Bringing Back the Greenback
Oncorhynchus clarki stomias

by Gordon M. Wickstrom

THE CUTTHROAT TROUT is now the glamor fish of the mountain West. In Colorado, rediscovered and saved from extinction, the particularly beautiful greenback is the most glamorous of them all. How this lovely and delicate fish was rescued after being thought extinct for so long is a tale of two cultures: one of the early 1950s and the other of the late 1960s.

In 1952, when the unrecorded discovery of living greenbacks first took place, anglers little esteemed the cutthroat trout. Although highly regarded on the table, it was thought to be a poor fighter and a rather easy, none-too-interesting mark. Rainbows and browns suited better the established idea of what a trout ought to be. Furthermore, cutthroat culture in the hatchery was at that time difficult and expensive and, therefore, neglected. The exception to this low assessment of the cutthroat was the considerable regard anglers had for the carefully protected Yellowstone black-spotted cutthroat in its native Yellowstone Lake and River.

The long and the short of the matter is that in 1952, when one young Colorado scientist got excited by some little trout he had just caught and came to suspect that they might be native greenbacks, few anglers felt any particular interest in "natives" or any investment in the "nativism" idea as partisans promote it today. And even if that first and early rediscovery of the greenback in 1952, which is the burden of this essay, had been well publicized and promoted, it is still highly doubtful that there would have been the enthusiasm necessary, those nearly fifty years ago, for the reestablishment of secure and fishable populations of this old "Rocky Mountain speckled trout." The 1969 date for the greenback's official rediscovery is significant. Only after that date—and its social, economic, and political upheavals—could anglers, ecologists, and politicians come to so value and take pride in this ascendency of a "native" species over the "exotics" in our streams and lakes.

The angling worm of those tumultuous times took a turn toward the New Left, "nativism" becoming the sign of the times on the environmental, ecological, and associated political fronts. There was no fish better qualified than the Colorado greenback to lead the way to the restoration of conditions as nearly "pre-European" as possible, conditions in which Rocky Mountain "native" fishes could thrive. It was the greenback that the Colorado legislature nearly stampeded to name the state fish in 1994, replacing, with a stroke of the pen, the tough, dependable, admirable rainbow, now ignominiously under suspicion as that "interloper from California." The metaphor is impossible to mistake.

If the first cutthroats evolved in the Pacific Northwest from the parent rainbow, one may well ask how they found their way to the interior Rockies where they adapted so well and individually to various troutless watersheds such as the Snake, the Colorado, the Rio Grande, and the Yellowstone. Students of salmonid development now feel quite sure that the mechanism for this movement was the sudden occurrence in periods of glaciation of ice dams (possibly also seismic events) that blocked ordinarily westward flowing streams on their way to the Pacific. These ice dams forced both water and trout back over the shoulders of the Rocky Mountains, even over the Continental Divide, to flow down south and east in streams old and new.

Lewis and Clark, on their way west in 1804, first encountered and described the cutthroat as a distinct species, and William

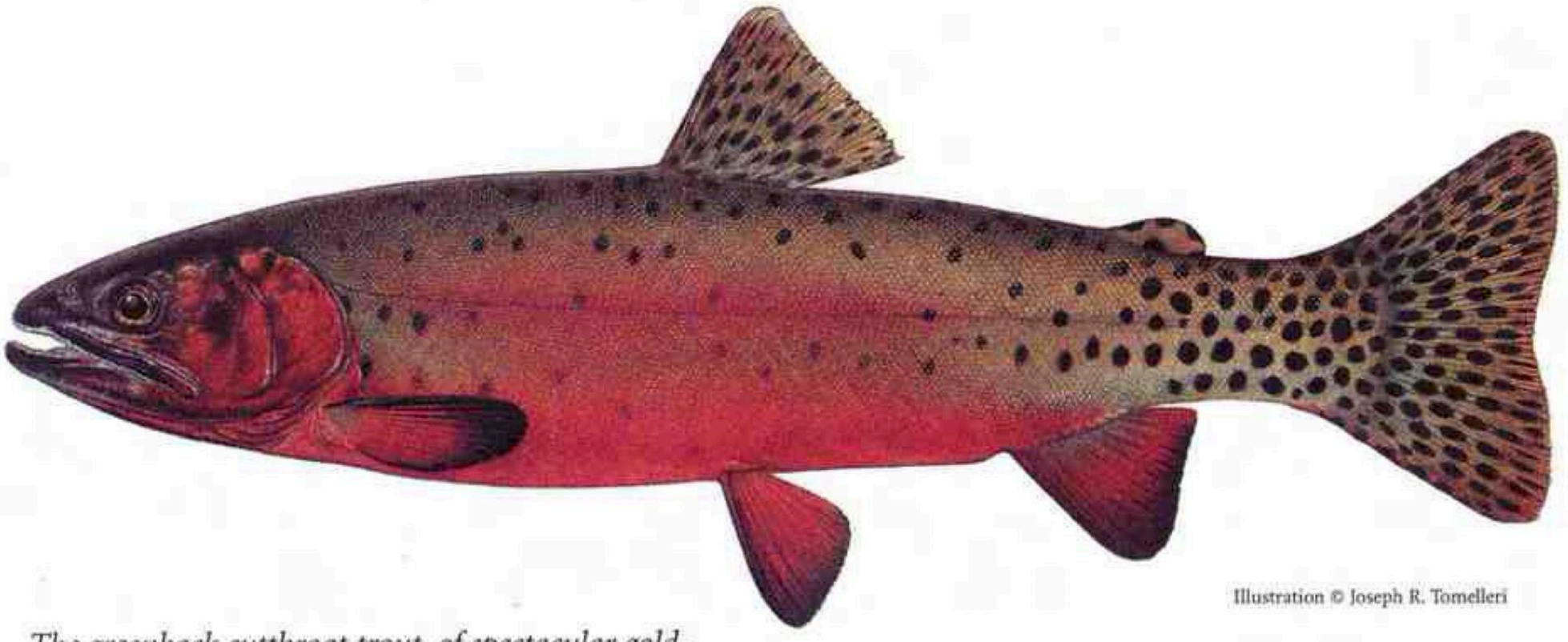


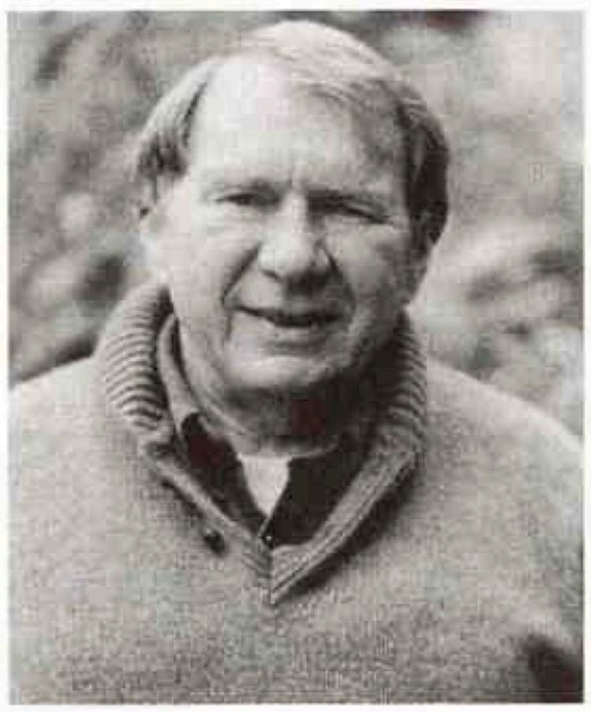
Illustration © Joseph R. Tomelleri

The greenback cutthroat trout, of spectacular golden red display, with the largest spots of any trout. Native to the watersheds of Colorado's South Platte and Arkansas rivers. The state fish of Colorado. For many years, thought to be extinct.

Clark was to have his name forever tied to all its varieties as *Oncorhynchus clarki.* These trout were at times crucial to that expedition's always-precarious larder.

Soon thereafter, westering mountain men, explorers, and pioneers, making their way to the Rocky Mountains and beyond, were to find and value this excellent fish. Those who took the northerly route from the Missouri and the Platte into the Northwest in their turn found the Lewis and Clark varieties—those related to the Pacific drainages. They were plentiful, delicious, and willing prey.

With the discovery of gold in Colorado in 1859, not a few of those restless new westerners, instead of taking the northern Oregon route, turned south, following the South Platte River into the Colorado Territory where in the mountains west of what would become Denver they found the Front Range streams filled with a beautiful "speckled" trout, again delicious and willing. This trout, almost surely a *speciation* from the Colorado River variety of cutthroat, made itself at home in the drainages of the South Platte and more southern Arkansas rivers of Colorado's Eastern Slope. The greenback got heavily fished, fair and foul, for both sport and as a valuable addition to the frontier diet.



Robert J. Behnke

And all too soon, essentially by 1890, the greenback was all but gone forever. Pollution from mining, deforestation, commercial fishing, unlimited sporting bag limits, and the fish's unfortunate vulnerability had done the dirty work.

Coincidentally, Rocky Mountain tourism was getting under way at this time with railroads playing a key role in that development. Realizing the importance of good fishing to tourists, the railroads, in cahoots with the federal government, were quick to stock the new and exciting rainbow from California into the fished-out waters of Colorado's Front Range. The rainbow seemed the answer to the trout fisherman's prayer, the cutthroat quickly and easily forgotten. The last authenticated greenback was recorded in 1906 by the distinguished University of Colorado naturalist T. A. D. Cockerell.

For at least eighty years, Colorado Rocky Mountain anglers got along quite happily, fishing good populations of imported rainbows, browns, and brooks, with a few remaining, if remote, populations of the Colorado River cutthroat on the western, less-populated slope of the mountains.[1]

Then, in 1969, with a new public consciousness about "nature" and all things "natural" in place, the internationally distinguished salmonid scholar Dr. Robert J. Behnke, of Colorado State University at Fort Collins, announced that he and his associates had found a surviving population of the greenback cutthroat high in the mountains only a few miles west of Boulder, Colorado, in a tiny run of water known as Como Creek, an extremely rugged tributary of North Boulder Creek. Como tumbles headlong over itself down through the University of Colorado's Mountain Research Station. (This essay might as readily be thought of as a tale of two universities.) Among the station's four or five rustic buildings, at 10,000 feet above the

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sea, Como slows down barely enough to allow a few small trout to hold on. These little trout, as it turned out, were and still are an essentially pure strain of greenbacks.

Professor Behnke, with the best scientific technologies, identified these little trout as the primeval greenback. Much was made of this good news, and plans for its recultivation were immediately put in place.

Behnke soon discovered yet another pure strain of this fish in the Little South Fork of the Cache la Poudre River, a more northerly watershed of the South Platte system. He also found a small but pure population to the south in a tributary of the Arkansas and an elusive, genetically doubtful population in Rocky Mountain National Park in the headwaters of the Big Thompson River.

Although these national park "greenbacks" themselves came to nothing, Rocky Mountain National Park proved an excellent location in which to foster the first new populations of greenbacks based on Como Creek and Poudre River brood stocks. Self-sustaining populations of the beautiful little trout quickly took hold there with the help in 1973 of the Endangered Species Act. These fish did well enough that by 1978, the "endangered" classification could be eased to "threatened," and new waters remote from the dangers of other trout competition and hybridization were stocked with greenbacks. It has been a gratifying success story of what is now more than twenty stable populations, providing quite good greenback, no-kill fly fishing. Biologists feel that the greenback in its own special waters will soon need no special protection at all.

PNNL Photo

William Howard Rickard Jr.

But that is only half the story, the well-known half. The other, earlier half is more romantic. It is the story of struggling graduate students at the University of Colorado, embarking on serious, advanced research in biological sciences. Bill Rickard, who returned from World War II and earned an undergraduate degree in biology, was an accomplished fly fisherman and promising scientist with the sensibility of a classical naturalist.[2] With three fellow graduate students, he spent three summers of study at the alpine Science Lodge, as today's Mountain Research Station was then known. Two of them had new brides in tow.

Almost as a lark, they caught a few of these fish. Rickard puzzled over them. They were obviously cutthroat, carrying that distinguishing slash of bright red just under the jaw, but otherwise were unlike any he had ever seen before in his extensive Colorado fishing. As much a scientist as an angler, he began reading in the technical literature and soon came to suspect that he just may have found the long-lost greenback!

Rickard took specimens down to Boulder to the single professor in his university department interested in fishes. Said the professor: "Bill, you're wasting my time and your own. The greenback is extinct. Forget it." Nor would the professor accept one of Rickard's specimens.

Bill then sent specimens to Dr. Howard Tanner at Colorado

Gordon M. Wickstrom

Como Creek, narrow enough to step across in some stretches, is one of the last refuges of the greenback cutthroat.

State University, a fish biologist, who sent them in turn to the National Museum of Natural History in Washington, D.C., where a "type specimen" of the greenback had long been stored. The museum eventually confirmed that indeed the fish from Como Creek were identical to the "type specimen" greenback! But it was too late for Bill to pursue his discovery to publication. He had to get on with his own quite different and demanding research on plants, not in Colorado but on his knees in Nevada's Mojave Desert, at the atomic test site.

Rickard bore up silently under the summary rejection of his alma mater, the University of Colorado, but the greenback might well have been reinstated among living species right there and then in 1952, Rickard earning the credit. True to his modest nature, however, he wrote an article for the Colorado Division of Wildlife's publication *Colorado Outdoors.* Appearing in October 1962, long after its submission, Rickard's piece described what was known about the "long-gone" greenback and suggested, only *suggested* mind you, that living greenbacks *might* yet be found in isolated little waters high up on the sides of the Continental Divide where they had escaped the persecution of man, beast, and other fishes. And all the time he knew very well that he had himself, almost beyond doubt, found the lost Colorado native. Such is the discipline—and the cost—of science.

Needing to get to his work in Nevada, under the direction of his new mentor at Washington State University, Rickard departed Colorado, leaving his bottled specimen greenbacks on the dusty shelves of the Mountain Research Station. Robert Behnke and the men from Colorado State University, some fifteen years later, following up on institutional memory and scientific rumor, went to Como Creek and found Rickard's bottles on the shelves and the fish in the creek. The rest, as they say, is history.

With Como's fish (living and bottled), the existing literature, the "type specimens" in Washington, DNA comparisons, and painstaking work, they were able to make the rediscovery official. The cultural climate around them had been changing fast and had prepared the way with new dispensations in both society and science to allow full appreciation of their achievement. The times were right for bringing back in glory this Colorado native.

And it becomes a cautionary tale for those who carelessly disregard the work of universities, faculties, and graduate students who with hard work of mind and body in laboratory and field achieve so much. It took two universities, the dedicated work of two generations of scholar-scientists, DNA technology, and nothing less than a cultural transformation to prepare the way for the return of the greenback to its rightful domain. ≈

ENDNOTES

1. Colorado's fourth cutthroat, the yellowfin *Oncorhynchus clarki macdonaldi,* is held to be extinct, wiped out by rainbow hybridization. It was indigenous to the small area of Twin Lakes near Leadville, Colorado, and lived happily there without hybridization—side by side with the greenback—until the rainbow came. The yellowfin kept to the depths and grew to 8 or 9 pounds; the greenback preferred shallow waters and streams and stayed small. Curiously, the yellowfin was sent to France and from there to Germany and not heard of after. Professor Robert Behnke has wondered if a yellowfin may not have survived in some remote water, just waiting to be found.

Colorado's superb Trapper's Lake on the Western Slope long supported a fine population of the pure Colorado River cutthroat *Oncorhynchus clarki pleuriticus,* but it has been genetically damaged by the introduction of rainbows.

At the same time as the demise of the greenbacks, the eastern brook trout was stocked indiscriminately over the higher mountains of Colorado where it overpopulated and stunted itself.

2. Dr. William Howard Rickard Jr. is retired from the Pacific Northwest National Laboratories in Richland, Washington. He now fishes the west-slope cutthroat and steelhead, continues his research, and develops special teaching projects for the National Laboratories and the Richland public school system.