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## 134.—SOME OF THE FISHERIES OF WESTERN FLORIDA.

**By SILAS STEARNS.**

With its extensive sea and gulf coast and its great interior water supply, Florida has an abundance of food-fishes, easily accessible to nearly every portion of the State. For a long time the fishing in Florida waters was done by the farmers and settlers for home consumption, while with the growth of the larger towns local fishing industries arose simply to supply the immediate neighborhoods, and a small traffic with Cuba gradually sprung up. The most important fisheries of Florida, however, are but ten or fifteen years old.*

*Statistics of persons employed, apparatus and capital, and products of the Florida fisheries in* 1880 *and* 1884.

| | 1880. | | 1884.* | |
|---|---|---|---|---|
| | Amount. | Value. | Amount. | Value. |
| Fishermen.....number.. | 2,194 | ..... | 2,700 | ..... |
| Shoremen.....do.... | 285 | ..... | 400 | ..... |
| Total persons employed.....do.... | 2,479 | ..... | 3,100 | ..... |
| Vessels.....number.. | 142 | $248,200 | 211 | $365,755 |
| Boats.....do.... | 743 | 15,558 | 1,061 | 22,750 |
| Minor apparatus..... | ..... | 21,923 | ..... | 38,140 |
| Additional invested capital..... | ..... | 39,963 | ..... | 63,255 |
| Total capital invested..... | ..... | 325,644 | ..... | 489,900 |
| Mullets.....pounds.. | 4,225,505 | 117,301 | 4,864,130 | 97,282 |
| Groupers.....do.... | 1,764,000 | 141,120 | 1,230,000 | 86,100 |
| Red snappers.....do.... | 1,483,202 | 66,756 | 3,551,204 | 124,294 |
| Pompanos.....do.... | 14,212 | 1,421 | 50,000 | 5,000 |
| Bluefish.....do.... | 99,250 | 1,385 | 110,625 | 2,212 |
| Other kinds of sea fishes.....do.... | 2,994,735 | 87,594 | 3,000,000 | 60,000 |
| Sponges.....do.... | 185,000 | 185,000 | 200,000 | 200,000 |
| Turtles.....do.... | 180,000 | 7,200 | 300,000 | 10,500 |
| Terrapins.....do.... | 3,000 | 200 | ..... | ..... |
| Shrimps.....do.... | 71,750 | 3,500 | ..... | ..... |
| Clams..... | 4,800 | 330 | ..... | ..... |
| Oysters..... | 324,280 | 16,270 | 75,000 | 45,000 |
| Mullet roes..... | 13,325 | 5,867 | 15,000 | 3,000 |
| Alewives.....pounds.. | 10,000 | 200 | ..... | ..... |
| Shad.....do.... | 251,700 | 20,136 | ..... | ..... |
| Sturgeon.....do.... | 3,000 | 150 | ..... | ..... |
| Other kinds of river fishes.....do.... | 402,750 | 11,850 | ..... | ..... |
| Total value of products..... | ..... | 666,370 | ..... | 633,388 |

* The statistics for 1884 are an estimate for Western Florida alone.

*The mullet fishery.*—The mullet occurs everywhere about the coast, and for a large part of the year is the most abundant and easily secured of the fishes. In season it is an excellent food-fish, ranging in weight

*For the sponge, red snapper, and grouper fisheries, see F. C. Report for 1885, p. 217.

from 1 to 5 pounds. It is most extensively pursued during the fall months, when it is schooling, seines being run around the schools and great quantities often taken.

Stations are selected at the most favorable points along the coast, where crews of fishermen are employed for several months. The greater part of their catch is salted, and a considerable quantity is sent in ice to the nearest railroad connection, whence the fish are shipped to the interior. The mullet is rather better in a salted condition than most Southern fishes, and approaches the mackerel in excellence.

The most valuable stations, which are on the southwest coast south of Tampa Bay, are worked to supply the demand for salt mullet in Havana. North of Tampa Bay, on either side of the peninsula, the catch is sold to the nearer markets in Florida, Georgia, and Alabama. While the fishing is going on the stations are visited by many customers from the country, who travel with ox-carts and are prepared to carry their purchases home with them. The roes of the mullet are always saved, and prepared for sale by being lightly salted and then dried.

Almost every coast settler in Florida has a cast-net with which to supply his table with mullet. During the first four months of the year there is one species of mullet in good condition, and about the time this has become poor another species has become edible and continues good until December, so that an almost constant supply of good mullets is easily available.

*The pompano and other fisheries.*—Pompanos are caught in small schools in shoal water along the sea beaches, where it feeds upon shell-fish. During seasons when they are scarce they bring very high prices, the fishermen sometimes getting $1 apiece for them, while when abundant they sell for 5 or 6 cents apiece. They average 1½ pounds in weight, occasional specimens reaching up to 6 pounds. Another species of pompano, of inferior edible qualities, sometimes grows to a weight of 20 pounds.

Spanish mackerel are taken in seines and gill-nets, as it occasionally comes into shoal water within their reach. It is readily sold for a good price during the period of its "run," and would appear in market much longer if there was some economical way to capture it in deep water, where it occurs in abundance for several months.

Bluefish are taken with the Spanish mackerel, though not so salable as this species or the pompano, as the bluefish do not endure handling or transportation so well as these. It is very abundant at times. When inclosed in large numbers in nets it is very destructive to the twine, and is therefore shunned by the fishermen when other fish can be taken.

Sea trout, redfish (or channel bass), and sheepshead are taken on grassy bottoms mainly in the bays and lagoons. Trout and sheepshead sell for about the same price as bluefish, but comparatively few are handled by shippers. The redfish are more abundant, but are considered inferior in quality and are not utilized to any great extent.

*The shad fishery.*—The river fisheries of commercial importance are confined to the Saint John's River, where shad are taken by gill-nets in considerable numbers. The season for shad being earlier here than at other points on the Atlantic coast the catch is sometimes very profitable to the fishermen, and many men look to this fishery for support. During the last few years, however, the catch has been small, and the supply seems to be somewhat exhausted.

*The oyster fishery.*—There is a large supply of good oysters, it being estimated that there are more than 12,800 acres of edible oysters in the waters of Florida. They occur in natural beds in the salt and brackish waters of the bays of the northern parts of the State, on the east and the west coasts. Along the shores of the southern part of the peninsula are large reefs of a small oyster known as "coon oyster" or "tree oyster," the latter name referring to their growing upon the tide-washed roots of the mangrove. These oysters are so small that they have no commercial value. The only method of gathering oysters in Florida is by using the ordinary oyster-tongs. Appalachicola has recently been doing a thriving business in canning the excellent oysters of that vicinity. Most of the fresh oysters of Florida are consumed locally.

PENSACOLA, FLA., *October* 15, 1885.

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## 135.—NOTES ON THE HISTORY OF PREPARING FISH FOR MARKET BY FREEZING.

**By A. HOWARD CLARK.**

For very many years in Russia and in other cold countries fish and meats have been frozen for market by exposure in the open air or by freezing them *en masse* in ice. In Thibet as early as 1806 the flesh of animals was preserved frost-dried—not frozen—and in that condition would keep, without salt, for several months.

In the United States ice was first used for the preservation of fish about the year 1842, and in 1845 fishing-vessels began to take ice to preserve their catch. At first they were careful to keep the ice separate from the fish, piling it in a corner of the hold, but they soon began packing the fish in broken ice. The inland trade in fresh fish had, up to that time, been very limited, but soon increased, and it was not many years before boxes of fish packed in ice were shipped far inland.

The trade in fish frozen by artificial means began about the year 1861, when Enoch Piper, of Camden, Me., obtained a patent (No. 31736) for a method of preserving fish or other articles in a close chamber by means of a freezing mixture having no contact with the atmosphere of the preserving chamber. The patent was issued in March, 1861. Mr. Piper states that the most important application of his invention is for the preservation of salmon, which had heretofore been preserved in a fresh state only by being packed in barrels with crushed ice, which on