

## PART XIX.

## THE TURTLE AND TERRAPIN FISHERIES.

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## I.—THE TURTLE FISHERY.

## 1. TURTLE FISHERIES OF NORTH CAROLINA.

The most northern points at which any considerable turtle fishery is prosecuted are Beaufort, and Morehead City, N. C.

A small number of loggerhead, hawks-bill, and green turtles enter Cove and Bogie Sounds and other shallow inlets in this vicinity during the summer months, in search of food. The green turtles arrive about the first of April and disappear early in November. The loggerheads and hawks-bills are of medium size, the average weight of the former being about 50 pounds; the green turtles are small, and weigh about 8 pounds each.

The capture of loggerheads in this vicinity was formerly effected by means of spears or "gauges." The turtles were struck by the fishermen with these implements while swimming in the water. They were frequently very badly wounded, however, and often injured to such a degree that they were unfit for shipment or sale. To avoid this difficulty Mr. Joshua Lewis, of Morehead City, conceived the idea of diving upon the turtles while in the water, and securing them with his hands. When starting out in search of them he ties the painter of his boat to his leg; then rowing along leisurely until one is seen, he approaches it and dives upon it from the boat. Seizing the anterior edge of the carapace with one hand, and the posterior edge with the other, he turns the head of the turtle upward, when the animal immediately rises to the surface, bringing the fisherman with it. If the water is deep he steers the turtle toward a shoaler spot, keeping hold of it with one hand; and with the other pulling the boat after him. When a suitable spot is reached he seizes the animal and throws it into the boat. Usually there is no difficulty in bringing turtles to the surface and directing them toward shallow water, but occasionally a very large one is encountered, which is strong and unmanageable. In such case the fisherman is forced to let go his hold and return to the surface, allowing the turtle to escape.

The method of capturing turtles by diving is employed at present by many of the fishermen in this locality, and the greater proportion of those taken are captured in this way. Good swimmers do not hesitate to dive for a turtle when seen, however great may be the depth of the water.

The small number of hawks-bill turtles taken are captured by the same method as that employed for loggerheads, and usually no distinction is made between the two kinds. The green turtles are caught in drag-nets and seines.

The loggerhead turtles find a ready sale at limited prices in the interior cities of North Caro-

lina, and a small shipping business has been established. The fishermen receive about 50 cents apiece for the turtles, which induces them to catch all that come in their way, but does not warrant their engaging very extensively in the fishery. The average annual catch of loggerheads in this vicinity does not exceed two hundred.

The green turtles are usually eaten by the fishermen, who consider them a delicacy, but occasionally they are sold to dealers for about 15 cents apiece. The catch at this point, if sold at local prices, would have a value of not more than \$50.

## 2. TURTLE FISHERIES OF SOUTH CAROLINA.

At Charleston, S. C., a few small green turtles are taken at irregular intervals. In weight they vary ordinarily from 5 to 15 pounds, the largest specimens weighing not more than 25 pounds. They are usually caught by accident in the drag-seines or cast-nets used for the capture of shrimp. Probably not more than one hundred and fifty are taken annually, in the season, which extends from June to the middle of September.

The fishermen sell the turtles to the marketmen for their city trade, and receive from 50 cents to \$1 apiece for them.

## 3. TURTLE FISHERIES OF FLORIDA.

**SAINT AUGUSTINE.**—Green turtles make their appearance in the waters of Saint Augustine in May and remain until October, but they are most plenty in July, August, and September. They are smaller than those taken farther south, usually having an average weight of 20 or 25 pounds, although many are much smaller.

The gill-nets used for their capture are about 200 feet long and 12 feet deep; the mesh is about 11 inches. They are made of twine, of a size a trifle smaller than that of ordinary chalk-line. They are seldom bought, but are made by the fishermen in their leisure hours, and are valued by them at from \$25 to \$40. About twenty in all are owned in Saint Augustine, Indian River, Mosquito Inlet, and Fernandina. These nets are set in the harbor, and are watched by the men from the shore. When a turtle is captured they paddle out and secure it.

In 1879 about three hundred and fifty turtles were caught, weighing in the aggregate 8,000 pounds; in 1878 seven hundred were taken, weighing 16,000 pounds. They are usually sold at once, and the price received is generally below 75 cents, often as low as 15 cents apiece. At present a few are saved for the hotel trade in the winter, and these bring 10 cents per pound. In 1879 thirty were reserved for that purpose, and it is probable that a larger number will be disposed of in this way in the future. They are kept without difficulty in "crawls," being fed on fish and "turtle grass."

No turtles are shipped from Saint Augustine.

**HALIFAX RIVER.**—The next locality south of Saint Augustine at which turtle-fishing is carried on is Halifax River. A number of green turtles come into this lagoon every year, and are captured by some seven fishermen from the little hamlets in the vicinity. They are somewhat larger than those caught farther north, their average weight being about 35 pounds. The fishery lasts for two months, during which time about two hundred turtles are taken. They are sent to Jacksonville, and from thence shipped to New York. The fishermen receive about 11 cents a pound for the turtles, and therefore the value of the annual catch is about \$770.

**INDIAN RIVER.**—A short distance south of Halifax River is Indian River, one of the most noted places for the capture of green turtles on our coast. More turtles are taken in this inlet than in any other locality in the State of Florida. They remain here during the greater part of

the year, but it is only during the winter months, when the saw-fish and large sharks are absent, that the fishermen will risk their nets in capturing them. Larger green turtles are taken at this point than at any other on the east coast of Florida. The average weight is 50 or 60 pounds, and specimens weighing 200 pounds have been frequently taken. The largest specimen taken here of which reliable information has been obtained weighed 275 pounds.

Fishing begins late in September or early in October, and continues to the last of December. It is said that the best catch is made during the coldest weather. The turtles are taken in nets similar to gill-nets. The size of mesh employed is about 11 inches. The nets are set directly across the channel, and extend from the surface to the bottom. A turtle, while swimming about in the water, comes in contact with them and thrusts its head through one of the meshes. Not noticing the obstruction it attempts to continue its course, and in a short time one flipper and then the other is entangled, and the animal is unable to extricate himself. If the fisherman is near his net he knows by the movement of the corks that the turtle is caught, and hastens to row up and secure it. Taking it to the shore he confines it in a "crawl," or pen, until a favorable opportunity is afforded to ship it to market.

The fishery has been carried on at Indian River for many years. Previous to 1860 the catch was bartered to merchant, trading, and Government vessels for such goods as they chanced to have on board. The turtles were then carried by these vessels to northern cities and sold in the markets. Lately, however, many of the fishermen have sought direct communication with the northern markets, principally with New York, through agents residing in Jacksonville. By these arrangements, after all expenses have been paid, they receive 10 or 11 cents per pound for the turtles shipped. A part of the catch, however, is sold to the fishing schooner at the inlet, and is taken by her to Savannah to be sent farther north.

The success of the fishery in the winter of 1877-'78 was the greatest for many years. During that season eight fishermen caught about sixteen hundred turtles. In the winter of 1879-'80 sixteen men prosecuted the fishery, and the catch was about fourteen hundred turtles.

**KEY WEST.**—At Key West, Fla., turtle fishing is carried on throughout the year, but reaches its height during the summer months. Turtles are more abundant here than at any other locality on the coast, except in the shoal water near Homosassa River, where these congregate in great numbers. The fishermen say that they have seen large schools of both green and loggerhead turtles in the sea between the Keys and Cape Romano, swimming near the surface, and apparently bound northward.

The turtles are caught at Key West in nets from 50 to 100 fathoms long and from 16 to 24 feet deep, having meshes each a foot square. The fishermen set their nets across the little channels and in the "hoor," among the keys and reefs near Key West. The turtles are kept in small "crawls" until needed for shipment.

There is only one firm at Key West which deals in turtles, and all shipments are made to New York. Several small vessels, which at certain seasons of the year are engaged in sponge fishing, participate in the turtle fishery to a limited extent, and the market fishing-boats also bring in some from time to time. The specimens which weigh from 40 to 100 pounds are shipped away, but the extremely large ones are sold to marketmen, who retail the flesh in Key West. It is estimated that an average number of fifty turtles, weighing 40 pounds apiece, are brought to Key West every week during the year.

**CEDAR KEYS.**—The green-turtle fishery at Cedar Keys is of recent origin, having grown up within the past eight or ten years. It is prosecuted during the summer months, usually from May

to October. The length of the season varies considerably, however, in different years, for the fishermen continue the business only as long as they may do so profitably.

The fishing-grounds extend 20 or 30 miles northward from Cedar Keys, and southward along the whole coast. The best grounds, however, are located where the bottom is covered with marine plants, on which the turtles feed.

The boats employed for setting the nets are similar to those used in gill-netting and seining. It is necessary sometimes to go 20, 30, or even 50 miles southward in order to find turtles in abundance, and as the ordinary small open boats would be unsuitable for trips of such length, larger sail-boats are hired, which have room for several men and their nets and other apparatus. The crew numbers three or four men, and the trip usually lasts eight or ten days. The nets are made of the largest and strongest cotton twine, and have a length of from 75 to 100 fathoms, and a depth of from 10 to 16 feet; the meshes are 2 feet long.

On arriving on the grounds the boat or vessel is kept beating back and forth until signs of turtles are noticed and several are seen to "blow" in one place, when the craft is anchored near by. A man in a small boat then makes a thorough investigation of the depth of the water in the vicinity, in order to find the deeper spots to which the turtles retire at low tide, and in which they usually prefer to feed. When the deep places have been discovered, the nets are set out near them and in a straight line parallel with the course of the tide. The turtles come to the surface every few minutes to breathe, and while rising and sinking near the net are very apt to become entangled in it. Only one flipper may be caught at first, but when the animal turns the other is entrapped and, shortly, the whole body is securely wrapped in the cords. After a little time it must come to the surface for air, when it is seen by the fishermen struggling to make its escape and is at once removed from the net.

This is said to be the dullest of all fishing, and unending patience and considerable skill are required to make it successful. Fishing is considered very good if one turtle is taken every hour during a half day, and commonly only one or two are caught during the whole day. The large boats frequently bring in, as the result of one cruise, a sufficient number of turtles to make up an aggregate weight of from 3,000 to 5,000 pounds, while for the small boats the aggregate weight of one day's catch may be from 50 to 800 pounds. Green turtles weighing 600 or 800 pounds are sometimes caught on the grounds in this vicinity, and, rarely, individuals weighing 1,000 pounds. The largest specimen which has been brought to Cedar Keys weighed 1,200 pounds.

For keeping the turtles alive after they are caught a pen, or "crawl," as it is termed, is constructed. It is an inclosure about 50 feet long and 25 feet wide, surrounded by piles driven closely together, and covered above with boards. A sort of crane or derrick for hoisting large turtles in and out is arranged close by it. It is usually constructed near the shore, in a position where the water is 5 or 6 feet deep.

#### 4. TURTLE-CANNING IN TEXAS.

**TURTLE-CANNING.**—At Rockport, on the coast of Texas, there is a firm engaged in canning green turtles and fish. It employs ten men with boats, who are engaged a part of the time in the capture of turtles, and in addition twenty persons who attend to the operations of canning. The company has been in existence only about one year. During the first six months of active work about 8,500 pounds of turtle meat were canned. A 2-pound can of this preparation sells at wholesale for 22 cents, and hence the value of the quantity canned in the first half-year was about \$950. The work continues throughout the entire year, and the value of the quantity of turtle meat prepared at this point annually will not be less than \$1,900.

## 5. TURTLE FISHERIES ON THE PACIFIC COAST.

On our Pacific coast very few turtles are taken. Five or six hundred are brought annually from Mexico on steamers, and occasionally on schooners. In 1879 a schooner brought one hundred and ninety turtles to San Francisco, retailed a number of them, and sold the remainder to a firm of fish dealers for 87½ cents apiece. The usual price received, however, is about \$4 each. The turtles weigh from 150 to 200 pounds.

## 6. STATISTICS OF PRODUCTION.

*Production of salt and fresh water turtles in 1880.*

	Number.	Pounds.	Value.
Delaware .....		15,300	
North Carolina .....		80,000	
South Carolina .....		22,600	
East Florida .....	1,000	88,250	\$3,800
West Florida .....		180,000	7,200
Texas .....		54,000	1,920
Total .....		395,550	

## 2. THE TERRAPIN FISHERY.

## 1. THE TERRAPIN FISHERIES OF NORTH CAROLINA.

ROANOKE ISLAND.—The waters of Pamlico and Roanoke Sounds abound in terrapins, and the salt marshes on the south side of Roanoke Islands and on the western shore of Pamlico Sound are favorite breeding grounds for them. A few also are found along the ridge on the eastern side, which shuts out the ocean, but they are sufficiently abundant there to induce anyone to make a business of gathering them. The terrapins found in this locality are of medium size.

Prior to 1845 no terrapins were shipped from this district, and the comparatively small number required by the inhabitants for their own consumption were gathered in summer by hand. In 1845, however, Mr. William Midgett, of Roanoke Island, invented a "terrapin drag," which he used in obtaining a supply for himself during the winter, when the animals lie dormant, buried in the mud. The dredge in use at present resembles the ordinary oyster dredge. The upper and lower bars are 3 or 4 feet in length and are separated at the ends by two hoops about 14 inches in diameter. The lower bar is made of iron and is furnished with teeth 3 inches long, and the distance between two teeth is 2 inches. The upper bar is made of wood. The bag is 4 feet in length. The only difference between the original dredge and the one now used is in the lower bar, which in the former was not furnished with teeth.

The "terrapin drag" is used chiefly in winter when the terrapins are dormant in the mud, and those who make an extensive business of dredging usually employ small vessels or large canoes. They sail along the channels and mud-flats, carrying one dredge out over each side and one over the stern. The pitch of the dredge is regulated by changing the position at which the lines are fastened to two rings. After dragging for a few moments the dredge is taken up. The bunt of the net is made with large meshes, and the mud and other débris readily passes through it. Dredging is largely successful only when the water is sufficiently cold to chill the terrapins, and make them torpid; at other times they are apt to escape.

Another form of apparatus used in the terrapin fishery in this region is the trap. It consists

of four or five hoops, about 3 feet in diameter, placed near each other, so as to make the total length of the trap about 4 feet. The hoops are covered with net. At each end there is a funnel, arranged after the manner of a lobster-pot. Bait in the form of fish is suspended near the center.

The trap is used in the summer months, when the terrapins are moving about in the water. It is set in the places most frequented by the terrapins. A pole is driven firmly into the mud, and the trap is fastened to it in such a manner that a part of it remains about the surface of the water. The object of this mode of setting is to allow the terrapins which enter the trap to breathe the air, without which they would drown in a short time. There is an opening on one side of the trap, through which the terrapins are taken out and the trap baited.

The hunting of terrapins with dogs seems to be confined to this locality. This method is carried on most extensively during the spawning season, when the terrapins come out of the water to deposit their eggs, and many nests are broken up. It is, therefore, the most objectionable of all modes now in use. The *modus operandi* is to set the dog to follow along the water-line until he comes to the track of a terrapin which has come out of the water. He takes the trail at once and follows it to the nest in the grass or bushes. When the terrapin is discovered the dog begins to bark, giving the signal to his owner, who, coming, picks it up and starts the dog on another trail.

A number of terrapins also are sent to market from two "pounds," as they are called, in which the catch is confined until there is a good demand. There are two such pounds in this region, one at Roanoke Island, built in 1875, and one at Sladesville, built in 1877. In 1875 and 1876 there were others at New Berne, but they are now discontinued.

There seems to have been no sale of terrapins in this region prior to 1849, when Capt. John B. Etheridge, at that time keeper of Body's Island light, caught 2,150 in February by dredging about the southern part of Roanoke Island. He took the catch to Norfolk and sold it for \$400. Returning immediately he captured 1,900 more terrapins, and sold them in Baltimore for \$350. The news of his success spread rapidly, and many men went into the business and prosecuted it with such vigor that the terrapins were shortly almost exterminated. Improvements were made in the original dredge, oyster tongs were brought into use, and dogs were employed.

The principal market supply is sent from the pounds, but some other dealers also send some during the winter months. On account of the general distribution of the terrapin over the whole section many are picked up by farmers and others, and while the majority of these are eaten, a small proportion are shipped to market. The principal local markets are Roanoke Island, Sladesville, Washington, and New Berne.

In the markets the terrapin are divided into three grades, according to size, namely: "counts," "heifers," and "bulls." "Counts" are those whose under shell measures over 6 inches in length; "heifers" have the under shell between 5 and 6 inches long, and all whose under shell is less than 5 inches in length are "bulls." The number taken at present is about one-third less than in former years. In 1879 the catch, including those eaten by the fishermen, was about 4,000 counts, 4,000 heifers, and 9,000 bulls, or about 17,000 terrapins in all. Of these about 3,000 were sent to New York, 5,000 to Philadelphia, and 2,000 to Baltimore.

The capital invested in dredges and traps is about \$1,500.

**TERRAPIN CULTURE.**—At Roanoke Island there is a large "pound," in which terrapins are to be raised for market. The inclosure contains about 4 acres, of which three-fourths are covered with water. The bottom in this part is soft and muddy and covered with grass. The remaining acre is sand. The pound is arranged so that the tide ebbs and flows, passing in and out through a brick sluice-way, which is protected at the mouth by a wire screen. The tide rises and falls about 1 foot.

In this pound from 3,000 to 6,000 terrapins are kept. They are fed twice a week with 6 or 8 bushels of crabs and fish. The young are raised from the egg and kept until of marketable size. About the first of June the females come out of the water and deposit their eggs in the sand, each laying from eight to twenty. It is found necessary to protect the eggs from crows, blackbirds, and gulls, by spreading a net over the ground above them, otherwise they would be scratched out and destroyed. The young hatch out about the 1st of September, but often remain buried in the sand until the following spring. When first hatched they have a diameter of about half an inch. They seem to fear the water, and will not go into it willingly until several weeks old. The owner of the pound sometimes packs the young in boxes filled with straw, and keeps them in a barn during the first winter of their existence, turning them loose again in spring. Careful experiments seem to show that these terrapins grow about 1 inch each year, "counts," therefore, being at least six years old.

The method of keeping terrapins in pounds has been strongly objected to by certain persons, who claim that it tends to decrease rather than increase their abundance. Fishing is encouraged at a time when the terrapins are breeding, and the nests are badly broken up. Furthermore, the pound-owners will buy the young at small prices, and thus cause the destruction of immense numbers of them when their value is less than a twentieth of that of the full-grown terrapin. Again, the pound-men reap an unfair proportion of the profits of the business, because, having facilities for keeping the terrapin, they can buy them in summer, when there is no market and the price is almost nominal.

The pound-owners, on the other hand, claim that they are really increasing the abundance of the species, since they protect the eggs and young from birds and other destructive animals. Some urge also that in buying terrapins in summer, when other branches of the fisheries decline, they are directly benefiting the fishermen, who otherwise would be unable to support their families.

**BEAUFORT AND MOREHEAD CITY.**—An extensive trade in terrapins has recently sprung up. Most of the methods of capture employed are similar to those already described. The terrapins are caught in winter in dredges, introduced many years ago from Roanoke Island; they are tracked to their nests in breeding season, or they are searched for in shallow water, and secured in dip-nets. A method peculiar to this locality is that of burning the grass in the swamps in winter. The terrapins which have hid themselves for the winter, feeling the warmth, are deluded into the notion that spring has arrived, and come out in considerable number, when they are immediately captured by the fishermen. Several pounds, also, have been constructed. The summer fishing begins about the 1st of May, and is prosecuted by children and a few men.

The average annual shipment of terrapins from this locality is about 10,000, of which number one-third are sent to New York, one-third to Philadelphia, one-sixth to Baltimore, and the rest to Norfolk, Richmond, and the interior towns generally. About two-thirds of the entire number are bulls, and the remainder is equally divided between counts and heifers. About 2,000 terrapins are eaten by the people of the locality. The price received by the fishermen in winter for counts is \$10 per dozen. In summer the price for counts is about 40 cents apiece; for heifers, 10 cents apiece; for bulls, 15 to 40 cents per dozen. The value of the products of the fishery at this locality, therefore, is about \$3,500.

Prior to the war there was no shipment of terrapins from this point, and the local demand also was very small. Most of the terrapins caught were eaten by the fishermen.

**WILMINGTON.**—The terrapins in the sounds about Wilmington, N. C., are said to be comparatively small, not one in twenty measuring 6 inches in length. There has never been any extensive trade in this locality, although many terrapins are eaten here. The first shipments were made in

1875 by the captain of one of the New York steamers, and were continued for several seasons. He bought the terrapins, both large and small alike, at \$4 per dozen. They were carried to New York. The next shipments were made in 1878 by Mr. C. O. Morse, of Wrightville Sound. In 1879 about 500 dozen, valued at \$2,000, were captured, and a part shipped, and the remainder eaten by the fishermen. None of the Wilmington dealers have entered into the business very heartily. A law recently passed forbids the capture of terrapins in Brunswick County between April and September.

## 2. TERRAPIN FISHERIES SOUTH OF CAPE FEAR.

The terrapin fisheries on the Atlantic coast south of Cape Fear are not very extensive at present. Terrapins are found in considerable numbers in any of the creeks, bays, and sounds, as far south as Fernandina, but they are especially abundant in the vicinity of Saint Helena Sound and Bull's Bay, and in Saint Andrew's Sound.

Terrapins are captured throughout this region by means of boats and seines. Vessels are employed of sufficient size to go from one harbor to another, and even to run the risk of being caught out in stormy weather. Each boat carries a seine and a bateau for ascending the shoal-water creeks, where the seines are set and hauled. The seines are usually from 60 to 90 fathoms long and 18 to 20 feet deep, the mesh varying from 4 to 5 inches.

The terrapins generally remain in deep holes in the creeks, and the fishermen on entering them commonly rap on the bottom or side of their boats with an oar or stick, in order to discover their presence. It is said that upon hearing the noise the terrapins immediately come to the surface to discover its cause. If no terrapins come to the surface after a noise has been made the fishermen seldom set out their seine. In setting the seine a pole, to which one end of the net has been fastened, is driven firmly into the mud. The seine is then set out in circular form from a boat, and when the two ends have been brought together it is rapidly brought into the boat, the terrapins gradually passing into the bunt. During the hauling of the seine the fishermen commonly rap frequently on the boat, in order to draw the terrapins from the bottom. This method is known as "bucking." Since the decrease of the fisheries it has been largely superseded by another method, known as "torching," which is practiced principally by negroes. Having provided themselves with torches they visit the sandy shores at night and catch the terrapins as they come upon the beach to spawn.

Fishing sometimes continues from the time of the first appearance of the terrapins, in April, until the middle of October, when they bury themselves in the mud. At present, however, it is frequently discontinued by the net fishermen during the breeding season. Occasionally the winter beds are discovered, and entire colonies captured by "bucking" on them.

The price now paid by dealers varies from 10 to 25 cents apiece, according to the season and the locality, but at times it is difficult to find a market for them at any price.

The statistics of men and apparatus for this region are as follows:

	Men.	Nets.	Boats.
Charleston.....	10	4	3
Savannah.....	15	6	
All other localities.....	12	6	

Besides the three boats given here, others are employed a part of the time. The men cannot be considered as engaged exclusively in this fishery. The total value of the nets is \$560, and of the boats \$900.



Previous to the late war many men were employed and considerable capital involved in this fishery. Several thousand dozen terrapins were shipped annually to the northern markets, and the fishermen received an average price of \$6 per dozen for them. In 1860 the fishery appears to have been at its height, both in point of men engaged and number of terrapins taken. During the war it was entirely discontinued, but in 1865 and 1866 it revived again and was carried on with considerable enterprise. A few small vessels were sent from the North to engage in it, and several men, both at Charleston and Savannah, fitted out a number of small craft for the purpose. A number of fishermen, too, in the different localities owned boats, and shipped their catch either directly or through dealers.

In 1866 Capt. T. E. Fisher, of Savannah, with two boats and six men, secured 653 dozen, and in the same year Capt. David Kemp caught 870 dozen, and several others did equally well. In addition to the catch of the boat fishermen, many were picked up along the shore during the breeding season, so that the total number taken during the year must have reached 5,000 or 6,000 dozen.

### 3. STATISTICS OF THE FISHERY.

*The number, weight, and value of terrapin taken in 1880 in the Atlantic States.*

	Number.	Pounds.	Value.
New York .....	800	1,800	\$300
New Jersey .....	8,000	8,000	1,600
Delaware .....	10,236	30,708	5,118
Maryland .....		91,000	4,000
Virginia .....		163,000	12,500
North Carolina .....		123,000	10,800
South Carolina .....		28,400	1,920
Georgia .....		10,800	1,620
East Florida .....		3,000	200
Total .....		406,208	44,118