PART X.

MARYLAND AND ITS FISHERIES.

By R. EDWARD EARLL.

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PART X.

MARYLAND AND ITS FISHERIES.

A.—GENERAL REVIEW OF THE FISHERY INTERESTS OF THE STATE.

155. STATISTICAL RECAPITULATION.

THE VARIOUS FISHERY INTERESTS.—If the sea fisheries proper be taken as a standard, Maryland has an unimportant place on the list of fish-producing States; but if the oyster and river fisheries, in both of which this State is extensively interested, be included, it ranks second only to Massachusetts in the value of the products, and stands first in the number of persons employed. The 26,008 fishermen and shoremen produced in 1880 $5,221,715, while the 20,117 interested in the Massachusetts fisheries realized $8,141,750 as the result of their labors. This is easily explained by the fact that the fishing season is much shorter in the former than in the latter State, and that the fishermen are as a rule less energetic and not so fully equipped for the work.

The oyster interests are more important than those of any other State. These, according to the report of Mr. R. H. Edmonds, furnished employment to 23,402 persons, with 1,450 vessels and 1,825 boats, the value of the products amounting to $4,730,476.

With so extensive a river system, the fresh-water fisheries are naturally of peculiar importance, and more shad are taken by these fishermen than by those of any other State, while Maryland stands second only to North Carolina in the extent and value of the alewife fisheries.

STATISTICAL RECAPITULATION FOR 1880.—The following tables show the extent and value of the fishery interests of Maryland:

Summary statement of persons employed.

Persons employed.	Number.
Fishermen	15,873
Shoremen	1,256
Factory hands	8,879
Total	26,008

Detailed statement of capital invested and apparatus employed.

Apparatus specified.	Number.	Value.
Vessels (43.500 tons)	1,450	$1,750,000
Boats	2,825	186,448
Pound-nets	83	13,375
Fykes, pots, and baskets	4,050	6,600
Gill-nets	1,462	44,880
Dip-nets and cast-nets	30	710
Purse-seines	1	400
Drag-seines	139	53,550
Minor apparatus, including outfit	.....	177,030
Factories and other shore property	.....	4,194,050
Additional cash capital	.....	4,800
Total capital	.....	6,342,443

Detailed statement of the quantities and values of the products.

Products specified.	Pounds.	Value.
Grand total for fishery products	95,712,570	$5,221,715
Sea fisheries.		
Bluefish	10,000	300
Clams (hard)	40,000	2,000
Crabs	1,166,667	46,850
Menhaden	3,903,000	11,851
Mullet	30,000	1,200
Oysters	74,200,000	4,739,476
Spotted sea-trout	5,000	150
Squeteague	60,000	1,200
Terrapin	30,000	4,000
All other species	837,000	20,900
Total sea products	80,281,667	4,818,927
River fisheries.		
Alewives	9,128,953	139,637
Shad	3,759,426	146,326
Sturgeon	144,000	1,440
All other species	2,398,518	121,355
Total river products	15,430,903	402,788

B.—REVIEW OF THE SALT-WATER FISHERIES.

156. STATISTICAL RECAPITULATION.

The sea fisheries of Maryland, if we exclude the oyster industry, are quite unimportant. There are no harbors of any size along the outer shore, and the shores bordering Chesapeake Bay are too far removed from the ocean to warrant any exclusive fishing for marine species. This fishery is therefore confined largely to small boats for use in the sounds and bays at different seasons. The following table shows the extent of the sea fisheries, excluding menhaden and oysters, for 1880:

Summary statement of persons employed.

Persons employed.	Number.
Fishermen	260
Shoremen	15
Factory hands	9
Total	284

Detailed statement of capital invested and apparatus employed.

Apparatus specified.	Number.	Value.
Vessels (33.99 tons)	3	$1,400
Boats	196	6,025
Pound-nets	2	1,500
Fykes, pots, and baskets	1,500	1,000
Gill-nets	300	4,500
Drag-seines	60	2,225
Minor apparatus, including outfit		3,100
Factories and other shore property		6,500
Cash capital		4,800
Total capital		31,050

Detailed statement of the quantities and values of the products.

Products specified.	Pounds.	Value.
Bluefish	10,000	$300
Clams (hard)	40,000	2,000
Crabs	1,166,667	46,850
Mullet	30,000	1,200
Spotted sea-trout	5,000	150
Squeteague	60,000	1,200
Terrapin	30,000	4,000
All other species	690,000	20,900
Total	2,031,667	76,650

157. THE FISHERIES OF THE OCEAN SHORE.

General description of the region.—The State of Maryland, if we consider the Chesapeake and its larger tributaries, has an enormous coast-line of salt and brackish water. Its ocean shore, however, is very limited, being only about 25 miles in extent. The outer beach is formed by a long and irregular sand-bar, varying from a few rods to a mile or more in width, extending throughout the entire length of the State. Lying between this bar and the mainland is a large and very irregular sheet of brackish water, which connects with the ocean near Chincoteague Island, Virginia, and again through Green Run Inlet, in the southern part of Maryland. The lower portion of this lagoon, known as Assateague Bay, is 7 or 8 miles wide and from 10 to 12 miles long. At its northern extremity it suddenly contracts into a long and narrow channel, known as Sinnepuxent Bay, which connects it with Isle of Wight Bay, an irregular sheet of brackish water near the northern boundary of the State. A belt of low swampy land, averaging 3 or 4 miles in width, separates the waters of these bays from the higher lands of the interior, with occasional landings connected by wagon roads with the villages and farming districts a few miles distant. A number of families have located at different points near the southern extremity of the outer bar, and in its northern portion is situated the growing village of Ocean Grove, which seems destined to be the popular summer resort of the region. The main shore, on account of the marshes, is almost uninhabited, the villages being situated on an average of 5 or 6 miles from the water. These, as a rule, are small and unimportant, the only ones of note being Snow Hill, the county seat, and Berlin, a small railroad center.

The fisheries of Assateague and Sinnepuxent Bays.—The fishing of Assateague and Sinnepuxent Bays is of little importance, being confined largely to the capture of mullet (*M. albula* and *M. braziliensis*)—locally known as fat-backs—eels (*A. rostrata*), croakers (*M. undulatus*), drum (*P. chromis*), weakfish (*C. regale*), and bluefish (*P. saltatrix*), for local use, during the summer months, and to the capture of a limited quantity of rock (*R. lineatus*) and perch (*R. americanus*) in the fall and winter. Clamming and oystering are also carried on to a limited extent in this region. The men engaged in the fisheries are for the most part farmers living some distance from the water. These own small boats, which are kept at the various landings in the region. During their spare hours they take their seines and repair to the shore, catching a supply of fish for local use and a few mullet for salting, after which they return home. With the exception of clams, almost no sea products are sent from this region to the larger markets of the country.

Fisheries of Isle of Wight Bay.—In the northern portion of the State, especially at Isle of Wight Bay, the fishing is much more extensive. This region was visited by Capt. J. W. Collins, to whom we are indebted for the following information. In the vicinity of Ocean City there is a limited fishery along the outer beach for menhaden and drum, the former being taken with seines

and used as a dressing for the land, while the latter are taken with hook and line by persons standing along the shore. In this fishery the hooks are baited with menhaden or crabs and thrown well out into the surf, after which they are slowly drawn to land, the fish seizing them as they pass through the water. It is said that the catch of drum in this way is frequently so large that there is a good deal of difficulty in disposing of them in the locality, and many are thrown away for lack of a market. The bay fishing is prosecuted to a greater or less extent during the entire year, though it is much more extensive during the winter months. A few persons may properly be called professional fishermen, as they follow fishing for a livelihood throughout the year, catching any species that happens to be abundant. With the above exception the summer fishery is prosecuted chiefly by farmers for home supply. In the fall and winter, when their farm work is over, many of these devote their entire attention to the fisheries, and, whenever the weather will admit, ship their catch by rail to Philadelphia and New York.

Seines and gill-nets are used to a considerable extent, both being sometimes employed by the same parties. The meshes of the gill-nets vary from 3 to 5 inches, according to the species for which they are intended. The average net is from 25 to 50 fathoms in length and from 15 to 25 meshes deep. The seines vary greatly, according to locality, the small ones ranging from 30 to 100 fathoms, while the larger ones reach and even exceed 300 fathoms. Some of the fishermen are provided with craft large enough to furnish them shelter during their stay in the vicinity of the fishing grounds, but most have only small open boats, and are obliged to camp on shore with no shelter, except that afforded by the trees and hills. They seldom build huts for their protection, claiming that these would be destroyed and the lumber carried away during their absence. They often go 8 to 10 miles from home, and remain from three or four days to even a week at a time, and, being without shelter, they are often exposed to great hardships.

STATISTICS OF THE CATCH.—Enormous catches are sometimes made, though as a rule the fishermen meet with only moderate success. The principal species taken in the winter are rock and perch, while in the spring alewives, pike, and catfish are also secured.

According to Captain Collins, the value of the catch of this region for both fresh-water and salt-water species amounted to $22,655 during the season of 1880, to which should be added $12,889 for the lower portion of the State; giving a total of $35,544 as the amount received by the fishermen of Maryland for sea products, exclusive of oysters, taken along the ocean shore.

158. THE FISHERIES OF THE BAY SHORE.

PECULIARITIES OF THE REGION.—If the State of Maine be excepted, probably no portion of the entire coast is so ragged and irregular as that part of Maryland which borders Chesapeake Bay, and, though no exact figures are at hand, it would doubtless be wholly within bounds to assume that the State has upwards of 1,200 miles of coast line washed by the salt and brackish water of the numerous arms and tributaries of the Chesapeake. The saltness of the water varies greatly at different times, depending largely upon the amount of rainfall in the region. During seasons of drought it is nearly as salt as the ocean, but in rainy seasons it is only moderately brackish, while in the extreme upper portion and in the mouths of the larger rivers it is nearly fresh. As a rule, however, it is so salt that oysters, crabs, and certain marine fishes thrive in almost any part of it.

THE FISHERIES.—With so enormous a coast line it would be natural to suppose that the Maryland people would engage extensively in the Chesapeake fisheries; and such is the case in certain localities, where the prosecution of the shad, herring, and oyster fisheries forms the principal occupation of the people. In many sections, however, the shores are low and damp, with few

inhabitants, except at small villages situated on the uplands of the river banks, and for this reason the fisheries are less important than would at first be supposed.

The shad and alewife fisheries are described by Colonel McDonald in another section of this report, while Mr. Edmonds gives below a full account of the oyster industry. We shall, therefore, speak only of the fishing for such marine species as are most frequently taken in the salter bays along the coast. Many of these, though common in the Lower Chesapeake, do not ascend to the Maryland waters in any considerable numbers, and those occurring there are found chiefly in the southern portion of the State, or in that portion lying between Tangier Island and Annapolis, where the population of the immediate coast line is very small, and where there are few opportunities for shipping.

THE PRINCIPAL FISHING CENTERS.—The principal settlements in this region, and the only ones of note having railroad facilities for shipping, are Crisfield, Cambridge, Easton, and Annapolis. The first named is a town of considerable importance, located on a good harbor, near the southern boundary of the State. The ground on which the business portion of the town is situated is composed almost wholly of oyster shells which have been deposited by the large packing-houses of Crisfield that do an extensive business in opening and shipping oysters during the winter months. The people in this vicinity are almost wholly dependent upon the water for a livelihood. Every able-bodied man is interested in the oyster fisheries in the winter, and nearly all engage in the capture of fish, crabs, or clams during the summer season. The other towns are also more or less interested in the oyster fisheries in winter, and are the receiving ports for considerable quantities of fish and crabs in summer, the bulk of these, after the local trade is supplied, being forwarded to Baltimore, Washington, Philadelphia, and New York. The fisheries proper of the region are growing in importance, and in most localities they have doubled within the last five years.

The principal sea fishes taken are tailors (*P. saltatrix*), bay mackerel (*S. maculatus*), trout (*C. regale*), sheepshead (*D. probatocephalus*), and eels (*A. rostrata*).

SPANISH MACKEREL.—In 1877 gill-nets were first extensively used in the capture of Spanish mackerel in the vicinity of Crisfield, though they had been regularly employed in the shad and alewife fisheries for many years. There are now over a hundred men employed in the gill-net fisheries in this region, exclusive of the large number that belong at Tangier Island who market their catch at Crisfield. The nets used vary from 25 to 30 fathoms in length, and from 9 to 12 feet in depth. Each man is provided with four of these nets and is actively engaged in fishing from the 1st of May till the 1st of October.

TAILORS AND TROUT.—The tailors arrive early in May and form the bulk of the catch for about six weeks. They are again abundant from August 15 to October 1, after which they are less frequently taken up to the 1st of November, when they entirely disappear. They average about 1½ pounds each in weight, and net the fishermen from 4 to 5 cents apiece. The trout are abundant during the entire summer, but are taken chiefly for local consumption, few of them being shipped out of the city.

SHEEPSHEAD.—A number of fishermen are employed in the capture of sheepshead with hook and line, while others are provided with seines for the same work. They usually have small "hurdles," consisting of a dozen to twenty piles driven into the mud, among which the sheepshead gather in considerable numbers. The sheepshead taken in this region are very large, averaging fully 7 or 8 pounds each, while some weighing 14 to 15 pounds were seen by us in the Crisfield market. They find a ready sale at from 7 to 12 cents per pound, the fishermen often

making good wages in the business. Several instances are reported where men have made as high as $18 to $20 in a single day.

EELS.—Eels are everywhere abundant, and, though few are taken for shipment, they are caught in large numbers with hook and line or pots and baskets, for local use, the aggregate of the catch amounting to many thousands of pounds in the course of the season.

MENHADEN.—For a number of years menhaden (*B. tyrannus*), locally known as ellwives, alewives, and oldwives, have been taken in considerable numbers by the farmers of the region, who have used small haul-seines for catching a supply with which to manure their land. Prior to 1880 this was the only method of fishing, but at this time an oil and guano factory was built at Crisfield, and during the course of the season 3,500,000 menhaden were taken. These, according to the statements of the managers, produced 300 tons of dried scrap and 10,575 gallons of oil, the value of the products amounting to $10,000 in the aggregate. Thus far the company has met with good success, and the outlook for the future is encouraging. It is hardly probable, however, that any extended business will be developed in the State, as even its southern boundary is so far removed from the mouth of the Chesapeake that the fish seldom occur in any considerable numbers and the fishermen are usually obliged to enter Virginia waters in order to secure their supply.

THE CRAB FISHERIES.—Crabs are very abundant in the region, and the shipping of both hard and soft crabs is now a very important business. The trade in the latter is said to have begun in 1876, when Crisfield parties first built pens or troughs for confining the crabs until they had cast their shells. After numerous experiments proper apparatus was adopted whereby the business could be prosecuted with considerable profit. The dealers now use shedding-pens or troughs, about 15 feet long, 3 feet wide, and 2 feet deep. The bottom of the trough is made of inch boards, and the sides are built of laths, arranged vertically about half an inch apart, while half-way between the top and bottom, on the outer surface, is a heavy scantling or float which marks the depth to which the box shall sink in the water. These shedding-troughs are placed in the smooth water of some sheltered cove convenient to the packing-house, where they can be frequently visited by the parties in charge, who overhaul them two or three times a day, taking out such as have finished shedding, and carrying them to the shore, where they are packed for shipment. The crabs are purchased from the fishermen at an average of $1 per hundred for such as are beginning to shed. When the shell first begins to open, the crab is styled a "peeler" by the fishermen, and later, as the opening becomes larger, it is known as a "buster." The hard crabs are always rejected by these dealers, and for this reason they are seldom taken by the experienced fishermen, who can usually detect a "peeler" before it is removed from the water. In case a hard crab is taken by mistake it is usually returned to the water, though some parties are in the habit of saving them and shipping them in barrels to Baltimore. The soft crabs are packed in trays 4 feet long, 18 inches wide, and 4½ inches deep; great care being taken that each shall be placed in such a position that the moisture shall not run from its mouth, for if the mouth parts become dry, death ensues in a short time. A crate of the size mentioned will hold about nine dozen average-sized crabs. These are shipped chiefly to New York and Philadelphia, though many are sent to the interior cities of Pennsylvania at from 30 to 50 cents per dozen. The people of both Crisfield and Annapolis are extensively interested in this business, and several hundred men are engaged in crabbing from the middle of May to the 1st of October. It is estimated that not less than 10,000 cases of soft crabs were shipped by Maryland dealers during the season of 1880. In addition to these, considerable quantities were consumed locally.

A company has been formed at Oxford for the canning of hard crabs, which are very abun-

dant in the waters of that region. It is said that fully 1,500,000 crabs were purchased by the company in 1880, the products of the cannery amounting to 135,000 cans, valued at $6,850. There are two similar establishments at Hampton, Va. Aside from the canning interests large numbers of hard crabs are shipped from different points to the larger markets. The crab is thus a very important species to the fishermen, who derive considerable money from its capture and sale.

CLAMS AND TERRAPIN.—Clams are less abundant in Maryland than in Virginia, and most of the clammers of the former State visit Virginia waters to secure their supply, though the laws are supposed to prohibit them from doing so. The species occurs in limited quantities, however, near the southern boundary of Maryland, and some clamming is done in that locality, the catch being used locally or shipped by rail and steamer from Crisfield. A few terrapin are found along the salt-water marshes, but the catch is so small as to be of little commercial importance.

STATISTICS OF THE FISHERIES.—The number of men directly interested in the salt-water fisheries, excluding oysters, is 305, of whom 275 are fishermen, the remainder being shoremen and factory hands. The fishing-vessel fleet is limited to 6 sail, aggregating about 105 tons, and valued at $4,300. In addition to these, 200 boats, worth $6,300; 2 pound-nets, worth $1,500; 1,500 pots and baskets, worth $1,000; 300 gill-nets, worth $4,500; 1 purse-seine, valued at $400, and 60 drag-seines, valued at $2,225, are used in the fisheries of the State. Adding the value of the single menhaden factory at Crisfield and other shore property, and the cash capital of the factory and dealers, we have a total dependent capital of $43,825.

The total quantity of fish taken for food during the year 1880 was 795,000 pounds, of which 775,000 pounds were sold in a fresh state and 20,000 pounds were salted, while 4,050,000 pounds were taken to be used as a fertilizer. About 10,000 terrapin, 3,500,000 crabs, and 5,000 bushels of quahaugs, were taken during the same season; these, together with the foregoing, make a grand total of 6,081,667 pounds of sea products taken by the fishermen of Maryland. The total value of the same to the producer is $88,451, and their estimated market value exceeds $175,000.

C.—REVIEW OF THE OYSTER INDUSTRY.

159. THE OYSTER INTERESTS OF MARYLAND.

By RICHARD H. EDMONDS.

The Chesapeake Bay and its numerous salt-water tributaries contain the most prolific and valuable oyster-beds in the world, probably about equally divided between the two States of Maryland and Virginia. Notwithstanding the great importance and value of the oyster trade of the Chesapeake Bay, it is a subject upon which there has been no reliable information, either as regards its extent, the amount of capital invested, or the past and present condition of the business. The legislatures of Maryland and Virginia have, at every session for many years, revised and re-revised the laws upon this subject for their respective States; but have always been content to work in the dark, knowing nothing practically, and never seeing the value of obtaining full information upon so important an industry. There is, perhaps, no subject of such vital importance to either State that is so little understood. By some it is as greatly overestimated as it is underestimated by others. Many who have never lived near the water, and who gain their information from the rose-colored pictures drawn by correspondents who see only the best features of the trade, imagine that an oyster-bed is a mine of wealth, from which every oysterman may gather a liberal competence with but little labor. Nothing could be more erroneous.

The present report, based upon my investigations made by request of Profs. Spencer F. Baird and G. Brown Goode, must at the best be but the basis for a more elaborate and thorough scientific examination of this subject. From the chaos in which I found the business, so far as regards statistical information, I have tried to evolve some facts and figures which, by showing the importance of the trade, may cause a more careful study to be made of the means to arrest the present depletion of the beds and provide ways for increasing the natural supply of oysters. Until this is done it is almost useless to hope for wiser laws than those now in existence, many of which are not worth the paper upon which they are written. There are so many widely differing interests, each seeking through its representatives in the State legislatures to have such laws enacted as will protect its own particular branch of the trade regardless of what may be desired or needed by other branches, that it is utterly useless to expect to please all. Politicians, however, dependent upon the votes of the unlearned as well as the learned, must seek by all means to please their constituents, however unwise may be their desires. The carrying out of this doctrine results in a conflict of opinion among legislators and, no one being willing to relinquish his own pet theories, much time is wasted in useless discussions; and at last, when a bill is proposed, it is subjected to so many amendments, that when finally passed it would scarcely be recognized by its originator. In this way the laws both of Virginia and Maryland bearing upon the oyster trade are often worse than useless; and if by chance a law should be good, the means of enforcing it and the penalties for violating it will be so inadequate that no good results will follow its passage. It is a lamentable fact that a large part of the oystermen, many of whom are negroes, are so ignorant as to be easily led by demagogues. I have been informed by a prominent and reliable gentleman in Virginia, that during a late political canvass for the State legislature one of the candidates, in an address to the oystermen, promised, upon condition of their voting for him, that should they desire to break any of the oyster laws, he, as a lawyer, would defend them free of cost. My own observation leads me to believe that this is by no means an exceptional case. I am inclined to think that just here lies one of the greatest hindrances to the enactment and enforcement of suitable laws.

The oyster trade of the Chesapeake Bay is of vast extent, giving employment to thousands of workmen and millions of invested capital, and yet there are many intelligent men who believe that the blessings so lavishly bestowed by nature upon the tidewater counties of Maryland and Virginia in the abundant supply of oysters and fish are in reality productive of more harm than good. This belief is based upon the non-progressive character of the oystermen, who, as a class, are illiterate, indolent, and improvident. As the great natural productiveness of the soil in tropical countries has tended to retard man's improvement by taking from him the necessity for constant labor, so has the abundant supply of oysters in the Chesapeake tended to make the oystermen unwilling to engage in any steady occupation. A tongman can at any time take his canoe or skiff and catch from the natural rocks a few bushels of oysters, for which there is always a market. Having made a dollar or two, he stops work until that is used up, often a large part of it being spent for strong drink. When his money is all gone he can repeat the same course. Unless spent in the indulgence of intemperate habits, a small amount of money will enable an oysterman to live in comparative comfort. He can readily and at almost no expense supply his table in winter with an abundance of oysters and ducks, geese, and other game, while in summer fish and crabs may be had simply for the catching. So long as they are able to live in this manner it is almost impossible to get them to do any steady farm work. This cannot of course be avoided, as they have a right to live in the manner which best suits their taste, although several laws have, at different times, been enacted, which, while not so expressed, were really intended to have the effect

of making the tongmen, and especially the negroes, engage in other occupations. Could this be done without restricting the rights of citizenship it would prove a great blessing to the negroes themselves, as it would lead them to regular work in the cultivation of land, and it is well known that as soon as these people are possessed of a house and a few acres of land they become more law-abiding and industrious.

It has generally been a favorite idea of the legislators both of Maryland and Virginia that each State should derive some revenue from the natural oyster-beds belonging to it. To this end many laws have been passed, but no satisfactory results have ever been accomplished. The expense of enforcing laws over such an extensive body of water as the Chesapeake Bay is necessarily very great. In 1879 the entire amount received from licenses to tong, to scrape, and to dredge in Maryland was less than the cost of maintaining the oyster-police force. This, however, was an exceptional year, and very little was collected from dredgers for reasons given elsewhere. Since the oyster-police force was first established up to September 30, 1879, the amount collected from dredging licenses, measurers, and fines exceeded the expenses of the force by $235,156.59. In addition to this there is a county tax upon tonging and scraping which averages about $10,000 a year. This amount is by law paid to the public schools of the respective counties. It would be necessary for the State to maintain the police force, even if it had to be done by appropriations from the general treasury. Disband the force, and in a few weeks the bay would be a battle-ground for tongers and dredgers. This was plainly demonstrated last winter on the Rappahannock River. Virginia having abolished dredging on natural rocks, it was decided to do away with the police force. In the winter of 1879–'80 about 40 dredging boats entered the Rappahannock and began work. The native tongmen, incensed at this depredation upon their beds, undertook to drive the dredgers away. In this, however, they signally failed. The dredgers, being well supplied with rifles, opened fire upon the tongmen. For several weeks the appearance of a tongman at any time, was certain to draw forth a volley from the dredgers. The legislature being in session at the time, it was decided to supply the tongmen with a cannon, a large number of rifles, and a supply of ammunition. Before the arrival of these, however, the dredgers had left. Such is but a sample of what would be constantly occurring if the dredgers of Maryland were not overawed by the police.

In Virginia there are some laws for taxing oysters but as there are no means of enforcing them they are worthless. The total amount of license money received during 1879 was only a few hundred dollars. When gathering the statistics of the oyster trade in Maryland the matter seemed perplexing enough; but when the effort was made to obtain the same information in Virginia the task was found to be even worse. State officials, from county clerk to auditor, knew nothing definite about the business. There was no license, as in Maryland; no record of the number of boats or men; in fact, nothing upon which to begin laying a foundation. The county officials, however, willingly rendered all the aid in their power, and to many of them I am greatly indebted for their kind assistance.

DREDGING.—There are really but two ways of catching oysters practiced in this State: dredging and tonging. Scraping is but dredging on a smaller scale.

Before discussing the merits and faults of our present method of dredging, it may be well to give some description of this manner of catching oysters, which, while very familiar to Marylanders, may not be so well understood by those who have never witnessed the practical working of it. Dredges are bags made of iron rings linked together, forming meshes similar to those of an ordinary seine, the mouth being held open by an iron frame, from the four corners of which project four iron bars converging to a point at a distance of a few feet from the mouth; to this point a

short chain is attached, and joined to the chain is a long rope which winds around the windlass. Projecting downwards from the bar, attached to the lower edge of the mouth, are iron teeth, which, as the dredge is drawn over the bottom, scrape up the oysters and guide them into the bag. Every vessel is supplied with two dredges and two windlasses, the latter being made stationary about midway of the deck on each side of the vessel. At the point where the windlass is screwed to the deck 3 or 4 feet of the rail is removed, and fastened to the side of the vessel is an iron bar over which the chain and rope run when the dredge is being worked. The windlasses are so arranged that each is worked by four men at the same time. When the boat reaches the dredging ground the captain takes the helm, and the men prepare for their laborious task. The dredges are thrown overboard and the vessel continues on her course until it is supposed that the dredge, which usually holds 2 or 3 bushels, is full, and then it is hauled up, and its contents, consisting of oysters, stones, shells, crabs, fish, &c., emptied on deck. If the vessel has passed across the bar, she tacks, and recrosses the ground and continues sailing over the same bar for hours.

If dredging is done in the day-time the oysters are at once culled, but when working at night this is deferred until morning. Culling consists in separating the oysters from the other things brought up by the dredge, and throwing the latter overboard, while the former are placed in the hold of the vessel. In this manner the work continues until the vessel is loaded, when she at once proceeds to market. A trip will generally take about twelve or thirteen days. The effect of dredging upon an oyster bar has been thoroughly studied both in this country and in Europe, and the conclusion almost invariably reached is that it is beneficial to the beds when properly conducted as to time and manner; and my own investigations have satisfied me that this is correct. An oyster bar when left undisturbed for a number of years has a tendency to solidify into an almost impenetrable rock. Dredging prevents this, and by scattering the oysters over a wide area greatly extends the bar. A bushel of wheat placed in one pile will never "increase and multiply," however fertile may be the soil in which it rests; neither will its yield repay for the gathering thereof if the grains are dropped at far-distant points. It is only when well sown, neither too thick nor too thin, that a good harvest may be expected. Such is the case with oysters. Nature has often placed them in one large pile. Dredging, properly conducted, acts like the grain-drill in scattering them over a wider field. But there is great danger that dredging may be carried to such an extent as to leave only an oyster here and there; and then, like the thinly-sown wheat, the yield is too small to be profitable. Such is by some believed to be the present condition of a large part of the bay; and they hold that there is an abundance of oysters, although so widely scattered that it is very difficult to catch them. In a report upon the "Oyster beds of the Chesapeake Bay," made in 1872, by Mr. O. A. Brown, to the auditor of public accounts of Virginia, it is said that "The dredging of oysters is as necessary to their development and propagation as plowing is to the growth of corn; the teeth of the dredge take hold of the rank growth of the oyster beds, and, by being dragged through them, loosen them (which is done by hand in France in the management of their oyster parks), and give them room to grow and mature properly; moreover, beds are continually increased in size, for when the vessel runs off the rock with the chain-bags filled with oysters, the oysters are dragged off on ground where no oysters existed, and thus the beds are extended, and when the vessel is wearing or tacking to get back on the oyster beds, the catch just taken up is being culled off, the cullings thrown overboard to form new cultch for drifting spat to adhere to. Reliable oystermen tell me that since dredging has been carried on in Tangier and Pocomoke, the beds have more than doubled in size; and, with the moderate force that worked upon them prior to the war, were continually improving. During the war the waters were thrown open to every one

who would pay the military officials for a permit to oyster; the consequence was that the oyster beds were scraped bare, and it was two years before they could recuperate."

While dredging, properly conducted, is no doubt beneficial to the beds, I am inclined to think that in this State it is being carried too far, and that its ultimate effect will be the same as in every European country where it has been unrestricted by proper laws. By some it is believed that the oyster beds of the Chesapeake Bay are of such vast extent, and the number of young annually spawned so great, that it will be impossible to destroy them. In view of the experience of Great Britain and France, and of the almost complete destruction of many of the once-famous beds of the Chesapeake, such an opinion is without good foundation. The history of dredging in France and in Great Britain is very instructive, and may be studied with much profit by those who are interested in the preservation of the oyster beds of the Chesapeake Bay. The most valuable records are those of the production of the beds of Cancale Bay, on the northwest coast of France. These records extend over a period of sixty-eight years, from 1800 to 1868. The following extract in regard to these beds is from the report of Francis Winslow, master United States Navy, made to Carlile P. Patterson, Superintendent Coast and Geodetic Survey:

"The beds in the bay comprise an area of about 150 acres, and from 1800 to 1816 produced from 400,000 to 2,400,000 a year. This, however, was the period of the Napoleonic wars, and the fishing was much disturbed by the presence of the English cruisers. During this time the beds became so thickly stocked that the oysters were in some places a yard thick. After the close of the war the fishing improved and the oysters were removed in larger and increasing numbers until 1843. From 1823 to 1848 it is supposed that the dredgers were living upon the oysters accumulated during the period of enforced rest, from 1800 to 1816. In 1817 the number of oysters produced was 5,600,000, and until 1843 there was a constant increase, the number taken in the latter year being 70,000,000. In 1848 it was 60,000,000; thenceforward there was a constant decrease. From 1850 to 1856 the decrease was from 50,000,000 to 18,000,000, supposed to be the effect of over-dredging. From 1859 to 1868 the decrease was from 16,000,000 to 1,079,000; the oysters having almost entirely disappeared from the beds, though on account of the suffering condition of the inhabitants of the shores it was almost impossible to prevent it. In 1870 there was a complete wreck of the bottom, which could only be remedied by a total prohibition of the fisheries for several years. From the beds of the districts of Rochefort, Marennes, and island of Oléron, on the west coast of France, there were taken in 1853–'54 10,000,000 oysters, and in 1854–'55, 15,000,000. On account of exhaustive fishing in 1863–'64 only 400,000 could be obtained. According to the testimony of Mr. Webber, mayor of Falmouth, England, about seven hundred men, working three hundred boats, were employed in a profitable oyster fishery in the neighborhood of Falmouth until 1866, when the old laws enforcing a 'close time' were repealed, under an impression that owing to the great productive powers of the oyster it would be impossible to remove a sufficient number to prevent the restocking of the beds. Since 1866 the beds have become so impoverished from excessive and continual fishing that in 1876 only forty men and forty boats could find employment, and, small as the number is, they could not take more than 60 or 100 oysters a day, while formerly, in the same time, a boat could take from 10,000 to 12,000. According to the statement of Mr. Messum, an oyster dealer, and secretary of an oyster company at Emsworth, England, made before the commission for the investigation of oyster fisheries in May, 1876, there were in the harbor of Emsworth, between the years of 1840 and 1850, so many oysters that one man in five hours could take from 24,000 to 32,000. In consequence of over-fishing, in 1858 scarcely ten vessels could find loads, and in 1868 a dredger in five hours could not find more than *twenty oysters*. The oyster fisheries of Jersey, in the English Channel, afforded employment

to four hundred vessels. In six or seven years the dredging became so extensive and the beds so exhausted that only three or four vessels could find employment, and the crews of even that small number had to do additional work on shore in order to support themselves."

The foregoing are a few of, though by no means all, the instances that may be quoted in order to show the disastrous effects of overworking the beds, and in concluding the remarks under that head it will be instructive to extract from Professor Möbius' work his prophecy with regard to our own beds, which is here introduced:

"In North America the oysters are so fine and so cheap that they are eaten daily by all classes. Hence they are now, and have been for a long time, a real means of subsistence for the people. This enviable fact is no argument against the injuriousness of a continuous and severe fishing of the beds. * * * But as the number of consumers increases in America the price will also surely advance, and then there will arise a desire to fish the banks more severely than hitherto, and if they do not accept in time the unfortunate experience of the oyster culturists of Europe, they will surely find their oyster-beds impoverished for having defied the bioconotic laws."

As the best stocked and most productive beds of Europe were quickly destroyed by unrestricted dredging, so may the hitherto seemingly exhaustless beds of the Chesapeake Bay be depleted if the present rate of dredging is continued. An illustration of this may be seen in the almost total exhaustion of the once famous beds of Tangier and Pocomoke Sounds. Year after year these beds were dredged by hundreds of vessels, and even the summer months afforded them but little rest. The result of this has been plainly seen during the past few years, and more especially during the season of 1879–'80, in the great scarcity of oysters in these sounds. Vessels having found it unprofitable to dredge in these sounds since the oysters became so scarce, have turned their attention to other parts of the bay, and will thus give the beds a year or so of comparative rest. It is doubtful if they will ever again be as well stocked as in former years, for as soon as oysters again become plentiful there will be a rush of all the dredging boats in the State. Thirty years ago the depletion of these beds seemed almost impossible, and yet at the present time it is an admitted fact that oysters have decreased at least four-fifths in Pocomoke Sound and two-thirds in Tangier. If it were possible to restrict dredging so as to give every bed an occasional year of rest, the result would prove the wisdom of such a course. Owing to the great extent of the oyster-beds in the bay and their immense annual production, it may be some years before there is an oyster famine, but sooner or later it is coming, unless there is a radical change in some of the present phases of the business. Properly protected and cared for, the "imbedded wealth" of the Chesapeake might be increased many fold. It is a shame that the gifts so lavishly bestowed by nature upon Maryland and Virginia should receive so little practical appreciation.

Dredging in Maryland is simply a general scramble, carried on in 700 boats, manned by 5,600 daring and unscrupulous men, who regard neither the laws of God nor man. Some of the captains and a few of the men may be honest and upright, but it is an unfortunate fact that such form a very small minority. The tenure by which the captains hold their positions is such that they are almost forced to disregard the laws. Many of the boats are owned by unprincipled men, and I am informed that a number of them are even held by the keepers of houses of ill-repute. An honest captain who complies with the law by not working on Sunday, at night, or on forbidden ground, will take at least a week longer to catch a load of oysters than one who, disregarding the law, gets his oysters whenever or wherever he can. The first captain, upon his return, is informed in language more forcible than elegant that unless he makes as quick trips as the second captain his place will be filled by some one less scrupulous. With such a system as this carried out by a large number of the boat owners, what but evasion of the laws can be expected of captains? When a premium is

placed upon law-breaking, and a man is taught by his employers that oyster laws are only made to be broken, and that the greater the skill displayed in evading them the greater will be his pay, it is scarcely to be expected that many will be able to resist the temptation. It is now rarely the case that a dredger can be found who will admit that he believes there is any wrong in disregarding the oyster laws, and such a thing as being disgraced among his fellow-workmen by imprisonment for violating the laws is totally unknown. In the above facts will be found sufficient reasons why it has been impossible for the oyster police since its first organization to enforce the laws. Seven hundred well-manned fast-sailing boats scattered over such a large space as the Chesapeake Bay are rather difficult to watch, and especially at night.

All blame for violating laws does not, however, attach to the boat owners, as some of them are prominent gentlemen of the most upright character. It is the misfortune of such men that their captains have often been trained by less honest employers, and having once acquired a love of ill-gotten gain, it is difficult to keep them from continuing in the same course. As he usually has a share in the profits, it is of course to his interest to make his trips as quickly as possible; and while the boat owner may be opposed to breaking any laws, his captain may think and act otherwise.

The unscrupulousness of the captain is well assisted by the character of his men. These men, taken as a class, form perhaps one of the most depraved bodies of workmen to be found in the country. They are gathered from jails, penitentiaries, workhouses, and the lowest and vilest dens of the city. They are principally whites, many of whom are foreigners (almost every European country being represented), unable to speak more than a few words of English. When a crew, which usually consists of about eight men, is wanted, the vessel owner or captain applies to a shipping agent, who then gathers these men wherever they may be found, drunk or sober. As one large boat owner expressed it to me, "We don't care where he gets them, whether they are drunk or sober, clothed or naked, just so they can be made to work at turning a windlass." The shipping agent having placed the crew aboard, is then paid $2 for each man furnished. With such a crew as this, who neither know nor care for laws, the captain is of course able to work wherever he desires to. As may be supposed, the life led by these men on board of the vessels is of the roughest kind. When sleeping, surrounded by vermin of all kinds; when working, poorly clad and with every garment stiff with ice, while the wind dashes the fast freezing spray over them, hour after hour winding away at the windlass, pulling a heavy dredge; or else stooping with backs nearly broken culling oysters. Returning from a trip, the men take their little pay and soon spend it in debauchery amid the lowest groggeries and dens of infamy to be found in certain portions of Baltimore. It is a gratifying fact, though, that even amid such surroundings as these, there are some few respectable and honorable men. This is more especially the case on the boats owned in the lower counties of Maryland. The crews of these are often gathered from the surrounding neighborhoods, and even as a class are not as degraded as those on Baltimore vessels.

There are two ways in which these men are paid; the one most generally adopted at present being to pay them a stated amount per month, although payment is usually made at the end of each trip; the amount, of course, being proportioned to the length of the trip. The other plan is to allow the crew a share in the profits. When this is done, the vessel at the end of each trip first pays the "grub bill," wharfage, and commission merchants' charges; then, of the balance, one-third goes to the owner of the vessel and a small bonus, usually about $20, to the captain; after which captain and crew all share alike, except the cook, who receives something less than the others. When the first plan is adopted the men receive their board and from $10 to $12, and occasionally as high as $15 a month. Those working on shares will, during the season, average

about the same as those who are paid a certain amount. A fair average of the amount made by each man would be $11 a month, making $77 for a season of seven months. Computing on this average, it will be seen that during an oyster season the 4,900 dredgers receive about $377,300, and the 700 captains, whose wages will average $50 a month, about $245,000—making a total of $622,300. It would also be proper to add to this amount the cost of boarding these men, since that in fact forms a part of their wages. This costs the vessels about $7.50 a month for each man; equal to $420 a season for each boat, or $294,000 for the entire fleet. This, added to $622,300, gives a total of $916,300 paid to the dredgers of Maryland during every oyster season.

The law requires all boats engaged in dredging to obtain from the State comptroller a yearly license, costing $3 for each registered ton. For reasons explained elsewhere this law has never been fully enforced, and the records of the past season are entirely without value in determining, even to an approximate degree, the number of dredging boats, since more than one-half of them worked without license. Through the kindness of Hon. Thomas J. Keating, State comptroller, I have obtained the record of the past ten years, as shown in the following table:

Statement showing the number of boats licensed to dredge, their aggregate tonnage, and the amount of license money paid during the past ten years, compiled from the books of the comptroller's office at Annapolis.

Fiscal year.	No. of boats.	Aggregate tonnage of same.	Amount of license paid by same.
1870–'71	637	13,862.49	$41,587 46
1871–'72	597	13,073.21	39,033 62
1872–'73	559	17,604.23	52,812 69
1873–'74	621	10,075.91	30,227 73
1874–'75	583	14,118.53	42,355 58
1875–'76	691	16,156.23	48,468 68
1876–'77	677	16,612.48	49,837 46
1877–'78	565	14,469.46	37,408 39
1878–'79	465	10,391.10	31,173 29
1879–'80	327	6,202.17	18,606 50
Total			391,511 40

It will be seen by examining the above table that the highest number of licenses issued in any one year was in 1875–'77, when there were 691 boats, having an aggregate tonnage of 16,156.23, or an average tonnage of 23.38 each. Since that year there has been a steady decrease in the number of licensed dredgers, although there has been no decrease in the actual number of boats engaged in the business. Knowing this to be true, and also mindful of the fact that even in 1875–'76 there were some unlicensed dredgers, I have thought it safe to place the number of dredging boats working during the season of 1879–'80 at 700. There are some well-informed persons who would make the figure as high as 800, but I have based my statement upon information gathered from many sources. Taking the average tonnage in 1875–'76, and multiplying it by 700, we have 16,366 as the aggregate tonnage of the vessels now engaged in dredging. At $3 per ton for license, this should have yielded the State during the past season a revenue of $49,098, instead of $18,606.50, the amount collected. The 327 vessels which, either from honesty or policy, paid into the State treasury $18,606.50, received no privileges or advantages not taken by the 373 which dredged without license.

Dredging boats range in size from 5 to 75 tons, and in value from $500 or $600 to $8,000, some few owned in the lower part of the State being valued as high as $10,000. The boats owned in Baltimore are generally in every way inferior to those hailing from the counties. The present value of these boats, basing the estimate upon information obtained from all parts of the State,

would be an average of not less than $1,500, and it is believed by many to be much higher. At this rate, however, the seven hundred boats in the trade would be worth to-day $1,050,000. In addition to this, the winders, dredges, rollers, and chains and dredge lines on each boat may be valued at $100, although costing considerably more. Adding this to the value of the boats, we have $1,120,000 as the amount of capital invested in the dredging boats. The total tonnage of the dredging-boats being 16,366, and the estimated value of the same being $1,050,000, the average value will be $64.15 per ton. As some tonnage has lately changed hands in Baltimore at $67, the above estimate can scarcely be too great when the high class of many of the boats is considered. The amount annually expended for repairing these vessels is about $105,000.

SCRAPING AND TONGING.—Scraping, which is simply dredging on a smaller scale, both as to the size of the boat and the dredge, is conducted only in shallow water; and while dredge licenses are issued by the State, scraping licenses are obtained from the counties, and hold good only in the local waters of the county in which issued. Dorchester, Talbot, and Somerset are the only counties in which scraping licenses are issued. In the first two the charge is regulated by the tonnage of the vessel (being $2 per ton), while in the last there is a uniform charge of $10 on each boat, regardless of size. The crews of these vessels average about four men each, the majority of whom are able to return home after each day's work, as the boat does not go out of the county waters, except to make an occasional run to a neighboring market.

The number of scraping boats licensed during the past seven years is as follows:

Counties.	1873–1874.	1874–1875.	1875–1876.	1876–1877.	1877–1878.	1878–1879.	1879–1880.	No. of men employed on same during 1879–'80.
Dorchester	106	149	180	142	142	157	134	536
Talbot*	.....	59	40	47	27	34	29	116
Somerset	224	322	209	165	59	151	57	228
Total	330	530	429	354	228	342	220	880

* No scraping law until 1874–'75.

The above figures have been kindly furnished to me by the clerks of the respective counties, and, while they embrace all vessels that are licensed, they by no means include all that are scraping. From personal inspection and from reports of reliable persons I feel safe in placing the number of scraping boats at 550, carrying 2,200 men. The additional 330 boats are working without license. The pay of these men will average about $18 a month each for the seven and a half months employed, amounting to $135 for the season, and making a total of $297,000 received by the 2, 200 men, including the captains, whose pay is of course larger than that of the men.

The average value of scraping boats, including their outfit, is $800, which gives a total of $440,000 invested in scraping. About $27,500 is annually expended in repairing these boats. Socially and morally the scrapers are somewhat superior to the dredgers.

Tonging, although employing less capital and fewer men than dredging, is probably of greater value to the State than the latter, because the men engaged in it are of a better class, are better remunerated for their labor, and are less prone to evade the laws than the dredgers. While this much may be said in the tongmen's favor, it is yet an unpleasant truth that they, like all others engaged in the oyster trade, either as catchers or shuckers, are as a class indolent and improvident. The majority of them live near the water, often owning a small house and an acre or so of land (the value of which depends upon the proximity of good oyster and fishing grounds), and a canoe or an interest in one, used in winter for oystering and in summer for fishing. Having secured a house their ambition seems to be satisfied and but little time or money is spent in beau-

tifying or improving it. It is too often the case that tongers, especially many of the negroes, who comprise about one-third of the total number, will work only one or two days at a time and then remain idle until necessity forces them again to earn a few dollars. By others, however, tonging is pursued as steadily and systematically as the wind and waves will allow, and when this is done I think it may safely be said that the remuneration is equally as fair as in other trades. Those who pursue tonging in this way form the most intelligent class of oystermen in the State. In some cases farmers and others holding prominent social positions may be found oystering during several of the winter months when their legitimate business does not require close attention.

Tonging necessitates very great exposure to the cold, but is, however, hardly as severe in this respect as dredging, and moreover the tongers suffer less from the fact that they are generally better clad than the dredgers and seldom work either during very cold or very windy weather on account of the smallness of their boats. From this cause I find that even the industrious ones will lose on an average at least two days out of every week, and when the time wasted by the idle ones is taken into account it will be found that one hundred and twenty days out of an oyster season of eight months is about the average length of time for each tonger. In this actual loss of at least one-half of their time may be seen the cause which prevents the tongers, as a class, from making any improvement in their financial condition, upon which depends their social position.

While seeking information from the county clerks as regards the number of boats licensed, I also requested answers to the following questions with a view to obtaining home opinion upon the character of the tongers: No. 1. What is the moral and social condition of your oystermen? No. 2. What is their occupation during the summer months?

In answer, I received the following from Somerset County: No. 1. The oystermen, as a class, are generally poor men residing near the water-courses, living in and mostly owning small houses, with an acre or so of land, or less, attached to their premises, and in morals are equal to any body of men similarly situated. No. 2. In the summer oystermen work on their lots and do some job-work for their wealthier neighbors; but it is still to be feared that much of their time is unemployed.

From Worcester County: No. 1. Of a rather low order; some of them good as to morals, but a large majority reckless and improvident. No. 2. Most as day laborers; others cultivate small parcels of lands.

From Dorchester County: No. 1. As a class, only fair. No. 2. Most of them have small truck-farms to cultivate.

From Saint Mary's County: No. 1. Fair. No. 2. Fishing and agriculture principally.

From Anne Arundel County: No. 1. Unable to answer the question, but believe they compare favorably with other industrial classes. No. 2. Crabbing and bedding oysters.

Tonging, although generally confined to shallow water, is in some of the tributaries of the bay carried on in water varying in depth from 18 to 20 feet. Engaged in tonging there are 5,148 men, using 1,825 canoes or other small boats. To obtain even an approximate average of the amount of money made by each tonger is almost impossible, but I think it will be very near correct to estimate it at $225 a season, at which rate the total amount made by the tongers would be $1,158,300. Many of the larger boats are held in joint ownership by two or three parties.

Statement of number of tonging licenses issued during the past ten years, and number of men employed on boats in the season of 1879–'80.

Counties.	1870–'71.	1871–'72.	1872–'73.	1873–'74.	1874–'75.	1875–'76.	1876–'77.	1877–'78.	1878–'79.	1879–'80.	Number of men employed on boats 1879–'80.	Figures furnished by—
Anne Arundel	307	240	300	421	314	396	250	348	343	301	903	Sprigg Harwood.
Calvert	145	146	324	380	237	207	186	198	243	312	624	S. Sollers.
Charles	8	12	48	22	50	49	28	23	30	41	123	B. G. Stonestreet.
Dorchester	331	441	575	405	472	280	212	182	142	199	597	Charles Lake.
Kent*	.....	.....	.....	.....	120	101	101	106	122	123	369	Samuel Beck.
Queen Anne	118	119	178	183	219	172	146	139	144	145	435	James Wooters.
Somerset	179	252	245	125	329	239	72	59	2	.....	.....	Benjamin F. Lankford.
Saint Mary's	267	220	362	307	325	272	244	197	212	183	549	J. Frank Ford.
Talbot	199	184	274	280	294	276	254	217	258	281	843	J. Frank Turner.
Wicomico	112	106	195	125	172	98	88	133	168	134	402	S. P. Toadvine.
Worcester†	.....	.....	.....	.....	291	241	193	170	211	106	213	I. T. Matthews.
Total	1,666	1,720	2,501	2,248	2,814	2,331	1,774	1,772	1,815	1,825	5,148	

* No records farther back than 1874. † No license required until 1874–'75.

The information contained in the above table was kindly furnished to me by the gentlemen named, who are the clerks of the circuit courts of the respective counties, and from whom all licenses to tong must be obtained. The law in relation thereto is:

"Any resident of this State desiring to use any canoe or other boat in catching or taking oysters, for sale, with rakes or tongs, in any of the waters of this State, shall first obtain, by application to the clerk of the circuit court for the county wherein he may reside, a license therefor, and such license shall have effect from the 1st day of June, in the year in which it may have been obtained, to the 1st day of June next succeeding; provided that such license shall not authorize the use of said canoe or boat in taking or catching oysters in any creek, cove, river, inlet, bay or sound within the limits of any county other than that wherein the license shall have been granted, and that the boundaries of counties bordering on navigable waters shall be strictly construed, so as not to permit the residents of either county to take or catch oysters beyond the middle of the dividing channel; * * * and every applicant for such license shall pay to the clerk of the court where such license may be granted, and before the issuing and delivery of the same, according to the following rates, viz: For any boat measuring in length 20 feet or less, the sum of $2; measuring from 20 to 25 feet, the sum of $3; measuring from 25 to 30 feet, the sum of $4; and all over 30 feet, including sloops under custom-house tonnage, the sum of $5 each; and all oysters taken with rakes or tongs shall be culled upon the natural beds where they are taken; the amount received from tonging license to be paid by the clerk to the school commissioners for the public schools of the respective counties where such license is issued; provided, the sum received from white tongers shall go to white schools, and the sum from colored tongers to the colored schools."

The money arising from licenses issued to tong and to scrape during the year 1879 amounted to $8,959.89, which was turned over to the boards of school commissioners of the various counties, with the exception of $210 received by Worcester County for licenses, and which was used by the county commissioners in purchasing "plants" to be bedded in the county waters. It may be well to explain that the laws in Worcester County are different from those in the other counties in respect to the disposal of license money and also as regards the issuing of license. In this county the license is $1 on each man in the trade, and no account is taken of the boat.

Since 1874–'75 the number of licenses granted has decreased from 2,814 to 1,825 in 1879–'80. There are several causes for this, the principal one probably being the unprofitableness of tonging for several seasons past as compared with former years. From 1865 or 1866 to 1874 or 1875 tonging was quite profitable, as oysters commanded a good price, but since the latter year prices have ruled very low and many have turned their attention to other occupations. It may be that some few tongers are working without license, but from the testimony of those well posted in the business I am led to believe that the number is comparatively small. Mr. Benjamin F. Lankford, clerk of the circuit court of Somerset County, makes the following statement in regard to scraping-boats, which is equally applicable to tongers: "The oyster business has been gradually declining in this county since 1873; during that year the number of dredge [scraping] licenses issued was 327, and the money received therefor was $3,270, which sum was paid into the public-school treasury. I do not think, however, that the great difference exhibited between the years 1874 and 1879 shows the actual amount of the decline in the business. The present oyster law is inefficient or is inefficiently executed." By referring to the table showing the number of tonging licenses issued during the past ten years it will be seen that in Mr. Lankford's county (Somerset) there were 329 in 1874–'75, while in 1879–'80 there was not a single license issued to tong. The size of the tonging canoe ranges from 15 or 16 feet to 30 feet or more, the larger ones being called "bugeyes." Owing to this diversity in size it is very difficult to estimate the value of these boats, but a fair average is about $100, which would cover the entire outfit, making $182,500 the amount invested in tonging-boats.

OYSTER RUNNERS.—Connected with the tongers, and each dependent upon the other, is a branch of the trade conducted by vessels generally known as runners, of which there are owned in this State about two hundred, carrying about eight hundred men. The oysters caught by tongers are either sold to these vessels, and by them carried to some market in the State, or they are bought by boats owned in other States and carried to northern cities. The runner will anchor near some tonging ground, and an empty basket or a small flag will be hoisted to the masthead as a signal that she is ready to receive oysters. In one or two days she will be loaded and is at once off for a market. On some occasions half a dozen or more runners may be seen in the same locality surrounded by forty or fifty canoes. As soon as a tonger has caught as many as his small boat will carry he sells out to the runner and returns to work. The men employed on runners will average about $18 a month, including their board, which, with the pay of the captains (about $50 a month), will amount to $166,400 for a season of eight months, that being the length of time that these vessels are engaged in carrying oysters. Reckoning the average value of the runners at $1,500, will give a total of $300,000 in this branch of the trade. About $30,000 is annually spent in repairing this fleet.

STATISTICAL SUMMARY.—Summarizing the statistics of vessels, their value, &c., it is seen that there are 700 dredging boats, paying $916,300 to 5,600 men; 550 scraping boats, paying $297,000 to 2,200 men; 1,825 canoes, with 5,148 men, earning $1,158,300; and 200 runners, with 800 men, at $166,400 for the season, making a total of 13,748 men engaged in catching oysters in Maryland, with wages and earnings amounting to $2,538,000 during every oyster season, or an average of $184.60 for each man. It is utterly impossible to obtain the number of people supported by this $2,538,000. Perhaps not one-half of the dredgers support any family, but with tongers and scrapers it is different. Five is usually reckoned as the average number of a family, but as very many of these men are single, it would be too high in the present case. It can scarcely, however, be too much to reckon that for every oysterman there is an average of four individuals dependent upon him. This would give 54,992 as the number of people supported by the catching of oysters in this State. In addition to this, there are hundreds dependent indirectly, as shop-keepers and in other ways, upon the oystermen.

The capital invested in oyster-boats is as follows:

700	dredgers, at $1,500	$1,050,000
	Outfit of same	70,000
550	scrapers, at $800	440,000
200	runners, at $1,500	300,000
1,825	canoes, at $100	182,500
3,275	Total	2,042,500

The amount annually expended for repairs to these vessels, as near as I can calculate from reports received from ship-builders, is $162,500, of which probably $75,000 is received by carpenters, sailmakers, and other workmen.

SHIPMENTS OF OYSTERS IN SHELL.—From the prolific beds of the Chesapeake Bay immense quantities of oysters are yearly taken for bedding in Northern waters, and also for immediate consumption in the principal cities along the coast from the bay to Portland, Me. It is not the West alone which is dependent upon the Chesapeake for oysters, for without the supplies annually drawn from this bay the Atlantic coast from Delaware to Maine would be but poorly supplied. The Chesapeake is the great storehouse from which several millions of bushels of oysters are annually carried to restock the exhausted beds of other localities. More than two hundred vessels, averaging in value about $3,000 each, are for eight months of the year engaged in the trade between the bay and Northern markets. During the winter the oysters which are taken North are used for immediate local consumption, with the exception of those carried to Fair Haven, Conn., which are packed and shipped elsewhere; those taken in the spring are used almost exclusively for bedding purposes. At Seaford, Del., there is quite an extensive packing trade—Maryland oysters being used. It is well known that oysters are eaten during the summer at the North much more extensively than in Maryland and Virginia. I have been told by Capt. J. T. Bolton, of Norfolk, who was for a long time in the trade, that all oysters eaten in Northern cities in summer are of those which were taken in the previous spring from the Chesapeake and bedded in Northern waters; that the change of water prevents the oysters from spawning until late in the fall, and for this reason they are considered suitable for eating. This statement may be correct so far as concerns the effect upon the oysters of change of water, but I scarcely think that has much to do with the consumption of them, for it is now believed by many that oysters are equally as good during the spawning season as at any other time. Evidence of this may be seen in the growing custom in Maryland and Virginia of using oysters very freely during the summer, and those who eat them maintain that they are in no way inferior to oysters caught in winter. While visiting Chincoteague Island, Virginia, in May, I ate very heartily of oysters, and found them as finely flavored as any I had ever eaten; the thermometer was then about 80° in the shade. During the early part of July I was on board a bay steamer where it became necessary to eat oysters or go without supper, and preferring the former course, I found the oysters remarkably good.

Among many intelligent men, both in Maryland and Virginia, there is great opposition to the shipment of oysters in shell to Northern markets. They claim, and justly, too, that the packing trade of the two States would be much more largely developed if Northern cities were unable to buy oysters in the shell, and as the shucking of oysters gives employment to such a number of people, they hold that it would be a wise policy to heavily tax all oysters shipped in the shell. It is very questionable, however, whether such a measure would be constitutional. Two great objections which might also be urged against the system are that the majority of oysters shipped North are purchased late in the spring, when the packing trade is about over, at prices necessarily low,

and that the beds are seriously injured by being disturbed after the commencement of the spawning season. The oysters purchased and taken North in the spring for bedding would, if allowed to remain until the fall and then sold for immediate use, bring nearly $500,000 more than they now sell for; that is, there would be a yearly gain to the oystermen of Maryland and Virginia of nearly $500,000. There being in the spring no home demand for them, they sell sometimes as low as 4 cents a bushel, and from that up to 12 and 15. In the spring of 1879 a vessel loaded in the Great Choptank River with 16,000 bushels, costing $640, or just 4 cents a bushel. These oysters are taken North and planted, where they grow very rapidly, and during the following fall and winter they come in competition with oysters from Maryland and Virginia packers.

During the spring of 1879 Capt. Samuel M. Travers, of the oyster-police force, directed his deputy commanders to board all vessels loading with plants for Northern waters and obtain the number of bushels taken. He has favored me with the result, which is as follows:

	Bushels.
Tangier Sound and tributaries	353,750
Nanticoke River and Fishing Bay	125,000
Little Choptank River	125,000
Greak Choptank River	375,000
Eastern Bay	62,500
Chester River	250,000
Anne Arundel County waters	112,500
Patuxent River and tributaries	150,000
Potomac River and tributaries	625,000
Total	2,178,750

The average price paid was 7 cents a bushel. Owing to the action of the State legislature at its last session, in forbidding the catching of oysters after April 15, the shipments from Maryland waters in the spring of 1880 were much smaller than for the previous year. I endeavored to ascertain the shipments for immediate consumption as well as for planting during the season of 1879–'80, and through the generous assistance of many correspondents in Northern cities, and of Mr. Ernest Ingersoll, who had general charge of the oyster investigation north of the Chesapeake, I was enabled to compile the following:

Shipments of oysters in shell from Maryland waters from May 31, 1879, *to May* 31, 1880.

To—	For planting.	For immediate consumption.	Total.
	Bushels.	*Bushels.*	*Bushels.*
Portland, Me	9,000	75,000	84,000
Fair Haven, Conn	66,000	50,000	116,000
Providence and Providence River	110,000	30,000	140,000
Boston		80,000	80,000
Delaware Bay	488,880		488,880
Philadelphia		162,960	162,960
Seaford, Del. (for packing and local use)		200,000	200,000
New York			650,000
			1,921,840
Per rail and steamers			100,000
Total			2,021,840

The vessels engaged in carrying oysters from the Chesapeake to the North are generally owned in the cities to which they run, and statistics concerning them are included in reports on those cities. The total number of carriers employed is about two hundred, with a present aggre-

gate value of $600,000. About one thousand men compose their crews, and the wages of these will amount to about $140,000 a season.

The oysters taken north for immediate use cost on an average about 25 cents a bushel, while plants during the past season probably averaged 10 cents a bushel—about 3 cents more than the price during the previous season.

PACKING.—Having given an account of the oystermen, their boats, &c., it is now appropriate to present some statistics of the number of bushels of oysters caught and the disposition made of them. The most important factor in this connection being the packing trade, I will endeavor to show the extent of this business as compiled from the books of the different firms engaged in it.

About 1834 or 1835 a small packing-house was opened in Baltimore, but it soon passed out of existence, and no record of it can now be obtained. The first important enterprise in this line was the establishment of a packing-house in 1836 by Mr. C. S. Maltby, a native of Connecticut. Mr. Maltby, who, by the way, is still in the business, confined his operations exclusively to the raw trade for a number of years. As his business increased he established a line of wagons from Baltimore to Pittsburgh, and was thus enabled to supply the West with fresh oysters long before the Baltimore and Ohio Railroad had stretched out its track to that then distant region. Mr. A. Field was the first to develop in Baltimore the steam trade. He began a few years after Mr. Maltby. His oysters were steamed and then hermetically sealed in small tin cans.

Having been once established, the trade increased quite rapidly, and for some years oyster-packing, both raw and steamed, was very profitable; but as there is an abundant chance of financial success through dishonest means, with but little danger of detection, many unscrupulous firms engaged in the steamed oyster business, and by packing "light weight", *i. e.*, putting in a 1-pound can about 6 or 7 ounces of oysters and filling the remaining space with water, and about the same proportion of oysters and water in larger cans, and either selling them under some fictitious brand, or else entirely omitting any name, they succeeded in gaining for the packing trade of Baltimore a by no means enviable reputation. To enable them to compete with these "tricks in trade," reliable houses were in some cases forced to follow their example, as in many places it was found impossible to sell standard goods at fair prices, while light weights could of course be sold at much lower figures. In answer to the question as to whether light weights were sold extensively in the West, I was lately informed by a gentleman from that section that up to within a year or so it had been almost impossible to obtain full weights, but that some improvement had lately taken place in this respect. The same gentleman, on returning to the West, sent me the names of three packing-houses whose names appeared on the cans and whose oysters were light weights. An examination proved the names to be fictitious, there being no such firms in Baltimore. Close competition, by causing a cutting in prices, helped on the trouble, and for several years previous to 1878 the business was very unprofitable. In 1878, to save themselves, the packers formed a combination known as the "Union Oyster Company," embracing all the leading firms engaged in the steaming business, with the exception of three or four, who, having well-known standard brands, preferred to fight it out alone. The formation of the Union Company was, in itself, an evidence that the trade was in a deplorable condition. The company was established with a capital of $300,000, the stock being divided among the twenty-three firms who entered it, in proportion to the amount of business previously done by them. The affairs of the company are managed by a president, a vice-president, a secretary, and the twenty-three firms who constitute the board of directors. In joining the company each firm entirely relinquishes their own steaming business (although they may still conduct the raw trade) and act merely as agents for the union. All oysters are bought and packed by the union and then sold to the packers at

a uniform price, thus placing every firm on exactly the same level. At the same time the union may sell directly to the trade.

The result of this combination has been to partially break up fraudulent packing, although it is still carried on to some extent. Outside of the union there are three or four influential firms whose oysters sell on the reputation of their brands, and it would obviously be impolitic for them to engage in packing light weights. The raw-oyster business has always been more profitable and less subject to the vicissitudes of trade, although there are many losses from spoilt oysters when the weather happens to turn suddenly warm. Raw oysters after being opened are packed in small air-tight cans holding about a quart, and these are arranged in rows in a long wooden box with a block of ice between each row, or they are emptied into a keg, half-barrel, or barrel made for this purpose. When the latter plan is pursued, the keg or barrel is filled to about five-sixths of its capacity, and then a big piece of ice is thrown in, after which the top is fastened on as closely as possible and it is at once shipped to the West, usually by special oyster trains or by express. Packed in this way, with moderately cold weather, the oysters will keep very well for a week or ten days. During the most active part of the raw season there are daily oyster trains of from thirty to forty cars from Baltimore to the West, where nearly all the Baltimore oysters are consumed. From the shores of the Chesapeake Bay as far as Detroit there is scarcely a city or town, connected with any of the great trunk lines, which is not supplied with Maryland raw oysters. Farther west, and to a considerable extent in European countries, the demand is supplied by steamed oysters. The oysters used in the raw trade are of a finer quality, and consequently command better prices than steamed. In fact, nothing in the shape of an oyster is too small to be available for the steamed trade. And from this arises one of the great sources of injury to the oyster beds. So long as dredgers are able to sell their entire catch, regardless of the size of the oysters, it will be useless to expect any improvement in the beds. Young oysters of a very small growth can be disposed of almost as promptly as larger ones, and while this is the case it need not be expected that dredgers are going to have foresight enough to see the wisdom of throwing all small oysters back on the bars. During the past season the supply of oysters was often insufficient to meet the demand, and the steamed trade was compelled to suspend work for a considerable length of time on account of a scarcity of oysters, all that were received being quickly taken by the raw men at prices which would be unprofitable for steaming.

Baltimore, the great oyster market of the United States, annually packs more oysters than any other city in the world. It is the great center of the packing trade, surpassing in that particular all other cities, and yearly handling more oysters than all the other packing points of Maryland and Virginia combined. During the season extending from September 1, 1879, to May 15, 1880, the number of vessels loaded with oysters arriving at Baltimore was 9,543 (or a daily average of 37 for the 257 days), bringing 7,252,972 bushels, which would make the average cargo 760 bushels. In addition to the amount brought by sail vessels, there were 25,000 bushels received by steamers and consigned directly to hotels and restaurants, making a total of 7,277,972 bushels, of which there were packed raw, 3,769,353 bushels; hermetically sealed, 2,689,939 bushels; and used for city consumption, 818,680 bushels.

Engaged in oyster-packing in Baltimore there are forty-five firms, with a capital of $2,338,300; their business houses and grounds having an estimated value of $1,360,966. During the summer these firms are generally engaged in fruit packing, and their capital and buildings are thus in active use during the entire year.

These firms employ 4,167 males and 2,460 females—total, 6,627; and during the season of 1879–'80 paid to them in wages $602,427. The total number of bushels of oysters packed was

6,459,292, which required 25,546,780 tin cans and 929,614 wooden cases. The value of the oysters packed, including shucking, cans, &c., was $3,517,349. For the tin cans $794,919 was paid, and for the wooden cases $102,622.

Next to Baltimore, Crisfield is the most important packing point in the State. Had the oyster-beds in the vicinity of Crisfield not been so greatly depleted, I think the trade at that city would have increased much more rapidly than it has. Crisfield is literally built upon oysters, or rather oyster shells, almost the entire space now occupied by the business part of the city having been under water. The shells from the packing-houses have been utilized to make new ground, and gradually the city has pushed out nearly half a mile into the bay. At the present time some of the houses are built on piles, and are entirely surrounded by water, having no means of communication with the land except by boats.

From the books of the ninety-eight oyster-packing firms of Maryland, the following table has been compiled, showing the amount of business done at each city from September 1, 1879, to May 1, 1880:

Statistics of oyster-packing in Maryland for the season of 1879–'80.

	Firms engaged in packing.	Capital employed.	Estimated value of buildings occupied.	Males employed.	Females employed.	Wages paid.	Bushels packed, raw.	Value of oysters packed, raw.
Baltimore	45	$2,338,300	$1,360,966	4,167	2,460	$602,427	3,769,353	$2,272,740
Crisfield	16	39,650	23,800	678	.....	65,481	427,270	165,800
Cambridge	8	20,300	10,000	385	.....	28,757	205,410	76,658
Annapolis	8	59,600	17,500	315	.....	26,482	156,703	69,555
Oxford	7	7,000	5,760	156	.....	23,258	108,960	39,986
Saint Michael's	4	4,500	3,000	91	.....	4,987	37,788	14,053
Sundry small places in Somerset Co	10	23,000	15,000	387	.....	26,387	224,817	86,945
Total	98	2,492,350	1,436,026	6,179	2,460	777,779	4,930,301	2,725,737

	Bushels steamed and hermetically sealed.	Value of oysters steamed and sealed.	Total bushels of oysters.	Total value of oysters packed.	Tin cans required.	Cost price of tin cans.	Wooden cases required.	Cost price of cases.
Baltimore	2,689,939	$1,244,609	6,459,292	$3,517,349	25,546,780	$794,919	929,614	$102,622
Crisfield	.....	.....	427,270	165,800	.....	.....	.....	3,576
Cambridge	13,100	11,320	218,510	87,978	.....	.....	.....	5,840
Annapolis	20,152	12,183	176,855	81,738	.....	.....	.....	11,097
Oxford	.....	.....	108,960	39,986	.....	.....	.....	1,257
Saint Michael's	.....	.....	37,788	14,053	.....	.....	.....	2,530
Sundry small places in Somerset Co	.....	.....	224,817	86,944	.....	.....	.....	1,890
Total	2,723,191	1,268,112	7,653,492	3,993,848	25,546,780	794,919	929,614	128,812

Baltimore is the only place where tin cans and wooden cases are used to any extent, shipments from other cities being made almost exclusively in bulk—in barrels, half-barrels, and kegs.

As shown by the table, there are 6,179 males and 2,460 females employed in oyster-shucking in Maryland. During the season they received as wages $777,779, this being an average of only $90.06. Very few of the shuckers are regularly at work, and while in one week an expert hand may make from $8 to $15, during the next week he may be idle. Of the 6,179 males, nearly all of whom are employed in the raw trade, about three-fourths are negroes, the majority of them being comparatively steady workmen, while the whites are more generally disposed to be idle and intemperate. The few whites in the business are generally of a very low class of society. Within the past year a few females have essayed to shuck raw oysters, but their number is still very small,

and will probably so continue, owing to the nature of the work. The 2,460 females are all employed in the steam oyster-houses of Baltimore. They are mostly white girls, of from sixteen to twenty-five years of age, the proportion of older ones, as well as of colored, being small. These girls are almost without exception of foreign birth or parentage, the largest proportion being of Bohemian origin, with Irish probably coming next. Few American girls, however poor, will consent to engage in this occupation, as in it both sexes must mingle indiscriminately, without regard to color, class, or condition. Owing to the thorough steaming, the oysters are very easily opened and the amount of physical labor required is comparatively light; but during busy seasons the work begins about daybreak and lasts until dark, and is of course exceedingly fatiguing. An industrious hand can make from 75 cents to $1 a day, but from the great irregularity in their work they are probably not engaged over one-half of the time.

Considering the class of people employed in the packing-houses, I do not think it safe to estimate more than an average of two individuals dependent upon the wages of each shucker, at which rate there are in Maryland 17,278 people dependent upon oyster-shucking.

There are about two hundred and twenty-five men composing the ninety-five oyster-packing firms of the State. The large majority of them are of Northern birth, and many of them, especially those in Crisfield and the smaller packing towns, reside in Maryland only during the oyster season, returning every spring to their Northern homes. More oyster packers have come from Connecticut than from all other States combined. Mr. C. S. Maltby and Mr. A. Field, who respectively established the raw and the steam trade, were both originally from Connecticut, and both are still living, the former in active business. There are about 1,125 individuals forming the families of the oyster packers.

During May, June, July, and August the packers of Baltimore are engaged in canning fruits and vegetables, and the same girls who in winter shuck oysters, in summer pare peaches and other fruits. The male shuckers of Baltimore, as well as those of the cities in lower Maryland, having no regular employment in summer, work at whatever odd jobs may be found.

The manufacture of cans and cases, quite an important industry in Baltimore, is so largely dependent upon oyster-packing, that an effort has been made to obtain some statistics pertaining to it, although the exact figures will appear in the census of manufacturing industries. About $250,000 is invested in the business, which gives employment to four hundred men (on oyster cans), whose wages for eight months amount to about $100,000. This estimate is based on the number of cans used, as shown by the returns from the packing-houses, the workmen being paid so much per 100 cans. It was very difficult to obtain any satisfactory statistics regarding the number of ship-carpenters occupied in building and repairing oyster vessels, but from an extensive correspondence with ship-builders in various parts of the State, I think it will be placing the estimate too low rather than too high to say that there are three hundred workmen, including carpenters and sail-makers, with yearly wages amounting to $156,000.

As can-makers, ship-yard workmen, &c., we then have 700 men, with about 3,500 people dependent upon them, receiving $256,000 in wages. It was found impossible to obtain the number of people engaged in the retail trade of Baltimore and other cities, as any statistics gathered from restaurants and hotels would be delusive, since they are not engaged exclusively in handling oysters. Under the circumstances, the best estimates that can be made may be deduced from calculations based upon the local consumption in the cities. In Baltimore the city trade is monopolized by a number of commission houses, which handle all the oysters taken for local use, with the exception of the receipts by steamers. From the books of these firms it was ascertained that the sales of oysters from September 1, 1879, to May 1, 1880, for consumption in the city and suburbs,

amounted to 793,680 bushels. Add to this 25,000 bushels received by steamers, and the total retail trade is found to be 818,680 bushels. The average price paid for shucking raw oysters is 15 cents a gallon; these being all of fine quality will open a gallon to a bushel, and hence the amount paid for opening 818,680 bushels would be $122,802. Estimating the average amount made by the shuckers at $6 a week, or $192 for the season, it is seen that there are 640 men steadily employed for nearly eight months of the year in opening oysters for local consumption in Baltimore. There is, in addition to these, a large number of men who sell oysters around the streets; others who rent a cellar room and sell from there; some engaged in driving oyster carts, and a few employed only during the oyster season in restaurants as extra help. As near as can be discovered, the number of these may be placed at 500, with wages and earnings amounting to $96,000. Of these 1,140 men about 800 are negroes.

The local consumption of towns on the bay is about 200,000 bushels a season, the shucking of which pays $30,000 to 150 men. Estimating an average of five to a family, these 1,290 men who are engaged in shucking and selling oysters for local consumption throughout the State represent an aggregate of 6,450 individuals. Knowing the consumption per capita of Baltimore and suburbs, and calculating that the inhabitants of the tide-water counties consume proportionately at least twice as many, it is easy to obtain an approximate idea of the total number of oysters annually consumed in the State, and not found in the returns from the packers. Of course the interior counties are not considered here, as they receive oysters from the packers which have already been noted. The estimate that the tide-water counties consume locally twice as many as Baltimore in proportion to the number of inhabitants, is based upon careful inquiry among well-informed persons. On this estimate, taking the population as returned by the present census, there are about 875,000 bushels annually consumed in the counties bordering on the bay, in addition to the 200,000 bushels consumed in the towns on the bay. These oysters are generally opened by the families who eat them, and hence there is no expense for shucking.

In some of the lower counties of the State oysters often pass current as money, and in one town there is a weekly paper (subscription price $1), about fifty of the subscribers to which annually pay in oysters. As the editor thus receives from 100 to 125 bushels of oysters a season, all of which are used in his own family, I readily believe his assertion that he "was very fond of oysters."

Summing up the total of all engaged in the oyster trade we have:

Occupation.	Number engaged.	Wages and earnings of same.	Estimated number of persons supported.
Dredgers	5,000	$916,300	54,992
Tongers	5,148	1,158,240	
Scrapers	2,200	297,000	
Runners	800	166,400	
Employés of packing-houses	8,639	777,779	17,278
Can-makers and ship-yard workmen	700	256,000	3,500
Preparing for local consumption	1,290	248,802	6,450
	24,377	3,820,521	82,220
Individual packers	225	.....	1,125
Total	24,602	.....	83,345

In the above enumeration no account has been taken of the number of owners of the dredge, the scrape, and the running boats, as any attempt to obtain such would be futile, since not even the names of the boats can be ascertained. If it were possible to gather this information it would swell the above figures to much larger proportions. From the $1,860,000, the present estimated

value of these 1,450 boats (excluding canoes), there must be a yearly profit of at least several hundred thousand dollars. Some of the boats are owned by packers, others by the captains, and the rest are distributed among all classes of society and almost all professions and occupations. When the number of these is taken into account, it will more than counterbalance any overestimates, if such there be, in regard to the number of persons dependent upon the oyster trade of the State.

Seaford, Del., situated on the Nanticoke River, a tributary of the Chesapeake Bay, has quite an extensive packing trade, and, as all the oysters are carried from Maryland waters, it was considered advisable to include in this report the statistics of the trade at that city. Mr. D. L. Rawlins, of Seaford, informs me that the oyster-packing business at Seaford was started by Platt & Mallory (of Fair Haven) in the fall of 1859. Hemingways, Rowe, and other eastern packers, came in 1863 and 1864. They put nearly all their oysters in small tin cans, which they shipped in cases holding about 52 cans each, a good proportion being sent to Fair Haven, Conn., to be reshipped from there. The business not proving as profitable as was expected, by 1867 nearly all the original packers had sold out and left, since which time a fluctuating amount of business has been kept up by various successive parties with alternating failure and success. No cans are used now, nearly all shipments being made in bulk.

There are at Seaford seven oyster-packing firms, having an aggregate capital of $14,600 and occupying buildings estimated to be worth $28,500. From September 1, 1879, to May 1, 1880, 184,500 bushels of oysters were packed raw, giving employment to 170 males and 45 females, the wages of both for the season amounting to $14,230. The estimated value of the oysters, after being shucked and packed, was $71,350. When shucked oysters are shipped in bulk, the package (barrel or half-barrel) is returned after being emptied, and then refilled. On this account only 1,400 packages, costing $1,000, were bought by Seaford packers during the season of 1879–'80. About 400 persons are dependent upon the oyster trade of Seaford. The local consumption added to the packing gives a total of 200,000 bushels handled at Seaford.

General summary of the whole trade in Maryland.

	Capital invested, real and personal.	Number of persons employed.
In packing	$3,928,376	8,639
In oyster catching	2,042,500	13,748
In can making, &c	250,000	700
In local trade	*25,000	1,290
Total	6,245,876	24,377

* Estimated.

Quantity of oysters caught in Maryland during 1879–'80, *and the disposition made.*

Disposition made.	Bushels.
Packed in the State of Maryland	*6,653,492
Shipped out of the State	2,021,840
Local consumption in Baltimore	818,680
Local consumption in other cities of the State	200,000
Local consumption in the counties	875,000
Total	10,569,012

* The total number of bushels packed in the State was 7,653,492, but 1,000,000 bushels came from Virginia.