Prophecy of Thomas Paine

Guest Editorial by Ernest Swift

In 1789, Thomas Paine, the much maligned patriot of the Colonial Revolution and a Quaker by belief, wrote of his beloved America:

"When we contemplate the fall of empires and the extinction of nations of the ancient world, we see but little to excite our regret than the mouldering ruins of pompous palaces, magnificent monuments, lofty pyramids, and walls and towns of the most costly workmanship. But when the empire of America shall fall, the subject for contemplative sorrow will be infinitely greater than crumbling brass or marble can inspire. It will not then be said, here stood a temple of vast antiquity, here rose a Babel of invisible height, or there a palace of sumptuous extravagance: but here, ah painful thought! the noblest work of human wisdom, the grandest scene of human glory, the fair cause of freedom rose and fell. Read this and then ask if I forget America."

Paine speaks of a time "when the empire of America shall fall," although he doesn't expressly state why or when this catastrophe will happen. No doubt the embryo nation was too close to a-borning for Paine to envision all the contingencies that would affect the course of empire. He could well have dated the "fall of the fair cause of freedom" in conjunction with the disappearance of the natural resources through continuing abuse and the willful and ignorant disregard of the consuming public. If the American appetite for resource consumption continues to expand for lack of discipline and self-restraint, Paine's prophecy regarding the fall of freedom may well become a certainty.
The American eel \((\textit{Anguilla rostrata}, \textit{Le Sueur})\) is Pennsylvania's only catadromous fish. This high-sounding scientific term merely means that the fish leaves fresh water and goes to salt water to spawn. Far more common are the fish which leave salt water and swim up the fresh water streams to deposit their eggs. Salmon, shad, and many others are examples of this latter kind, called anadromous fish.

During the fall from September to November, the mature female eels move from the headwaters of our streams and start toward the ocean. At this time some of these females may change from the usual yellowish color to one where the back is a bronzy-black and the belly a milky-white or silver. These are called “silvers” by the eel fishermen. Even the head may change somewhat, becoming more pointed, and eyes grow larger.

These mature females, many now 2½ to 3 feet long, move only at night and usually start their journey on a rise in the water during or immediately following heavy rains. As they enter brackish water at the heads of the bays emptying into the ocean, they pick up their small mates which have been waiting for them. The male eel rarely grows to be over 16 to 18 inches in length and evidently does not migrate far above tide water.

Then together and mysteriously, they move off into the ocean. How fast they travel and how deep they swim no one knows, because eels have never been seen in migration after they leave the continental shelf.

\[\text{the Eel}\]
\[\ldots\text{truly a remarkable creature}\]

\[\text{BY ROGER M. LATHAM}\]
Their destination is the Sargasso Sea, a spot in the mid-Atlantic where the water is the warmest and where the Gulf Stream is supposed to originate. This spawning area lies south and southwest of Bermuda between the latitudes of 20-30 degrees north and longitudes 60-78 degrees west. And here in this tropical sea, hundreds of fathoms below the seaweed-clogged surface, the eels deposit their eggs.

All the mature migrating eels from the North American continent, from Labrador southward to Panama and the West Indies, have gathered here to fulfill their reproductive duties and then die. But these American eels can't claim the Sargasso as their own. For there are millions of European eels there, too, and in many places their breeding grounds overlap. The European eel (Anguilla vulgaris) is a distinct species, although it can hardly be distinguished from our eel except that it has an average of 114 vertebrae in the backbone while our fish has an average of only 107 vertebrae.

Each female is capable of producing 5 to 20 million transparent, almost colorless, tiny eggs depending on her size (one 32 inch eel produced 10,700,000 eggs by actual measurement). A week or so later the eggs hatch and both species begin life as a tiny larva about one-quarter inch in length. These are so thin and transparent that newsprint can be read through them. They remain 600 to 900 feet below the surface for a time and then rise to the upper layers and begin to float northward. When these billions of tiny larvae, called leptocephali, reach the vicinity of Bermuda, the

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**ABOUT THE AUTHOR**

For one whose professional career has been devoted mainly to game, rather than fish, Roger Latham's selection of the American Eel as the subject of his term paper while earning his Doctor's degree in Wildlife Research, came as somewhat of a surprise. But the typical thoroughness that characterized his work and writings throughout his time with the Pennsylvania Game Commission and more recently as the Outdoors Editor of the Pittsburgh Press, is reflected in this story of one of nature's most amazing creatures.

Following his graduation from Sharpsville (Pa.) High School in 1931, Latham joined the Game Commission and became a member of its first training school in 1936. After a few months as a Game Protector, he was assigned to the Commission's Wildlife Research program. During a leave of absence between 1947 and 1951 he completed undergraduate and graduate work at Penn State University and earned his Bachelor's degree, then his Master's in Wildlife Management. With the work finished, adding his Doctor's degree only awaits the attending formalities scheduled for June of this year.

While with the Game Commission, Latham's research included a survey of the Pennsylvania wild turkey range and the study of requirements of the hardy evergreen pines of the white tailed deer; a detailed examination of the reasons why the Bob White quail was no longer prospering in the state; a complete analysis of the predator problem and the Pennsylvania bounty system.

In October 1953, Outdoor Life magazine presented its Conservation award to the Pennsylvania Game Commission as a result of an article he submitted on the state's wild turkey restoration program. In February 1954 Latham was selected as one of ten leading professional wildlife workers to receive the Nash Conservation award.

Presently he is regional representative of the Wildlife Society and a member of its council. He also holds membership in the Society of American Mammalogists, the Outdoor Writers Association of America and the Sigma Xi scientific fraternity.

Since August 1957 the author has been the outdoor editor of the Pittsburgh Press, Pittsburgh, Pa., succeeding the late Johnny Mock. He resides in Gibsonia, Pa., with his wife and family of four ages 7 to 22 years.

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**THE PLANKTTONIC larva of the eel is leaf-like and transparent, and about one-quarter inch long. (photo by courtesy of Nature Magazine)**

**YOUNG EELS, known as elvers at this stage, soon after they have entered fresh water. These were taken from the Delaware River and photographed in an aquarium by Johnny Nicklas, Pennsylvania Fish Commission photographer.**
American variety moves westward while the European species turns to the east. Just how this happens is not clear, because the tiny larvae appear to be drifting with the currents and only weakly able to swim toward their respective homelands. The interesting part of all this is that as far as is known no American eel has ever been taken in European waters and no European eel has ever been caught on the North American continent.

The larvae continue to drift and feed on tiny plankton organisms and reach a length of about two to three inches by the time they reach their respective shores. The trip to the west takes only one year but the larvae of the European species do not arrive for about two and one-half years. When they reach the mouths of the rivers and the brackish water, they undergo a major change. They lose their thin leaf-like form, get a new set of teeth, and gradually grow to look like miniatures of their parents. These three-inch eels are then known as elvers and the ascent of the rivers begins.

In 1777, the ovary of an eel was first recognized by a professor of anatomy at the University of Bologna, and thus sex in eels was established. Ninety-five years later a male was at last identified. The first larval eel was not found until 1846 when a German, Johann Jakob Kaup, discovered a small ribbonlike fish in the sea. He preserved it in alcohol, named it *Leptocephalus brevirostris*, and scientists paid no further attention to it. A half century later, two Italian scientists, Gracci and Calandrucci, collected a similar fish in the Mediterranean. This specimen was more fully developed and these two men identified it as a young eel.

Then in 1906, Dr. Schmidt, started his 15-year investigation of the eel and its reproduction in the Atlantic. All during this long period, he trolled nets from one side of the Atlantic to the other, measuring the size of the eel larvae wherever he found them. He reasoned that the tiny fish were growing on their journey back to their homelands, and that wherever
be would find the smallest larvae in the greatest abundance would be the breeding and spawning area. His ever-narrowing search led him finally to the Sargasso Sea.

But there are plenty of things still not known about the eel. In the Maritime Provinces of Canada, poisoning of lakes containing eels revealed that at least 9 age groups were represented. The dominant age groups were those with 2 to 3 annual rings on their scales. Because eels do not get scales until they are three years old, this means that the majority of the eels in lakes are five and six years of age. The studies there also showed that most of the female eels migrating to sea to spawn were seven to eight years old. Some migrating females are as old as fifteen years. Why some of the females reach sexual maturity and make the spawning run years before others is impossible to explain with present knowledge. Examination of these runs revealed that silverying was manifest only among a portion of the largest eels. All those under about eighteen inches were yellow, and among the larger ones both yellow and silver fish were evident, with various gradations between these colors.

Recently, fishery biologists have discovered that fall runs of large eels from salt water have come up the rivers of Nova Scotia. This was unrecorded prior to this time. They also found that the number of eels leaving certain of the study lakes on the spawning run varied greatly from year to year and from lake to lake.

Now what do eels mean to fishermen? First, do they do any harm? It might be well at this point to make sure that the reader understands that the American eel is not the sea lamprey which has caused so much destruction to valuable fish in the Great Lakes and other waters. The American eel has a true mouth with jaws and paired fins. The lamprey, on the other hand, has an almost circular buccal funnel which is lined with sharp teeth. It attaches itself to its victim by a strong suction pressure, tears a hole through the skin and into the flesh with the tongue teeth, and then proceeds to suck the blood from the host fish. This usually results in death in a few hours to a few days. Eels have gills and gill covers whereas the lampreys have seven gill openings in the form of small holes in each side of the body behind the head. Eels possess scales after the third year, but lampreys never do.

But the American eel is a predator on other fishes and may be a serious competitor for food under some circumstances. In New Brunswick and Nova Scotia, the eel is considered as an important predator and competitor of the speckled trout and the Atlantic salmon. Characteristic scars were found on some of the yearling and older trout in one study lake, and the conclusion was that eels were eating a good number of smaller fish. Of particular concern to the investigators was the fact that the eels were spending more years in the lake than the life-span of the trout. Control of predators, including eels, appeared to benefit the trout population. But in this connection, it was found that eels were not present in streams where the water temperature was below 50° F. This meant that most of the smaller brook trout streams were free of eels and the young brook trout suffered no mortality from this source. European investigators discovered that at temperatures below 50° F., eels are unable to form antibodies and thus develop immunity to infections. This could be one explanation why they do not frequent cold-water streams and lakes.

In warm-water rivers and lakes, predation by eels is far less serious and may even be beneficial where stunted populations of panfish or gamefish occur. In many of these waters, the eel is a favorite sport fish and may be more popular than many of the better known species.

Besides being taken on hook and line, eels are caught in several other ways in some states. Commercially, eel racks are operated in several states. In this method a wide V of rocks is placed in a river with the point downstream. Each of the wings of the V may be several hundred feet long. This leads the migrating eels into the narrow opening at the apex of the V where they are caught on eel racks. The racks are merely a series of catching boxes made of narrow strips of wood nailed parallel so that the water can go on through but the eels cannot. These are operated at night during the eel runs, and on favorable nights hundreds of eels may be caught. The fish are usually sold locally to those who have a taste for their fine flesh. Eels bring a good price and are much in demand as a food fish.

Another commercial-type gear is the eel pot or eel trap. These are almost always homemade and are generally of two types. The most popular is made of ½"-16 gauge galvanized wire netting, usually about 30 inches long and 9 to 11 inches in diameter. The...
Normally a night-time forager, this eel was photographed while feeding in the shallows of a northeastern Pennsylvania stream.

An adult eel measuring 37 1/2 inches, caught in mid-summer from the Lackawaxen River in northeastern Pennsylvania. Late scale analysis by fish commission biologists placed its age at nine years. It also had well developed egg sacs thus would probably have shortly started its seaward migration.

A close-up of the head of the same eel...

The commercial eel fishery of the United States extends from Maine to North Carolina and the annual catch is more than a million pounds with a value of approximately $100,000. The eel remains greatly under-utilized in North America because people have not learned of its fine food quality. In Europe it is tremendously popular, and is actually cultivated as a market fish. Elvers are netted as they enter the rivers and are shipped alive to men who raise them in land-locked lakes until they are large enough to sell. They are eaten fresh, pickled, and smoked. In some localities of Europe, smoked dried eels are sold in street stalls like “hot dogs” in the United States.

For sport fishing, eels can be a lot of fun. They take a variety of bait, but whether “cut bait” or live bait, it should be fresh. They are not ordinarily taken on artificial lures, but they will “strike” live bait viciously and put up a fight equal to that of many of the best known sport fish. They may grow to a length of four to five feet and weigh seven to nine pounds. Even a three or four pound eel can break lines and straighten out hooks. Spearing at night is permitted in some states and can be an exciting sport as well.

When the fisherman arrives home with his eels, he may want to know how to dress them and prepare them for the table. Cleaning is easy. Either hang them by the gills with a piece of twine or nail the head to a board. Then cut through the skin the whole way around behind the head, grab the loose edge with a pair of pliers, and strip the hide off in one piece. For frying or baking, the eel can be cut in pieces three or four inches long. When baking or broiling, the pieces may be placed on a metal rack so that the fat will drip away from the meat.

To smoke eels, the fish are cleaned, washed, drained, and salted. A fire of corn cobs and hardwood sawdust is converted into a slow smudge and the pieces of eel kept in the smoke for 4 to 16 hours depending upon taste and heat of smoke. A little sulphur added to the fire gives the fish a rich brown color. For smoking fish, an old refrigerator or icebox is fine. The fire is put in the bottom section and the fish are placed on racks in the top compartment.

In Italy, pickled eels are considered a delicacy. The dressed eels are sprinkled with salt and this is soon wiped off. Then they are cut into pieces, spread with butter and broiled on a gridiron. The pieces are then placed in corks with a mixture of bay leaves, whole cloves, pepper, English spices, and a little mace.
weight is placed on the mass to keep it compressed and the receptacle is covered. After 24 hours the weight is removed, sufficient vinegar is added to cover the pieces, and the receptacle is tightly sealed.

Even the value of the eel does not stop here. In Europe the skins are stretched and dried and used for lining whips, binding books, and making suspenders. In Tartary, the skin is oiled and used as a substitute for window glass. Eel oil is used in places to keep harness soft and pliable and for various medicinal purposes.

Truly a remarkable creature is the eel.

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**National Wildlife Week**

March 16-22, 1958

**PROTECT OUR PUBLIC LANDS!**

The public lands, over one-quarter of the nation’s area, belong to us and our neighbors and to all of the people of the United States. Held in trust by local, state and federal governments, these lands are rich in resources, diverse in meeting our wants for water, minerals, timber, grass and recreation. One of the greatest of our heritages, they are an ingredient of American living that we wish to save.

The public domain has become a part of us, just as kinship with the wilderness was a part of those earlier generations of Americans who settled our country. It is to this that many of us must turn for a little of the feeling that comes from living “close to the land” in the out-of-doors. These lands also provide a diversity of the material things so essential to living in this modern age.

But just as we have grown to value the many benefits of this public estate, so must we begin to assume a greater responsibility for taking care of the land itself—the soils, water, minerals, plants, animals, scenery and wilderness. Our use must be keyed to a basic concern for these resources so that they can continue to satisfy our wants in the face of rapidly increasing pressures upon them.

**History and Purpose of National Wildlife Week**

National Wildlife Week was first proclaimed by President Roosevelt in 1938. It has been sponsored annually since by the National Wildlife Federation and the state groups that belong to the Federation. Purpose of the Week is to focus public attention on the importance of our natural resources and on the broad and pressing problems of conservation.

**What Is the Federation?**

The National Wildlife Federation is an association of state federations or leagues and their affiliated local conservation clubs. The total membership exceeds two million persons. It is not a government agency, but is a citizen’s organization, and has been responsible for informed public opinion leading to much important legislation and to many action programs in the conservation field. It is financed by civic-minded persons throughout the nation who every year send in small contributions in exchange for Wildlife Conservation Stamps.

The Pennsylvania Federation of Sportsmen’s Clubs again sponsors the project. Seth L. Myers of 480 N. Oakland Ave., Sharon, has been designated Pennsylvania State chairman by the National Organization.

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“Thats right! Wait for the tide...
Everything with you is wait.”

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FEBRUARY, 1958
EVERYBODY’S BOATS

By BILL WALSH

ERIE’S SOUTH PIER on a mildly busy day shows how popular are the stationary “boats” which everyone can enjoy for free. Fish caught range from perch to walleyes and from catfish to smallmouth bass.

Surrounded with water as it is, Pennsylvania’s third largest city—that’s Erie, stranger—is naturally a boating town. Some days it looks as though a traffic cop is needed to direct the flow of yachts, inboard cruisers, outboard cruisers, sailboats, runabouts, canoes, or whatever you will, as they ply back and forth in pursuit of boating pleasure—or a fishing spot. Even visitors to Erie are bringing their boats along with them—via the increasingly popular trailer—BUT it isn’t necessary if fishing is all you’re after.

There are a couple of boats that get you right out on the water and they belong to everybody. Of course, they’re really not boats, but we’ve decided to call them that because the effect as far as fishing is concerned is just as good—and the convenience is even better. No rocking of the boat in rough weather, no bailing when waves are high, no gas to buy for the putt-putt, no worries about life jackets, fire extinguishers, or other equipment.
One of these free “boats” for everybody is the south pier—accessible through the grounds of the Soldiers and Sailors Home at the foot of Erie’s Ash Street. This monstrous hunk of concrete is probably a good third of a mile long—we’re guessing. It will hold hundreds of fishermen each day.

Also, statistically speaking, we wouldn’t be afraid to bet that the fish that have been carried off the place since it was built would probably weigh as much as the structure itself. Hardly an Erieite today who goes fishing in an expensive boat with expensive tackle who didn’t do his first fishing as a boy on the South Pier.

High on the list of good catching, good eating fish are yellow perch—taken by the thousands off the pier each year. Both large and smallmouth bass get added to stringers here. Northern pike, every now and then a muskie, walleyes, bullheads, catfish, burbot (ling or sea lawyers) or eelpout, sunfish, crappies, bluegills, mud puppies—or, in other words, just about anything that swims, creeps, or crawls under water—can be caught from the pier. We even remember catching blue pike there—night fishing with lanterns.

Used to be fishing on the south pier was like fishing in front of a large mirror, because the north pier (a twin construction on the other side) held just as many anglers and they were catching just as many fish. While the south pier is attached to the mainland, the north pier is part of the Peninsula State Park. Between the two piers is the channel which connects Presque Isle Bay and Erie Harbor to Lake Erie and the Great Lakes shipping lanes. In other words the piers weren’t built for fishermen—but we’ve not quarreled about that. But to get back to the point, the north pier no longer provides noontime lunch. Bait stands are also only a few feet from his fishing spot.

The dock is convenient, too, because the fisherman can park his car a few feet from where he’ll be dunking his terminal tackle—and restaurants a few steps away will provide noontime lunch. Bait stands are also only a few feet from his fishing spot.

The biggest stationary “boat,” however, is Erie’s famed Peninsula itself. Some eight miles of protecting arm, curved around Presque Isle Bay, its shoreline, jetties, bridges, and lagoons offer many a quiet spot to sit and fish from or a point from which the wading fly-rod or spinning enthusiast can set out.

Such wading is especially productive to the bass fishermen on the bay side of the Peninsula. Fishing from the lake side has been limited somewhat since the rebuilding of hundreds of yards of sandy beach. But along the jetties, fishermen can still do a bit of inland “surf casting” and come up with a bass or a yellow pike of respectable size. Erieites call walleyes “yellow pike.”

The lagoons offer varied fishing throughout the year, ranging from the crappie-northern pike runs in the spring to bow fishing for carp in June to bugging for bass on summer evenings to trolling for northerns in October. The quiet atmosphere of the lagoons offers good father-son shore fishing possibilities.

So—if the family doesn’t own a boat—there’s no excuse for not enjoying the national sport (no, not baseball) which is fishing. When in Erie, use everybody’s boats—for free.

So You’ve Retired . . .

So you’re retired. The magic birthday has been reached and crossed, and time is yours to do with what you wish. You are at last unhampered by work schedules, vacation limits and employment responsibilities. This age of leisure, an achievement of the modern civilization, can be the most creative and splendid of your life. And one of the most important assets your retirement can bring you is freedom to take rod, reel and all equipment to a spot dear to your heart and remembrance. Not only is this a dream come true of years of dreaming. It is a glimpse of Paradise!
LITTLE PINE DAM

By JOHN F. CLARK

The news item, "Fish Commission extends trout season in certain Commonwealth waters," really made us perk up and take notice. As a matter of fact the announcement caught us with our rods down and most of our gear stowed away for the winter. However it didn't take long to turn the tackle closet inside out and get our equipment out of hibernation.

Lee Richards, my cousin and long time fishing buddy called me the evening after the item appeared in the local papers.

"Get your gear together and I'll pick you up Saturday morning about five o'clock. I hear they're really hitting up at Little Pine Dam."

It goes without saying that I was ready, come Saturday morning, when Lee pulled up in front of the house. Besides Lee, there was Tim Hurr, Lee's brother-in-law, and Ronnie Teasley, Tim's son-in-law.

It was a little chilly and still pretty dark as we drove through the mountains to Waterville. But by the time we turned off on the road to the dam the sky was beginning to light-up in the east. Arriving at the dam we quickly loaded up the borrowed boat with tackle boxes, life preservers, bait, rods and fishermen, and shoved off.

Little Pine Creek Dam is located in Cummings Township, Lycoming County. It was constructed several years ago as a flood control measure, but that is only one of its purposes. It's rapidly becoming a 'Mecca' for the fisherman, camper and vacationer. As a matter of fact as this is being written improvements are under way that will add a great deal to the recreational possibilities. A large parking area is being bulldozed out to handle the increasing number of visitors. A bathing beach is being added, plus boat docking facilities. A large camp site is being prepared below the dam. The dam is beautifully situated between two mountains approximately three and a half miles from the village of Waterville and about 14 miles from Jersey Shore.

For the stranger in this area it's a fairly easy job to find your way to the dam. Drive west from Jersey Shore on Rt. 220 to the bridge over Pine Creek. Then turn right on Rt. 44 to Waterville. Just after you cross the Waterville bridge take a sharp turn to the right and proceed directly to the dam. There's a good black top road all the way.

State fishing laws are strictly enforced, and there are a few special regulations which are prominently

LITTLE PINE CREEK DAM

TO ENGLISH CENTER

BOONE RUN

ENGLISH RUN

DAM RUN

WATERVILLE • PINE CREEK

PENNSYLVANIA ANGLER
posted along the shoreline. Outboard motors are strictly prohibited. Needless to say, "litterbugs" will not find a welcome here.

The lake formed by the dam is approximately a half mile wide and the water is backed up for about three miles. However the lake is much larger in the spring due to the run off of melting snow and seasonal rains. The bottom is mostly mud, with here and there some rocky stretches where the original stream bed used to be. The south end of the dam is fairly clear of obstructions, but as you row north the bottom is dotted with snags and brush, and requires some deft manipulations of the rod to keep from getting hung up.

Tim and Ronnie were both using bait, while Lee and I tried our luck with spinning lures. We hadn't been anchored more than fifteen minutes before Ronnie got his first bite.

"Boys I think we're in luck," said Ronnie, as he swung his net under a ten inch rainbow. "If they keep this up we'll be lucky if we don't swamp the boat with fish."

The rest of us were inclined to agree with him, but things didn't work out quite the way we expected. As a matter of fact we sat for two solid hours, biteless and fishless. We couldn't agree on whether it was Ronnie's statement that had jinxed us. Anyway we were about ready to toss him overboard when our luck took an abrupt change.

At the time we were drifting along the East shore near some rock ledges. I don't know who got the first bite, but it wasn't long until we were all tied into a scrappy sunfish. The action was fast and furious for awhile and we caught and released a goodly number before we booked any that were big enough for the stringer. Lee wasn't having any of the sunfish and was still sticking to his spinning lures. All of a sudden he gave a whoop and yanked back so hard on his rod that he almost swamped the boat. We could tell by the way his rod tip was bent that he was tied into something nice. We all reeled in our lines and watched the action. After a couple of long runs and a couple of near misses with some submerged brush, Lee worked the fish into the boat where Ronnie slipped the net under two pounds of black bass. Not a lunker by any means but still a nice fish.

From here on the fishing was rather "spotty," but we did manage to boat another trout, several more bass and a grass pike. There weren't any prize winners in the lot, but for variety we had sure hit the jackpot.

As we pulled the boat up on shore we promised ourselves that we would pay another visit to Little Pine Dam.

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THE ONE THAT GOT AWAY

High in the rugged hills a silvery crescent waterfall Spins busy filigree webs of bluish-white, As the boisterous spray calms and falls fatigued, To form a restless pool, deep and mirror-bright. From the bank a boy, one year in his teens, Drops baited hook and breathes an angler's prayer. He waits, crouching low, soundless, shadowless, Afraid the educated trout will know he's there. Suddenly, there's motion; the boy is on his feet! The line is taut; the trout is trying every scheme To snarl the line 'round flood-polished alder snags, And to ruin a long-nourished youthful dream. Along the water's edge the excited boy follows The course of the fighting trout. And then, In an open spot he sets himself and pulls— What a thrill to watch the birch pole bend! Suddenly, before him, the crimson-dotted trout Lay struggling in dark-brown muck. What size! But what a pity to smudge the silver and the red, Of a captive, magnificent, and so obviously a prize! As the boy reached to touch the gasping gills, A surging flip-flop spewed his face with batter-muck. The trout shook free and landed with a swishy plop! In water deep enough to snatch away the boy's luck. Desperately the youthful angler plunged—too late! He saw the wriggly olive back fade and disappear. Stunned, he stood; but since he wasn't yet a man, He didn't try to quell the rising flood of tears.

—Wilbert Nathan Savage.
February is the month for tackle tinkering. Many days of this month generally have weather and water suitable for a fling at sucker fishing. But the month as a whole is well suited for tackle tinkering—putting gear in top condition, ready and waiting for the new season to unfold.

Rods, reels, boots, boats, creels and lines need inspection. Guides that have been torn from rods need replacement; holes ripped in boots need patching; sand and grit should be cleaned from reels. Major and minor repairs can all be taken care of very nicely now. And in this tackle tinkering process, don’t neglect the lures—the plugs, spoons, spinners and flies—the real business end of the gear. These have caught a great many fish during past seasons and now bear the scars of battle. Take several hours from the TV viewing schedule some evening to check over these important pieces of tackle.

For a moment, let’s glance at the lures in your tackle box. If you haven’t opened the box since closing it last fall, you, like so many others, will probably find hooks, fitted to plugs and spoons, have rusted and points dull as used razor blades. Chances are the once glistening spinner blades have now tarnished. Ribbons of paint have been scratched from spoons.

NOW is a good time to dig out all those lures in the tackle box and get them in readiness for the new season.

And thread, hackles and bodies are unraveling from the prized trout flies. They’ve acquired a shop worn appearance and have lost some of their attractiveness or appeal to game fish. There are many things you can do to restore them to the original condition. Here are a few suggestions.

Plugs: First run through the assortment of plugs scattered in the trays of the tackle box. The finish on plastic plugs is still satisfactory. But paint on those made of wood is probably cracked, flaked off in spots. Protect the exposed patches of wood from moisture and, by the same token, make them a little more attractive to you and to fish, by touching up the areas with quick drying enamel. In fact, if a particular plug...
COAT the newly polished surfaces with clear lacquer to prevent metal oxidizing again.

is painted a color that doesn't seem too attractive to fish, repaint the entire lure to whatever color seems best. One particular fisherman who I know very well, is partial to silver. Practically a third of his plugs have been repainted with silver paint. The job isn't exactly professional in appearance, but bass do not seem to mind, for he usually catches quite a number of both large and smallmouths every year.

Check the hooks closely. Long nose pliers are helpful in straightening those which have been bent out of shape. Those rusted badly should be replaced with new BE SURE all the hooks on the lures are needle sharp. This makes it easy for hooks to sink deeply in the jaw of a striking bass.

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trebles, obtainable in sport shops for the sum of 5¢ each. You may wish to replace the originals with weedless models which cost slightly higher than the open treble hooks. Whether new or old, be certain the points are needle sharp. This may mean the difference between hooking and landing a lunker bass or missing the strike entirely. Tackle shops sell small hones designed especially for sharpening fish hooks of all types. Purchase one. Keep it in your fishing jacket so that it is handy at all times. Make a practice to sharpen the points regularly.

As the last thing before dropping the plugs back into their individual compartments in the trays, be sure all screws holding the hooks and clevises in place are tightened securely. Sometimes screws work loose. It's an exasperating experience to lose a husky bass by having a screw drop out of place.

Spoons: Enamel on spoons, even though this has been baked on, cracks, chips and peels when the lures are slammed against rocks and logs, or scratched across the sandpaper teeth of big pike and bass. Touch up these areas with the same color enamel. Of course, spoons with only half the original paint remaining will continue to lure pike into the creel. But the bare spots will tarnish quickly and cause the lures to become less effective.

Brass, silver, gold and copper colored spoons were originally lacquered at the factory to prevent air and moisture from tarnishing the bright surfaces. Where this lacquer has been scratched, the metal turns dark. You can restore these expertly by borrowing your wife's nail polish remover to remove the old lacquered surface. Then rub the metal briskly with metal polish.
Perhaps you may want to repaint chipped areas on the plugs, or refinish the body completely in another color.

When the surface has been brightened, recoat the spoon with clear nail polish.

This same treatment is also effective for tarnished spinner blades. The small spinners attached to flies and the innumerable variety of spinning lures can be treated in this manner. Personally, I have always been partial to small spinner and fly combinations for early trout fishing. When the streams are high and roiled, the trout's visibility is cut to a minimum. I prefer that the blade of the lure be as bright and as shiny as possible to show clearly and as far as possible in the discolored water. The lure may swim beside a trout's nose, but because it is tarnished, the fish may not be aware of the passing lure. What otherwise could become a strike and a trout for the creel results in the lure swimming back empty-handed to the fisherman.

Flies: Flies take a fierce beating during the course of a fishing season. Three or four trout can maul a fly pretty badly. One chub can do even more and several bluegills can practically tear all the dressing from the hook. All but the very worst flies can be restored to fairly good condition again simply by holding each one singly over a steaming kettle. The live steam will activate the fibers and feathers. The matted materials fluff-up instantly and the fly appears practically new again.

Check the box of flies, including all the dry, wet, nymph and streamers. Steam each one. Then examine the thread wrapping near the eye. Probably more flies are lost each year because the wrapping has unraveled and allowed the entire fly to come apart, than from all other causes. Many of these thread-worn flies can be saved from such a tragic ending by placing a drop of cement or varnish on the vital thread.

Fishing with fine terminal tackle—3x to 5x tippets—requires hooks to be needle sharp. Light tackle will not stand heavy pressure when setting the hook in the jaw of a jumping trout. Keep the point needle sharp and the slightest pressure will sink the barb deeply. Here again it is a good gesture to hone each hook before stashing the flies back into the box. Keep the hone handy in the vest so that the points can be dressed after one or two trout have been caught and especially after snagging.
IF YOU expect to store flies for some time, be sure
to add moth crystals to the containers to prevent
insect damage to feathers and wool bodies.

a tree limb during a back cast.

This month is ideal for administering these tackle
tips. It's fun too to spend a few evenings in this manner.
As you pick out a particular spoon and attempt to
restore its original surface, the events surrounding that
prized pike will be recalled. As you hold a particular
dry fly over the singing kettle, you will reminisce of
that day in June when that husky brown trout gobbled
the fly and was finally netted in the pool below the
covered bridge. The evening will pass quickly when
tackle tinkering.

PLUGS and other lures slammed against stumps, logs
and rocks soon acquire a run-down appearance. Now
is the time to re-condition them.

Best of all, like buying a new fishing license, time
spent tinkering with the tackle means you're ready for
a whole new season of angling pleasure.

"GEORGE, ARE YOU SURE THEY WERE ALL PANFISH
THAT WE STOCKED LAST YEAR?"
AFTER DARK ANGLING

By L. JAMES BASHLINE

THERE HAVE BEEN many volumes of printed material written on the subject of fishing with the dry fly, and nearly as many written about wet flies. Whole books have also been devoted to nothing but the use of streamers and nymphs, not to mention various kinds of short articles about these different types of flies.

There is one type of fly, coupled with a special type of fishing which seldom receives any recognition in this wealth of printed material. Some of you devotees undoubtedly have an inkling about now of what kind of fishing I am talking about. I am sure that a good share of you will agree with me that very little has ever appeared in type concerning it. Well, what is this guy building up to? It's night fishing and the unusual sport that accompanies it.

Just what the reason is that writers skim lightly over night fishing is not clearly understood. I have always felt perhaps a slight selfish motive kept them from it, or they honestly felt that they didn't know enough about it to comment at any length.

Before I get too far along with this and can't turn back, allow me to admit that I do not consider myself an expert night fisherman. There are no expert night fishermen! A man simply cannot live that long, nor are the nights long enough for an individual to amass the knowledge necessary to become an expert. My only claim to be worthy to write on this subject is that I have known well a few individuals whom I believe are the finest after dark fishermen in the east. Some of these fine gentlemen are no longer with us and should I, by chance, mention some of their long kept secrets on the night fishing art, I hope I am forgiven.

Minnows, night crawlers, and soft shelled crabs are all considered good night baits, but the willingness of trout, and especially the brown trout to strike a fly at night is to me the most fascinating kind of fishing that exists. The surging strike of a heavy trout after dark is a rare thrill that once experienced will leave the angler wondering why he even bothers to fish during the day time. Of course the rise of a trout to a dry fly is no small excitement and takes considerable skill to bring about, but how often does a really big trout take dry flies? During the green drake hatch the larger trout sometimes feed with little caution, but this hatch of mayflies is quite short in duration on most streams, therefore the dry fly man has little opportunity on fish in the three pound and up category. Even if trout could be attracted to the dry fly more readily, the larger ones would seldom be landed because of the very fine terminal tackle which is necessary to present the dry fly properly. I don't mean to infer that it can't be done, but still, a trout of three pounds plus is a mighty fine catch on dry fly tackle on any stream.

After darkness settles on the water however, and providing the trout cooperate, a three pound trout is not unusual. In fact, on a moderately good fishing night a trout under a pound is uncommon in many of our eastern trout streams, excluding of course small brooks that do not have the food supply to grow fish of this size. This is not meant to infer that night fishing will always produce big trout, far from it, for big trout are hard to seduce and harder still to land wherever they exist. During the larger part of eastern trout seasons, the big fish do most of their serious feeding at night, so it seems logical that that would be the best time to fish for them.

As a general rule the flies used for trout at night are larger than those used for the same fish in the day time, and usually are a bit brighter in color. Even salmon flies, with their almost vulgar color combinations are used with fine results on some streams containing highly educated fish. It is interesting to speculate just why trout will take such a fly at night when the same fly during daylight hours would scare them half to death. Size ten flies are used quite extensively during the day, so we really cannot call them night fly size, however on some occasions they work quite well after dark. The size eight wet fly and the size six are seldom used during the day on eastern trout streams, with the exception of native brook trout waters. (I should insert here that most of my experience in fishing is with brown trout of the fished over variety, and not with wild reared natives.) These two sizes, and occasionally size four are the most useful in night fishing according to my observation. This is not a hard, fast rule, for some really fine catches have been made on very large flies. Size six is probably the
most popular, with eights and fours tied for second place.

The term night fly will lead some to believe that there is a special method of constructing them. This is not so, for a night fly in the general sense of the word is merely a conventional wet fly. In some waters streamers work well and in those areas could be called night flies, but they are still special purpose flies and perform best when trout are working on minnows.

The leader for night fly fishing deserves some mention, but it is not so important as during day time fishing. While trout seem to possess their same excellent eyesight at night as they do during day light hours, they do not act nearly so leader conscious. Bob Pinney, of Coudersport, Pennsylvania, the finest night fisherman I ever fished with, has used just about every type of leader available, and after forty years experience believes that an eight pound test level leader is just about right. I heartily agree, with the addition of an eighteen inch section of twelve pound material tied on at the butt. This seems to reduce the tangling tendencies that leaders lean to after dark. This heavy leader recommendation may sound a bit husky for brown trout fishing, but in application it isn’t. The trout will strike a fly attached to a heavy leader as well as they will one tied on a light one. Then too, a fisherman can usually be relied upon to strike much harder at night and a stout leader is good insurance against losing a big trout.

The rod for night fishing depends of course on the size water you are fishing. The most important feature of a good rod for any type of wet fly fishing is a sensitive tip. This never applied more strongly than to night fishing. At night you cannot see the fish take your fly, nor do you see the telltale twitch that betrays his presence. The only real contact that you have with the striking fish is your rod tip. Whenever possible, a very short line should be fished, for the added contact that it gives you with your flies. For most purposes the modern American fly rod, either glass or bamboo fills the bill quite well. Some glass rods are a bit too stiff, but by shopping around a bit, a flexible one will not be too difficult to find.

Without a doubt the most interesting feature of night fishing is the fly patterns themselves which range from the somber to the ridiculous. I have long been convinced that trout can see a wet fly for exactly what it is. Dry fly men still cannot agree on the trout’s ability to distinguish color on the surface. The wet fly is right there in the trout’s own domain and he has every opportunity to study it before he makes up his mind to take it. Some patterns which are successful at night do make an attempt to imitate a natural creature that trout feed on. The best night fly patterns however, seem to be more or less fanciful creations that resemble nothing in particular. I am inclined to believe that trout take these patterns for much the same reason that Atlantic salmon do, a combination of anger and curiosity, and in the case of trout, hunger. All this is of course speculation and only the fish know the real answer. It is usually true that a nighttime hatch of mayflies will produce good night fishing, but patterns which catch the trout on those nights are not always good imitations of that particular hatch, in fact they aren’t even close! On a well remembered evening while fishing the Oswayo River in Northern Pennsylvania, a sizable hatch of green drakes commenced. They hatched far into the night, and the sounds of rising trout could be heard a hundred yards from the stream. Being of a practical turn of mind, I proceeded to tie on a size eight Light Cahill and a size eight Grizzly King, feeling that those two would come as close to duplicating the green drake as any fly I had would. I made at least two hundred casts with those flies in the direction of ten actively feeding trout and never felt a single strike. My fishing partner on that occasion was a veteran night fly man and on his second cast hooked and landed an eighteen inch brown. Three more sizeable fish challenged him in quick succession and lost. I finally drew up courage enough to ask him the pattern he was using. He reeled in his leader, and by the glow of my cigarette lighter I recognized a size six Hardys Favorite and a King of the Waters. Of course these patterns were attached to my leader at once and a fish shortly followed, which measured sixteen inches. The grand total for the evening was eleven fish, with an average weight of one and one-
fourth pounds. The two flies mentioned do not even closely resemble the green drake. This is one of the great mysteries of night fishing. From the preceding incident it would seem that there is no rhyme or reason concerning why a trout will or will not take a certain night fly on a particular night. While this is partially true, there is a certain sequence of patterns which seem to work quite well. In northern Pennsylvania and southeastern New York, the night fly season usually starts about the end of May. In the western states and farther north it varies, my guess would be about the middle of June. The most successful early patterns are nearly all dark colored flies. Heading the list would be the Governor, the Hardys Favorite, and the Lead winged Coachman. In discussing flies for night fishing, the Silver Doctor deserves special mention. It is a fly which seems to arouse the most lethargic trout. Long a favorite of the British and Canadian salmon fishermen, it is no less a fly than it is. Most knowing night fishermen would never be without it. It is seldom tied the same way by any two fly tyers, but two of the many ingredients used in its construction remain the same. They are the silver body and the mixed guinea and blue hackle. Perhaps they take it for a minnow for it certainly does not resemble any insect.

As the season progresses the flies which get results seem to be a little more brilliant in color. The Professor, Grizzley King, Montreal, and other tinsel ribbed flies are good during the latter part of June and the first of July.

As the end of the season approaches, the producing flies really become brilliant. The Alexandria, Parma-cheene Belle, and Royal Coachman, and many other gaudy salmon patterns seem to be what the trout are looking for. I do not intend any of this discussion on fly patterns to be gospel, simply because, as any fisherman knows, there are just too many variables when ever trout are concerned. This is extremely fortunate for us because it gives us much conversational material.

While the patterns used at night are important in catching fish, the most difficult thing to master is when to strike. The actual method of fishing is no different than using a small wet fly during the day. The most productive routine is to cast slightly upstream and retrieve your flies as they drift down stream. The speed of your retrieve depends on how fast the current is moving your flies. Except on rare occasions a slow retrieve will gather more strikes than a fast one. For some strange reason trout never seem to strike a fly the same way twice after dark. The most spectacular type of strike occurs when your flies are on or near the surface, and the trout makes a surging lunge to grab it. Such a strike, even from a small fish, makes you react fast and hard, and you usually hook him. At other times the only indication you will get is a slight tap on your line. Some times these “slight taps” will turn out to be minnows in a playful mood, but quite often they will be trout bunting the fly to test its suspicions. The best thing to do is to strike hard if you receive any unnatural feeling through your line. You will feel a bit foolish doing this, but the occasional reward of a nice trout is worth a few false strikes.

As is true during the day, not all nights are good fishing nights. Bass fishing to the contrary, the best nights for trout are nearly always dark nights. In fact the only thing positive I can say about night fishing is that I have never caught, nor seen caught, a really big trout on a bright moonlight night. Perhaps a shaded pool, or a night when clouds obscure the moon's brightness, the trout will sometimes work, but as a general rule, the darker the night the better the fishing.

It is a good idea to be fairly familiar with the place you intend to fish. Scout it out well during the day and memorize the snags, and their location. Check on your backcast, so you are sure how much line you can handle without getting into a nerve shattering entanglement.

It is common knowledge that big pools contain more and bigger trout than small pools. However, the deepest part of the pool is ordinarily not the best place to cast at night. Trout and especially the big ones like to lay in the shallow entrance or exit of a large pool after dark. Their reason is simple; it offers them a better chance to watch for floating or drifting bits of food. Also, may flies and other aquatic insects are more plentiful in the shallow sections of pools.

Night fishing is the best way I know to capture a large trout. I think I should warn you though that once you begin night fishing your friends (some might even be fishermen) will think you have gone off your rocker, your wife will threaten divorce, and strange dogs will bark at you. But when a five pound trout is curled up in your creel, you'll have the last laugh!

A canoe is an object that acts like a small boy—it behaves better when paddled from the rear.
Wonder of Water

The Wonder of Water—a cartoon-type presentation in four colors, designed to tell the story of upstream watershed protection to more Americans, has just been released by the Soil Conservation Society of America.

The Wonder of Water is a story about a mythical community—Midvale—suffering first from drought and later from flood. The water problems of the community were solved by the small watershed approach, with farm and city people, adults and students, participating.

"The cartoon-type presentation is the sugar-coated pill we are using to inform the public about the necessity for upstream methods of water management and control," according to J. S. Russell, President of the Society and farm editor of the Des Moines Register and Tribune.

Information about its availability may be secured from the Soil Conservation Society of America, 838 Fifth Avenue, Des Moines, Iowa.

Biggest Lake Reclamation Job

By chemically reclaiming 31,000-acre Lake Apopka, Florida has leaped to the front as the state having undertaken the biggest single lake reclamation job by chemical means in the United States to date.

About 6,500 gallons of fish killing compound were used. The killing agent was applied by airplane, airboat and outboard boats.

In reporting the big job, the Sport Fishing Institute commented that the real evaluation of its success will come in the future—when the fishing quality in Lake Apopka has been determined. This can be truly analyzed only by the application of sound fish management techniques, which include creel censusing, spot chemical treatment and electric shocking.

Fish Riddle

An item in Arizona's Wildlife News (Phoenix) for Fall raises an obviously pertinent question: If a single female black bass can lay around 20,000 eggs, how many can a married one produce?

Bargain Day, Maybe?

The Game and Fish Department's Tucson office received a telephone call recently from a lady who wanted to know if she could buy hunting and fishing licenses there. She was told that the office was not authorized to issue licenses, but that numerous stores in the area would be happy to sell her whatever license she needed.

The lady then wanted to know if the licenses were available at the county courthouse, or perhaps the city hall. Again she received a negative answer, but was told that if she would give her address, a dealer in her neighborhood would be suggested, so that she could obtain the license with a minimum of travel.

This idea, too, was unsatisfactory.

She then admitted that she had tried several sporting goods stores, but had found their prices rather high and had decided to shop around a bit before buying her license.

—Ariz. F. & G. Bulletin

Michigan Supreme Court Rules For Public In Lake-Access Case

A state supreme court decision—ruling in favor of the public—has ended a two-year legal battle over access to Diamond Lake in Cass County Michigan. The decision, handed down by the high court at Lansing recently, reaffirmed the principle that a public road terminating at a navigable body of water provides public access to that water.

The Diamond Lake dispute arose in 1955 when a group of property owners on the lake wanted Cara avenue, which ends at the lake front, closed to public use. A circuit court ruling in the case closed the street except to property owners, prohibiting public use of the access site by fishermen, swimmers and others. This decision was appealed to and reversed by the supreme court—re-establishing the public's right of access.

The supreme court opinion restated the long-standing principle: "Where a public highway ends at a navigable body of water, public access to said body is provided."

—National Wildlife Federation
He Ribbed Me About His Bucket

While planting trout in Deep Creek, Schuylkill County, and in carrying a bucketful down a steep and rock lined bank, I lost my footing and fell on the bucket. It was a mean fall and as determined later, resulted in two cracked ribs. However, while attempting to recover my footing, with fish flopping all around and reaching the water under their own power, driver Bob Giffin, who was still atop the truck after having replaced the tank cover, called down, “I hope you didn’t damage my bucket.”

—Anthony J. Lech, Warden, Schuylkill County

Not All Fishermen Hunt

On the opening day of the small game season for 1957 I made a routine patrol of Harvey’s lake and counted seventeen boat fishermen and twelve fishing from shore. I had the pleasure of assisting one fisherman in landing a nice 26-inch, 5 pound rainbow.

—John I. Buck, Warden, Luzerne County

The Same Bunch

Working closely with our fellow conservation officers of the Game Commission during the hunting season, we cannot help but notice the interesting parallel in conservation law enforcement. It seems that the people who violate the fish laws in the spring and summer are generally the same segment of our population who violate the game laws in the fall.

—Richard Owens, Warden, Huntingdon and Mifflin Counties

They Mature Early Up Crawford Way

An egg laden muskellunge at 16 inches and only two years old was observed and reported by Dewey Sorenson, Superintendent of Hatcheries after his inspection of the northern pike-muskellunge netting operations on Canadohta Lake in Crawford County. Normally, this maturity in “muskies” does not occur until they are from four to six years old and attain a length of thirty inches.

The netting operation is part of the Commission’s program to propagate these species of the pike family for introduction into selected waters of the State and as a means of controlling over populations of pan and rough fishes.

—Edward O. Pond, Warden, Crawford County

. . . but no acid!

SOMETHING NEW IN THE ANTHRACITE COUNTRY

An important new step was taken recently by Sanitary Water Board of the Pennsylvania Department of Health in an effort to prevent an increase in the load of coal mine acid pouring into the Schuylkill River drainage basin.

Because the Schuylkill, especially in its lower basin—downstream from its confluences near Reading, with the highly alkaline Maiden and Tulpehocken Creeks—now rates as a “clean stream,” the Board is now writing so-called “C-2” permits for applications to open new anthracite coal mines, where the drainage would reach the Schuylkill.

The C-2 permit provides that the operator of the mine granted this permit may not allow acid drainage to enter tributaries of the Schuylkill, even though the receiving streams themselves may be acid polluted.—W. V.

FOR HEAVEN’S SAKE!

While patrolling French Creek I came upon an elderly man whom I had met several times. He was fishing and had a nice muskie measuring 37 inches and weighing about 15 or 16 lbs. Talking with him, he told me he was using small stoney “pokers” for walleyes, but the muskie preferred his small bait and that this same thing happened on two occasions last year. This man is 84 years old and he told me that he had never caught a muskie until he was past 75. He showed me his knuckles and there were several patches of skin missing where the reel handle had rapped against them.

—Edward O. Pond, Warden, Crawford County

They Buy the Best

On a visit to one of the local sport stores in this area I was surprised to learn the amount of fishing tackle sold at Christmas time last year. Judging from the type of equipment purchased there will certainly be a lot of happy fishermen in 1958.

—Kenneth G. Corey, Warden, Warren County

A “Bang-Up” Catch, Too!

A youthful fisherman ended the 1957 season at Sugar Lake, Crawford County, with a bang. A 23-inch, 7 pound largemouth bass was his reward and was caught on December 30.

Sucker fishermen have been taking advantage of unseasonable warm weather, and French Creek has been producing numerous catches almost daily.

—S. Carlyle Sheldon, Regional Warden Supervisor, Northwest Region
A Mink Streak

The following story was related to me by Mr. Conrad Nelson, LeBœuf Gardens, Waterford, Pa., concerning a fishing trip on the morning of July 13, 1957, in the outlet to Lake LeBœuf. As Mr. Nelson was standing under a tree along the outlet a half-grown mink swam across the stream, climbed the bank and ran between Mr. Nelson's legs and traveled across land to Mr. Ted Reed's cabin where the mink went under the cabin and killed four young house rats but the mother ran out and jumped into the stream and swam under some overhanging tree roots. When Mr. Nelson called regarding the incident the mink was still under the cabin.

—Warden Harold L. Solomon, Erie County

Ice-Fishing—My No!

One lake owner tells me that 1957 was the first in thirty years that his lake was not covered with safe ice.

Two anglers whom I know, have been catching night walkers this past mid-December.

—Harland F. Reynolds, Warden Wayne County

Falcon Style—No?

One evening while fishing for bass in the Raystown Branch, I experienced an unusual incident. Knowing that a large bass inhabited a certain hole in the river, I procured several hellgrammites and decided to make a try for this lunker.

On the first cast I hooked into a fair-sized fallfish. Putting on a new hellgrammite, I again cast into the same hole and received another strike. I set the hook and landed a 6-inch smallmouth bass. Upon removing the bass from the water, I discovered it was not caught on the hook. Believing it was just holding on to the hellgrammite, I lowered it into the water, expecting it would release its hold on the bait and swim free. I could still feel tension on the line, and upon lifting the line from the water, I found still had the bass. I took the bass in my hands and discovered that the hellgrammite had clamped its pinchers securely around the jaws of this 6-inch fish and was holding it. In order to release the fish, I had to pry apart the pinchers of the hellgrammite.

—Harold Corbin, Warden Supervisor South Central Region.

High Water Takes Over

The fishing pressure at this time is very light, due to high water in the Allegheny River and Tionesta Dam. There have been a few anglers fishing for walleyes who have been rewarded with some nice catches.

—Norman L. Blum, Warden Forest & Clarion Counties

AN OLD RESIDENTER!

A nice muskie died of old age in Conneaut Lake during the first part of December. It had lost most of its teeth and I judge would have weighed 40 lbs. or better. It was not tagged.

—Edward O. Pond, Warden Crawford County

Stone in Tummy

Ray Smith, Deputy Game Protector of Amaranth, Pa., caught a 171/4-inch pickerel in Sidelinghill Creek, Fulton County. This pickerel had a stone in its stomach approximately one inch in diameter.

—Warden Bryce Carnell, Franklin and Fulton Counties

Haven for Fish and Wildlife

Glade Run Lake is again full of water, and it didn’t take the ducks long to find this out. On December 30, I counted 31 ducks and 4 geese on the lake.

—Clifton E. Imman, Warden Butler & Beaver Counties

Happy Fishermen, Out Crawford Way

Fishermen of Crawford County will tell you that it was one of the best years they have had in a good many years. With liberalized fishing they could fish all winter and did, catching many walleyes all winter in French Creek, with most of the fish being taken on artificial baits. A few bass were also taken.

We have had the same thing happen at Conneaut Lake. The walleyes seemed to go crazy and any one could go out and catch his limit without any trouble until about the last of May when they quit biting. During the fall when they would normally be taking live bait in deep water the old time fishermen reported that they have not been able to catch many.

—Edward O. Pond, Warden, Crawford County

They’re Suckers, for Biting at Shawnee

The last half of December, 1957, provided considerable fishing at Shawnee Lake. On the 26th of December the fishermen caught hundreds of suckers along with many pickerel.

—William E. McLain, Warden Bedford County

Armstrong Fishermen to Wear Red

On November 2, 1957, while fishing along the Allegheny River near Kelly Station, Joseph Velhino of Lecshburg, Pa., was shot in the back and legs by a rabbit hunter. He had to be treated at the Tarentum Hospital.

—Anthony Discavage, Warden Armstrong County
HOW FAST DO FISH SWIM?

By DAVID GUNSTON
Hampshire, England

Most anglers fall into the error of over-estimating the speeds of fish. The reel screams out its line, the catch struggles mightily and plays cunningly, and all the time appears to swim faster than is actually the case. Nevertheless, there are many kinds of fish which can put up a good speed, even when not hooked, and the whole subject of how fast fish can swim is a fascinating one.

To begin with, no creatures are such masters of their natural element as fish, not even birds, with their apparently effortless soaring and gliding. A fish can remain motionless for as long as it likes, it can move forwards or backwards an imperceptible degree, it can spurt forward from scratch at high speed, it can rise or descend with supreme grace and ease. Furthermore, the shape of a fish is ideal for swift sinuous movement, and its underwater streamlining is perfect, as man recognizes when he designs submarines and torpedoes. The simple “jet-propulsion” with streams of water ejected swiftly through the gills, the moulded body shape with its bullet-like head and jaws tightly sealed to allow no water to enter, the smooth-surfaced, inset eyes, the overlapping scales and the tapering rear quarters are all admirably suited to speedy progress through the water.

The resistance of water, by the way, is something like 700 times that of air, so the really high speeds achieved by some fish are little short of miraculous. It was formerly thought that the fins, particularly the caudal fin, and the tail were the sole and primary means of locomotion, but experiments have shown that a fish without tail or fins is far from helpless. The chief method of fish progression is through the rippling undulations of the creature’s body, aided by the streams of water from the gills. The other organs are useful as steering devices, balancers, brakes and aids to sudden movement, while the swim-bladder inside all fish—a kind of sac containing gas lying just above the gullet—acts as a sort of hydrostatic lifebuoy, adjusting its gas content according to the degree of water pressure experienced at varying depths. Thus a fish can move quickly up or down in the water, sometimes from quite a depth, without experiencing any discomfort at the sudden changes in external pressure—as a human diver does when he gets the “bends.”

Both the shape and the tail formation of fish are good guides to their powers of speedy locomotion. The fastest fish have long, tapering bodies, cigar-shaped and broad rather than high; whereas fish with short, high, laterally-compressed bodies (that is the sunfish shape, as opposed to the salmon shape) are always slower-moving. Those fish with deeply-forked tails like the mackerel are nearly always the fastest moving over long distances, and those with square or rounded tail patterns are usually slow-movers, although most of them are able to make short dashes at high speed if the need arises.

It is extraordinarily difficult to secure reliable proof of fish speeds, for there are many obstacles in the way of scientifically checking underwater movements (some of which may be swift, sudden and brief) with reasonable accuracy. Fish speeds have been recorded with a variety of devices: by ordinary stop-watch; by a gadget called the “fish-o-meter” attached to a rod to register the speed at which the line is run out; another similar device in which tank fish are harnessed with a fine silk...
cord which unwinds over a large pulley actuating a sensitive relay once each revolution; by taking a cine film of swimming fish and working out their actual speed by comparison of the varying positions on each picture-frame of the film; by timing a swimming fish from the known speed of a ship or boat which it passes in a recorded time; and even by calculating the speed of the current in a river and then working out the minimum speed a fish must achieve to make headway against it.

A French scientist, Professor A. Magnan, using the third device mentioned, has done a lot of work in this field, but almost all his findings relate to the normal speeds of fish, rather than to their absolute maximum speeds. He found pike, dog-fish, salmon, sturgeon, tunny and blue shark to be among the fastest of fish. Some typical speeds he recorded are salmon 11 m.p.h., tunny 14 m.p.h., and blue shark 24 m.p.h.; all of them normal rather than emergency speeds. Salmon have attracted more speed investigators than any other fish, and another French expert who coaxed fish along a specially-built track in the River Vienne found the salmon an easy first, at about 18 m.p.h. The highest recorded speed for a salmon is 25 m.p.h., although some authorities claim that it has really swum much faster.

All fish speeds, by the way, should be considered in comparison with the world speed record for a human swimmer, which is 4.01 m.p.h. American bonefish have been known to swim at 22 m.p.h., and Zane Grey, the famous storyteller, recounted how he once hooked one and ran along the bank towards it. In the time he took to cover 50 feet the fish had reeled out 400 feet of his line, and assuming his speed to be only 5 miles an hour, the fish would appear to have reached something approaching 45 m.p.h. in a very short time.

The fastest fish of all is the sailfish, a variety of swordfish, without any doubt. It has been known to take out 100 yards of line in three seconds, a speed of nearly 70 m.p.h., and anything over 60 m.p.h. is usual for these powerful creatures in a sudden spurt of colossal energy and rage. Tunny also rush at a good speed, recorded by some as about 44 m.p.h. maximum. Anyway, a tunny that does not spurt off at about 40 m.p.h. when it first feels the hook is an unusual catch. But for sheer impact of speed (sometimes directed straight at a boat) the thrust of an angry swordfish takes some beating. It has been shown that to drive the rapier of a swordfish through 20 inches of hardwood sheathed with copper and often faced with oak as well takes a driving force at the moment of impact of at least 60 m.p.h.

The wahoo has been timed by stop-watch to travel 200 yards in 11 seconds, when hooked, which is an average speed of just over 37 m.p.h., while the fighting tarpon and the mako shark can both reach a good maximum of about 35 m.p.h., sometimes hurling their great bodies clean out of the water when they do so. The other really fast fish is the dogfish, to which a spurt of 30 m.p.h. comes easily.

Among the smaller species, the trout follows the salmon with a maximum speed of about 23 m.p.h., and more than one observer's stop-watch has registered a pike's mad dash at 20 miles an hour. Devilfish at 14 m.p.h. and bass at 12 m.p.h. both maximums again, are speedy adversaries, and even a minnow can swim at over 9 m.p.h.

Here are some other authentic speeds recorded for species of special interest to anglers: perch, 10.2 m.p.h.; roach, 10 m.p.h.; dace, 9.3 m.p.h.; carp, 7.6 m.p.h.; mullet, 8 m.p.h.; eel, 7.5 m.p.h.; tench, 7 m.p.h.; chub, 5 m.p.h.; it is worth remembering that even this last, seemingly slow speed, is faster than any man can swim, and it is about as fast as one can walk without breaking into a run. By way of comparison the bream progresses at only 1½ m.p.h., though the picture presented by an octopus darting about at a good 4 miles an hour runs contrary to the generally accepted opinion that these devilish creatures are slow-moving and sluggish by nature.

If our authenticated records of fish speeds over short distances are all too few, those covering long periods and distances are even rarer. A marked eel, however, is known to have swum 750 miles in 93 days, which gives it an average speed of about 9 m.p.h., while a salmon has been proved to swim over 60 miles per day for more than ten days in succession. The usual daily mileage for a salmon in the sea has been estimated at nearer 25 miles per day, however.

It should hardly be necessary to add that if any angler ever gets the chance of measuring a fish's swimming speed, even over the shortest distance, it would be a great pity to neglect the opportunity of adding to our knowledge of this subject.
Twenty-eight years ago Mrs. Vista Hartenstine of 172 Bridge St., Morton, Pa., purchased a small turtle about the size of a quarter in a 5 & 10 store. Today it has become a fixed pet in the Hartenstine home.

Mrs. Hartenstine writes—"We call the turtle Snooper and over the past twenty-eight years have become rather attached to him. We call him by tapping the floor and he will come to be lifted up on my lap. I feed him morsels of horse meat and various sea foods but must always submerge him in water before he is able to swallow it.

"Snooper and Ting Ling our 10 year old Siamese cat have become fast friends, and it is quite common for him to crawl upon the back of the cat and fall fast asleep."

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Book Review

Sportsman's Game and Fish Cookbook
By Helen Lyon Adamson and Hans Christian Adamson
Greenburg Publisher, 201 E. 57th St., New York 22. N. Y.; $5.95

This is a cookbook for each of the millions of men and women who shoot their own game, catch their own fish, and bring home the "bacon" to enjoy over their own ranges. It begins with much-needed and excellent information on how to preserve, treat and transport your quarry from field to kitchen.

Fish becomes a diner's delight when prepared according to the Adamsons' both usual and unusual recipes. Among the many fish dishes are bass in tomato aspic, scrambled muskie, trout with orange butter sauce, baked silver salmon, baked Lake Ontario whitefish, bullheads in sour cream, soused mackerel, baked pompano, and broiled swordfish steaks.

Other categories, also arranged regionally, include recipes for antlered game, mountain goats and sheep, bear and other big game, small game, wild turkey, and waterfowl. Never before have so many easy to prepare recipes for game and fish been included in one cookbook. In addition to the down-to-earth dishes there are many gourmet delights interspersed within each section: for example corned venison a la Maine, creole venison jambalaya, brandied snipe, smothered doves Virginia, Indian House venison curry, sweet and sour rabbit, salmi of duck Olivera, crepes faison de Chapdelaine, to mention a few.

SPINNING FOR SALT WATER GAME FISH by Joseph D. Bates, Jr. Published by Little, Brown and Company, 34 Beacon Street, Boston 6, Massachusetts, 274 pages, illustrated with clean line drawings and half-tones. Price, $6.00.

THE FISHERS OF OHIO, by Milton B. Trautman. Published by the Ohio State University Press, Columbus 10, Ohio, 700 pages (7¾ x 10¾ inches). Contains 7 full-page color plates showing 21 species of fishes. There are more than 800 black and white illustrations. They include 190 detailed original drawings of fishes to scale and 172 distribution maps.

Includes technical keys for identification of fishes in Ohio and many species in neighboring states. Has chapters on common and scientific names of fishes, fish hybridization, collecting and preserving fish, changes in land use and stream conditions since 1750, factors influencing fish distribution and abundance and reasons for changes since 1750.

This long-awaited treatise may be of interest to the technically-minded, advanced angler as well as to the fishery scientist. It's an amazing record of an outstanding naturalist's life-long devotion to a goal.

Price is $6.50 plus 30 cents postage for mail delivery. Ohio residents must add 20 cents more for sales tax.
NOW REMEMBER GILBERT... YOU PROMISED ME SOME EXCELLENT FISHING!!

YES SIR... MISTER BIGGS, THAT'S WHAT YOU'LL GET!

LATER...

NO FISH YET... WE MIGHT AS WELL MOVE!!

MUCH LATER...

GILBERT YOU DISAPPOINT ME! THE FISHING IS TERRIBLE!

BUT MISTER BIGGS ---

-- THE FISHING IS EXCELLENT... IT'S THE CATCHING THAT'S LOUSY!!

SPLASH!