

had been passed that forbade the taking of trout under 6 inches in length. George Bennett knew the law well enough, and was careful to obey it, but became separated from his companion on the stream, and when he rejoined him for luncheon, and the trout were exhibited and counted, the Attorney-General had a good sprinkling of under legal limit trout, for it was apparent that the chief law officer of the State knew nothing of the 6-inch law, and George did not deem it necessary to inform him, but thereafter creoled trout as they came to him without regard to their length.

Since I first fished the waters in the region of Thirteenth Pond the fishing has gone from bad to worse, until there was practically no fishing worth the journey to it, and then under artificial cultivation, planting of trout and a better observance of the fish laws, it has improved until fair to good trout fishing may be found; but if the artificial hatching of trout had not come to the rescue many of the Adirondack waters would to-day be barren of trout, or practically so.

Landlocked Salmon.

The State fish car went to Lake George last week to plant a car load of yearling lake trout and landlocked salmon, and I went with it. The work of stocking this lake with landlocked salmon was begun in 1894, before the creation of the Fisheries, Game and Forest Commission, when fingerlings were furnished by the United State Fish Commission, and this has been continued ever since. The plant of 2,400 yearlings made last week was the first from eggs hatched and reared by the present Forest, Fish and Game Commission, and the plantings of the species will be concentrated in this lake until the fish are established in sufficient numbers for the State to draw upon them to stock other suitable State waters. It is far better to do this than to distribute the fish in small lakes, where it will take some time to determine the question of the suitability of the waters for the fish. It has already been proven that Lake George is most favorable for the salmon, and it is expected that the State may very soon begin taking eggs from the fish that have been grown there. While at Lake George Capt. Lee Harris gave me a memorandum of twelve salmon caught this season, the largest weighing 11 pounds, and the next 10 pounds. They have been seen to run up the streams where they were planted and which are closed by law to all fishing for the purpose of permitting the salmon to spawn unmolested and give the young an opportunity to grow to two years of age before descending to the lake.

Pioneer Fish Breeders.

One of the replies which came to me in response to Dr. Seligman's queries about fish monsters was from Gen. Martin Schenck, formerly State Engineer and Surveyor of New York. Though I had known him for a number of years, and talked fish and fishing with him, I was unaware that he was one of the pioneers in hatching fish artificially, and therefore I asked him about his early life in this field, and in reply he sends me the following interesting letter:

"I began operations in a small way in 1873, and then established the Kenandrach trout ponds and hatchery on Kenandrach Creek, near the south line of the town of Palatine, four miles east of Palatine Bridges, on the New York Central. My ponds were supplied from a large spring, known as the Schenck Cold Spring, and my first venture in taking ova was from native trout taken by me and a few friends from the Loucks, Allen and Flank creeks, near the south line of Fulton county, and some were purchased of local fishermen.

"I trust you will not criticise this method of getting stock. Please remember the law then permitted it, and all the fish except those purchased were caught in a decent and sportsmanlike manner; possibly those purchased also were.

"I had three ponds of fingerlings, that for adult trout of good size, and a hatchery with a capacity of 200,000 ova, but did not take that number of eggs the first year or two. Used gravel in the hatching troughs the first year; after that used galvanized wire trays, fertilized ova by the dry method, and was reasonably successful for a beginner.

"For text books I had Seth Green on 'Trout Culture' and Stone's 'Domesticated Trout.' I also received considerable verbal information from Fred Mather, Seth Green and Dr. Slack. Fred Mather at that time wrote for an agricultural paper (a monthly) on the subject of fishculture, but I cannot for the life of me recall the name of the paper, notwithstanding I culled from it many a valuable hint on fish breeding.

"I was something of a pioneer in the fish breeding line in Central New York, although the Richland Station hatchery, of which you speak in your letter, was running then.

"At that time Seth Green was at Caledonia, Fred Mather at Honeoye Falls, Dr. J. H. Slack at Troutdale Ponds, near Bloomingdale, N. J., Mr. Ainsworth in Livingston county, and Stone & Hooper (Livingston Stone senior partner) were running the Cold Spring ponds at Charleston, N. H. The American Fishcultural Association, with Geo. Shepard Page, president, was then in its glory, and every man who owned a horse pond, a hog wallow or frog puddle was going to raise salmon and get rich in a week. A few did not get very wealthy.

Most of the persons named have passed on to the Great Beyond: all were worthy disciples of the gentle craft, and let us hope they find plenty of occupation for rod and reel over there.

"I had comparatively few monsters among the fry hatched from ova taken from our native trout, nor do I think that any unusual number were hatched from the fish raised from the Stone & Hooper eggs mentioned in my recent letter to you, although a very large number, the three-headed one among the number, were hatched from the lot purchased from them in 1875. I preserved the triple-header for some time, but it finally became a fleshy mass in the alcohol, and was thrown away. Had amateur photography then been one of my accomplishments I might now have a picture of it. I do not recall ever having seen more than one monster with one body and two tails, although those with two bodies and one

tails were of frequent occurrence, and the Siamese twins soon were quite common.

"My fish breeding experience ended when my professional duties became so exacting as to require all my time, much of it away from home, and in 1879 I disposed of some of the stock, and with the balance stocked a few brooks in the vicinity of the ponds.

"The pond and hatchery have passed out of existence, and I understand that the county of Montgomery has purchased the property on which they were located for a county almshouse farm, and thus endeth the Kenandrach ponds and this letter."

The reference to Mr. Ainsworth in Gen. Schenck's letter reminds me that he is perhaps the pioneer fish breeder in this State, and in some future angling note I will publish a letter which he wrote me years ago in which he tells of his early experiments and which shows that he operated on independent lines, never having heard of Roney and Gehin, whose experiments in Paris inspired Dr. Garlick to become the father of fishculture in this country.

It was quite by chance that my own thoughts were turned to practical fishculture by artificial processes, for I had never heard of Livingston Stone until on a visit to a younger brother in college I was forced to spend the night at Bellows Falls, Vt., and there heard of a fish establishment at Charleston, N. H., and the next day I drove to it and later went to the Richland hatchery in New York to learn how the hatching was done in all its details, but in those days only members of the salmon family, chiefly brook trout, were hatched. How this business has grown since that time! At this moment there is before me a report showing that in New York State alone there were over 60,000,000 fish of different kinds planted in one month.

New York Commissioner.

The work of the Forest, Fish and Game Commission has been most encouraging this year. The pike-perch work at the Constantin hatchery on Oneida Lake is closed, and 50,700,000 young fish were hatched and planted in State waters. The Commission has granted applications for pike-perch only for waters that already contain them, or waters that once contained them, and many applications for small waters, where it was believed the fish would not thrive, have been rejected.

The United States Fish Commission was so successful in taking shad eggs on the Delaware that five car loads of fry, 10,300,000, were granted to the State Commission and were planted in the Hudson. One car load of shad fry was planted at Glens Falls, fifty miles above tide water, at Troy, as previous experiments in this direction have proven that the shad grow rapidly in the purer water of the upper river, and escape their natural enemies to a greater degree than in tide water. The shad work at Catskill, where the State Commission has a hatchery, is in progress, and about 30,000,000 eggs have been taken. The Commission is also taking shad eggs at Smithtown, L. I., from the shad that run up the Nassaquoque River, so that altogether more fry will be planted this season than in any previous year.

The mascalonge work at Chautauqua Lake resulted in taking about the same number of eggs as last year, something over 6,000,000, and above 65 per cent. of the eggs were hatched and planted. This, too, is a fish for which many applications are made to be planted in waters that are wholly unsuitable, for the Commission will not grant applications for this fish to be planted in waters in which they do not at present exist. Many small mascalonge were taken in the State nets this year, showing that the work of previous years is bearing fruit. It is the policy of the Commission to return to the waters from which eggs are taken more than a fair share of the fry hatched from the eggs, and in pursuance of this policy over 15,000,000 pike-perch were planted in Oneida Lake, and over 3,000,000 of mascalonge in Chautauqua Lake. The Commission will hereafter increase the stock of breeding brook trout at the various stations, and decrease the stock of breeding brown, rainbow and red-throat trout, for there is a greater demand for the native brook trout than for the European or Pacific coast species that have been already introduced into State waters.

The applications for black bass seem to swell in numbers rather than decrease. The total number of black bass asked for in the applications this year has not been given out by the Commission, but at their last meeting the Commission adopted a recommendation made by the State Fishculturst that no small-mouth black bass be distributed this season. The present law does not protect the fish during their breeding season, and it is most difficult to procure the fish for transplanting. There is less difficulty in procuring the fry of the large-mouth black bass, and this species will be distributed so far as possible to those who ask for them, or who will change their applications for small-mouth black bass to read large-mouth black bass.

A. N. CHENEY.

The African Tiger Fish.

Editor Forest and Stream:

I was much interested in the article on "The African Tiger Fish," in the issue of FOREST AND STREAM for June 2 (p. 433). Your readers may be pleased to know what the fish is. It belongs to a group of which no representatives occur in Europe or the United States proper—that is, the family of characimids. Numerous species occur in the waters of Africa as well as tropical America, and a single species enters the southernmost streams of Texas. The family is most nearly related to that of the carps, although almost all have an adipose fin like the salmonids. The so-called tiger fish is member of a genus peculiar to Africa (*Hydrocyon*) and its longest known species is a fish of the Nile called by the Arabs kelb el bahr, or kelb el moyeh, which may be translated river or water dog. Five species occur in various parts of Central Africa. They are all large fishes of a fusiform or salmon-like shape, but more slender, and the very large and pointed teeth fit in grooves outside the jaws. The caudal fin is deeply notched, and its lobes spread out. Two new species have been described lately (December, 1898) from the Congo Basin.

THEO. GILL.

WASHINGTON, JUNE 4,

When the Bluefish Bite.

FIRE ISLAND, June 13.—"Too airy for bluefish? It's never too airy for 'em, if ye know where to find 'em." So spoke Captain Joe Sinclair, whose reputation for finding the wary and uncertain pirates of the salt seas had induced us to employ him to guide us to the best fishing grounds, and incidentally to assure us of a good catch.

"Bluefish is like all other fish," he continued, as he loosened the sheet rope of the sloop Emma and swung her out into the channel before a spanking breeze. "They have their fav'rite hidin' places, an' ye might fish around 'em all day an' not get a bite. What ye wants to do is to drop your squid plum into the school. Then they do the rest."

That, incidentally, we thought might be the secret of all fishing, but we did not say so, and permitted the Captain to enjoy the full effect of his erudition in fish lore. Across the bay from Babylon to Fire Island is a good two hours' sail when you have a fair breeze, but we made it in much less than that time, because we had something more than a fair breeze. We thought it was a two-reef breeze, but out salt-water navigator sniffed at the suggestion and replied:

"I ain't nothin' of a breeze—jest a little baby breeze. The whitecaps ain't hardly formed on the channel yet."

Before we reached Fire Island Inlet, however, the whitecaps had certainly formed, and they seemed to make an endless line of foam wherever the tide eddied and met in little whirlpools. There was a perceptible swell on the inlet, too, which was not altogether agreeable to some of the party, but nobody dared confess such feelings. We had all told our tale of bluefishing in rough waters before, and it hardly seemed consistent to indulge in any remarks about the unusual rolling and rocking of the boat. So we all remained quiet, and later, under orders from our guide, hauled out the lines and flung the squids into the water.

There is no pleasanter fishing than trolling for bluefish if you have the luck of finding them. It goes far ahead of "chumming," for you have the delight of the sail as well, and there is always the brisk excitement produced by the danger of somebody being knocked overboard when the boom swings around just as a fish is being landed. For some unknown and occult reason an ordinarily sane and level-headed man loses his head completely when in the act of hauling a big bluefish in, and if he doesn't jump into the water after him he is very apt to catch the boom if a puff of wind or a heavy wave should swing it over in the nick of time. The wisest and most sedate business and professional man dances a regular hornpipe on the stern of the boat when he feels a sharp bite on his squid, and then after hauling in a hundred feet of line finds that the gamy creature will flop off if he is not quick and active in pulling. If it is a big one everybody adds to the man's excitement by shouting, "Pull him in! Quick, or you'll lose him! There he goes! No, you've got him yet! Keep him away from the boat! Keep him away from the boat!"

Such shouts and directions are enough to disconcert almost any except a professional, and many a man has come within an ace of losing his wits entirely when in the act of landing a 6-pound bluefish. It was because of this pandemonium that our first fish escaped. The lucky fisherman who got the bite on his line was unused to the sport, and instead of devoting his time to the fish, he attempted to follow the various orders shouted at him. After five minutes of the hardest work in the world, his fish went plump into the water, and while mopping his brow he talked back angrily to his would-be advisers:

"What for you tell me such lies? You say pull him in quick; then you say he's gone, an' I give up. Then you say he ain't gone, an' tell me pull again. I pull away, an' you shout keep him away from the boat. Then I throw the line away from the boat, an' you say pull again, pull again. How I know what to do? I know. The next time I'll do jest as I blank please. See?"

Our shouts of laughter did not help to mollify our Dutch friend, but Captain Sinclair poured oil on the troubled waters by remarking: "Ye don't want to mind what anybody says. Jest pull away, an' keep your line as far from the boat's side as possible. If the critter gets under the boat he's apt to turn over and flop off the hook. Ye must jest fight with him alone, an' don't pay no attention to the others."

"That's jest it, Captain; don't pay no attention to none of them. They jest tell lies, because, I think, they're jealous of my luck."

We did not respond to this outburst of confidence, for just then we struck it rich. The Captain had indeed led us to the early summer hiding place of the bluefish. One hook after another was caught and swallowed, and in a short time we were hauling five lines hand over hand. The fish were of good size, and we flung the hooks over again and pulled in more almost as fast as we could work. Back and forth through the school we sailed, everybody getting excited except the Captain. He had enough to do in keeping the sloop going properly, for the sea was heavy and the wind a stiff ocean breeze.

Suddenly our lines all slackened except that of our Dutch friend, who was tugging away with all his might. He stood on the stern deck, and what with the rolling of the boat and his exertions to land his fish he seemed liable any minute to tumble overboard.

"Don't fall overboard there!" somebody shouted in real concern.

"Golly! I got a big one," grunted the man, tugging away at his line.

"Want any help?" asked one of the party, starting toward him.

"No, no; this is mine—mine! Go 'way, an' let me land him. He's a big one!"

So we all watched him fight fiercely with his catch, for in the interval all of our lines seemed slack and free from any indications of a bite. We all began to speculate upon what our friend was hauling in, some predicting it was a huge catfish, and others an eel, and one suggested a young shark. Our curiosity was soon to be gratified, for more than half the man's line was already in, and we began to peer into the blue water to catch a glimpse of the monster.

Our eyes were thus diverted from the fisherman to the fish, when the boat gave an unusual roll, and there was a muffled grunt, followed by a loud splash. Instantly