PART XIV.

EASTERN FLORIDA AND ITS FISHERIES.

By R. EDWARD EARLL.

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PART XIV.

EASTERN FLORIDA AND ITS FISHERIES.

A.—GENERAL REVIEW OF THE FISHERIES.

187. TOPOGRAPHY OF THE REGION.

GENERAL CHARACTERISTICS.—Florida, the southernmost State of the Union, has an area of 59,268 square miles. It is a peninsula of sand and shells, 400 miles long, separating the waters of the Atlantic from those of the Gulf of Mexico. It is for the most part a sandy waste, with a level surface gradually rising toward the center where it attains a height of several hundred feet. The evenness of the surface is occasionally interrupted by low ridges of sand running parallel to each other. These are often separated by immense shoal-water lakes, rivers, or swamps, covering hundreds or even thousands of square miles, while the surface of the higher lands is everywhere dotted with land-locked lakes and ponds of smaller size. In its southern portion the land is particularly low and becomes simply a large grassy swamp, known as the Everglades, which is wholly submerged during a considerable portion of the year. Continuing southward the peninsula is broken into an almost innumerable number of sandy islands and coral reefs, some of them quite small and others of considerable size.

The peculiar shape and position of the peninsula gives to Florida a more extensive sea coast than that of any other State; on the Atlantic there are over 450 miles of coast line and there are fully 650 on the gulf, making a total of 1,100 miles. This distance, though enormous, is vastly increased by the numerous salt-water lagoons and bays along the shore.

DESCRIPTION OF EASTERN FLORIDA.—The eastern portion of the State, which is the one at present under consideration, is a remarkably level section, rising but a few feet above the sea. The land is composed wholly of sand and broken shells, covered here and there by a thin layer of vegetable mold. The higher ridges of the region are covered with a scattered growth of pine, while the intervening depressions, which are submerged to a depth of from a few inches to several feet, support a rank growth of various swamp grasses, or are covered with dense thickets of cypress, palmetto, magnolia, and ash. Even in the higher pine lands one finds a great number of land-locked ponds and lakes varying from a few rods to several miles in extent.

Along the ocean shore the current has thrown up low sandy bars for nearly the entire length of the State; and behind these are shallow lagoons or arms of the sea, with here and there an opening to the ocean. These lagoons, called by the inhabitants rivers, are often broad sheets of salt or brackish water, extending continuously for many miles along the coast, and with but few interruptions along the entire eastern shore of the State. They usually connect with the ocean by means of shallow inlets, which are separated from each other by a considerable distance; these,

although very shallow, are often navigable by boats and shoal-draught vessels for their entire length. In the still water of these lagoons many of the salt-water species find an agreeable change from the rougher water outside, some coming in to spawn, while others are led to enter the inlets in pursuit of food. During the winter months immense quantities of fish may be found in these places, but in summer the water becomes so warm that most of them are driven out into the sea.

The saltness of the water varies greatly, being wholly dependent upon the amount of rainfall in the locality. During seasons of continued drought the lagoons are fed from the ocean, when they become very salt. During the rainy seasons, however, they are often quite fresh, except at and near the inlets. It is said that in 1863 Indian River was even salter than the ocean, and salt-works were established on its banks; but during our visit, in the fall of 1880, after two rainy seasons, the water at Titusville was so fresh that we failed to detect any brackish flavor, and the animals of the region drank it freely. The freshening of the water has a decided influence on its fauna. The oysters of an entire bay are at times wholly destroyed, while the fish are driven to the inlets, where the water is always more or less salt. An excellent opportunity is thus given for extensive fisheries, as immense quantities of fish can readily be taken with suitable apparatus.

THE SAINT JOHN'S RIVER.—Just beyond these salt or brackish lagoons of the shore, at a distance varying from 10 to 30 miles, lies the Saint John's River. It is fed by thousands of square miles of shoal grassy swamps, in which the river takes its rise. It is a sluggish stream, extending through nearly 3° of latitude, and by means of its numerous and intricate windings the water is carried about 400 miles before it reaches the sea. It is navigable by small inland steamers for fully 350 miles. In its central portion the river often expands into small lakes several miles in extent, and as suddenly contracts into a mere creek only a few rods wide. In its lower third it is merely a succession of shallow lakes, from 2 to 15 miles in breadth. It is said that the river has but 4 feet of fall during its entire course. For this reason the current is usually quite sluggish, and the ocean tide extends to Lake George, situated 158 miles from the sea, while the water is usually brackish for a considerable distance beyond Jacksonville.

188. STATISTICAL RECAPITULATION.

The fisheries of Eastern Florida are so different from those of that portion of the State bordered by the Gulf of Mexico that it has been thought desirable to treat them separately. If the entire State be considered, Florida takes the fifteenth place on the list, having, in 1880, 2,480 fishermen, producing $636,378 worth of fishery products. The principal fisheries are at Key West, where a fleet of twenty-one vessels is employed in the capture of groupers and red snappers for the Havana market. The sponge fisheries of the United States are confined exclusively to the west coast of Florida, where, according to Mr. Silas Stearns, special agent in charge of the fisheries of the Gulf States, one hundred sail of vessel are engaged in the business, the value of the sponges taken in 1880 amounting to $200,750. The mullet fisheries also are of peculiar importance, the catch for the Gulf coast of the State, according to Mr. Stearns, being over four times that of Eastern Florida. The catch for the entire State in 1880 reached 3,494,333 pounds, valued at $123,508. Nearly half of the mullet taken in the United States are caught in Florida waters.

Along the Atlantic coast the fishing is chiefly with hook and line or cast-nets for local supply, though in the Indian River 88,250 pounds of green turtle, valued at $6,000, were taken, the majority being shipped to the Northern markets. The shad fisheries of the Saint John's River, though of recent origin, are quite extensive, 251,700 pounds, worth $20,136, being taken in 1880. A full statistical account of the fisheries of Eastern Florida is given in the following statements:

Summary statement of persons employed.

Persons employed.	Number.
Number of fishermen	348
Number of shoremen	20
Total	368

Detailed statement of capital invested and apparatus employed.

Apparatus specified.	Number.	Value.
Boats	315	$12,950
Fykes, pots, and baskets	40	200
Gill-nets	172	11,915
Dip-nets and cast-nets	271	1,229
Drag-seines	16	1,060
Minor apparatus, including outfit		3,700
Factories and other shore property		9,000
Additional cash capital		3,500
Total capital		43,554

Detailed statement of the quantities and values of the products.

Products specified.	Pounds.	Value.
Grand total for fishery products	2,286,750	$78,408
Sea fisheries.		
Bluefish	25,000	500
Clams (hard)	4,800	330
Mullet	563,000	20,787
Oysters	140,000	5,000
Shrimp	71,750	3,500
Spotted sea-trout	100,000	2,000
Squeteague	15,000	225
Terrapin	3,000	200
All other species	596,750	13,530
Total sea products	1,619,300	46,072
River fisheries.		
Alewives	10,000	200
Shad	251,700	20,136
Sturgeon	3,000	150
All other species	402,750	11,850
Total river products	667,450	32,336

THE SEA FISHERIES.—In the following statements is given a summary of the salt-water fishery interests of this portion of the State, exclusive of the oyster industry:

Summary statement of persons employed.

Persons employed.	Number.
Fishermen	223
Shoremen	15
Total	238

Detailed statement of capital invested and apparatus employed.

Apparatus specified.	Number.	Value.
Boats	245	$8,650
Fykes, pots, and baskets	40	200
Gill-nets	93	3,955
Drag-seines	12	460
Dip-nets and cast-nets	231	1,029
Minor apparatus, including outfit		2,200
Factories and other shore property		7,800
Cash capital		3,500
Total capital		27,794

Detailed statement of the quantities and values of the products.

Products specified.	Pounds.	Value.
Bluefish	25,000	$500
Clams	4,800	330
Mullet	663,000	20,787
Shrimp	71,750	3,500
Spotted sea-trout	100,000	2,000
Squeteague	15,000	225
Terrapin	3,000	200
All other species	596,750	13,530
Total	1,479,300	41,072

B.—THE PRINCIPAL FISHERY DISTRICTS DESCRIBED.

189. FERNANDINA AND ITS FISHERIES.

THE FISHERIES OF FERNANDINA.—Fernandina, the principal coast town of Eastern Florida, is situated on the west shore of Amelia Island, and has about 3,000 inhabitants. It was settled by the Spaniards in 1632, and still has a large Spanish population. Its harbor is one of the largest and among the best in the South. The fisheries of the place are of little importance for other than local supply, and the fishermen use only the cast-net and hook and line in the capture of the different species. They fish wholly from small boats in the harbor and river, seldom crossing the bar to fish along the outer shore.

There are about twenty-five men in the two settlements, or the upper and lower towns as they are called, who depend largely on the water for a livelihood, with twenty others who fish occasionally during the winter months.

In addition to the boat fisheries of the place, several Northern vessels occasionally visit the region, and fish along the outer shore between Savannah and Saint Augustine, selling their catch in Jacksonville and Savannah, or shipping it to the Northern markets. These usually make their headquarters at Fernandina. In the winter of 1879–'80 there were three smacks engaged in this fishery for a few weeks, but the business was soon discontinued, not from any scarcity of fish, as we are told, but from the lack of any suitable market and the want of energy on the part of the crews. One of the smacks is said to have stocked $472 between the 7th and 27th of January. There are excellent fishing banks a few miles outside of the harbor, extending along the coast for miles in either direction. Parties from Jacksonville and Fernandina occasionally resort to these banks in vessels or steamers for pleasure-fishing, and bring in large numbers of blackfish and

red-snappers, but, aside from the fishing by Northern smacks already mentioned, there is no "outside fishing" for profit.

QUANTITIES OF FISH AND OTHER SEA-PRODUCTS TAKEN BY THE FERNANDINA FISHERMEN.—Not over 25 green turtle are caught in a season. These are taken with cast-nets in the river, their average weight being about 10 pounds. Loggerheads and hawkbills are very abundant, but no use is made of them. According to Capt. T. E. Fisher, shrimp and prawn are abundant in the harbor directly opposite the city during the entire year, and a man can readily secure 3 or 4 bushels with a small cast-net on any pleasant night. The catch, which is not less than 450 bushels, is boiled and dried for shipment to New York, Philadelphia, and Savannah.

In the winter of 1879–'80 the fishermen for the first time became interested in the sturgeon fisheries. They have just established a camp on the Saint Mary's River, at Tampa Bluffs, where two nets are fished regularly. The catch is brought to the village, where the fish are iced for shipment to New York.

During the winter of 1879–'80, according to Captain Fisher, 3,000 strings of fish were shipped to Atlanta and Macon, in Georgia, and about 1,000 red-snappers, 40 groupers, and 3,000 bass were sent to other markets along the coast.

THE PRINCIPAL FOOD-FISH AT FERNANDINA.—The principal species taken in the river are mullet (*Mugil albula* and *M. braziliensis*), trout (*Cynoscion maculatum*), blackfish (*Serranus atrarius*), drum (*Pogonias chromis*), bass (*Sciæna ocellata*), sheepshead (*Diplodus probatocephalus*), croakers (*Micropogon undulatus*), flounders (*Pseudorhombus dentatus*), yellow-tails (*Bairdiella chrysura*), sailor's choice (*Lagodon?*), and eels (*Anguilla vulgaris*). On the outer banks all of the species common to the region are abundant.

190. SAINT AUGUSTINE AND ITS FISHERIES.

EARLY SETTLEMENT OF SAINT AUGUSTINE.—Saint Augustine, a city of 2,600 inhabitants, was founded by the Spaniards in 1565. It occupies a portion of a peninsula, formed by the Saint Sebastian and Matanzas Rivers, lying nearly opposite Saint Augustine Inlet. Its harbor is simply a portion of the Matanzas River separated from the sea by a long and narrow strip of land known as Anastasia Island. Though the inlet has 10 to 13 feet of water, no steamers run regularly to the city, and the vessel fleet of the place consists simply of a few pleasure yachts owned by Northern gentlemen, who spend their winters in the South. Thousands of people visit Saint Augustine each winter, both on account of its historic interest and its delightful climate, and it is fast coming to be the Saratoga of the South.

THE PRIMITIVE CONDITION OF THE FISHERIES.—Saint Augustine boasts the oldest fisheries in the United States, if not on the Western Continent, for the colonists who came over in 1565 must have drawn largely on the water for their food, and it is not improbable that the introduction of the Spanish cast-net, which is still in use in the locality, could be traced to this colony. The fisheries, like the town, have remained stationary for many years, and we still find them under the control of the Spaniards, who paddle about in their log canoes or dug-outs, throwing their primitive cast-nets over the heads of the fish. The men have become very expert in the use of these nets, and readily secure more fish than can be sold fresh. They seem satisfied to fish only for the home market, and it never occurs to them to catch an additional quantity for salting or shipping. The favorite fishing grounds are about Matanzas Inlet, 17 miles distant, and in winter the bulk of the fish are taken in that locality; but in summer, and to a certain extent at other seasons, many are taken at various points along the river bank. There is no fishing for profit along the outer shore,

and many fishermen never cross the bar. When Matanzas Inlet is visited only three trips are made in a week, but when fishing nearer home it is customary to go out oftener. After securing as many fish as can be sold the fishermen start for home, and by daybreak each has his catch spread out upon his stall in the market. As the customers arrive they make their own selections of such fish as they desire. These are at once strung in bunches of 4 to 6 pounds each, the average price being only 10 to 15 cents a string, while the hotels are supplied at an average of $1.50 per bushel.

EXTENT OF THE FISHERIES AT SAINT AUGUSTINE.—There were ten men, with five boats, engaged regularly in the fisheries during the winter of 1879–'80, and the average daily catch was about 50 strings to a boat. In addition to the regular fishermen a few negroes go out occasionally, selling their catch in the same manner as the others. As the season advances the visitors return to their homes in the North, and the demand becomes so much lighter that some of the fishermen naturally turn their attention to other work, and a few engage in the capture of turtle or shrimp.

THE GREEN-TURTLE FISHERIES.—The green turtle make their appearance in the waters of Saint Augustine Harbor in May and remain till November; they are most plenty during the months of July, August, and September. During this season two gill-nets are set for them in the waters opposite the city. It is said that in 1878 about 700 turtle, weighing 16,000 pounds, were taken, and 350, weighing 8,000 pounds, were caught in 1879. The turtle here are smaller than those farther south, averaging only 20 to 25 pounds apiece. They are usually sold at once to the residents of the city at from 15 cents to $1.50 each. For the past two or three years a few have been penned and saved for the winter trade, when they bring about 10 cents per pound.

THE SHRIMP FISHERIES.—Shrimp and prawn are abundant during the summer months on the various mud flats in the locality. Three men are engaged regularly in this work, catching their supply chiefly during the hours of low water at night. The yearly catch is about 600 bushels, valued at $700. The shrimp are sold locally. At the beginning of the season the price is 10 cents per quart, but it soon drops to 5 cents, or 3 quarts for a dime; and when the season is well advanced they sometimes sell for 15 cents a peck. None are shipped, and not more than 20 bushels are dried.

191. THE FISHERIES OF MOSQUITO LAGOON.

Lying to the southward of Saint Augustine is another lagoon, some 60 miles in length, connecting with the ocean through a small inlet. This opening, known as Mosquito Inlet, and situated about midway from either end of the lagoon, is so shoal that even vessels of small size can seldom enter. The northern arm of the lagoon is known as Halifax River, and the appropriate name of Mosquito Lagoon has been applied to the southern one. Until recently the country was almost uninhabited, and there are now but four or five settlements in the region, all of which are very small and unimportant.

The waters abound in fish of various kinds, and mullet are said to be remarkably abundant. Owing, however, to the lack of transportation, the fisheries are little developed, the only products shipped from the locality in 1879 being 150 green turtle, a few barrels of salt mullet, and 300 or 400 dried mullet roes. The fishing is wholly by means of cast-nets, each farmer going to the vicinity of the inlet in November or December to secure his yearly supply of mullet, which he salts and packs for family use. Seven men are engaged in the green-turtle fishery with gill-nets for about two months. The catch in the winter of 1879–'80 was about 200 turtle, equal to 7,000 pounds, valued at $770. These were sent to New York and Philadelphia through Jacksonville parties.

192. THE FISHERIES OF INDIAN RIVER.

BRIEF DESCRIPTION OF THE INDIAN RIVER COUNTRY.—Indian River, lying just south of Mosquito Lagoon, and connecting with it by means of an artificial canal, is a sheet of water 150 miles in length. It has two inlets in its lower portion, the first known as Indian River Inlet and the second as Jupiter Inlet. These are obstructed by shifting sand-bars, where the water varies in depth from year to year. The inlets are at present too shoal to admit the ordinary coasting vessels, and in 1879 even the smaller fishing vessels could not enter.

The section is quite isolated from the outside world. It is cut off from the ocean by the shoalness of the water, and has communication with Jacksonville by means of small river steamers during only a portion of the year. Until 1865 the country was little better than a wilderness, and at present there are but six post-offices along the entire shore, some of the settlements having only five or six families, while the largest have but fifty.

THE GREEN TURTLE FISHERIES.—The first fishing in the region was for green turtles (*Chelonia mydas*). This began at Indian River Inlet prior to the war, the catch being exchanged for merchandise with the coasting and Government vessels that visited the locality. Turtles are more abundant at this point than at any other on the Atlantic coast. They are said to be present in the river during the greater part of the year, but it is only in winter that the absence of saw-fish (*Pristis antiquorum*) and several of the larger species of sharks will warrant the fishermen in engaging in their capture. They are taken in nets similar to the ordinary gill-nets, though necessarily of heavier material. These have 11-inch mesh and are set directly across the channel, the turtle being entangled in them while moving back and forth. The fishing begins early in September and lasts until late in December. The best catch was made in 1878, when eight men caught 1,600 turtle. In 1879 sixteen men caught 1,400 in number, weighing about 75,000 pounds, and netting the fishermen $8,000. Of late the catch is being shipped to the Northern markets through Jacksonville agents, and the price realized, after deducting expenses of transportation and commission, averages about 11 cents per pound. The largest turtle taken in Indian River, according to the fishermen, weighed 275 pounds, but the average for those taken in 1879 was only 50 or 60 pounds.

UNSUCCESSFUL ATTEMPT TO ESTABLISH A CANNERY AT THE INLET.—The first fishing business of importance in this locality was in 1866, when a company was formed in New York for the purpose of establishing a cannery on Indian River for putting up turtles, fish, and oysters. It was also the intention to run fish in ice from this point to New York by means of a steamer. The steamer was properly equipped and sent to this region, but was wrecked in crossing the bar on her arrival, and, after two seasons of poor management, the business was abandoned.

EXTENT OF THE FISHERIES OF THE REGION.—From the date of the failure of the New York enterprise to 1878 there was little fishing at Indian River. At that time, however, the smack Lillian, of Noank, came to the inlet with seines and boats, and began fishing for the Savannah market. Pens, in which the fish could be kept alive during the absence of the smack, were built in the water, and a crew of men were stationed on the shore to seine the fish. Another crew remained on board the smack to "run" the catch to market. When the vessel could not enter the inlet the fish were towed out in cars and placed in her well. In 1879 another vessel accompanied the Lillian to the inlet, but she soon abandoned the fishery and returned to the North. This season the smack had but one crew, and was anchored off the shore in charge of the cook, while the captain and men went inside to seine the fish. On account of the lack of time no attempt was made to keep the fish, and they were usually packed in ice for the trip. The fishery has been very profitable, and there has usually been no difficulty in securing a load in two or three days.

Aside from the vessel and turtle fisheries already mentioned, there are no fisheries of importance, and the fishing is wholly for family use, each man securing his own supply. Mullet and other species are occasionally salted by the farmers for home use, but they have such crude ideas of the proper methods of curing fish that they are seldom able to keep them for any length of time. Their poor success has caused many to believe that fish cannot be saved with salt in that climate. It is, indeed, a prevalent idea all along the coast south of Charleston, S. C., that the salting of fish in pickle is only an experiment at best, and almost no one thinks of salting any beyond those for use on their own tables; for this reason, though many edible species, including the mullet, sheepshead, and trout, are abundant, the fisheries are of little financial importance to the people of this region.

193. THE VARIOUS FISHING CENTERS OF THE SAINT JOHN'S RIVER.

DESCRIPTION OF THE FISHERIES OF THE SAINT JOHN'S RIVER.—Fishing in the Saint John's is confined largely to the capture of shad (*C. sapidissima*), mullet (*M. albula* and *M. braziliensis*), and trout (*C. maculatum*), though many other species are taken for both pleasure and profit in various localities. The banks of the stream are, as a rule, low and swampy, and the fishing is therefore confined to the few higher areas, where small settlements usually occur. Only eight or ten of these are large enough to merit the unpretentious title of village, while but two are towns of any note. The principal fishing centers on the river are Mayport, New Berlin, Jacksonville, Palatka, Lake George, Lake Monroe, and Lake Harney. The fishing interests of these places will be described separately.

MAYPORT.—Mayport is a village of about one hundred and thirty inhabitants, at the mouth of the river. It is settled largely by people of Spanish descent, and has few attractions other than those due to location. The principal business during the summer months is fishing, and nearly all are more or less dependent upon it for a livelihood. Mayport boasts the oldest shad fisheries in Florida, and was the only place in the State prior to the rebellion where this fishery was prosecuted. The shad were first taken at this point in 1858 by Capt. Charles Waterhouse, of Saybrook, Conn., who had fished regularly in the Savannah River for several years. Owing to the scarcity of fish at this particular time he decided to try the Saint John's, whither he proceeded with two nets. From the first the fishery proved very profitable, and it has been continuously prosecuted to the present time, with the exception of the "war period." In 1879 there were fourteen shad-nets, two mullet-nets, three haul-seines, and five trout-nets. The total value of the fishery products for 1879, at local rates, was $7,320. The shad are now taken in gill-nets from the last of November to the 1st of April, and the entire catch goes to the fish dealers of Savannah, who own an interest in the nets.

The bulk of the mullet are taken with haul-seines between the 10th of August and the middle of December, when they are passing out of the river. Three-fourths of the catch goes to Savannah and the remainder to Jacksonville.

The trout fishing is with gill-nets in April and May, the catch going largely to Jacksonville.

There is also a limited amount of "stop-fishing" in summer. This consists simply in stopping the mouth of a creek or lagoon with netting at high water to prevent the fish from escaping, and in taking them out of the deeper holes at low water by means of cast-nets.

NEW BERLIN.—The little village of New Berlin, locally known as "Yellow Bluffs," is situated on the Saint John's River, about 9 miles above its mouth, and is, next to Jacksonville, the largest fishing town in East Florida. It was settled largely by fishermen from Connecticut, who came to this point with gill-nets in 1866 to engage in the shad fisheries during the winter months. It has,

therefore, next to Mayport, the oldest shad fisheries in the State. The town has at present a population of about one hundred and fifty, all of whom are largely dependent on the fisheries during a greater part of the year. Many of these are Northern fishermen, who spend their winters in Florida and return to Connecticut in the spring to engage in the shad fisheries of that State.

In 1866 there were four nets at New Berlin; in 1876 the number had increased to fourteen, and in 1878 to forty. In 1879 there were only thirty-five shad-nets, and at the present time (1880) there are thirty shad, twelve mullet, and five trout-nets owned in the village. The total value of the catch for 1880, at local prices, was about $10,770. Two-thirds of the shad and three-fourths of the mullet go to Savannah, and the balance of the catch, including trout and mixed fish, goes to Jacksonville, or the larger cities of Georgia and South Carolina.

JACKSONVILLE.—Jacksonville, the largest city of Florida, was laid out as a village in honor of Andrew Jackson in 1822. When half a century old it contained less than 1,500 inhabitants, but within the last few years it has come to be the commercial center of the State, and has at present a population of 12,000. It is situated on the right bank of the Saint John's River, about 25 miles above its mouth, and has fair rail and water connections with all parts of the country.

Prior to 1868, according to Messrs. Melton & Tait, the fishing at Jacksonville was chiefly with hook and line for local use. Two or three drag-seines were also fished for mullet during the season, and the catch was salted for exportation to the West Indies. At that time shad-nets were introduced into the locality, and from that date the fisheries gradually increased, until, in 1879, there were one hundred and twenty men either catching or handling fish during some portion of the year. There were forty shad, thirty mullet, and three bass nets, with seven haul-seines and a dozen or more shrimp-nets, owned in the city. The catch, according to the most reliable estimates, amounted to 43,000 shad, 146,000 mullet, 6,300 bass, 37,000 strings of mixed fish, and 800 bushels of shrimp, having a total value of $23,000.

The shad fishing begins early in December and lasts till the following April, when about thirty fishermen leave for the North to engage in the fisheries of the Connecticut and other rivers. The remainder, mostly colored, fish with hook and line or cast-net, or work on shore until June, when the mullet arrive in sufficient numbers to warrant them in engaging in the fishery. This fishery is prosecuted to a limited extent from this date, but the height of the season is between August and December. Mullet are usually present in small numbers during the entire year.

Bass-nets are fished from December to May, the favorite grounds being Doctor's Lake, about 20 miles above the city. The bass taken average about 10 pounds in weight. The haul-seines are fished in all the little creeks and bays along the river, for 10 or 12 miles on either side of the city.

The principal species of the Jacksonville market are mullet (*Mugil albula* and *M. braziliensis*), shad (*Clupea sapidissima*), trout (*Cynoscion maculatum*), bass (*Sciæna ocellata*), croakers (*Micropogon undulatus*), sheepshead (*Diplodus probatocephalus*), drum (*Pogonias chromis*), sailor's choice (applied to numerous species, but more particularly to *Lagodon rhomboides*), flounders (*Pseudorhombus dentatus*), yellow-tails (*Bairdiella chrysura*), and whiting (*Menticirrus alburnus*), together with fresh-water trout (*Micropterus pallidus*), and bream and perch of various kinds.

Three-fourths of the shad and half of the mullet and bass are shipped, and the remainder are consumed locally. Of those shipped, a few shad and bass go to the Northern markets, but the greater part are sent to the interior of Georgia and South Carolina.

PALATKA.—Palatka, the only village of any importance on the Saint John's above Jacksonville, is situated about 100 miles from the mouth of the river, in the midst of a large fruit-growing section. It is the center of steamboat navigation for the upper Saint John's and Ocklawaha

Rivers. The village is near a narrow portion of the river, locally known as "The Devil's Elbow," which is one of the best points for the capture of shad and mullet in this part of the State.

The first fishing of importance at this place was by Capt. C. B. Smith, of Connecticut, in the winter of 1871–'72. He was remarkably successful, and shipped large numbers of shad to the Northern markets, and also sent a considerable number of mullet to Jacksonville. From that date he came yearly to Palatka with an increased number of men, and it is said that during the season of 1874–'75 he caught 55,000 shad with six nets. Up to 1876 he had the fishing all to himself, but at this time the inhabitants, seeing the value of the fishery, made preparations to take part in it. In the season of 1879–'80 there were ten nets, with twenty men, engaged exclusively in the shad fisheries, landing about 12,000 fish. There is considerable fishing with hook and line for fresh-water trout, and several tons are brought to Palatka for market each winter. Mullet are very abundant during the greater part of the year, and especially so between July and September, though little attention is paid to their capture, and almost none are shipped.

WELAKA AND LAKE GEORGE.—Welaka is a small river landing, with two stores, in the heart of a fruit-growing region, 25 miles above Palatka. It is situated on a narrow part of the river, a few miles below the point where it expands to form Little Lake George. This is a shoal-water lake, 4 miles wide by 7 long. A few miles farther up the stream is Lake George, the prettiest and clearest sheet of water on the entire river. This lake is 12 miles wide by 16 to 20 miles long, and abounds in fish of various species, being seemingly the summer home of large numbers of mullet. There are several salt springs in various parts of the lake, and the fishermen claim that many of the mullet spawn there instead of taking the long trip to the sea.

Between Welaka and Lake George there is a limited fishery for shad, mullet, and "foul-fish," employing twelve men during a portion of the year; but the fishing, with the exception of that during the shad season, is very irregular, and the chief aim is to catch "foul-fish" (including catfish, gizzard-shad, and gar-fish, and other worthless species), which are sold as a fertilizer at $8 a ton. The fishing for mullet and foul-fish is not confined to any particular locality, the nets being set either in the lake or river; but the shad are principally taken in the narrower places along the stream.

In 1879 there were three shad-nets, six mullet-nets, and one-haul-seine fished in this section. The catch was about 4,500 shad, 20,000 mullet, and 600 barrels of foul-fish, the whole having a value of $1,800.

Probably no point on the Saint John's River affords better facilities for an extensive mullet fishery than Lake George. Fish of large size are reported to be remarkably abundant during the entire year, and it is said that they can be taken in any quantity desired. At present, as has been stated, there are but six small nets, and these are fished only occasionally, a few mullet being sent fresh to Palatka, the others being consumed locally. The distance from a suitable market might interfere with any extensive shipping of fresh mullet, but it seems probable that any party familiar with the proper methods of salting and curing fish could establish a very profitable business in the salting and shipping of mullet to other States, especially to those of North and South Carolina.

LAKE MONROE.—Lake Monroe, a sheet of water 5 miles wide by 10 long, is simply another expansion of the Saint John's River, 240 miles above its mouth. On the banks of this lake are the settlements of Melonville, Sanford, and Enterprise, all villages of small size, although among the largest in this portion of the State. They are coming into favor as winter resorts, and several good hotels have been recently built.

The first fishery of importance in this region was in 1874, when parties from Palatka established a shad fishery on the bar at the upper end of the lake, salting their catch or shipping it to

Jacksonville and Palatka in ice. This fishery has been occasionally prosecuted by Northern fishermen since that time, and during the winter of 1879 one seine was fished regularly on the bar, the catch, which amounted to 2,500 shad, being sold to the hotels in the locality. The fishing season lasts from the 1st of December to the middle of April. Another seine and two or three gill-nets are owned in the region, but the fishing is very irregular and mostly for family use.

LAKE HARNEY.—Lake Harney, about 265 miles above the mouth of the Saint John's, is the highest point on the river where the fisheries have been prosecuted, and even here the fishing has been very limited. The lake, which is only 5 or 6 miles in diameter, is so shoal that a common seine will scrape the bottom in almost every part. It was first visited four or five years ago by Palatka parties, who were successful in taking a large number of shad and mullet, which they salted and shipped to Jacksonville.

In the winter of 1879–'80 two crews came from Jacksonville, with seines and other necessary apparatus, to catch fish for shipment in ice to that market; but after three or four weeks they gave up the work, owing to the unusually high water which covered the surrounding country and allowed the fish to escape into the grass of the swamps. The catch amounted to almost nothing, though under ordinary circumstances the lake is said to be an excellent location for a fishery.