody knew what he was doing.

Now that we all know what we're doing, it is difficult to pose questions that would have made sense to our ignorant ancestors. If, however, you had asked a good early angler something simple -- such as whether his flies ever floated -- he would certainly have said that, yes, of course they did: what else would a fly do before it soaked up water? He might have added that floating flies were good for fooling a difficult trout. After a few casts, however, they would sink. No problem. The rate of sinking would be slow, and by control of the line, he could keep them near enough to the surface that he could see trout rising for them. The flies typically imitated surface insects (as North-Country wet flies still do).

If you were able to pursue this conversation, you might conclude that our early trout fisherman did not see much difference between "wet" and "dry." He would, however, have seen a difference between fly-fishing (near the surface) and something else: bait, for example, or what Hewett Wheatley, in 1849, described as "artificial Grub-fishing." We would now call it fishing with a weighted nymph. Wheatley even used a strike indicator, which he called it a float. He was a good fisherman but his euphemisms needed work.

By the late nineteenth century, anglers had means of keeping flies afloat consistently, without resorting to dapping, cross-lines, cork bodies, and so on. The improved equipment

included stiffer split-bamboo rods, greased silk lines, new fly designs, and fly flotants, more or less in that order. New gear made it possible for Halford to bestow the myth. A few decades later we had thin synthetic leaders, sinking lines, and graphite rods, which made it easier to fish deep. There were curmudgeons who said that this wasn't fly-fishing, but it caught trout and humans. Fly-fishermen must have decided that the psychic rewards were, at least, greater than those of spinning with metal lures.

We have made good use of our technology. There is a boom in dry-fly fishing [ref next month's article]. Deep fishing is still short of myth but is catching plenty of trout.

The odd thing is that few of us are still competent with the old mid-water flies, which have the best myths in the sport. We could use lessons from an angler like the one who visited me last summer. Adriano does not know enough English to read the glories of angling literature, but he is a product of the great tradition nevertheless. He fished a cast of small wet flies in the old-world way: upstream, near the surface, and with just enough drag to keep track of them.

The trout rose as they have for centuries.

There are indeed trout that take flies deep, but not shallow; and then there are trout that do the opposite. This is anecdote, the product of a real-life detective game: finding out where a trout is feeding, and on what, and then trying to offer a fly with the right behavior, size, shape, and color. Like the games in mystery books, this one can be a matter of life and death for one of the actors.

[At worst, or best, you may have to see what kind of insect it is taking and imitate nature on a hook.]

Some anglers catch real flies in nets and then tie imitations, but I suppose that most rely on others to do the science. In any case, science now accounts for much writing about trout fishing. I am not sure that there is anywhere else in print such a mixture of art and science. Usually the artists look down on the scientists, who are not even aware of the artists. Both of them find fishing literature odd.



William Donald Schaefer
Governor

Maryland Department of Natural Resources

Tawes State Office Building
Fish, Heritage and Wildlife Administration
580 Taylor Avenue
Annapolis, Maryland 21401

Torrey C. Brown, M.D.
Secretary

August 25, 1993

Dear Datus:

Thanks for the plug! I'm honored. The sidebar looks good to me. Thanks for giving me the opportunity to look it over before it goes to print (if it does).

I'd love to fish your stream again. You may remember that I and my son, Allen, fished it with your permission some years ago (1986, I think). Allen saw me hook one of your really wild rainbows that ran upstream through the channels between the weeds, jumped twice, tore downstream past me, and then back up upstream again. As I eased the fish in to release it he said (age 14) "I not even going to bother taking my rod out of the case. I'll just watch!"

He graduates from William and Mary next May. We hope to spend some time fishing in the Great Northwest next summer. Perhaps we could get him to unpack his rod this time.

We did manage a short trip to Sandpoint, Idaho in July to visit with Gail's parents on their 60th wedding anniversary and I got into some belly-boat fishing near Kamloops in June. That was it for the West this year.

I appreciate the opportunity to look over what you have submitted, and would love to take you up on your invitation. If you get back this way be sure to give me a call and we'll go fishing on the Yough, North Branch, Savage or Gunpowder. They were all good this year.

Sincerely,

Robert A. Bachman

Telephone: 410 974-5551
DNR TTY for the Deaf: 301-974-3683



(Dane J.)

Fly fishing was the
first step away from
bait. Looks fancy now,
to some, but it
started because it

could be done simply,
w/o technology. You

I'd need a reel, &
in spinning & bait-casting.
You could make a hybrid rod,
braid a horsehair line,
& tie feathers on a hook
made from a pin. —

B. Dugy ridelon

cfr. Doherty's study.

By front, of work,
now: back to prelation

on fol.

BY NICK LYONS



PICKY? PARTICULAR?

Epicurean? These words hardly begin to describe His Supreme Fussiness, the brown trout.

the SNOB

Meaning easier to catch?

SALMON ARE LARGER AND leap higher. Bass strike more savagely. Bluegills have the more generous heart. The fierce bluefish fights harder. And in various ways, at various times, a good case can be made for pike, bonefish, tarpon, striped bass, bonito, muskie, snook, barracuda, and a dozen other gamefish.

But I prefer trout. I like dark, mottled, and brilliantly rose-pocked native brookies from the headwaters of clear mountain streams; I like bright silver rainbows, with their honor stripe of crimson, in brisk rapids; and I like wild cutthroats, with colors of mountain mosses and wild raspberries. But mostly, I like the beautiful brown—sleek, dappled with crimson moles, its yellows the color of fresh butter.

I don't love the brown trout for his fighting ability or even for his beauty. I love the brown trout because he is shy to the point of being a wall (or shore) flower. But what I love most are his eating habits—habits so fastidious, so snobbish, that I'd probably abhor them in humans.

With infuriating finality, this thoroughgoing snob turns up his nose at what he refuses to eat, saying, "I would if I could, but, really, I simply cannot—not now."

For myself, I'm more like a bluefish. When I'm hungry I simply hunt out the nearest chum line. The brown trout eats what's served, but he's temperamental—a dainty picker of tiny morsels from the stream surface when he's living up to his best potential. The brown knows what he wants for lunch, and when he wants it; and when he wants it on the surface—the top of his world—I want to be there. Trying to figure out what he wants, and when he wants it, though, is often an exercise in futility. Without the failure, I would love the brown less.

When a brown trout wants a *Paraleptophlebia*—which is not a foot fungus but a mayfly—he wants a *Paraleptophlebia* and no substitute. He's got backbone and values. He'll only eat a *Paraleptophlebia* sandwich when *Paraleptophlebia* sandwiches are being served, and he'll come to the table only when summoned by the official dinner bell. Not before, not after. Sometimes, being a very particular fellow, he'll prefer an immature *Paraleptophlebia*; sometimes, one that's just hatching; and sometimes, one that has fulfilled all of its sexual obligations in this world and,

PHOTOGRAPH BY LAURANCE B. AIUPPY

wings spread-eagle on the surface, is quite spent and done in.

I have tasted *Paraleptophlebia* and have no sweet tooth for them, though a big *Ephemera guttulata* tastes a little like butter. A braver friend tried a giant stonefly (*Pteronarcys californica*) once, then drank a glass of white wine and said, "The wine's not quite right." Each to his own, I suppose.

What's the appeal of all this fussiness?

Simple. It makes a savage old bluefish like me think a bit more when I pursue the fish. I haven't the slightest idea of why a salmon takes a fly that looks like the British flag, and no one has given me a convincing reason. The fish is up the river to spawn and probably gets irritated. Maybe it remembers some lunch it had a couple of years earlier. Big deal. And a pike would as well dine on frog or perch or duckling or lizard-as-shiner. When a fish takes my fly, more and more I want to know why—and, frankly, though some people may think me a snob, more and more I want to see him do so.

Part of the fun I have, of course, when I pursue wild brown trout, especially in tap-clear water, is that I've got to figure out which of the hundreds of possible mayflies, caddisflies, or stoneflies a particular fish is lunging on, and then offer him a reasonable facsimile thereof. To find the right fake bug, I must think about the natural insect's color, size, and shape, its attitude on the water, and how the bits and pieces of fur, feather, and Space Age plastics can best be concocted to represent it. The brown trout's brain may be the size of a pea, but he's no dope. More than any fish that swims, he is determined to save his skin. He'll rarely take a morsel of food on the roof of his world if it looks like a piece of Grandma's old sweater—and he can spot an *inermis* in the midst of his *Paraleptophlebia adoptivas* any day of the week. The honorable brown trout in his middle years—before he has become a toothy old cannibal that will eat any living thing it can get its hooked jaws around—wants his plate of fake *Paraleptophlebia* to look and act pretty much like a plate of real *Paraleptophlebia*.

I'm less fussy myself. I'm partial to smorgasbords and stews. Like the pike, I'll take liver instead of beef, chicken in lieu of duck, if that's what's available. I didn't choose my wife for her fussiness—nor my friends for their eating habits. But I like those of the brown trout. He's a thoroughgoing culinary snob, all right—and that makes all the difference. □





Tales from the trips

THE RESULT OF THE
MOST MINOR
MISCALCULATIONS
CAN BE YOUR
OWN OBITUARY.



IN AND OF ITSELF, fishing is not a dangerous sport. But sometimes things go wrong and a slight miscalculation or a minor mistake lands you in the worst kind of trouble. It happened to these fishermen who might not have lived to tell the tale if they hadn't had a little help from a friend. . . or a little good—but mostly dumb—luck.

As mate on an ocean-going sport-fishing charter boat many years ago, I tried to skim a bucket of spray with which to slosh down the cockpit as we ran at full throttle back toward shore from a day spent trolling in the Gulf Stream. But rather than scooping the spray, the bucket

grabbed a solid wave and stopped dead, yanking me overboard instantly. I yelled but the fishing party was inside the cabin with the door shut and the captain was on the flying bridge facing away from me and my shout could not be heard above the roar of the engines and the pounding sea. In a moment the boat had disappeared beyond the swells and I was alone in the water, without a life vest, 40 miles from shore. Black swells towered above me on all sides and there was nothing I could do to counter the increasingly clear fact that I was going to die.

Then, suddenly, the boat reappeared above the swells. I had been missed before the bubbles in the boat's wake had disappeared and the captain was able to retrace his course and find me.

The big 52-foot boat came alongside

me and I can still remember the captain, Steve Gaskill, cigar in mouth, looking down at me from the bridge.

"Don't drop that bucket," he said.

I looked, and sure enough, the bucket was still clutched in my hand. I'd been too scared to let it go. —**JEROME B. ROBINSON**

Once, when I was mackerel fishing about 12 miles off the Long Island coast in early May, the boat I was fishing from blew up. The two others aboard and I managed to jump free of the wreckage and grab hold of the anchor line where we hung while the boat burned to the waterline. The water was numbing cold, and we would have soon died of hypothermia, if not drowning, had not another fisherman over the horizon seen our smoke and come to in-

ILLUSTRATION BY RICHARD WILLIAMS

The thing is that ^{life} fishing is fun, but
it's also science, history, ^(education) poetry, ~~and~~ religion. I'm
~~not~~ making an analysis, but a recommendation. Don

Fishing - this kind - is an analogy for life.

// Don't take my word for it; look at our
books. We throw in all of the above. This
makes students of literature & puzzles & scientists
& historians.

Trout and "reason" (and birds)

Bob Bachman took exception to my use of "rational"
for trout, pointing out that they can't reason

because they ~~that~~ have no ~~the~~ cerebral
~~cortex~~ cortex. Neither do birds - & ^{ducks + geese are} pretty clever.

(Dogs + humans do.)

1/28/86

But if the Trout do not think, at least they
make us think.

The Way We Fish

{ Great vs.

~~the~~ ~~former~~

tradition:

most American fishermen once paid homage to
~~that~~ the great tradition by self-conscious
rejecting it - also rejecting European fishing.

~~British fishing literature met a standard of writing that
we still do not follow.~~

~~oddly, English tradition not esp. adapted to our conditions:
size, diversity. At the beginning we looked the trout (brown).
make them fit. How often are our trout relative to color?
Paterson (10 or 20 lb)~~

~~cause or effect? How~~

~~Brown trout: caught on early in the Catskill & Poconos, perhaps helping
explain NY region's prominence in US fly fishing in
early 20th Cent. See Sch. p 182 & earlier.~~

~~(Not my sentimental favorite: trout trout a rugged game and the
one I like to love.~~

"From April to September the trout keeps them angle for
him with the artificial fly appropriate to the month."

61-31302-10000
About 2??? words

Do not be
shopping. How w
or she would ha

m

pop and it was worth the seventy-five dollars, but I hadn't saved
ten years' allowance yet. The Russell boots took only two years'
savings and have been worth every penny of it.

The science of angling is different in that it aims at trout, not humans. Science is another word for the ancient detective game played out between man and nature. The most the unusual thing about fly-fishing is the depth of these inquiries. People involved in other sports have inquiring minds too (being often the same people), but they rarely have as much to inquire about. New angling entomologies -- books describing the insects that trout eat and ways to imitate them on a hook -- are being published every year. Compare this to the scarcity of writing on the pheasant, which came to America at the same time as the brown trout and became, perhaps, equally popular. I love them both but could not write a book on the food of the pheasant.

The difference is science. Pheasant hunting takes art but not much science. With trout, when you have found your quarry you must still persuade it to eat. At worst, or best, it may be selective, in which case you have to see what kind of insect it is taking and imitate nature on a hook. Some anglers catch real flies in nets and then tie imitations, but I don't suppose that most of us do this often. We may let others do the science for us, or we may learn from experience that a size-16 Adams looks like something hatching in this particular creek on a cloudy-warm day in May. Science ^{is nothing} ~~does not have to be~~ more than a careful way of seeing nature.

Science accounts for much writing about fishing, but it is

widely used, now, in the original wet-fly form. (The Royal Coachman has prospered by turning into a dry fly.) But I do not mean to suggest that the century-old flies were worse, in some absolute way, than modern ones. You have to decide whether flies should be designed to please trout or people. If people, then the old flies were as good as the new -- better, by Charles Dudley Warner's standard of artistic ornamentation. The 1880s flies would have taken more skill to tie than most on the market today. They were prettier, and they meant as much to their users.

To the extent that fishing has to do with catching clever trout, however, we tie better flies today. Fly-fishing returned to its natural sources when the fishing got tough. We humans might have continued to prefer Charles Dudley Warner's "high art," but the brown trout would not have it. And when we Americans learned how to fish for the new species, original books started to blossom: La Branche's, Hewitt's, Jennings's. An imported fish continues to encourage American originality, which may not be as strange as it sounds. The brown trout has now evolved in this country for some ^(25 to 33) fifty generations, [Can I call two years a generation for trout?] which makes him at least twice as American, genetically, as any angling writer. Native Americans have not written much on fly fishing.

The big change in our fishing coincided with the naturalization of the brown trout, but it would be wrong to

3 OF 10, maybe 1000
pushing it back

No, not for
first
at least 3rd year
at 2nd
more
4 years
for brown

brown trout studied by Robert A. Bachman (as reported in three issues of this magazine) took less than 12 percent of their food items from the bottom. I am not sure how many of the rest produced what anglers call a rise -- a movement near enough the surface for a fishermen to detect -- but much of the feeding was in or near the surface. [Bob: can I make this more precise?] This research does not not necessarily apply to other waters or species. It does describe a kind of brown-trout behavior that fly-fishermen were, according to Aelian, already exploiting in the third century.

Fly-fishing evolved for the most part around the rise. The books seem clear on this point, once you learn to read them. You have to avoid getting side-tracked by a fascinating old debate on the origins of dry-fly fishing. Jack Heddon in England and Paul Schullery here have helped to clear up the confusion, which is not to say that either would agree with me. My conclusion is that the Dry Fly originated in 1886, precisely. In that year a gentleman named Frederic M. Halford wrote a book providing the necessary mythology. There was no dry-fly fishing before Halford. There was no Greece before Homer. There were, of course, Greek-speaking people before Homer, and some of them were probably fishing for brown trout with floating flies, but back then nobody

knew what he was doing. (There are some original Greek trout flies, I think I saw them at the New York Anglers Club.)
Now that we all know what we're doing, it is difficult to

See Fig 12.
100 BET!

2. See
Jim Baughen on
Big Horn.

*

2a.

pose questions that would have made sense to our ignorant ancestors. If, however, you had asked a good early angler something simple -- such as whether his flies ever floated -- he would certainly have said that, yes, of course they did: what else would a fly do before it soaked up water? He might have added that floating flies were good for fooling a difficult trout. After a few casts, however, they would sink. No problem. The rate of sinking would be slow, and by control of the line, he could keep them near enough to the surface that he could see trout rising for them. The flies typically imitated surface insects (as North-Country wet flies still do).

3. If you were able to pursue this conversation, you might conclude that our early trout fisherman did not see much difference between "wet" and "dry." He would, however, have seen a difference between fly-fishing (near the surface) and something else: bait, for example, or what Hewett Wheatley, in 1849, described as "artificial Grub-fishing." We would now call it fishing with a weighted nymph. Wheatley even used a strike indicator, which he called it a float. He was a good fisherman but his euphemisms needed work.

By the late nineteenth century, anglers had means of keeping flies afloat consistently, without resorting to dapping, cross-lines, cork bodies, and so on. The improved equipment included stiffer split-bamboo rods, greased silk lines, new fly designs,

think that you have the hang of it, you find a more desirable trout. There is always one somewhere upstream that you are not good enough to fool. It is likely to be a brown.

I surmise that we taught the trout to cope by exaggerating a natural characteristic, in much the same way that we taught the pointing dog to exaggerate the wolf's pause before pouncing. Even wilderness trout are extra-wary at the top of a stream; they know that they are vulnerable, up there, to natural predators. The air/water interface is no more user-friendly for trout than for insects. We added a complication when we made dangerous fake flies that look like real ones. Some trout have become good at telling the difference. Today we call them selective.

4. also another definition!

All of the insect-eating trouts seem to have a genetic potential for selectivity. It happens that the most selective fish I found in 1988 were cutthroats rising for something very small in the Yellowstone River. Day in and day out, however, most of us think that brown trout are the best at eating real insects while rejecting fakes. It is not ~~likely to be~~ a coincidence that the trout which has known us longest is the most careful of the food he eats.

Go for it!

209me!

In the Summer 1986 issue of this magazine, I called selectivity "the best thing about trout." It has certainly been the best thing for people who write books about trout. Even browns are not discriminating as often as we anglers like to

Datus:

I really enjoyed this.
Let's go fishing.

About 3500 words

Paul

Datus C. Proper
1085 Hamilton Road
Belgrade. MT 59714
(406) 388-3345

THE BROWN TROUT AND THE GREAT TRADITION

No fish can think, but the
brown trout made us think.

There is in fly-fishing a great tradition, and it evolved around a peculiar fish called the brown trout. Most of us, by now, owe our angling attitudes to that trout and tradition. We Americans are ambivalent about traditions; we may be unaware that the brown trout shaped us; we seldom make it a sentimental favorite like the native brook trout. But the brown informs us constantly.

Brown. One knows, right away, that such a name comes from long ago and far away. If we were doing it now, we would want a designer label with glitter, pugnacity, syllables: something like ^{golden} rainbow or cutthroat. But the brown is the original trout, and it does not need to prove anything. Describing it as a fish is like calling wheat a grass -- true, but not much of the story. Our

I think
Vince really
helped us do
this very
thing.

ancestors discovered both grain and trout upon leaving the Garden of Eden, give or take a few millennia, and each discovery started something of consequence. I propose to look at what the brown trout did to us: its influence, not its fishness.

Three of the brown's oddities help to explain its effect on me, the angler.

- + First, the rise: the trout feeds near the surface of the water, with me watching, and draws me in with the fly.
- + Second, selectivity: the trout keeps on taking natural flies but rejects my imitations of them, making the choice with a logic that I think I can understand.
- + Third, time: Trout and I have been doing this for a lot of centuries, recording what we have learned in genes and books.

Getting A Rise Out Of Him

Nice What we humans call the surface of the water is, for a fish, the surface of the air. Either way, it is the boundary between worlds, important to the residents of both and difficult to cross for either. Insects coming from both directions get stuck. Many fish have learned to feed on them, especially in America. In the old-world streams where trout and man met each other, however, the brown (in my experience) rises more frequently than other fish of equal size -- mostly members of the carp family, with salmon, grayling and pike in some streams. The brown is also more

prized as food than any other river fish except the salmon. The trout therefore evolved under the dual handicaps of desirability and visibility. In order to survive, it had to be clever, which in the oldest sense means (according to my dictionary) "expert to seize, dexterous." *(Bachman on oslation to eat insects)*

Scientists have learned much about the trouts' biology but not about what interests anglers: their way of feeding. What we think we know is often unreliable. Edward R. Hewitt *repeats* started something *among fly fishermen* in 1934, when he reported a finding that "over 80% of the trout food consisted of nymphs." This was probably not a useful generalization in the first place. *(The trout I check are at least as likely to have been eating larvae, pupae, adult insects, crustaceans, mollusks, small fish, and many other things.)* Hewitt's proverb has been further distorted by use without attribution, sometimes to prove that trout do most of their feeding on "the bottom" (which Hewitt did not imply). *good*

There are indeed trout that take flies deep, but not shallow; and then there are trout that do the opposite. This is anecdote, the product of a real-life detective game: finding out where a trout is feeding, and on what, and then trying to offer a fly with the right behavior, size, shape, and color. Like the games in mystery books, this one can be a matter of life and death for one of the actors.

There is at least some hard information. The Spruce Creek

Needham and the biologists were talking about this too.

Segue?

brown trout studied by Robert A. Bachman (as reported in three issues of this magazine) took less than 12 percent of their food items from the bottom. I am not sure how many of the rest produced what anglers call a rise -- a movement near enough the surface for a fisherman to detect -- but much of the feeding was in or near the surface. [Bob: can I make this more precise?] This research does not not necessarily apply to other waters or species. It does describe a kind of brown-trout behavior that fly-fishermen were, according to Aelian, already exploiting in the third century.

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Now that we all know what we're doing, it is difficult to

I will agree with this if we may emphasize the capitalization of Dry Fly, if we agree people were intentionally floating them flies before that, and if we agree that the last sentence is tongue in cheek. They really did know what they were doing.

pose questions that would have made sense to our ignorant ancestors. If, however, you had asked a good early angler something simple -- such as whether his flies ever floated -- he would certainly have said that, yes, of course they did: what else would a fly do before it soaked up water? He might have added that floating flies were good for fooling a difficult trout. After a few casts, however, they would sink. No problem. The rate of sinking would be slow, and by control of the line, he could keep them near enough to the surface that he could see trout rising for them. The flies typically imitated surface insects (as North-Country wet flies still do). — good

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not always.
They floated
them on
purpose
well before
1886 -

and fly flotants, more or less in that order. New gear made it possible for Halford to bestow the myth. A few decades later we had thin synthetic leaders, sinking lines, and graphite rods, which made it easier to fish deep. There were curmudgeons who said that this wasn't fly-fishing, but it caught trout and humans. Fly-fishermen must have decided that the psychic rewards were, at least, greater than those of spinning with metal lures.

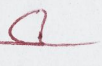
We have made good use of our technology. There is a boom in dry-fly fishing [ref next month's article]. Deep fishing is still short of myth but is catching plenty of trout.

The odd thing is that few of us are still competent with the old mid-water flies, which have the best myths in the sport. We could use lessons from an angler like the one who visited me last summer. Adriano does not know enough English to read the glories of angling literature, but he is a product of the great tradition nevertheless. He fished a cast of small wet flies in the old-world way: upstream, near the surface, and with just enough drag to keep track of them.

where
is he
from?

The trout rose as they have for centuries.

The Fish That Chooses

Half the fun of fishing for rising trout is seeing the object of your lust right there, playing catch-me-if-you-can. The other half is discovering that you can't. When you begin to think ~~think~~ 

think that you have the hang of it, you find a more desirable trout. There is always one somewhere upstream that you are not good enough to fool. It is likely to be a brown.

I surmise that we taught the trout to cope by exaggerating a natural characteristic, in much the same way that we taught the pointing dog to exaggerate the wolf's pause before pouncing. Even wilderness trout are extra-wary at the top of a stream; they know that they are vulnerable, up there, to natural predators. The air/water interface is no more user-friendly for trout than for insects. We added a complication when we made dangerous fake flies that look like real ones. Some trout have become good at telling the difference. Today we call them selective.

All of the insect-eating trouts seem to have a genetic potential for selectivity. It happens that the most selective fish I found in 1988 were cutthroats rising for something very small in the Yellowstone River. Day in and day out, however, most of us think that brown trout are the best at eating real insects while rejecting fakes. It is not likely to be a coincidence that the trout which has known us longest is the most careful of the food he eats.

In the Summer 1986 issue of this magazine, I called selectivity "the best thing about trout." It has certainly been the best thing for people who write books about trout. Even browns are not discriminating as often as we anglers like to

think, but they reject our flies often enough to have appealed to writers from Aelian to Zern.

The Great Tradition

Even a fish as unusual as the brown trout could not, of itself, create a tradition; traditions are always human. This one took shape in Britain, flowed to the early colonies with the English language, and has since colonized most of the trout-fishing world. Today American, Argentine, Australian, Danish, Dutch, Japanese, and South African fly fishermen are more remarkable for the assumptions they share than for the few on which they differ.

About now, however, we need to pause for a cool-down. A woolly old natural philosopher named Izaak Walton portrayed anglers as gentle and uncontentious. This shows how little he knew about fly-fishermen. We are a volatile tribe, quick to boil with indignation, or at least simmer with giggles, and in either case I may already have stirred your emotions by writing about rising trout and selectivity. Tradition is even more dangerous.

good { We normally call on it only to create atmosphere, or to sanctify what we mean to do anyhow. We adore tradition at a fairy-tale level, like royalty, but do not invite it to go fishing. Unlike royalty, tradition comes along uninvited. *good*

{ I may get in less trouble if I make clear that I am not trying to be a Historian. Historians are obliged to record things

that mattered once, whether or not there were consequences. [Like fly-fishermen, too, historians must take an interest in small things, and some take refuge in them. The ones mentioned here have broader visions; look to them for your history.] My subject is the way we fish today, and why: origins, not history. Why do Hisatsugu Haneda, Preben Torp Jacobsen, and (probably) you share an attitude toward fly-fishing -- an attitude that did not originate in any of our countries? It must have taken a powerful idea to convert the world.

The indisputably great thing about the great tradition is the number of books it has produced. I would not care to argue that the sport (as opposed to the literature) of trout fishing is greater than, for example, the sport of pheasant hunting. If you get through many catalogs of old sporting books, however, you will note that fly-fishing titles are the most abundant and often the most expensive. Why?

The sport has claimed two dimensions: art and science. *[This may be because the dog-fanciers have their own catalogs. Baseball and other games generate much more periodical literature, and more words.]* ART is the human side. It includes skill and aesthetics and tackle. These can get complicated if we wish, as we usually do. Rods, reels, and (especially) flies are such appealing crafts that they are collected even by non-anglers. The art of fly-fishing accounts for many of its books. Other sports, however, have similar books and as much gear. Hunting has dogs and guns. Baseball fans collect even more useless facts than anglers.

*I don't know.
Try Bill James'
Baseball books
sometimes.*

The science of angling is different in that it aims at trout, not humans. Science is another word for the ancient detective game played out between man and nature. The most the unusual thing about fly-fishing is the depth of these inquiries. People involved in other sports have inquiring minds too (being often the same people), but they rarely have as much to inquire about. New angling entomologies -- books describing the insects that trout eat and ways to imitate them on a hook -- are being published every year. Compare this to the scarcity of writing on the pheasant, which came to America at the same time as the brown trout and became, perhaps, equally popular. I love them both but could not write a book on the food of the pheasant.

The difference is science. Pheasant hunting takes art but not much science. With trout, when you have found your quarry you must still persuade it to eat. At worst, or best, it may be selective, in which case you have to see what kind of insect it is taking and imitate nature on a hook. Some anglers catch real flies in nets and then tie imitations, but I don't suppose that most of us do this often. We may let others do the science for us, or we may learn from experience that a size-16 Adams looks like something hatching in this particular creek on a cloudy-warm day in May. Science ~~does not have to be more than~~ ^{is} a careful way of seeing nature.

*It could just
be we aren't
trying hard
enough yet.*

Science accounts for much writing about fishing, but it is

never pure science; not always good science, either. John Gierach notes that our knowledge "draws heavily on science, especially the easygoing, slightly bemused, English-style naturalism of the last century, but it periodically leaves the bare facts behind to take long voyages into anthropomorphism and sheer poetry."

Time has a way of sorting out the good books, like good music. Check the prices of early editions by Aldam, Davy, Edmonds & Lee, Flick, Halford, Harding, Harris, Jennings, Mackintosh, Marinaro, Mottram, Pritt, Pulman, Ronalds, Sawyer, Scotcher, Shipley, Skues, Theakston, Wade, and Woolley. This is a very short list of authors who are safely deceased but still modern. They have the art, some of them, but they also come close to a dictionary definition of science: "The observation, identification, description, experimental investigation, and theoretical explanation of natural phenomena." There is not as much of this in other sports. I am not sure that there is anywhere else in literature such a mixture of art and science. Usually the artists look down on the scientists, who are not even aware of the artists. Both of them find fishing literature odd.

Next I have to use a dirty word. Elitism. Sorry. The E-word used to be naughty but nice, and nowadays it's not even nice, which means that we yearn for it more than ever. Once we could at least recognize the devil's work when we saw it. Then (in the 'sixties, if memory serves) the elites went under cover.

All people and all things became equally good. A professor of biology was no longer to be considered a higher product of evolution than, for example, a mite living on his skin. Each was equally adapted to its niche and, indeed, while the mite might start an itch in the niche, no mite had ever started a war.

If you are too young to recall what happened next, here is a multiple-choice quiz. With anglers free to do their own thing, which fish did they do it to?

- a) Catfish, using trot lines baited with green chicken gizzards.
- b) Bluegills, using hooks baited with red flannel from old long-johns.
- c) The most discriminating of trout, using artificial flies that represent insects with Latin names.

The correct answer to the quiz is hidden in one of the advertisements in this magazine -- no, in most of them.

Do you wonder what American fishermen were like in those old, upside-down times when they wanted to be elitist but had no brown trout? Well, their yearnings become clear in 202 letters that they sent to Mary Orvis Marbury in the 1880s. ^{and early 1890s?} These have at last been reprinted in a beautiful book: Favorite Flies And Their Histories. To flip its pages is to travel to a better place -- a country of fragrant streams and big brook trout. I have just traveled through my copy with a pencil.

Mary Orvis Marbury was a good editor and few of her contributors, especially from Pennsylvania, seem to have been good as fishermen. Most sound as if they would not catch much a century later. They rarely describe their method of stream-fishing, perhaps assuming that there was only one: across and down with a team of big, fancy wet flies. Of course, those were primitive times. Or were they? The trout and the streams were clearly more innocent, but the letters inclined to the highfalutin.

These American anglers were Victorian in all senses. They debated trivia like the killing color for a fly but, on difficult topics, invoked the founding fathers -- all British. I started to count the patterns of American origin but was unable, in many cases, to decide where the dividing line should be drawn. Two "hackles" of deer hair seemed original. Most of the other patterns were copies of copies of old-world originals, changing only colors. The originals had not been based on American nature and the derivatives became even more stiff, stylized, gorgeous -- as close to decadence as to innocence. Charles Dudley Warner (one of the contributors) wrote that "The trout fly is a 'conventionalized' creation, as we say of ornamentation. The theory is that, fly-fishing being a high art, the fly must not be a tame imitation of nature, but an artistic suggestion of it."

The ornaments burned brightly and quickly. None of them seem

a lot of them
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There's a
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Hatchlings

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Brown Trout

widely used, now, in the original wet-fly form. (The Royal Coachman has prospered by turning into a dry fly.) But I do not mean to suggest that the century-old flies were worse, in some absolute way, than modern ones. You have to decide whether flies should be designed to please trout or people. If people, then the old flies were as good as the new -- better, by Charles Dudley Warner's standard of artistic ornamentation. The 1880s flies would have taken more skill to tie than most on the market today. They were prettier, and they meant as much to their users.

To the extent that fishing has to do with catching clever trout, however, we tie better flies today. Fly-fishing returned to its natural sources when the fishing got tough. We humans might have continued to prefer Charles Dudley Warner's "high art," but the brown trout would not have it. And when we Americans learned how to fish for the new species, original books started to blossom: La Branche's, Hewitt's, Jennings's. An imported fish continues to encourage American originality, which may not be as strange as it sounds. The brown trout has now evolved in this country for some fifty generations, [Can I call two years a generation for trout?] which makes him at least twice as American, genetically, as any angling writer. Native Americans have not written much on fly fishing.

The big change in our fishing coincided with the naturalization of the brown trout, but it would be wrong to

credit, or blame, just the fish. The nation got older, richer, more populous, more interested in recreation. The streams deteriorated. The native trout retreated, adapted, or both. Statistically, they are still easier to catch, but individually they can be just as tough. In time the natives might have forced us to pay more attention to nature's doings. The time was not granted.

In a few decades after Mary Orvis Marbury's book, we learned how to catch a different trout. It gave us the mystery we needed for good detective stories. It taught us to design flies for fish, not people. It immersed us in the quizzical relationship with nature that makes this sport different from others.

Perhaps no fish can be said to think. The brown trout, at least, made us think.

This Ball good, and
stimulating, I hope it
makes people argue with
you. I'm afraid fishermen
still won't care.
Good try, though.

Brookers
taught us to
design flies
for them that
we could enjoy
for other reasons.
I think that's still
going on. Fly tying is
still very affected
and anthropocentric.

from my ~~letter~~ river can't to John Holden:

Schulky's history good, but: "The problem is that pre-1950 fly fishing here was provincial, in the strictest sense; the heavy [original] thinking had been done in England, and U.S. practice was derivative." — + w/o acknowledgment

~~At the~~

time broke the mold in 1950 —

"Just American fishing book"
Not provincial

Schulky has given us a history that, by acknowledging both left, is not provincial.

(all good fishing lit is specific + local — tied to a place, not vague generalities. (Just like Bachman's research.)

There's a difference between specific + provincial.

Slaton

Brown trout pie angling
"human culture" (Duncan likes)

Fidelar on writers
flies - & fly-fishing.
(biology?) Buchanan

~~More impact on human (European) culture
than all the whale in the ocean - though
has not inspired a novel as good as Moby Dick.
(Hemingway way)~~

How Do You Tell a Chair from a Cat? Scientists Say You Could Ask a Pigeon

12/6/88

By MALCOLM W. BROWNE

IOWA CITY

The humble pigeon, scarcely noticed as it pecks a livelihood from its sidewalk environment, may have more in common with human thinkers than generally realized.

In behavioral psychology experiments at the University of Iowa, Dr. Edward A. Wasserman and his colleagues have turned up what he called surprising evidence that "the conceptual abilities of pigeons are more advanced than hitherto suspected."

The pigeon mind, moreover, probably offers important clues as to how the

But skeptics question whether the birds can relate images to actual objects.

human mind evolved and functions, Dr. Wasserman said in an interview.

"Darwin raised the possibility of a continuity in mental development from animals to human beings," he said. "And it certainly looks as though he was right."

In a series of related experiments, the Iowa group is investigating the ability of pigeons to assign pictures of objects to such logical categories as "cats" or "automobiles." After being familiarized with the testing apparatus, the pigeons respond to questions by pecking at keys representing possible answers. A computer controls and records all experiments, and when a pigeon pecks a correct answer the bird is automatically rewarded with a pinch of grain.

"Pigeons commit new images to memory at lightning speed," Dr. Wasserman said, "but the remarkable thing is that they organize images of things into the same logical categories that human beings use when we conceptualize."

Experiments devised by Dr. Wasserman, his former graduate student, Dr. Ramesh S. Bhatt, and others in the Iowa group have built upon pigeon research begun in the 1960's by Dr. Richard J. Herrnstein of Harvard University. Dr. Herrnstein and other investigators have shown that pigeons can distinguish between images that contain some type of object and images that do not.

Dr. Wasserman carried this discovery a step further by showing that pigeons can distinguish among at least four categories of objects and, he said, "probably vastly more than that." He also found no difference in a pigeon's ability to distinguish "natural" objects like flowers and artificial ones like chairs.

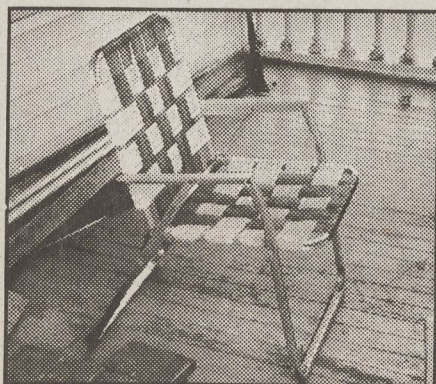
In this, his finding differed from that

Continued on Page 24



The New York Times/Paul Jensen

Pigeons in an experiment at the University of Iowa showed the ability to sort objects in photographs, such as chairs, below, into the same types of logical categories human beings use when thinking. They could distinguish the pictures from photographs of, for example, people, cats, flowers and cars.



Edward A. Wasserman

hooks

will be eligible for five-year awards, subject to regular reviews.

Telling a Chair From a Cat: Ask a Pigeon

Continued From Page 21

of Dr. Herrnstein, who suggested that pigeons were better able to recognize categories for natural objects rather than artificial ones. "The difference in our results is probably the result of some variation in experimental technique," Dr. Wasserman said.

Dr. Herbert S. Terrace, a psychologist at Columbia University who conducts conceptualization experiments with pigeons and chimpanzees, said all such experiments have failed to settle a major controversy.

"The big question is what the pigeon really sees when it is presented with these two-dimensional images," Dr. Terrace said. "Whether or not it can make the connection between an image and reality is a question that remains unanswered and not much work is being done to answer it."

Critics of all experiments of this type contend that no experiment can demonstrate unequivocally that an animal associates the image of an object with the real thing. However persuasive the evidence may seem, Dr. Wasserman acknowledged, "no one can get inside a pigeon's head."

Different Perspectives

The four categories Dr. Wasserman's group used in the experiments, which were recently reported in the *Journal of Experimental Psychology*, were cats (or in some cases, human beings), chairs, automobiles and flowers. Objects were shown from different perspectives, in altered lighting or settings and sometimes partially hidden.

In one test, 500 slides from each category were mixed in random order and shown to pigeons. Ten images

The pigeon's brain is smaller than a fingertip.

from each category were repeatedly flashed on the screen until the subjects had learned to classify them correctly. The remaining slides were then presented with no repetitions. If a pigeon pecked the key corresponding to the correct category, it was rewarded; otherwise, the next slide was presented.

Dr. Wasserman said the birds achieved an accuracy rate of about 70 percent in this test. Since random pecking at the keys would have yielded a score of about 25 percent, he regards the result as highly significant.

"It's not just a matter of rote learning," he said. "Once a pigeon has realized that various objects resemble each other enough to constitute a category, the bird can accurately identify new pictures of different objects that belong to that category."

Experiments of this kind, Dr. Wasserman believes, may shed light on one of the principal debates in behavioral psychology: whether animals, including pigeons and human beings, conceptualize categories of things in terms of average "prototypes" or by reference to a huge file of similar stored images referred to as "exemplars."

Skinner Box Is Main Tool

"Our experiments have not settled the debate," he said, "but I think the evidence is growing that the richer a memory is in stored images the more capable it is of distinguishing categories. I feel the exemplar explanation is probably closest to the truth."

The main tool in Dr. Wasserman's experiments is the Skinner box, a device named for B.F. Skinner, the trailblazing psychologist who demon-

strated in the 1930's and 1940's that behavior can be modified in complex ways by reinforcing desired behavior with judicious rewards. Among Dr. Skinner's achievements was teaching pigeons to play table tennis.

The variant of the device invented by Dr. Wasserman and his group is a box about the size of a microwave oven with a three-inch-square frosted-glass projection screen at one end. A slide projector controlled by a computer is mounted outside the box and projects images on the screen.

Near each corner of the screen are four round keys, each a different color. Behind each of the keys and the projection screen is a sensitive electrical switch that sends a signal to the computer if the key is pecked.

Just below the screen is a tray of grain that remains retracted out of reach of the pigeon unless the computer controlling the experiment recognizes that the bird is due a reward. The tray then pops out for about two seconds, gives the bird a quick snack, and then retracts to keep the bird interested in the experiment.

The pigeons themselves, trapped on Iowa farms, are fed only 85 percent of what they would normally consume. They are therefore always hungry and eager to hop into the box to work for rewards.

'Seed of Intelligence'

As Dr. Wasserman explained his work to a visitor, wild pigeons that had nothing to do with his experiments perched on the windowsill of his laboratory and looked in. "Pigeons are not just opportunistic creatures like rats," he said. "They're really part of the human environment and they have some striking features in common with us, acute vision, for one."

Many psychologists have theorized that the development of the visual area of the brain in animals is closely related to intelligence.

"Intelligence is really dependent on sensory organs like the eyes that operate over distance and permit an organism to plan what it will do before it makes contact with something," Dr. Wasserman said. "An amoeba can only sense its immediate chemical environment and cannot plan ahead. The evolution of long-distance sensory receptors was the seed of intelligence."

Pigeons also have a keen ability to distinguish the relative size of numbers and the duration of time, he said. In one set of experiments the birds were trained to register their answers by pecking the projection screen a number of times corresponding to a category. Shown a cat, for instance, the bird was supposed to peck about 20 times, or shown a chair, the bird was to peck 140 times.

"Pigeons can't count," Dr. Wasserman said. "But they slow down when know they will have to peck many times before getting their reward. By timing the pecking rate we find that they give answers consistent with the relative size of the numbers."

One peculiarity of pigeon perception, he said, results from the fact that their eyes have two foveas rather than the one in human eyes. The fovea is a light-sensitive region at the back of the eye that converts images into electrochemical signals.

Looking for Life Vests

The double fovea gives the pigeon a good stereoscopic view of objects straight ahead as well as another view taking in a much wider angle that does not offer stereoscopic vision.

Whatever pigeons see, their visual acuity may be useful to humans. In a Coast Guard experiment Dr. Wasserman described, pigeons were trained to peck a key when they spotted the

The birds also have a keen ability to tell large numbers from small ones.

bright orange color used for life vests. Three of the birds were placed in a transparent box suspended from a helicopter flying over the ocean. Dr. Wasserman said the birds were adept at spotting the vests.

The legendary navigational abilities of pigeons, believed to be largely dependent both on keen vision and a superlative memory of topographic details, are still useful to humans. Although they are rarely used to carry messages any more, the birds are sometimes used for emergency flights in London to carry blood samples from hospitals to laboratories.

Dr. Wasserman sees his work with pigeons as closely related to somewhat similar experiments with chimpanzees and human infants. In particular, he believes pigeons exhibit some of the abilities of chimpanzees that were reported by Dr. R. Allen Gardner and his wife, Dr. Beatrice T. Gardner.

In experiments in 1985 the Gardners trained chimpanzees to make sign language gestures of the kind used by deaf people. The primates were then trained to use the gestures to identify categories of objects they were shown, and to classify and identify new objects.

The title of the Gardners' paper, "A Vocabulary Test for Chimpanzees," helped to fuel a controversy among psychologists as to whether animals really use the equivalent of words in the same way people do.

Similarity in Teaching

Dr. Wasserman is undecided on the issue. He suggested that the Iowa pigeon research "formally resembled the chimpanzee study," and that this could imply that "pigeons also acquired a vocabulary." But, he added, "it is important to note that this 'vocabulary' may differ from the kind associated with human languages."

At the same time, he said, "there is a striking resemblance between the way pigeons learn the equivalent of words and the way we do."

"We teach pigeons in the same way I teach my baby daughter with the help of a picture book," he said.

Dr. Wasserman believes it is foolish to anthropomorphize pigeons or to imagine that they have anything approaching the mental capacity of humans. "We don't name our test birds," he said. "We just give them numbers."

At the same time, the pigeon's brain, "smaller than a fingertip," can perform some tasks that remain far beyond the ability of any existing or planned computer, he said.

"We're a very long way from explaining how either a pigeon brain or a human brain can do the things they do," he said. "But by studying their modes of mental behavior we are getting closer to knowing what intelligence is and how it came into existence."

Texas Center Says Gift Will Aid Cancer Studies

Special to The New York Times

DALLAS, Dec. 5 — The University of Texas Southwestern Medical Center said that a gift of \$41 million would allow it to greatly expand its cancer-related research.

The donation from Harold C. Simmons, a Texas investor, was officially announced today. The center had said last week that it was planning to announce a large gift, but it declined to identify the donor. Mr. Simmons's role was disclosed Friday by sources familiar with his discussions with the center.

The gift, one of the largest ever made by an individual to an educational or medical organization, includes \$37 million in new pledges, and \$4 million from a previous pledge.

Mr. Simmons, who is 57 years old, said he intended to make larger donations for medical research "in the next 10 or 20 years." His wealth is estimated at \$1.5 billion.

With the gift, Southwestern will add four chairs for cancer research, each with an endowment of \$1 million. Mr. Simmons will also provide \$20 million to support cancer studies in various sciences for 20 years, and \$5 million

toward construction of a tower planned as a center for the research.

The gift does not take into account money that Mr. Simmons provided last year, when he gave \$1 million to the Susan G. Komen Foundation for breast-cancer research. The foundation, in turn, used the money to establish a chair at Southwestern.

The new gift did include \$4 million pledged previously was to support arthritis research. Mr. Simmons said today that he was increasing that to \$12 million over the next 10 years.

The investor, who suffers from the disease, has already given \$6 million to Southwestern for arthritis studies since 1983.

"I have a lot of confidence in the institution and the people who are running it," Mr. Simmons said.

Dr. Kern Wildenthal, president of Southwestern, said the center generally has lagged behind other respected medical organizations in cancer research.

The Simmons gift, he said, is "a major leap forward" that is likely to attract additional money to Southwestern for cancer studies.

About Men An essay. Sundays.

The New York Times Magazine

MRI scanners, using powerful

The improved accuracy comes because the computer can analyze many more images than are usually studied, Dr. Kennedy said. Ordinary

Dr. Kennedy, working with Dr. Pauline Filipek, a pediatric neurologist and Dr. Verne Caviness, a neuropathologist at the Massachusetts General Hospital, has spent the past year testing the new method to ascertain its accuracy. Dr. Filipek said that with their error rate of 10 percent, they do even better than pathologist looking at specimens in an autopsy. "Even with pathological specimens on autopsy, there is a 15 percent error rate," she said.

F.D. Frank E. Young, the current F.D.A. commissioner, said his agency has taken many steps to speed the approval of promising drugs.

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Summer,
1986

Datus C. Proper
1914 N. Johnson St.
Arlington, VA 22207

Feb. 13, 1985

Mr. Thomas R. Pero
Editor
Trout Magazine
Box 6225
Bend, Oregon 97708

Dear Tom,

The piece on selectivity is enclosed. It's been pretty thoroughly massaged now and I'm content with it. Bob Bachman was very helpful. I wanted a biologist to see the manuscript because, in one place, it's hard on biologists. He liked the story and told me to make it even tougher on his tribe. Bob's a good sort of biologist -- even goes fishing.

The manuscript is long and got a little longer in the process of responding to critiques. Even so, it treats only about half of the topic: the question of what selectivity is. I thought that was the most important half, because it seems not to have been done before.

Some readers will, no doubt, expect to see more about why selectivity happens, when it happens, and which trout do it. That angle has been covered before, though I don't recall seeing anything especially good on the subject. On p 11, I noted that there isn't space for the why/when/which questions.

This topic involves some fairly heavy breathing, and I did my best to make it interesting, but I fear that new fishermen may still find it pretty dense. I'd be curious to know what you find.

Anyhow, thanks for asking me to do the piece. I enjoyed it.

Yours,

Datus

Datus C. Proper
1914 N. Johnson Street
Arlington, Virginia 22207

THE BEST THING ABOUT TROUT

A Morality Play in Four Acts
About Fish Who Are, Sometimes,
Almost As Selective as Fishermen.

There is an angler on stage as the curtain rises on a wooded bend of the Potomac River (which is a peculiar place to begin a drama about selective trout.) The sky is orange haze, too thick for breathing and too thin for swimming. Sand scrunches around in the angler's basketball shoes; water a little cooler than blood circulates through his trousers; a stringer with some yellowbelly sunfish on it tugs from his belt. They have been kept because they taste better than smallmouth bass. The bass have been hitting too, but they usually take the little metal lure at the end of the line, while the sunfish prefer a wet fly tied above the lure as a dropper. The whole outfit is a hybrid. The line is four-pound monofilament cast from a little Alcedo spinning reel that is taped to the grip of an old fiberglass fly rod.

As the sun sets and the haze darkens, a few big, pale mayfly duns start coming down the water. The rings of rising fish appear. The lure works better than ever now, because the

bass hit it right under the surface instead of waiting for it to jig along the bottom. But the angler thinks he's missing something even if the fish don't. As the rings grow more abundant, he switches to a fly line and starts covering the rises. A big Light Cahill dry fly appeals to the fish but drowns quickly. A cork popper works too. Then, just before leaving, the angler puts on a streamer and fishes it across and downstream, having read somewhere that the big fish lie deeper, waiting to catch the little risers. Maybe. The bass hit the streamer as well as the dry fly, but the biggest fish of the evening is not big enough to eat the smallest rising sunfish.

The truth seems to be that these fish don't care a lot what fly -- or lure -- is used, as long as they are in a mood to feed and the victim will fit into their mouths. Even though natural insects start the rise, a little piece of chromed metal works as well as something with a Latin name. But fly-fishing is more fun. At least, it's almost fly-fishing. There's the natural fly, the ring of the rise, the thick line in the air, the float with an artificial fly, another rise, the strike, and the fish tugging against a long rod. All of the ingredients of fly-fishing.

Except one. But that one missing ingredient is enough, in the end, to persuade the angler to get up at four in the morning and drive to a trout stream that's three times as far away.

* * * * *

Act II is set about sixty degrees further south and six thousand feet higher, near the Brazilian resort town of Campos do Jordão. The air smells better here. The angler pulls off a dirt track and parks, then hikes downhill, which is where the trout streams hide out in any part of the world. His pants get wet from dew and greasy from the billy-goat-beard grass. As he hikes downward, the grass yields to Araucaria pine, and then to mossy jungle. The easiest way to penetrate that is to wade up a brook called Canhambora.

This time there is no fly reel anywhere in the angler's vest. He has never seen a surface-feeding fish here and it's hard to cast up through the clutching bamboo, even with a five-foot spinning rod. Before lunch he hooks one trout, loses it in a snag, and is about ready to quit for the day when he sees the unexpected: a rise. Then another, about thirty feet upstream. Drab little duns are trickling down the stream and a rainbow is taking them. Now here is a coincidence: the only fly-fisherman in all of Brazil is present in the only place where a trout is taking mayflies -- and the fisherman has no fly tackle.

Eventually, he casts his smallest lure twenty feet above the rising trout and retrieves, 1/16-ounce spinner high in the water, flickering right in the path the duns have pointed out. The trout quivers and sinks a little lower, clearly

frightened. It is two minutes before the fish takes a dun again and, on the next pass of the lure, the rainbow flees.

Why? The angler is reasonably sure that the little lure would have been taken if only the fish hadn't been looking for another mayfly. But the trout's opinion was definitive, as it usually is, and the score for the day remains: fish two, fisherman zero. On the long hike back uphill, the angler does not like the score, but he likes the trout. What other fish would introduce an American to the Canhambora? And then, in the bargain, give him a lesson in the fitness of things?

* * * * *

Trout have a lot of virtues, but on most of them they have no monopoly. Take beauty, for example: woodcock are as pretty as trout and much warmer, and you find woodcock where the leaves are turning color. A woodcock cover does as much for the senses as a trout stream.

Trout are not even the only fish that are, sometimes, selective about their food. Grayling and Rocky Mountain whitefish behave that way, but not as often, and maybe you have found bass being selective (though I don't think I have). For all I know, the upland streams of Tahiti may have a fish that behaves like a brown trout, but no one has written much about it. People have written uncounted millions of words on trout fishing, and the trout's peculiar feeding habits account for much of the literature. We cannot identify the Macedonian stream that Aelian wrote about in the third century or what

kind of natural fly he may have been describing, but he was clearly reporting on fishing with an imitative fly. When the Treatise of Fishing With An Angle appeared in English in the fifteenth century, one of its premises was that artificial flies should resemble the trout's natural food. The same assumption underlies the early Spanish literature, which seems unrelated to the English.

So, if you will accept literary evidence, the best thing about trout is the oddly discerning way in which they may choose to feed. This trait is doubly puzzling because trout do not appear to have been designed for the task. A biologist might not agree with this, but if I were seeing a one-pound brown trout for the first time, I would not guess that he had reached his size by eating tiny insects. Trout, like black bass, have big mouths, and nature does not usually provide physical equipment without a reason. I would surmise that a fish shaped like the trout would specialize in minnows or frogs or mice. And of course trout do eat such creatures, but it's remarkable how often they prefer small insects instead. I like to take pictures of trout with little artificial flies showing as dots on big jaws: it looks like such a miraculous feat. Miracle or not, I am grateful for the trout's diet, because insects are needed, lots of them, to make a fish most selective. In order to fill his stomach with mayflies, a trout may have to feed hundreds of times, and he gets clever at it.

It is because of this unusual manner of feeding that the pursuit of trout has been called an "intellectual passion." No one has called 'coon hunting or perch fishing intellectual passions, and I wouldn't venture to make a case for woodcock. They arouse fierce but identical passions in me and my dog, and at least one of us is no intellectual.

The peculiar feeding habits of trout cause those of us who pursue them to carry around hooks dressed very differently from those of non-trout anglers. We often call these creations "flies" even when -- as in the case of streamers -- we are trying to imitate little fish instead of insects. (We would, it seems, rather stretch the language than risk confusion with pike fishermen.) Mind you, it is impossible to find a trout that shares all the tastes of trout-fishers, and it is not even as easy as you might suppose to find one that is highly selective. If "selective" is to mean anything, it has to mean more than "hard to catch." Bass and muskellunge are hard to catch, too, but for different reasons.

Perhaps I've missed something, but I don't recall that any angler, in the centuries of writing, has said just what selectivity does mean. We'll try here, later on. First let's look at some of the assumptions on which fishes and fishers agree -- or disagree.

There is, for example, a friend of mine who has been known to float Quill Gordons over a kind of degenerate, peroxide-blond rainbow that they breed in West Virginia. The

fly has to be a Quill Gordon because that is what might be hatching in April, and by May the predators will have cleaned out any fish that were bred to be conspicuous. The Quill Gordon says a lot about the angler but not much about the trout, who are not even bright enough to be selective to hatchery pellets.

And how about the Brazilian trout in Act II? He might have taken any floating fly of about the right size, if the angler had given him a chance. If he had accepted, say, a Royal Coachman instead of a Quill Gordon, how many anglers would call that selectivity? Never mind, for now. At least the Brazilian rainbow knew the difference between mayfly and metal trinket. Thanks to fish like him, there is a sport aspiring to Quill Gordons instead of Cheez-Eggs. Granted that trout anglers do not invariably need hexagonal bamboo rods, hundreds of flies, boxes with little flippy lids to hold the flies, and vests with twenty-two pockets each to store the boxes. The equipment at least satisfies functional needs as well as our emotions.

The trout takes us seriously, you and me, but the human audience can be counted on to giggle as we waddle upstream in full felt-soled armor, searching for something small, shy, and primitive. We are a parody waiting to happen. The critics know more about theater than trout, and they write us up as Falstaffs in bulging vests. But there is not much trout-fishing satire that is good enough to sting. A clever

satirist has to understand motivations, and I can't name one who has perceived that we see ourselves as supporting actors in a morality play. The paraphernalia and the sweat in our waders are offerings -- spurned, perhaps, but extended in fervor. We are trying, with our clumsy fingers in the fly-box, to be guided by nature instead of superstition. We have been trying for centuries. And it is all because of selectivity.

Thanks, trout.

* * * * *

For Act III the backdrop changes to lodgepole pines, grass curing to the hue of autumn sun, and the long riffle that is the Madison river. The angler feels as small as he looks, with only a raven's echo for company, but he hopes for a big trout. There aren't many. The fall run from Hebgen Lake is mostly made up of fish closer to one pound than two: splendid on light tackle in the summer, but short work for a steelhead rod. The heavy gear is, however, useful for pitching the big, weighted object at the end of the leader, which is intended to represent a stonefly nymph.

Under another sky this might be drudgery, because there are long stretches with ponderous casting and no fish. When located, the trout -- browns and a few fall-run rainbows -- take innocently. They haven't seen many flies with hooks in them. Then, in the first moments of each fight, the trout hangs deep against the current, the rod develops a pregnant belly, and the angler has a minute to feel the heartbeat and

hope that this is the one he wanted. In the end, there is a trout who jerks more slowly than the others and lasts longer coming to the net. This is not the summer's most difficult fish but it is the biggest -- four pounds plus, and perfect. There is no trace of spawning color yet to dull sides shining like the sun-gold grass. If Hebgen Lake were salt water, this fish would carry sea lice.

There are lots of natural stonefly nymphs in the Madison, so you might consider these trout selective. You might expect that three-quarters of them take a little wet fly sticking out from a dropper higher up the leader. When the angler changes the stonefly nymph on the point to a weighted streamer, the trout don't care much for that, either. Next the angler spoons some stomachs to see whether any food in them resembles the little wet fly -- and finds no food at all. These lake-run fish, like salmon, are responding to something besides a need for nutrition.

Of course, the fish might take the big point fly more often if there were no easily-available alternative on the dropper. Fall-run Madison trout often do take streamers and nymphs that look like stoneflies. But in this Act the big creations at the end of the leader serve mainly as sinkers, giving the dropper some kind of behavior the trout like. Most fishermen who use droppers have had similar experiences.

The little dropper, then, has two functions. First, it catches fish; and second, it keeps the fisherman honest about selectivity.

* * * * *

The moral of Act III is that selectivity is something you cannot presume, if you want to play square in your game with nature. Suppose that the angler had fished with the stonefly nymph alone -- no dropper. Suppose he had not checked stomach contents. Suppose he had caught fish anyhow (which is probable) and suppose, finally, that he had gone home and talked about how those fish loved stoneflies. He would have been wrong. The little dropper gave the trout a chance to reject the stonefly hypothesis, and most of them did.

Selectivity must be proved, or (more frequently) disproved, not by what fish eat but by what they reject. The point about rejection is central, so let's look at what the dictionary says. To select (according to the American Heritage dictionary) means "to choose from among several, pick out." And selective means "of or characterized by selection; discriminating." Now, clearly, when one item from among several is picked out, there must be other items that are not picked out, or rejected. A trout who eats everything readily available is not making a selection.

Does the point seem obvious? Not to one fisherman -- a good one -- who wrote this dissenting opinion: "Selectivity is, in fact, a built-in response to the great abundance of any one food organism, subaquatic or floating on the film." Now this is a nice, simple, comfortable approach. Unfortunately, it does not work, either in the dictionary or on the stream.

If you read the quoted sentence again, you will see that it makes no reference to choice, or selection. And, in practical terms, a trout faced with "a great abundance of any one food organism" will very likely learn to eat it -- thereby demonstrating opportunism, not selectivity. The fish may also be selective, but you cannot know that unless you give him repeated chances to choose between the insect on the water and some alternative food, real or fake, like your fly.

In practice, fish that have been taking a single kind of food may not be very selective. In the wilderness lakes of Yellowstone Park, for example, I seldom found trout (or grayling) that would refuse a fancy wet fly, even when they were feeding on scuds or midges. I think I know why ^{the} fish behaved as they did, but that's another story. We lack space here for many of the puzzles, such as why some trout are more selective than others and some conditions seem more likely to bring on a selective response.

On some waters, trout do regularly refuse well-fished flies, and that makes selectivity important to anglers.

Fortunately, we can check on it ^{more} easily than biologists.

(no 4) We may have to try a few flies to find out for sure what an individual trout rejects, but this we can do in a short time, before he switches from one food to another. Biologists must seine out a sample of everything drifting down a stream, which is a non-selective way to measure selectivity. Perhaps this is why biologists like to talk about the behavior of

populations rather than individual fish. Choice, however, is an individual act, and trout are practical about it but by no means automatons. Suppose that one fish is taking spent spinners in midstream while another is waiting for ants to fall of a grassy bank. On the average, that population of two fish is non-selective, because it's taking half mayflies and half terrestrials. The angler -- if he wants to catch much -- may have to make a more precise call than that.

On the other hand, we anglers don't inspire as much confidence as biologists unless we're equally careful with our conclusions. Most of us do, I think, choose to be a little more strict than the dictionary with our usage. If, on some trip, the bass hit a Jitterbug three times more often than a Crazy Crawler, we don't usually claim that the bass are selective: we conclude only that the Jitterbug has some episodic appeal we don't understand. Similarly, I don't think that the Madison fish should be considered selective to a small dropper fly just because they took it three times out of four. Many other flies might have worked, if given a chance. The fish must have had their reasons for liking the dropper but we cannot understand them, because the trout were not taking any artificial food to which the natural could be related. Only an angler of very great faith would expect much selectivity from non-feeding fish.

In angling terms, I conceive of a selective fish as one who has been taking a single kind of food, expects to see

another specimen^y of the same kind, will take it if it appears, but will be less likely to take any other kind of food. He then sees my artificial fly and decides that it is -- or is not -- what he has been expecting. (He will not, of course, take my fly if he realizes that it is an artificial, no matter how attractive.) If you concur, let's try the following as an angler's definition:

Selectivity in fish is a preference for one
kind of food as opposed to another that is
readily available.

* * * * *

In Act IV it takes the audience a while to stop coughing and realize that the theme of the background music is quietness. There is not even the rustle of the Madison, though another set of Montana ranges circles most of the backdrop. A spring creek filters noiselessly through watercress beds. The angler can hear the winnowing of a snipe hidden in the depths of a clear sky, and a sandhill crane groans about something two farms north. Once Paul Schullery (who has good ears) heard a trout swimming in this stream. Anybody can hear a fly line splatting down at the end of a cast, and wince. Probably the trout wince too, because they sidle upstream forty feet without looking at the angler's fly, and he realizes that this August morning isn't going to be easy. But at least the trout keep on rising. There are heavy ones in there, and they need a vast number of tiny mayflies and tinier midges to stay in condition.

This, finally, is the kind of limestone stream where you would expect the fish to be selective, as well as wary. And sometimes they oblige. The angler finds it helpful to match the mayflies in whatever stage the trout are taking -- nymph, dun, spinner -- and then to tie on a beetle when the rise is over, or perhaps a grasshopper if the wind comes up. When the Tricos are hatching, the fly has to be small. The occasional swirls after crane-fly larvae call for something much larger and fast-moving. Always the fly has to come down behaving like the natural, at the right level.

Enter on stage Glenn Brackett. In a stream which many a good fisherman leaves at the end of the day with a lemon-sucking smile, Glenn just slithers upstream catching fish. He doesn't talk much about his flies. They are well tied and small enough, but they mostly come in a multipurpose shape and any old color. I think his system is to pick ~~up~~^{up} whichever one comes up first in the box: red in the body, last time I looked.

* * * * *

A successful subversive like Glenn can cause a fellow to question the whole philosophical underpinning of trout. Not that Glenn means to shake the faith -- actually, he makes bamboo rods, looks like a trout fisherman, and tries not to show off his heretical flies. The stupid fish are the problem. How, when yellow duns are hatching, can trout ignore my respectable yellow imitation and take Glenn's red one? It

goes to show you the dangers of asking what the fish think instead of what fishermen think. To hell with trout. They are primitive, cold-blooded, cannibalistic, low in I.Q. and, worst of all, grossly deficient in the good taste that characterizes anglers.

Still, there may be a magic that can save the old order.

Color. It is very strong magic, for fishermen, while trout seldom worry about it. And that, I think, is the kernel of the disagreement between trout and people.

I do not mean to say that trout always disregard color. They have excellent color vision -- better than ours -- and, personally, I think they use it sometimes to distinguish good food from bad. But the proposition is difficult to prove beyond question. (The fact that trout have a certain ability does not mean that they invariably exercise it: we have already seen that they often specialize in insects, even though trout have evolved with a mouth that will accept larger food.) It seems to me that, in practice, the behavior of a fly usually matters more than color or any other feature to a trout. After behavior, size matters, and less frequently trout seem to insist on a plausible shape. So, in designing flies these days, I would argue that it makes less sense to be guided by color than by behavior, size, and shape. By this reasoning, Glenn Brackett's Act IV fly was not as subversive as it looked in the first red flush.

We fishermen, however, have long used color to tell one fly from another, and I suppose we always will. We can't help it: color is simply too important to be ignored in our human culture. And so in 1985, when I wanted to find an artificial Sulphur in my fly-box, I looked around for a yellow body. It may not have meant much to the trout -- I don't think it did -- but it told me what I was trying to do. In this way it provided moral comfort, which is a very important feature in trout flies.

I will use yellow Sulphurs again in 1986, but when the fish take something low-floating and small in another color instead, I will still think that they are selective, and feel good.

Curtain, please.



From Blue Duns to Woolly Buggers

By Datus C. Proper

*In three decades of
trout fishing our tastes
have changed. Just
look in our fly boxes.*

WE ARE NOT THE WAY WE WERE 30 years ago. We don't buy cars with tail fins; we don't order chop suey at Chinese restaurants; we don't fish with wet flies. These little things are unlikely to impress a student of the big picture. We have not had a revolution, but we have evolved so quickly that, for those of us old enough to have been paying attention in 1959, there is a touch of vertigo.

It's not that I miss the Wurlitzer cars and the pseudo-Chinese cooking. The traditional wet flies, however, wound out of the shadows of history, dazzling anglers and trout. In principle, we fishermen still love wet flies; in practice, they still work; in the fly shop, they are nearing extinction.

Consider this a state-of-the-fly message, and about time. There is at least one other endangered species out there. Why have we changed our preferences? My aim is to interpret what the flies say about us fishermen, not what we say about flies. We have written volumes on the craft of tying flies and the science of fooling trout with them. There doesn't seem to be much in print on the human connection.

It seemed important to start with objective facts – ideally market statistics. Reliable, comprehensive figures on the market in trout flies, however, are not available; businesses do not release information on sales. I therefore looked closely at the flies listed in the catalogs of The Orvis Company in Manchester, Vermont, and Dan Bailey's Fly Shop of Livingston, Montana. These catalogs were available for both 1959 and 1989, and they reflect

*All flies tied by
Michael Arritt
except Whithopper
by Dave Whitlock*

*Photography by
James A. Yuskavitch*

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Fullerton 92633 — 714-525-1827

Bob Marriott's Flyfishing Store
27324 Camino Capistrano
Laguna Niguel 92677 — 714-582-3699

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2909 N. Glen Oaks Blvd.
Burbank 91504 — 818-843-7888

Sport Chalet
920 Foothill Blvd.
LaCanada 91011 — 818-790-9800

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1457 Morena Blvd.
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judgments that are not mine: judgments by businesses that have continued to prosper. I also used other recent catalogs and sought opinions from people identified below.

What the Flies Say

The trend to flies that copy nature is much stronger than I had expected. In 1959, 15 percent of the trout flies in the Orvis catalog imitated natural insects that I could identify. By 1989, the figure had increased to 60 percent. For Bailey's, the corresponding figures are 8 percent and 40 percent – the lowest in my search. Bailey's carries a wide range of imitative flies but has also retained traditional flies that other firms have discontinued. Judging from other catalogs, regional fly shops around the country typically sell high percentages of flies that imitate local hatches.

Pictures in catalogs do not, of course, correspond exactly to sales. Many of the old flies that are still listed sell poorly, but a few are very important – the dry Adams, Light Cahill, and Hairwing Royal Coachman, for example; and in the West the Trude (calf tail downwing) Coachman. What all of these share is a pale color that anglers can see on dark water. We could design more purposeful flies for fishing “blind” on fast streams – flies both imitative and highly visible – and perhaps we will. Over the last three decades, however, our energies have been focused on calmer streams.

Only the trout can say with certainty which flies look to him like real insects. Human definitions are all subjective. I settled for the simplest and most literal of them: a fly is imitative if the angler chooses it in the belief that it represents one insect or a group of closely-related insects. I did not count flies as imitative when there was any major doubt about anglers' intentions. The Adams, for example, did not qualify. The catalog of the Fly Shop in Redding, California, points out that the Adams is a good *Callibaetis* imitation, and some of us think that it looks like other mayfly duns. Most fishermen, however, seem to have used it with no imitative intention. That makes it a fancy.

Fancy flies are those that we use

because we fancy them, without knowing whether they imitate any particular insects. Such flies are art, not science, but they are not necessarily gaudy. This point becomes important when we turn to patterns like the Blue Dun, Iron Blue, and Cowdung. These look somber enough to represent insects, and they do: British insects that do not exist in America. The artificials, then, must be considered fancies (non-imitative) when used here. They were, however, important in 1959. Why did we use flies that were neither imitative nor easy to see?

The old British flies might be dismissed as non-functional vestiges of evolution, like the vermiform appen-

A fly is imitative if the angler chooses it in the belief that it represents one insect or a group of closely-related insects. I did not count flies as imitative when there was any major doubt about the anglers' intentions.



Wet fly: *Parmacheene Belle*

dix – except that they still appear in 1989 catalogs. With a longer record of continuous service than any other flies in America, they tell us something about ourselves. The message is that we yearned to copy nature even before we knew whose nature to copy. You will have your own opinion as to the source of the yearning. Mine is that it has something to do with the search for good.

Blue Dun; number 2 in most rivers for dark days, when it is cold
A starling's wing will give you the colour
or duck widgeon, if you take feather from under the wing
Let the body be of blue fox fur, or a water rat's
or grey squirrel's. Take with this a portion of mohair
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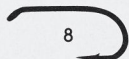
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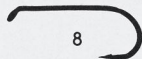
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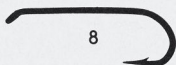
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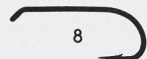
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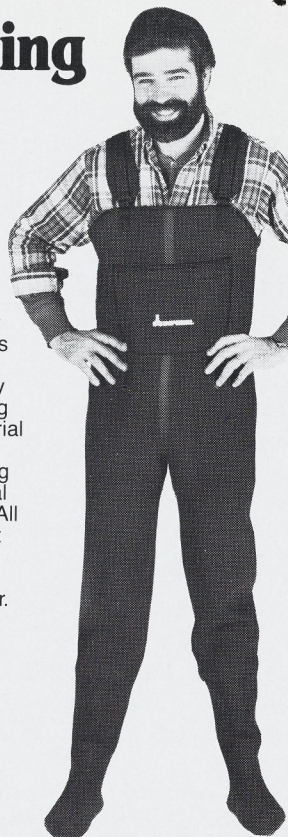
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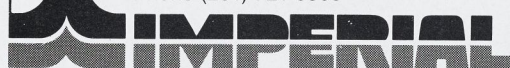
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I would speculate that the trend to imitation has peaked, but only because we're running short of space on the fertile waters where flies that copy nature are most important.

Ezra Pound had to use a British book for his source: there were none in America that could have served. There are now. American fly fishing has grown up in the last three or four decades. There are probably more fly fishers here now than in any other country. We have had a burst of creativity comparable to that of the British in the nineteenth and early twentieth centuries. We are able to acknowledge our vast fly fishing inheritance, as heirs must before they can grow further.

I would speculate that the trend to imitation has peaked, but only because we're running short of space on the fertile waters where flies that copy nature are most important. (Tom Rosenbauer of Orvis reports that some recent imitative designs, such as the no-hackles, have dropped in sales.)

Imitative flies, however, are neither



Streamer: Black Ghost

fashion nor revolution. Fashions and revolutions do not endure. The Blue Dun has been around in its drab way for ten times 30 years. What the trend since 1959 may show is that there has been a change in the educational level of American trout and of the people who try to catch them. Whether we anglers look on ourselves as poets, scientists or both, we are no longer content to choose flies irrationally. We want to know what we're doing.

The Decline and Fall of the Wet Fly

And that, perhaps, is why wet flies don't sell. Anglers do not understand what the old wets are supposed to do.

Some catalogs no longer offer them at all. Orvis, which carried 43 wets and 51 dries in 1959, now lists seven traditional wet flies and 69 dries. Meanwhile, Tom Rosenbauer says, alternative wet flies like the soft-hackles have not caught on. Dan Bailey's still catalogs 41 wet flies (down from 138 in 1959). Four of them are soft-hackles. The old flies nourish my hope that people live longer here in Montana than in places where they're thawed out all year.

As to the wet fly's problem, we might find a clue in the first American book devoted entirely to fishing – by John J. Brown, in 1845. By then, he said, American rods were better than the imports, but all 49 of his flies were British: patterns like the Blue Dun, Iron Blue, and Cowdung. Brown found the English sizes “entirely too small for the majority of our streams,” however, and he recommended jumping from size eight or nine to size four or five. It sounds like a simple adaptation. Remember, though, that the British flies became fancies when they traveled to a continent where their natural models did not exist. Our ancestors did not know that. They just found that the imports worked poorly, then adapted by making them vastly bigger than the original natural insects. That implied a different kind of fishing. Brown thought he was recommending proven old patterns, but he had lost their rationale.

With dry flies and nymphs the situation was exactly the opposite: we kept the rationale and discarded most of the patterns. The difference was timing. Dry flies and nymphs caught on in this country relatively recently, after we had imported the brown trout. We have since learned much that is new (such as how to fish the dry fly on fast water) but we have retained original purposes, too. Let's put it in a 1989 figure of speech. With wet flies, we kept the hardware and lost the software. With dry flies and nymphs, we gradually discarded the hardware, saved the software, and wrote new programs.

I am dwelling on this because I don't think we can understand what has happened to American flies unless we come to terms with the software/hard-

For downstream fishing, stiff-hackled wet flies have, it seems, been replaced in this country by streamers and nymphs.

ware paradox. Hardware is easier to see – and software is more important.

So far no imitative software for American wet flies has caught on. Leisenring's patterns had names like (you guessed it) Blue Dun, Iron Blue, and Cowdung. I tried to naturalize the soft-hackle fly by publishing what were, as far as I know, the first notes on suitable American feathers. They were about the only things in my book, *What the Trout Said* (1982), that didn't pro-



Terrestrial: Whithopper

voke even an argument. Wet flies in a few catalogs offer soft hackles, but I don't see anglers fishing them upstream as British North Country flies were designed to be used. Their soft hackles mat if pulled against the current in the traditional American wet fly method.



Dry fly: Light Cahill

For downstream fishing, stiff-hackled wet flies have, it seems, been replaced in this country by streamers and nymphs. These work – sometimes. Streamers are not intended to imitate

insects and are too big for many trout. Many nymphs, like soft-hackle flies, do not "breathe" when fished downstream. Stiff-hackled wets evolved for a kind of downstream fishing that we still like to do, and for that they work as well as ever, for the few old boys who still use them.

Dry Flies Floating High

During my first and last effort as a commercial fly tier in the 1950s, I could not sell dry flies. The customers wanted wets with snells. Today, our largest importer of good-quality flies – Umpqua Feather Merchants – reports that overseas producers cannot keep up with the demand for dries. Tom Rosenbauer says that about two-thirds of all flies sold by Orvis are dries. Thirty-five percent of the flies in the 1959 Orvis catalog were dries; by 1989 the figure had risen to 46 percent. Over the same period the dry flies in Bailey's catalog rose from 35 percent to 52 percent. Dries apparently have a rising share of a booming market.

In the 1959 Orvis catalog, every one of the 51 trout dry flies followed Halford's original 1886 designs, but with even less variety. There were no terrestrials, no spent spinners. There was one unlikely caddisfly and one possible stonefly. In the 1989 catalogs, you can still buy the traditional dry fly designs, but you also have a choice of caddisflies, stoneflies, spent spinners, parachutes flies, thorax duns, no-hackles, emergers and others. Progress in terrestrials has been perhaps the most important of all, starting with Vince Marinaro's 1950 book, *A Modern Dry-Fly Code*. In no other country, I think, have terrestrials been taken as far.

In 1959, Orvis offered dry flies in sizes 10, 12 and 14. Back then anglers sometimes called 16s "midges," though few of them imitated real midges (chironomids). Today, demand for 16s is so heavy that one of my fly-tying friends will not sell them unless customers order other sizes as well. He cannot afford to buy expensive hackle capes and use only the size 16 feathers.

Not all of the new flies are as pretty as the classics. One difference, perhaps, has to do with changes in the market. (The *New York Times* quotes Lauri Rapala of Finland as saying that

With the old Catskill flies, trout rising in flat water could not be caught. They get caught now – browns the size of salmon on little imitative dry flies.

"the international fishing tackle market is in the United States...There is not so much fishing in the rest of the world.") Worldwide competition has restrained increases in the price of flies, which in turn makes it important to reduce the costs for labor and materials. Yet each fly must still be tied by hand. Tiers understandably like simple dressings, inexpensive hooks, synthetic dubbing, turkey feather wings, and lots of deer hair. On the other hand, the level of skill is high, domestic hackles are the best in history and the choice of designs is vastly wider.

Pretty or not, the new designs have helped us to catch difficult trout. A friend of mine has been fishing the same Montana spring creek since 1963, and in the early years he used only the flies tied by Harry and Elsie Darbee. Harry Darbee even came to Montana, did a stream survey and joined in the fishing. My friend comments that, with the old Catskill flies, trout rising in flat water could not be caught. They get caught now – browns the size of salmon on little imitative dry flies.



Terrestrial: McMurray Bee

Dave Kumlien of Montana Troutfitters in Bozeman tells me that most of the students in fishing schools want to try dry flies first, then nymphs. Perhaps fun explains that: some people fish because they enjoy it, and they usually enjoy floating flies most. If you want a more profound reason, however, consider that dry flies have led the trend to imitation. In 1959, 14 percent of the dry flies Orvis listed

were imitative; in 1989, 74 percent. In the catalog of the Cold Springs Anglers in Carlisle, Pennsylvania, six out of seven dries are imitative – seven out of seven if you include the Adams.

Streamers Holding Their Own

In both the Bailey's and Orvis catalogs, streamers now make up 15 percent of the flies offered, representing a slight decline over 30 years for Orvis and a slight increase for Bailey's. Tom Rosenbauer, however, reports an increase in sales of what he calls "meat flies" – those like the Woolly Buggers and rabbit-strips, which are used for float-fishing the Western rivers, among other things. In 1959, I had never seen a real driftboat, and today the traffic on some rivers has to be restricted by regulation.

Richard Parks of Parks' Fly Shop in Gardiner, Montana, writes that new designs "have virtually wiped out the market for the classic streamer types." The Thomas & Thomas catalog does not list any of the old streamers in trout versions and has only two bucktails (the hair-winged versions of the streamer). But it is easy to find Mud-dlers, Matukas, Dave Whitlock's beautiful baitfish sculptures and more. In my view, most of the new designs are improvements on the old, which had a design defect: the long feather wing was inclined to wrap around the hook. The bucktails weren't as troublesome but the deer hair didn't have as much action, either. The best of the old designs was perhaps the Spruce Fly, which had a wing-and-hackle arrangement giving good action without problems. The Spruce Fly is still doing well.

Streamers are usually thought to represent small fish – sometimes crayfish, mice, frogs, and indeterminate meaty items. The British have recently adopted some of these American fish-flies. It may be significant that the streamers followed the imported rainbow trout.

But the streamers' lukewarm reception from fishing-school students must mean something. In the late '50s, most of us young fanatics believed in big flies for big fish. Joe Brooks was writing about Platinum Blondes, not mini-bugs with maxi-names. We waded deep and made long casts with stout bamboo

rods. I wanted to slay a mastodon, but an eight-pound landlocked salmon was all right too. Edward R. Hewitt had written that the yen for size marked the second stage of a fisherman. Seems that the 1980s crowd is moving faster into Hewitt's cerebral third stage.

It could be coincidence, but consider this: only dry flies and some kinds of nymphs are increasing their market share. In these flies there is a strong trend toward imitation. One category is disappearing (traditional wet flies) and one is holding its own (streamers). The imitative trend has not caught on in these categories. Today's anglers, it seems, want the science as well as the craft of fishing. Wet flies and streamers are not offering the science. Streamers can be highly imitative, but most are not. In the 1959 Orvis catalog, three of the streamers were imitative; in the latest, four are. In Bailey's, the number has gone from one to seven. (And in the catalog with seven imitative fish-flies, there are 73 imitative dry flies.) But this is not an appeal for complicated streamers. The trout seem to respond just as well to simple hackle designs like the old Spey flies, Jack Gartside's soft-hackle streamers, or the Carey Specials in Bill Hunter's catalog.

Nymphs – Change and Confusion

A natural aquatic nymph is an immature mayfly, stonefly, dragonfly, or damselfly. An artificial nymph these days is anything that doesn't float high or have a wing, and the wing is negotiable. Have a look at the "nymphs" pages of catalogs. They now show artificial larvae, pupae, scuds, shrimp, cress bugs, crayfish, fish eggs, salmon flesh, and drowned sheep – if that's what the Woolly Bugger represents. Whatever it is, it works. It's keeping about half of my fishing buddies from starving (the half who are driftboat guides). May that kind of wool never be sheared. But if anyone celebrates the Woolly Bugger in verse, I promise not to read it.

Identity problems are non-fatal afflictions of adolescents, resembling love-sickness. Perhaps the nymphal confusion explains why my respondents found it difficult to generalize even about the popularity of these flies. In Bailey's catalog, 20 percent of the

flies were nymphs in 1989 – up from seven percent in 1959. That sounds like fast expansion. Remember, however, that a lot of things now called nymphs are, by an older definition, just wet flies. The market share of nymphs and other wets has shrunk from 56 percent of all flies in the 1959 catalog to 34 percent in 1989. In the Orvis catalog, too, the things called nymphs have grown, but not enough to compensate for the decline in other sinking flies. This came as a surprise to me.

Today's anglers, it seems, want the science as well as the craft of fishing. Wet flies and streamers are not offering the science.



Nymph: Dun Variant

By any name, many of the new sinking flies are good – better and more varied than those in the 1959 catalogs. The puzzle is why we called them all nymphs. This time fashion does seem to be involved. The argument over



Nymph: Emergent Sparkle Pupa

The flies we call nymphs, then, are hard to fish and easy. They catch lots of fish and none, big and small, shallow and deep, drag-free, upstream and down.

G.E.M. Skues' 1910 book on mayfly nymphs made them seem naughty but nice, sort of like a book banned in Boston. Hewitt became their leading spokesman in this country, starting in about 1933. He found them totally awesome, citing a finding that "over 80% of the trout food consisted of nymphs." They were, however, much more difficult to fish than other flies. What the correct method was, Hewitt did not make clear. He didn't specify what species he was imitating, either, but he introduced elaborate flat-bodied nymphs on which one of his customers caught 165 trout, as opposed to 35 on a round-bodied model fished for the same length of time. These horse-feathers wafted around for decades. Perhaps Hewitt's mythology conveyed what we wanted to believe about our sport.

When strip-casting in icy rivers with a sinker and float, I like the sound of "nymph" – it's more fragrant than the maggots I fished that way in the '50s. At the other extreme, the original Skues-style nymph is fished upstream, unweighted and drag-free, with no strike indicator. In England (notes Conrad Voss Bark), the Piscatorial Society considers this kind of nymph a dry fly, which is as creative as anything we Americans have done with the language. Nymphs suitable for Skues' style of fishing are scarce in the catalogs. This is odd, considering the popularity of spring creek dry flies; the Skues method is adapted to difficult fish in the same streams.

The flies we call nymphs, then, are hard to fish and easy. They catch lots of fish and none, big and small, shallow

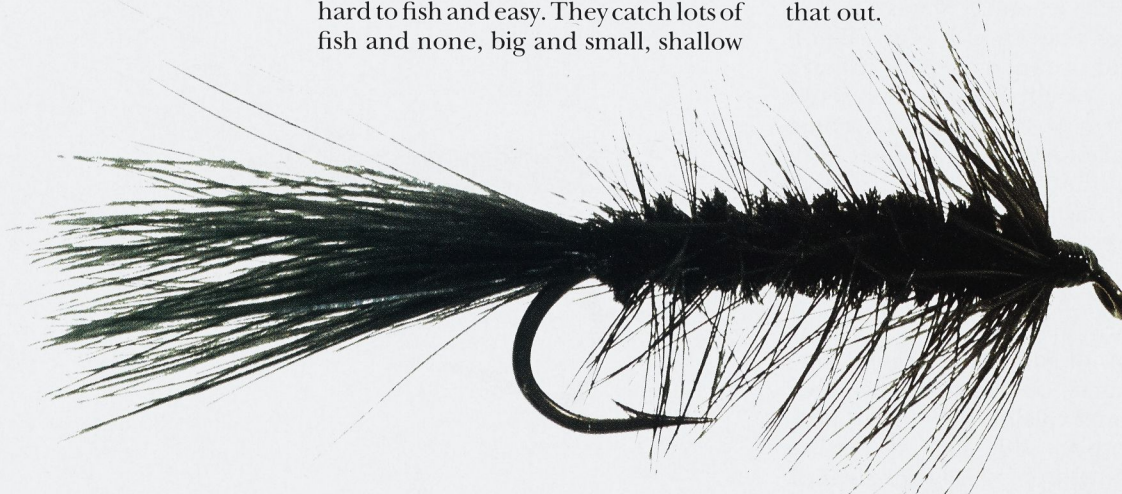
and deep, dragging and drag-free, upstream and down. Charlie Brooks described 14 methods of nymph fishing. I'm delighted that one of them lets me spend February days with a bait that is indisputably artificial, though disputably a nymph.

Technology has encouraged the proliferation of methods, and perhaps nymphs will yet have their boom. Sinking lines let us fish deeper. Graphite rods cast split shot without hooking our ears. Strike indicators, alias floats, help with the biggest nymph fishing problem – spotting the take-in time to hook the trout. We now do with sinking flies things that we used to do with bait and hardware. We look on this as a step up.

Up? Isn't that the way to elitism? Or is it the direction that the whole country has been moving? In a market leaping from tail fins to four-wheel steering and from chop suey to lobster in black-bean sauce, trout flies seem to offer what Americans want. My respondents were kind enough to address questions that I did not know enough to ask, and some of them had heard that fly fishing is growing faster than any other field sport. It may be true. No one could substantiate it in the absence of market statistics.

Thirty years ago, we wouldn't have worried as much about proof; back then we all knew, because somebody said it once, that nymphs were 80 percent of what trout ate. We're learning. It's confusing and untidy – fast change usually is – but it's fun.

And lots more of us have figured that out.



Nymph: Woolly Bugger

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EDITOR'S NOTES

It is commonly supposed that the first appearance of sportfishing (as opposed to fishing for food or commerce) in Western literature was *The Treatyse of Fysshynge wyth an Angle*, which was printed in 1496 in the second Boke of St. Albans. This is the text alleged to have been penned by the legendary English abbess Dame Juliana Berners, and the assumption has been that fishing for fun did not exist in the civilized world before then—because if it did, it would have been written up by some earlier primal outdoor writer.

Thanks to recent thorough research by a Canadian scholar named Richard C. Hoffmann, it looks now as though this assumption is all wet. (The Dame may not have had anything to do with ye treatyse either, but that's another story.) Hoffmann has found a number of references to fishing as a pastime in earlier writings from England and also from France, Germany, Austria and Spain. Some of these predate the *Treatyse* by several centuries, and the clear picture is that fishing was enjoyed by men of leisure then as now. One of the German books describes a young prince wading barefoot in a stream in pursuit of trout and grayling with a *vederangel*, a "feathered hook," while his girlfriend lounges on the streambank with their dog. Did they have a sixpack of the local gewurtztraminer cooling in the shallows and a pair of all-terrain vehicles grazing nearby on the grass?

The earliest European angler-writer that Richard Hoffmann uncovered was a young 12th-Century French aristocrat known as Gui de Bazoches, who appears to have led the kind of varied and relaxed life still enjoyed today by the scions of the well-to-do. A canon in the church, he tagged along on the Third Crusade, then studied with a favored uncle in his country castle. He obviously enjoyed a proper upbringing, for in his letters Gui says he has interspersed his studies with fowling, the chase, and with fishing for every sort of game with every means of capture: hook and line, nets and seines, for salmon, pike, barbel, eel, perch and so on. And this fishing was entirely recreational.

Hoffmann's thesis is peppered with other highbrow fishermen—kings, emperors and assorted nobility, all passionate sportsmen. The concepts of fair play in fishing were so well established in medieval Europe that Hoffmann has even found a British angling manuscript that was intended as a metaphor for proper sexual behavior, cautioning men against "poaching in others' waters" and similar heinous carryings-on; it's a poem called *Piers of Fulham*, and parts of it sound surprisingly modern, if slightly backwards. The unknown author, reports Hoffmann, "laments overfishing, especially by those unscrupulous fishers who take young fish before they reach their growth, and himself swears to keep only those of full size." (Fisheries biology was in its infancy, remember.)

My favorite of Hoffmann's fishermen, however, is William Wallace, an early hero of the Scottish struggle against English rule. Young Wallace, according to his later biographer, Blind Hary the Minstrel, was so wrapped up in his fishing one day in the year 1296 that not only did he fail to avoid the approach of a band of the foreign oppressors, he'd also apparently left home without any weapons. Proper bullies, the English began to plague him and to take his catch; words were exchanged, and one of the soldiers drew his sword. Wallace brained the fellow with his net, then grabbed the sword and killed three of the five, making his getaway on one of their horses in the bargain. It's little wonder the British have developed such a rigorous etiquette concerning fishing rights.

All this is interesting, at least in the sense of *The more things change the more they stay the same*, but, between us, we suspect that sportfishing has been around since Adam and Eve, whether anyone took the time to write it up or not. It's like saying (as scholars do) that mountain climbing was invented by Sir Edward Whymper, that no one climbed a mountain "because it was there" before he did it—and wrote about it—late in the 19th Century. Ancient Egyptian frescoes reportedly depict anglers with long rods and feathered hooks; and somewhere there's likely to be a picture of some royal person standing atop a large hill. The hair to be split, however, is whether or not these people were having fun, or if they set out to have fun. What do you think?

But, lacking a wayback machine, scholars can only wrangle about the fishing that actually appears on paper (or on walls, but it's harder to infer from a single scene whether or not the subject is fishing for "recreation to the body and benefit to the soul"). And while Hoffmann found numerous lengthy references to sportfishing prior to the *Treatyse* and outside of England, it seems that all later angling writings, at least those that form a cohesive body of literature, came only from Britain—Izaak Walton, Charles Cotton and so forth. The literary trail of fishing dies out in all other instances, and after that all cultures looked—as we do today—to England as the historical champion and developer of our sport.

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LETTERS

The Hardy Fix

The letter from Robert Demb regarding the Hardy Ocean Prince reel, in your July/August issue, has prompted me to write and congratulate you on your magazine. Those of us lucky enough to see copies in England enjoy each issue.

May I take this opportunity of confirming the Editor's reply to Robert Demb's letter. The Hardy Ocean Prince reel underwent the two minor alterations stated. The reel is fully capable of handling dorado and school-size yellow fin tuna to 65 lbs.

House of Hardy operates a policy of continuous development with the view to improvement.

James L. Hardy
Marketing Director, House of Hardy
Willowburn, England

A Glaring Error

I wish to express concern at what I believe to be a "red herring" offered to the reader of "Fishing Glasses" by Tom Rosenbauer [May/June].

We are told, "The most glare occurs when light is reflected at an angle of 15 degrees above the horizontal, so sunglass polarizers are set to absorb glare coming off a surface 30 feet away at an angle of 15 degrees. Glare that's closer can be eliminated only if you bend down or back up."

Now I'm prepared to accept the worst glare at 15 degrees, but I would like to be told its basis in physics. What I'm not prepared to accept without a good explanation is the second part of the statement, which seems to ignore totally Brewster's Law (as well as empirical data gathered while fishing).

Brewster's Law expresses the relationship between reflected light and polarization: basically, you get maximum polarization of light reflected from water if the light strikes the surface at an angle of 37 degrees above the horizontal. If you now view the reflection with polarizing glasses, they will effectively cancel (absorb) the reflection containing the polarized light, transmitting only the nonpolarized light. At angles other than 37 degrees the polarization of the light is less and thus the efficiency of the lenses in subduing reflection is reduced. Not 15 degrees.

A.F. Hewlett
Kambah. ACT, Australia

You are correct. Author Rosenbauer has been sent to Georgia to gather fatwood.

Future Flies

As a long-time friend of Joan and Lee Wulff's, I naturally took great interest in the

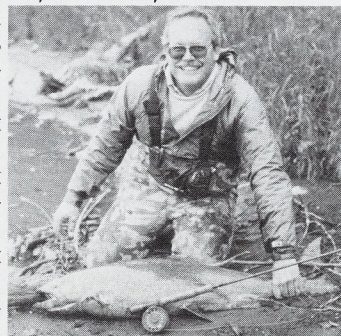
LIVING PROOF

This king salmon weighed about 50 pounds. It was caught and released on July 23, 1986, by Ross P. Hauck on the Togiak River, Alaska, during final field performance tests of the Ross Gunnison #3 reel.

During a week at Andy's Alaskan Safari, Ross caught more than 200 salmon, many 10-15 pound chums that were foul-hooked. If you've ever accidentally snagged a trout, you can imagine what it's like to fight a tail-hooked salmon against an Alaskan river. The Gunnison's amazing drag not only beat the fish, it beat the waters.

There were six Gunnisons used in camp. They were purposely dropped in the gravel,

banged around boats, dipped into the rivers and generally abused. The result: Not one failure. Pretty terrific for a \$132 reel.



If salmon, steelhead, stripers, bonefish, large trout, bonito, yellowtail, tuna, muskie or other high-speed, long-run fish are in your future we hope you consider a new Gunnison.

Ross Reels. Ten models of American-made fresh and saltwater fly reels fully machined from the finest aircraft aluminum. Available at Authorized Ross Reel dealers.

For a free brochure with accurate line and backing capacities, write:

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MONTROSE, CO 81401 □ PHONE: 303/249-1212

(Brown)

re the "body of literature":
never have so few angles caught
so few fish & written so
much about it.

Brown Trout

Proper

copies to Paul Schullery, Bob Bachman, Jack Heddon, Herbert W.,
Klinkenborg, *Berl*

(1 reatypre)

Came to us w/ a code
of ethics. (?) (See
C & R file.)

Brown

seen w/6-26-92 in home
pool. Visible over water,
in visible brown feeding
quietly, selectively. Feeds
like butter. Red fish.

Nt. fancies were also part of British tradition
(same name & pattern - mostly lake & loch fish).
Work into w/f on dish bryke.

~~my son's position person is with ~~him~~ look for
fishing.~~

science not "better" than ^{fact} ~~art~~ - but ~~not if it would~~ I'd
rather have my appendix removed by an M.D. than
a shaman. Depends what you want.

"March toward extinction" ~~do~~ work for brown, & maybe
the rainbows (+ heads of people) in Henry's Fork.

Scientists and historians are not the only ones who
wish we would stay out of their domain.

The students of literature ^{suggest} ~~say~~ that we don't write
it, just as the scientists and historians wish ~~us~~
that we would stay out of their domain.

Brown

art needs originality, + ours wasn't
till we learned about our nature, not
the British kind. (imitation is learning
about nature)

Dame Juliana?
Small streams?

Fly fishing could not have been invented in these technological times. Rod and line are inspired by the buggy-whip, of all things, and the reel plays no part in casting. A person accustomed to motors, machines, and microchips would never have thought of this. Every flick of the fly is a rejection of progress, a rude gesture to the Zeitgeist. [] And so, of course, new anglers are flocking to the sport.

Self-sports and simplicity/lightness/elegance

Self-powered sports enforce simplicity on their equipment. We humans must go light if we are to achieve much with our weak bodies. Thus, lightness has always been prized in rods and guns and canoes and bicycles. The best of these things still require much human labor, even if the material is modern, and it is still difficult to improve on those made fifty years ago: a hundred years, in the case of guns. We have the same old bodies and skills. We can always do more if we can shave a half-ounce off our rods, four ounces off our bicycle frames or guns, eight pounds off our canoes.

Some of us flee to self-sports because their equipment is personal and elegant. Cars haven't been this way in years. Motorboats are ugly. Houses done up by interior decorators lose their spirit when ^{or she} he leaves the premises. So we caress our fly-rods, oil our guns, wax our skis, overhaul our bikes, varnish our canoes.

The equipment loses meaning when it is not driven by the sport. The urge to acquire is strong, to be sure, and we have more rods and guns than we need for fishing and hunting. I do not suggest that we should go fishing with Phillippe(?) rods or hunting with engraved matchlocks -- those should be in museums, with the skulls of early humanoids. But the souls have departed. Vince Marinaro thought that no plastic rod had a soul, and the point is well taken, but I suppose that even graphite acquires a vestigial spirit when it is cast, prayerfully, over enough fish.

re the intellectual: I don't like it any better than hunting pheasants/woodcock - but it's different.

Most of us can afford no better, today, and I suppose that the gods will not penalize our poverty.

Brown
The fly-fisherman has special problems with lightness, because he is trying to do something that is both physical and intellectual. Most other self-sports take knowledge, skill, and thinking, but they are not intellectual in the same sense. For the physical part the fly-fisherman must have rod, reel, line, waders, and their accessories. For the thinking part he must have flies. They do not weigh much, but sometimes their accessories do. The books can be left home, with the fly-tying gear, or perhaps in the car. But there are the vests, knives, clippers, tippets, insect nets, and the rest. We burden ourselves with too much of this. An accumulation of these things -- each elegant individually -- does not leave me, the bearer, cutting an elegant figure on the stream. Never mind. I trim the load where I dare, and profit from each cut. The part I see -- stream, trout, trees, insects, artificial flies -- these are elegant. I don't see myself, except as an occasional angular, bulgy reflection on the water: Quixote in hip boots. Even then, I am more pleased with my silhouette in waders than in a car. I do not (to understate the case) look as good as my wife in her dancing shoes and tights, but then she does not go on the stream in these things.

We are, after all, discussing the kind of elegance that is driven by function -- not by show. The function of fishing apparel is to protect the bearer's skin. The destiny of fishing

apparel is to be wet, torn, and faded. These are honorable scars,
but better on my jeans than on me.

Surface-feeding of brown trout

Generalization dangerous - some trout individual or population always contradicts - but here's a fact:

I can control the mix of my catch by varying level of fis.

Dry: many browns (up to, say, 12-18", depending on river. By one no.) ^{Brook to} Deep nymphs: Whitefish, some old + brown.

Mid-water: ? Some of everything.

Rainbows highly variable.

~~Running water is a time machine.~~

re browser: line from Roman poet Martial: (Date?)

"She has not seen the scars rise

Decayed, and killed by painful flies!"

(But presumably translates by an
Englishman)

He started on "history" article for
Tom Pero.

at least by changed definition of profession ~~historian~~ ^{by}.
N/A a historian, - find most of what passes for history
these days as admirably ^{scholarly} + step-in-theory.
Play Paul's look as ^{historian} ~~historian~~ but kept the assails. His interest is
in influence; mine in origin of ideas.

Historians may
be led by looking
books too.

Formed by diff background from Paul:

- lived in Ireland, coming to England
- lived in Latin countries + knew them, but aware of
how non-British they are.

Here cite the Schippers title
Fox Tenier, in Gordon & Sheedy's.
(Note I fell for this in 1st edition)

~~Since now~~ I want to know origins ~~not for~~ as a scientist
does, not a historian: to try to keep ideas untangled
& give credit where it's due.

We use the current American fly-fishing ethic(?) —
not the frontier ethic — to the brown trout +
that the British mode of life. Conjunction of 3 elements
we take for granted — until + unless we live in
other cultures + see how they do it. (Latins, Russians + Soups)
chronologically:

1) Sportsmanship. Hunting: much older than fishing.
originated in chivalry? French input — but they didn't
apply to fish.

Restraint / Rules — tightened as necessary to give
game a fair break. Tightened to max w/ Holford.

{ Did Liv? for food, + still do, but for more than that.
(Then led to FFF here)
Even an assumption that fish enjoyed the game (Skues)

Pressure for restraint became even ~~more~~ greater in
this country, where all ~~states~~ ^{showed} had access to some
~~some~~ hunting + fishing.
e.g., FFF, persons against killing deer.

// See Sch., p. 247: Americans "graduate" to FF.
(Latins don't). Maybe by point (and Sch's)
i.e., w/ flies, we can return fish unharmed.

(We did + do differ from Brits on ~~some~~ details, but not
fundamentals.)

→ to imitate

Dictionary

Proper

truck, de.luxe Cheapest variety of truck, with rubber floor mats, plastic seats, and manual windows, used for getting from home to hunting or fishing and usually back.

truck, spec.ial lim.it.ed de.sign.ers' e.di.tion Vehicle for the expression of personality, costing approx. twice as much as

2) ~~Romanticism~~ Enjoyment of nature - a kind of
romanticism before romanticism. (Pope)

Swift liked to live in country & a time when nature did not.
Thought it good for you: like Beaman, Walton.

Beaman - (De Wode) was not just an early
fishing book, but one of first books on
any subject in English. like Helden's m.
work in Augustine's Dates

3) ~~Great~~ tradition, based on fact that British brown
trout would eat some bait + not other flies +
not others. Call it selectivity today, + we abuse the
term, ~~but~~ but brown + a few other fish behave
that way. (all trout including I. fontinalis, plus
whitefish.)

Made the sport worthy of best minds.

Beaman or whoever.

Darby, Walton

Skinner's reference to an "intellectual passion"

"a mental recreation" - Jordan (p 116)

Fact that Fly fishing began w/ a general
theory (unarticulated) separates it from all other
sports, field + otherwise. Made it science as well as
art - chess as well as chase.

We know the trout, not just the culture, led to this,
because some thing happened in Spain - w/ ^{fewer} consequences.

Dictionary

Proper

months. Ferrules on the Payne rod came apart with a satisfying pop and it was worth the seventy-five dollars, but I hadn't saved ten years' allowance yet. The Russell boots took only two years' savings and have been worth every penny of it.

It is true that in recent weeks, or possibly decades, the catalogs have been so appealing that shopping in person has not seemed necessary. Mr. Bean kept me on his mailing list as a deserving charity for years, then Mr. Orvis started selling everything in the world I consume, and later Mr. Hunter and Mr. Matthews started sending fly-tying catalogs worth about ten dollars in return for my annual orders of \$4.49 in thread and peacock herl. Now I get other good catalogs -- about three of them every day. At least, they come in my name. When the packages arrive, they generally seem to be large, light-w

This tradition had great power: comparable, among smaller
group of people, to Shakespeare + King James Bible. ~~It~~ No one
looking back, but literature of great force:
~~Benson~~ Benson: both the theory + the personal.
sportsmanship?

Walton: personal
sportsmanship?

Theory: { Benson
Romans
Hulford
Skuse

British practice not well adapted to our conditions, by a
large, but we copied it eagerly - ~~it~~ sometimes honestly
(John Brown), sometimes w/o attribution (a kind of
intellectual poaching common also in the UK).

Still happens - allude to Tansley in Switzerland.

But also happens now in reverse.

Better adapted than we put Brown forward - but
we never put British scarcity of insects.

Design better adapted here.

Perch, Corixas look wise much like
trout. Saw them 6/4/88 in Rot Fall.

(Many creatures learn to take advantage of the
vertical film of foam caught between air + water world.
~~How~~ I have seen even scud do it & have
caught crabs on dry pier. But the brown seeps
to have adapted especially well to surface feeding.)

Brown Trout

Surface food: See Roberts, pp. 50-51

~~feeding~~^{citing} study by Dr. Welland on the
Wells River Dec:

"From June onwards aerial insects were not only the single major food source but that they were the majority food, being greater than the total of all other food sources. As the trout grew older they consumed more surface food."

About 2000 words,
including sidebar

Datus C. Proper
1085 Hamilton Road
Belgrade, MT 59714
(406) 388-3345

THE BROWN TROUT AND THE GREAT TRADITION

This is the fish that made us think.

Brown. One knows, right away, that such a name comes from some distant place and time. If we were doing it today, we would choose a designer label -- something with truculence, glitter, syllables. We would call our new species a cutthroat, say, or a golden, or a rainbow. But the brown is the original trout, and it does not need to prove anything. This is the fish that led humankind to invent fly-fishing, which is a role comparable (in the eyes of anglers) to that of wheat in building civilization.

Three quirks of biology and history explain the brown trout's effect on us humans.

First, the rise. This fish feeds on insects near the surface of the water, where you and I can watch.

Second, selectivity. The brown rejects our artificial flies, making us try ever harder to imitate the natural insect.

Third, the tradition. People have been fly-fishing, and writing about it, since long before the discovery of America.

Getting A Rise Out Of Him

What we humans call the surface of the water is, for a fish, the surface of the air. Insects get stuck in this boundary between worlds, and trout feed on the insects. Biologist Robert Bachman describes the brown trout as "a fish that has evolved to capitalize on a very specific diet: a relatively helpless adult aquatic insect, loaded with high nutrient value -- eggs."

The trout, in turn, has high nutrient value for humans, who have long tried to deceive it by wrapping hooks in feathers and fur. Today, we have the technology to keep our artificial flies afloat, and dry-fly fishing has become the most popular of methods. Historically, flies probably got soaked after a few casts and drifted in mid-water. Even so, they imitated surface insects and the trout rose to take them.

The brown trout's rise made fly-fishing a game of wits played out in plain view. Anglers developed better and better equipment, and by five hundred years ago, sophisticated flies were already in use. In order to survive, brown trout became clever, which in the oldest sense means, according to my dictionary, "expert to seize, dexterous." Bob Bachman demurred when I once suggested that there was something spookily rational about the brown's decisions. Well, all right -- no fish reasons like a human. Centuries of angling pressure have, however, forced the evolution of a trout that can cope with us.

The Fish That Chooses

Half the fun of fishing for rising trout is seeing the object of your lust right there, playing catch-me-if-you-can. The other half is discovering that you can't. When you begin to think that you have the hang of fly-fishing, you find a more desirable trout. There is always one somewhere upstream that you are not clever enough to fool. Nick Lyons writes that what he loves most about the brown trout "are his eating habits -- habits so fastidious, so snobbish, that I'd probably abhor them in humans."

I surmise that we taught the trout to be selective by exaggerating a natural characteristic, in much the same way that we bred pointing dogs to exaggerate the wolf's pause before pouncing. Even innocent trout sometimes "concentrate on just one species" of food, writes Bob Bachman, adding that he "believes they do it to feed more efficiently." And all trout are extra-wary at the top of a stream, even in a wilderness. They know that they are vulnerable, up there, to natural predators. We added a complication when we made fake flies that looked like real ones. A trout that could not discern the difference would have been removed from the gene pool.

All of the insect-eating trouts are selective on occasion. Day in and day out, however, most of us find that brown trout are the most demanding. It is not a coincidence that the trout which has known us longest is the most careful of the food she eats -- or that her selectivity has caused us to write volumes. This choosiest of fish has caught the fancy of authors from Aelian, in

the second century A.C., to Zern in the twentieth.

The Great Tradition

Over all the centuries, fly-fishing has remained unchanged at core. The same could be said of falconry and the chase, which may have even longer histories. All three sports were widespread in Europe during the Renaissance, but their literature dwindled, over time -- with one exception. In Britain, an angling tradition took shape, flourished, and spread to the colonies with the English language.

Fly-fishing in the great tradition has, by now, colonized most of the world's trout zones. Americans, Australians, Japanese, South Africans, and Scandinavians have come to share not only a method of angling but an attitude toward the sport -- a way of thinking that was already clear in the fifteenth-century Treatyse of Fishing with an Angle. It must have taken a powerful idea, and a remarkable fish, to convert the world.

About now, however, we need to pause for a cool-down. A woolly old natural philosopher named Izaak Walton portrayed anglers as gentle spirits, which shows that he did not know many fly-fishers. We are in fact a feisty tribe, and I may have stirred old arguments by writing about rising trout and selectivity. Tradition is an even more emotive topic. We normally call on it only to create atmosphere, or to sanctify what we mean to do anyhow. We adore tradition at a fairy-tale level, like royalty, but we do not invite it to go fishing. Unlike royalty,

tradition comes along uninvited.

What is unusual about the fly-fishing tradition is that it has two dimensions: art and science. The artful side includes our skills and tackle, which can get complicated if we wish -- and we usually do. Rods, reels, and especially flies are such delicately appealing objects that they are collected even by non-anglers. The art of fly-fishing accounts for many of its books, too.

Other sports, however, can also claim their share of art -- but the science of fly-fishing is unique.

Science is a careful way of seeing nature, and one of its rules is that observation must be guided by a theory. Traditional fly-fishing proceeds from the theory that trout are most likely to take an artificial fly resembling the natural food of the moment. It is a valid theory -- simple, elegant, and accepted by many anglers, but not all. Those who fish with imitative flies test the theory constantly.

No other sport is scientific in the same sense, as far as I know. People involved in other sports have inquiring minds too (being often the same people), and every modern sport gets help from scientific research. But only fly-fishing is guided by a theory.

The theory of imitation accounts for many of the fly-fishing books. Compare the abundance of angling entomologies, for example, to the scarcity of literature on the pheasant -- another clever species from the Old World. The bird reached America at the same time as the brown trout and remains, perhaps, equally

popular. Pheasant hunting takes art and passion and a very clever dog, but there is one basic difference from trout fishing: You take a shot as soon as you flush the bird. When you have spotted your trout, you must still persuade it to eat, and that is where the science comes in.

Do you wonder what American fly-fishers were like before they imported the selective brown trout? Well, 202 anglers sent letters to Mary Orvis Marbury in the 1880s. These have been reprinted in a beautiful book titled Favorite Flies And Their Histories. To flip its pages is to visit a land of shady streams and native brook trout. A few of the contributors, especially from Pennsylvania, seem to have been skilled fishermen, but most sound as if they would not catch much a century later. They rarely describe their method of stream-fishing, perhaps assuming that there was only one: casting down and across the stream with big, fancy wet flies.

Of course, those were innocent times. Or were they? Native brook trout were easier to catch than browns, clearly, but the anglers in the book wrote highfalutin prose and their flies were stiff, stylized, and gorgeous -- as close to decadence as to innocence. Charles Dudley Warner (one of the contributors) wrote that "The trout fly is a 'conventionalized' creation, as we say of ornamentation. The theory is that, fly-fishing being a high art, the fly must not be a tame imitation of nature, but an artistic suggestion of it."

Warner's notion was not a theory at all, in the scientific

sense, and his ornaments burned out quickly. None of them are widely used, now, in the original wet-fly form. (The Royal Coachman has survived by turning into a dry fly.) But I do not mean to suggest that the century-old flies were worse, in some absolute way, than modern ones. You have to decide whether flies should be designed to please trout or people. If people, then the old flies were as good as the new -- better, by Charles Dudley Warner's standard of artistic ornamentation. The 1880 flies took more skill to tie than most on the market today. They meant as much to their users, too.

Fly-fishers might have continued to prefer Charles Dudley Warner's "high art," but a trout that was new to this continent arrived from Europe in 1882. Writer John McDonald calls what happened next "the brown trout revolution in America." The revolution spread westward from New York and Pennsylvania, and by 1927 Scotty Chapman was using dry flies to catch fussy brown trout in Yellowstone Park. Anglers everywhere began tying flies to match natural insects found in the stomachs of trout -- a process recommended by The Treatyse of Fishing with an Angle in the fifteenth century. The New World had become part of the great tradition.

Perhaps no fish can be said to think. The brown trout, at least, made us think.

(Sidebar on next page)

(Sidebar)

The Biologist's Brown Trout

Biologist Robert A. Bachman gathered hard information on brown trout in Spruce Creek, Pennsylvania. Young fish grew rapidly in this fertile limestone stream, reaching a length of eight inches in two years. It took four or even five years, however, for the average trout to reach twelve inches. Most never attained a length of fourteen inches.

The brown trout Bachman observed would dash for cover if startled. When feeding, however, they occupied the same lies day after day, and the feeding sites were often in bright sunlight, far from overhanging limbs or other cover.

Individual trout of all ages from young of the year to eight years had much the same feeding pattern. They rarely got enough to eat, so from dawn to dusk, April through October, they were always on the lookout for food. There were short flurries of more intense activity during mayfly hatches and spinner falls at dusk in May and June.

Of more than 15,000 "feeding events" that Bachman recorded, only some 7 to 13% took place on the bottom of the stream. The rest of the events were divided about equally between food on the surface and in mid-water. Many nymphs and pupae were present on the bottom, but they were hard to see and many were hidden in spaces between rocks. Food items in "the drift," on the other hand, were silhouetted against the sky and therefore easier to see.

"To you anglers who like to dredge the bottom with weighted nymphs," Bachman wrote, "I can only remind you that the trout in Spruce Creek took less than 15% of their food off the bottom and moved a much shorter distance from their lies for bottom food than for food in the drift."

Biologist Bachman does not claim to have described all possible brown-trout adaptations. Anglers have been fascinated by "cannibal" browns -- big old individuals that eat other fish, sometimes after dark. The behavior observed by Bob Bachman is, however, the one that has accounted for most fly-fishing literature over the centuries.