PART I.

THE COAST OF MAINE AND ITS FISHERIES.

By R. EDWARD EARLL.

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PART I.

THE COAST OF MAINE AND ITS FISHERIES.

A.—GENERAL REVIEW OF MAINE AND ITS FISHERIES.

1. DESCRIPTIVE AND STATISTICAL RECAPITULATION OF THE FISHERIES OF THE STATE.

LOCATION AND EARLY SETTLEMENT.—The State of Maine includes an area of 32,000 square miles in the extreme northeastern corner of the United States. It is claimed that the region was visited by the Northmen in the latter part of the tenth century. An attempt was made to settle a colony on Neutral Island, on the Saint Croix River, under a grant from the King of France, in 1604. In 1613, French Jesuits established a mission at Mount Desert Island, but they were driven away by the English the following year. About this time Capt. John Smith with a company of fishermen took possession of Monhegan Island, from which point he made visits to different portions of the coast for the purpose of making maps of the region. In 1620 the territory was granted to the Plymouth Company, and three years later the first permanent settlement within the present limits of the State was established near the mouth of the Piscataqua River. From that time onward the province grew in importance and many colonists were soon comfortably settled within its borders. The eastern portion was for many years under the control of the French, who made little effort to develop its resources, but the western part was from the first in the possession of the English, and by 1650 a number of important settlements, some of them founded fifteen to twenty years earlier, were scattered along its shores.

The Massachusetts colony obtained control of the region west of the Kennebec River in 1677: nine years later its jurisdiction was extended to the Penobscot, and in 1691 all of the territory west of the Saint Croix, as well as Nova Scotia, was transferred to it by the Provincial charter. The treaty of 1783 ceded to Massachusetts all of Maine's present territory, and she continued her superintendence over it until 1820, when Maine became a separate State, at which time it had a population of over 298,000. In 1860 the State had 628,279 inhabitants, the number increasing to 648,936 in 1880.

PHYSICAL CHARACTERISTICS OF THE COAST.—Geologically considered, the region is one of peculiar interest. With unimportant exceptions, as at Perry on the Passamaquoddy and Rockland on the Penobscot, the coast is one huge bed of metamorphic rocks, including granites, syenites, and mica schists. These are everywhere scraped and grooved by huge glaciers which descended from the northward and extended many miles into the sea, and which were of sufficient thickness entirely to cover Mount Desert and of such weight as to plow out enormous valleys and ravines in the hard granite floor. The principal furrows and ridges extend nearly north and south, the shoreline being made up of a series of long rocky peninsulas separated by deep and narrow fjords, which

give to Maine a peculiarly ragged and uneven coast with hundreds of excellent harbors, in many of which the largest vessels of the world can find safe anchorage. Beyond the headlands are scattered innumerable rocky islands and sunken ledges having the same general trend as the peninsulas of the mainland. In addition to these we find large rocks and bowlders scattered over the surface of the land and the ocean bottom, where they have been left by the receding glaciers. Enormous quantities of these fragments are frequently piled together, many of the well-known fishing banks, and even the famous George's Shoals being, according to Prof. N. S. Shaler, made up of glacial deposits.

These sunken ledges and rocks are covered with marine animals, which constitute the favorite food of many of our most important food-fishes, and the locality is a favorite resort of the cod, haddock, hake, and other species known as "bottom feeders."

The distance along the ocean shore of the State from Quoddy Head to the mouth of the Piscataqua River is only 250 miles in a straight line, but, owing to the peculiar features already mentioned, Maine has 2,500 miles of sea-coast exclusive of the outlying islands. The rocky character of the country forbids extensive agricultural interests, and the majority of those living along the coast are necessarily dependent upon the various industries connected with the sea, such as shipbuilding, the vessel-carrying trade, and the fisheries.

ORIGIN AND GROWTH OF THE FISHERIES.—With so extensive a coast-line and such excellent harbors for vessels and boats in the near vicinity of the more important fishing grounds, Maine enjoys many advantages, not possessed by other States, for the prosecution of the fisheries. In fact these advantages led to the settlement of the country, and for two and a half centuries continuously the fisheries have been prosecuted by a large percentage of the people. For many years foreign ships made annual visits to the coast to secure cargoes of cod, many of them bringing small colonies which were left at some convenient harbor to continue the fishing during the absence of the vessel. These began to build for themselves comfortable dwellings and to clear a limited amount of land on which to raise products for their own tables. In this way were founded a number of important settlements, which, in a few years, became quite independent of the Europeans. Their resources being limited they found that the construction of large vessels was impracticable, and they therefore contented themselves with building small craft, ranging between 15 and 40 tons, in which they visited the nearer fishing grounds, some of them venturing as far as Cashes' and Jeffries' banks, and the Seal Island ground.

This condition of affairs practically continued until the beginning of the present century, when in some localities larger craft were built for engaging in the offshore fisheries, and by 1825 the Maine fishermen, in common with those of Massachusetts, frequented Grand and Western banks, the Magdalen islands, and Labrador. Between 1830 and 1870 the fisheries were peculiarly important, nearly every coast town having its fleet of vessels in addition to a considerable number of small boats. Occasional seasons during these years resulted disastrously, but the period was on the whole a prosperous one, and in many localities the small vessels were replaced by larger and better ones. From 1870 to 1879 the fisheries were less remunerative, and, owing to the unsatisfactory results, many of the vessels were fitted for the coasting trade, and others were allowed to remain idle, so that the fishing fleet was reduced to less than three-fourths of its former size. The crews soon turned their attention to other pursuits, or provided themselves with boats for prosecution of the shore fisheries. This decrease in the vessel fisheries was most noticeable in the smaller towns. Another season of prosperity has just begun, but, though signs of renewed activity are everywhere manifest, no considerable increase in the size of the fleet has yet occurred.

THE PRESENT CONDITION OF THE SEA FISHERIES.—During the season of 1880, 11,071 per-

sons were actively engaged in the capture or preparation of fishery products. Of these, 3,630 belonged to the vessel fleet, 4,480 fished from small boats, and the remaining 2,961 were employed as shoresmen in preparing the products for the markets. In addition to these, 1,591 persons were, according to Mr. C. G. Atkins, engaged in the river fisheries, making a total of 12,662 persons directly dependent upon the fishery industries. Not less than 2,500 others were engaged in transferring the fish to the larger markets, in the manufacture of fishery apparatus, or in other dependent industries, which brings the total for those directly and indirectly engaged in the fishery industries up to 15,000. A majority of these have families dependent upon them for support, and, allowing for these, we find that fully 48,000 persons, equal to 7½ per cent. of the total population of the State, are, to a greater or less extent, dependent upon the fisheries for a livelihood.

The total capital invested in the various industries connected with the sea fisheries for the same period was $3,375,994, of which $633,542 was in vessels and $245,624 in boats, the remaining $2,496,828 representing the value of gear and outfit, shore-property, and floating capital.

During the year, the Maine fishermen landed 202,048,449 pounds of sea products, valued at $1,790,849 as they came from the water. These products received an enhancement in value of $1,823,329 in process of preparation, making them worth $3,614,178 when placed upon the market. Of the entire catch of sea products, 42,548,008 pounds were sold fresh, 93,195,430 pounds were used for drying, 39,690,615 pounds were pickled, 9,038,242 pounds were smoked, and 17,576,154 pounds were canned.

The principal species taken were cod, herring, mackerel, hake, haddock, and lobsters; these constituting seven-eighths of the entire catch. The following quantities of each of the above-named species were secured: Cod, 56,004,325 pounds, valued at $656,753; herring, 34,695,192 pounds, valued at (including sardines) $1,043,722; mackerel, 31,694,455 pounds, valued at $659,304; hake, 24,447,730 pounds, valued at $278,336; haddock, 17,728,735 pounds, valued at $225,393; lobsters, 14,234,182 pounds, valued at $412,076.

The vessel fleet numbered 606 sail, aggregating 17,632.65 tons, valued at $1,413,361, including apparatus and outfit. It was divided into two classes, the larger vessels being engaged in the offshore, while the smaller were employed in the inshore fisheries. Of the offshore fleet, 94 engaged in the offshore cod fisheries for a greater or less period. Some of them fished for cod during the entire season, while others, after making one or two trips to the banks, joined the fleet engaged in the mackerel fishery, bringing the total for this fishery up to 81 vessels, manned by 1,042 fishermen. Four vessels were employed in the halibut fishery, and twenty-six fished for haddock during the winter months. The smaller craft were in the shore fisheries, taking cod, herring, mackerel, or lobsters, as might at the time seem most desirable. The catch of the vessel fleet reached 212,747 quintals of dry fish, worth $618,025, and 96,350 barrels of pickled fish, worth $510,052. In addition to these, oil and sounds to the value of $109,119 were saved, making the total value of the catch of the vessel fleet $1,359,376.

THE LOBSTER FISHERIES.—One thousand eight hundred and nine men, with capital to the amount of $189,219, were engaged in the lobster fishery. The catch for the season amounted to 14,234,182 pounds, netting the fishermen $268,739. Of the entire catch, 9,494,284 pounds were sold to the twenty-three canneries of the State. These furnished employment to 782 persons, including smackmen, tinsmiths, and factory hands. The product of the canneries amounted to 1,542,696 one-pound cans, 148,704 two-pound cans, and 139,801 cans of other kinds. The enhancement in canning was $143,337, the total value of the canned products as placed upon the market amounting to $238,280. A description of the lobster fishing and canning interests will be found in another part of this report.

THE SARDINE INDUSTRY.—The sardine industry, which is now one of the most important fishery industries of the State, began in a small way in 1875, since which time it has grown enormously. In 1880 it furnished employment to 1,896 fishermen and factory hands, including 372 belonging to New Brunswick. Eighteen canneries, valued at $89,500, were in operation, and 46,000 barrels of herring and 775 barrels of mackerel were put up. The product of the canneries amounted to 7,550,868 cans of the various brands, in addition to 8,365 barrels of Russian sardines and anchovies. The total value of the canned products amounted to $817,654, $776,704 of this amount representing the enhancement in process of preparation.

A full description of each of the more important fisheries in which the Maine fishermen are interested will be found in another part of this report.

RECAPITULATION FOR 1880.—The following statements show in detail the extent of the marine fishery interests of the State for 1880. The fresh-water fisheries will be considered in a separate chapter by Mr. C. G. Atkins:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	3,630	Capital in vessels and boats	$1,552,959
Number of boat-fishermen	4,480	Capital in nets and traps	260,800
Number of curers, packers, fitters, &c	894	Other fixed and circulating capital	*a* 1,562,235
Number of factory hands	2,067	Total	3,375,994
Total	11,071		

a Other fixed and circulating capital.—Cash capital, $652,473; wharves, shorehouses, and fixtures, $417,925; factory buildings and apparatus $491,837; total, $1,562,235.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							***Nets.***		
In food-fish fishery:							Gill-nets:		
Active	529	15,367.64	$550,867	$110,568	$496,595	$1,158,030	In vessel fisheries	1,935	$30,826
Idle	32	1,102.99	34,650			34,650	In boat fisheries	3,520	42,280
In menhaden fishery	5	320.98	20,000			20,000	Purse-seines:		
In lobster fishery	39	771.08	25,025	600	6,380	32,005	In vessel fisheries	127	69,750
In oyster fishery	1	69.96	3,000		150	3,150	In boat fisheries	1	300
Total	606	17,632.65	633,542	111,168	503,125	1,247,835	Haul-seines:		
Boats.							In boat fisheries	134	5,440
In vessel fisheries	2,102		64,950			64,950	Total	5,717	148,596
In shore fisheries	3,818		180,674	43,100	16,400	240,174	***Traps.***		
Total	5,920		245,624	43,100	16,400	305,124	Weirs	132	27,502
							Fykes	1,095	6,360
							Lobster-pots	104,456	78,342
							Total	105,683	112,204

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	202,048,449			$3,614,178
Fresh fish.				
For food	16,597,300			207,965
For bait	17,330,000		86,650 barrels	64,988
For fertilizer	2,790,000		13,950 barrels	6,575
Total	36,717,300			279,528

Detailed statement of the quantities and values of the products—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Dry fish.				
Cod	52,494,325	18,090,352		$565,325
Hake	23,597,730	9,788,688		131,098
Haddock	9,917,775	3,526,320		70,841
Pollock	5,220,000	2,016,000		36,000
Cusk	1,965,600	846,720		20,790
Total	93,195,430	34,268,080		824,054
Pickled fish.				
Mackerel	27,342,000	18,228,000	91,140 barrels	524,055
Herring:				
Ordinary	6,116,250	4,893,000	24,465 barrels	73,395
Russian sardines and anchovies	2,703,625	1,673,000	8,365 barrels	29,078
Miscellaneous	1,747,100	1,035,400	5,177 barrels	25,885
Total	37,908,975	25,829,400	129,147 barrels	652,413
Smoked fish.				
Herring:				
Ordinary	3,751,942	2,710,778	318,915 boxes	63,783
Bloaters	2,387,000	1,723,333	51,700 boxes	36,190
Haddock (Finnan haddies)	2,899,300	1,414,500		78,175
Total	9,038,242	5,848,611		178,148
Canned fish.				
Mackerel	1,252,455		814,668 cans	96,749
Herring (sardines)	6,496,375		7,500,084 cans	772,176
Miscellaneous	21,660		12,996 cans	1,928
Total	7,770,490		8,327,748 cans	870,853
Lobsters.				
Fresh	4,739,898			173,796
Canned	9,494,284		1,831,201 cans	238,280
Total	14,234,182			412,076
Clams.				
For food	1,090,810		109,081 bushels	38,178
For bait	1,781,640		178,164 bushels=12,726 barrels	63,630
Canned	311,380		31,138 bushels=456 028 cans	47,318
Total	3,183,830		318,383 bushels	149,126
Miscellaneous.				
Fish-oil			168,732 gallons	67,492
Sounds		131,098		117,988
Marine products used for fertilizers				25,000
Enhancement in value of southern oysters in transporting and transplanting				37,500
Total				247,980

B.—PASSAMAQUODDY DISTRICT.

2. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

ORIGIN AND DEVELOPMENT OF THE FISHERIES.—The Passamaquoddy customs district, extending from Calais to Cutler, is in many respects the most important fishing region in the State. Though its general fisheries are limited and its vessel fleet is quite small, the shore fisheries are of peculiar importance, and there are certain special industries which are either peculiar to the district or in which its interests are more extensive than those of any other locality. The coast is peculiarly

bold and rugged, and the waters, which are very deep, are greatly affected by tides and currents. The district contains few villages of importance, the principal ones being Calais, Eastport, and Lubec. Smaller settlements are found at various points where coves or harbors afford shelter and anchorage for boats and small vessels.

The fisheries began with the settlement of the region, about 1780, and during the latter part of the last century and the first half of the present one they were of considerable importance, a large fleet of vessels visiting the more distant fishing grounds for the capture of cod, mackerel, and other species. Later, owing to various causes, the offshore fisheries were largely discontinued, and the residents turned their attention to the shore fisheries, selling their large vessels and providing themselves with smaller craft for engaging in the work. Even at the present time the offshore banks are little frequented by these people, nine-tenths of all the fishermen being provided with boats and small vessels for fishing along the shore.

IMPORTANCE OF THE HERRING FISHERIES.—The herring is the principal fish of the region, and immense numbers are taken annually. Special industries depending on this fishery, as the smoking of herring, the frozen herring trade, and the preparation of sardines, constitute the principal business, and thousands of persons find employment either in catching the fish or in preparing the various products. The shores are everywhere lined with brush weirs in which small herring are extensively taken during the summer months, and in winter, when the weirs cannot be fished, the most of the men are provided with nets, in which immense quantities of large fish are secured.

In the smoking of herring this district leads all others, and probably three-fourths of the herring smoked within the limits of the United States are prepared by the fishermen of Lubec and Eastport. The business began early in the present century, and continued to increase till in 1865 between 400,000 and 500,000 boxes were smoked annually at Lubec, and large numbers were put up at other places. Since that time the quantity has gradually fallen off, and fewer herring are smoked now than for many years, though the dilapidated and weather-beaten smoke-houses everywhere present give unmistakable evidence of the importance of the work in former times.

The frozen-herring trade originated at Newfoundland, and for some years it was confined exclusively to that island. About fifteen years ago the first cargo was shipped from Eastport, and the business has since that time grown to enormous proportions, the quantity shipped in the winter of 1879–'80 reaching 28,000,000 fish, valued at $90,000. Though a majority of the fish are caught by the New Brunswick fishermen, our own citizens are also engaged in the work and secure large quantities during the season. The Passamaquoddy district is at present the only one within the limits of the United States where herring are extensively frozen for shipment.

The sardine industry is of very recent origin, having been started in 1875. Up to 1880 it was confined exclusively to the village of Eastport, and though a few canneries are now operated elsewhere this district still practically controls the industry for the entire country.

THE POLLOCK FISHERY.—In addition to its herring interests the Passamaquoddy district is noted for its pollock fisheries. The most important pollock grounds in New England are within its borders, and large numbers of these fish are secured annually by the hand-line fishermen, who devote considerable attention to their capture during the summer months.

STATISTICAL RECAPITULATION FOR 1880.—The following statements show in detail the extent of the various fishery interests of the Passamaquoddy district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	179	Capital in vessels and boats	$117,180
Number of boat-fishermen	596	Capital in nets and traps	27,806
Number of curers, packers, fitters, &c	273	Other fixed and circulating capital	a464,250
Number of factory hands	1,390	Total	609,236
Total	2,438		

a Other fixed and circulating capital.—Cash capital, $324,125; wharves, shorehouses, and fixtures, $46,625; factory buildings and apparatus, $93,500; total, $464,250.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							*Nets.*		
In food-fish fishery:							Gill-nets:		
Active	25	650.37	$30,275	$5,570	$18,455	$54,300	In vessel fisheries	250	$3,750
Idle	3	70.78	1,900			1,900	In boat fisheries	200	2,400
In lobster fishery	1	22.88	500	10	160	670	Purse-seines:		
Total	29	744.03	32,675	5,580	18,615	56,870	In vessel fisheries	1	700
Boats.							Haul-seines:		
In vessel fisheries	90		1,835			1,835	In boat fisheries	60	3,000
In shore fisheries	378		50,515	5,960	2,000	58,475	Total	511	9,850
Total	468		52,350	5,960	2,000	60,310	*Traps.*		
							Weirs	67	15,875
							Lobster-pots	2,775	2,081
							Total	2,842	17,956

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	31,515,588			$1,081,715
Fresh fish.				
For food	4,188,000			42,507
For bait	480,000		2,400 barrels	1,800
For fertilizer	1,900,000		9,500 barrels	4,350
Total	6,568,000			48,657
Dry fish.				
Cod	2,627,625	905,520		28,298
Hake	2,021,760	838,656		11,232
Haddock	906,255	322,224		6,473
Pollock	1,460,440	564,032		10,072
Cusk	52,000	22,400		550
Total	7,068,080	2,652,832		56,625
Pickled fish.				
Herring:				
Ordinary	1,725,000	1,380,000	6,900 barrels	20,700
Russian sardines and anchovies	2,703,625	1,073,000	8,365 barrels	29,078
Miscellaneous	401,100	267,400	1,337 barrels	6,685
Total	4,829,725	3,320,400	16,602 barrels	56,463

Detailed statement of the quantities and values of the products—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Smoked fish.				
Herring:				
Ordinary	2,716,000	1,962,310	230,860 boxes	$46,172
Bloaters	1,987,000	1,490,000	44,700 boxes	31,290
Haddock (Finnan haddies)	492,500	211,500		12,000
Total	5,195,500	3,663,810	275,560 boxes	89,462
Canned fish.				
Mackerel	37,650		12,336 cans	3,985
Herring (sardines)	6,496,375		7,500,084 cans	772,176
Total	6,534,025		7,512,420 cans	776,161
Lobsters.				
Fresh	351,348			12,883
Canned	953,910		152,568 cans	18,793
Total	1,305,258			31,676
Clams.				
For food	15,000		1,500 bushels	525
Miscellaneous.				
Fish-oil			27,593 gallons	11,037
Sounds		11,232		10,109
Marine products used for fertilizers				1,000
Total				22,146

3. THE FISHERIES OF CALAIS, ROBBINSTON, AND PERRY.

CALAIS.—Calais is a town of 6,000 inhabitants on the west bank of the Saint Croix River about 30 miles above Eastport. It includes the city of Calais, the village of Milltown, and a scattered settlement known as Red Bank. The residents of Calais and Milltown are engaged in the manufacture and shipment of lumber, having extensive saw-mills and a large vessel fleet. Red Bank is in the midst of an agricultural region, in the lower part of the town, with granite quarries and plaster mills.

Having so extensive a water-line, the town has naturally a certain interest in the fisheries; but, with the exception of a few lobsters and clams taken along the shore, the fishing is confined largely to the capture of salmon (*Salmo salar*) and alewives (*Pomolobus vernalis*) in small weirs. A few salt-water species are taken, chief among which is the herring (*Clupea harengus*), which is used as a dressing for the land. The section is too far removed from the fishing-grounds of the coast to have any boat-fisheries of note, though a few of the inhabitants go occasionally to the outer headlands to catch a supply of pollock (*Pollachius carbonarius*), hake (*Phycis chuss* and *P. tenuis*), and cod (*Gadus morrhua*) for family use.

Prior to 1878 it is said that no fishing-vessels were owned in the town. At that time parties bought small schooners and engaged in the Bay of Fundy cod and hake fisheries. At the present time (1880) there are four vessels, of 25 to 50 tons each, fishing from the town. These employ forty-three men during the fishing season, which lasts from April to December. One of the vessels is sailing under British papers, and for this reason is omitted from the list of American fishing vessels.

In 1879 there were cured at the city of Calais, where the vessels are owned, about 2,125 quintals of cod, 2,175 quintals of hake, 700 quintals of pollock, and 600 quintals of haddock

(*Melanogrammus æglefinus*). In 1880 the catch will probably be about 5,825 quintals, of which 50 per cent. will be hake, 25 per cent. cod, and the remainder, pollock and haddock, in about equal quantities. About half of the fish are sent to Boston for exportation, and the rest are sold to the country trade.

ROBBINSTON.—Robbinston is a town of 900 inhabitants on the west side of the Saint Croix River, just opposite the village of Saint Andrews. It has two post-offices, one called Robbinston and the other South Robbinston, but neither is a village of any size. At present little business is done, though ship-building was formerly carried on in a small way.

The people are mostly farmers, but a few living along the river bank are engaged in weir-fishing and lobstering, while men go occasionally in small open boats to the lower fishing-grounds for pollock, cod, and herring. The catch is largely for home consumption, and is so small as to be of little importance. No fishing-vessels are owned in the town.

There are ten weirs for the capture of herring, which are sold to the sardine cannery of Hart & Balcome, built in the spring of 1880, and now employing about forty hands. The catch of these weirs is considerably less than that of those a few miles further down the river, and beyond this point the capture of herring as a business ceases to be profitable. Salmon are occasionally taken with the herring.

PERRY.—The town of Perry, lying to the west of Saint Andrews Bay, and to the north of Cobscook Bay, has about 1,450 inhabitants, mostly engaged in farming. Formerly a number of the people were interested in the weir-fisheries, and many had large smoke-houses for curing their catch of herring. Now, however, but two weirs are fished in the town, and less than 2,000 boxes of herring are smoked annually. No fishing-vessels are owned, and but few of the people interest themselves in the fisheries. Occasionally, during the height of the season, a few men go for pollock, selling their catch to Eastport dealers. These cannot be called professional fishermen, as they spend a greater part of their time in farming, and do not average over twenty-five quintals of pollock to the man during the season. There are two post-offices, called Perry and North Perry respectively, but neither are villages of any note.

4. EASTPORT AND ITS FISHERIES.

ORIGIN AND DEVELOPMENT OF THE FISHERIES.—Eastport, the most easterly settlement in the United States, is situated on a small, rocky island, lying between Cobscook Bay and the Passamaquoddy River. The island, formerly known as Moose Island, was first settled by traders about 1780, and was incorporated as a town under the present name in 1798. It soon became prominent as a trading-post, and both foreign and American vessels resorted to the region in considerable numbers. The place continued to grow in importance for many years, and in 1850 had a population of 4,125. From that date, owing to various causes, its commercial interests gradually declined, and, in 1875, the town had less than 3,500 inhabitants. About that time, the first successful experiments were made in the preparation of herring as sardines, and as soon as it became certain that the small fish could be utilized in this way, and that a market could be found for the products, large canneries were erected, and parties engaged extensively in the work. The industry has since grown to enormous proportions, and to-day it constitutes the principal business of the place, making it one of the liveliest settlements on the coast of Maine.

From its earliest settlement the people of Eastport have been largely dependent upon the fisheries. The location of the village at the western entrance to the Bay of Fundy, in the center of a large fishing district, gave it a decided advantage as a market; and the abundance of rocks,

which forbade any extensive agricultural interests, compelled its people, in common with those of the adjoining British islands, to depend almost wholly upon the sea for their support. Its spacious harbor warranted the inhabitants in investing largely in vessel property, and they soon built or purchased quite a fleet of fishing schooners. These, in addition to the fleet owned at other points in the district, depended chiefly upon Eastport for their supplies, and also found it a desirable market for their catch.

THE MACKEREL FISHERY.—As early as 1820, the merchants of the place were extensively interested in the mackerel fisheries. In 1830 the business was at its height, when, according to Mr. D. I. Odell, there were fully forty sail of "mackerelmen," averaging 60 to 70 tons each, fitting and selling at Eastport. These vessels carried a total of nearly 600 men. Mackerel of large size were very abundant in the vicinity at this time, and, according to Mr. S. B. Hume, it was not uncommon to catch individuals weighing upward of 2 pounds within a few rods of the wharves; while 100 dressed fish would often fill a barrel. From 700 to 1,000 barrels is said to have been an average catch for a vessel during the season.

In connection with the mackerel fishery, which did not begin till midsummer, most of the vessels went to the outer banks or fished in the Bay of Fundy for cod, usually landing 700 to 800 quintals each before the mackerel season opened.

THE LABRADOR COD FISHERY.—As early as 1820, a number of the vessels, after making a short trip to some of the nearer grounds for cod, "fitted" for Labrador to engage in the cod fisheries of that region. They usually started in June and returned in September. By 1830 there were from six to ten vessels engaged regularly in the Labrador fisheries. A few years later, this branch of the fishery began to decline, and by 1855 it was wholly neglected.

THE TRADE WITH BOAT-FISHERMEN.—Seeing that both the mackerel and Labrador fisheries were being abandoned, the merchants were obliged to turn their attention to the shore fisheries. They soon began to cater to the trade with the local boat-fishermen, and to that of the vessels employed in the Bay of Fundy cod fisheries. A number of large curing stands were built, and a considerable business was done in drying fish, the greater part of which were purchased from the boat and vessel fishermen of the surrounding islands.

Then, as now, the bulk of the catch of the fishermen of New Brunswick and Nova Scotia was consumed in the United States, and the duty levied on their importation not only seriously affected the extent of these fisheries but also greatly reduced the value of the fish taken. As a result, Eastport controlled to a considerable extent the catch of the Bay of Fundy, and most of the men living within a convenient distance sold their fish either from "kench" or "from the knife;" while others often landed dried fish on the island to be carried to Eastport in small quantities from time to time, in order to avoid the payment of duties. With such intimate relations existing between the Eastport fishermen and their foreign neighbors, it was very difficult to distinguish between foreign and domestic products, and thousands of quintals of cod and other species were annually smuggled across the line.

THE MAGDALEN ISLANDS HERRING FISHERY.—Before the decline of the mackerel fishery, a number of vessels were sent to the Magdalen Islands in the early spring for herring, which they salted and brought to Eastport and Lubec for smoking or pickling. This business began as early as 1830, and continued to be important till 1868, since which time only an occasional vessel has been sent. In addition to the "Magdalen trade," the shore herring fisheries were very extensive, and next to Lubec, Eastport prepared the largest quantity of smoked herring of any town in the United States.

THE FISHERIES IN 1850.—Mr. M. H. Perley, in his Report of the Fisheries of New Brunswick for 1850, gives seven firms, with a total capital of $33,500, engaged in the fish trade at Eastport. These, according to the same authority, employed 238 men; used 18,900 bushels of salt; cured 18,000 quintals of fish and 3,500 boxes of smoked herring; put up 12,000 barrels of pickled herring, 300 barrels of mackerel, and 3,503 barrels of other fish (probably cod, haddock, and hake), in addition to 450 barrels of oil and a quantity of canned goods, the whole having a value of $85,800.

ORIGIN OF THE CANNING INDUSTRY.—Eastport claims the honor of putting up the first can of hermetically sealed goods within the limits of the United States. The process originated with the French, and was first employed on the American continent at Halifax, Nova Scotia, by Mr. Charles Mitchell, of Aberdeen, Scotland, in 1840. About this time Mr. U. S. Treat began experimenting in the same line at Eastport, and in 1843 Mr. Mitchell removed to Eastport and joined him in the work. It was here that lobsters were first canned. From this beginning the business has developed to its present enormous proportions. There are now three lobster canneries at Eastport, and two others a few miles distant, on British soil. The products of the three canneries in 1880 amounted to nearly 136,000 one-pound and 5,000 two-pound cans. In addition to those canned several hundred barrels of lobsters were shipped fresh to Portland and Boston.

THE EFFECT OF FREE TRADE WITH CANADA.—Eastport was seriously affected by the treaty that admitted foreign fish free of duty, and from that time its fishing interests, owing to a tendency of the New Brunswick fishermen to send their catch to the larger markets, gradually declined. Many of the dealers soon gave up the business, while others removed elsewhere. The larger fishing-vessels owned in the town were one after another sold from the district, and most of the fishermen turned their attention to the boat-fisheries, taking a considerable quantity of pollock, haddock, hake, herring, and other species along the shore. Pollock and herring have long been more abundant in this region than on any other portion of the entire coast.

THE FROZEN HERRING TRADE.—In the winter of 1854–'55 a Gloucester vessel secured a quantity of frozen herring in Newfoundland, and carried them to Gloucester, to be used as bait in the George's Bank cod fisheries. This was the beginning of a trade in frozen herring which has since assumed important proportions. In the winter of 1866–'67 a vessel engaged in the business made a trip to Eastport and obtained a full cargo of herring. The following year a number of vessels visited the region for a similar purpose. From that time the business has rapidly increased, until Eastport has come to control the frozen-herring trade of the United States. The fishing begins as soon as the fish can be frozen, usually about the middle of November, and lasts until the weather becomes "soft" in spring. From the first the fishing has been quite important, and has gradually increased, until in the winter of 1879–'80 there were ninety-five cargoes, averaging 250,000 fish each, in addition to 9,500 barrels of 450 fish each, shipped from the region, making a total of 28,000,000 herring, valued at $90,000. These were mostly taken by the fishermen of New Brunswick and sold to American fishing-vessels, that carried them to Boston, New York, Gloucester, Portland, and other places.

HADDOCK SMOKING.—About 1868 Eastport parties began smoking haddock, and a number have continued the work to the present time. The height of this business was in 1875, since which time it has been less extensive. In the winter of 1879–'80 there were 210,000 pounds of "Finnan haddies," valued at $12,000, smoked in the town. All of them were sent to Portland for distribution.

ORIGIN AND GROWTH OF THE SARDINE INDUSTRY.—In the fall of 1874 New York parties

conceived the idea of using small herring for "Russian sardines." They at once ordered a supply of these fish from Eastport for their experiments. The herring were found to answer the purpose admirably, and the following summer parties went to Eastport to engage in this business. It was soon found that the herring could also be utilized in the preparation of oil sardines, and, after various experiments, methods were hit upon by which a fine quality of sardines were prepared. From the first the demand for American sardines has rapidly increased and other establishments soon located at Eastport, and several canneries have recently been built elsewhere along the shore for utilizing the small herring that are found in considerable quantities. In the fall of 1880 there were in the town of Eastport alone thirteen canneries, employing nearly 1,500 persons, for the capture and preparation of sardines. These put up during the season about 7,000,000 cans, valued at upwards of $725,000.

EXTENT OF THE VESSEL AND BOAT FISHERIES IN 1880.—An examination into the present condition of the fishing fleet shows that in 1880 Eastport had fourteen vessels, with a total of 358.56 tons, valued at $13,000. These carried ninety-two men, and landed about 8,750 quintals of fish. In addition to these there were five or six small vessels, owned by Eastport parties, sailing under the British flag. There were seventeen herring weirs, valued at $4,000, at Eastport and adjacent small islands. These caught about 1,200 hogheads of fish, worth over $5,000. Between thirty and forty additional boat-fishermen were engaged in the capture of pollock, hake, and haddock in summer, the greater part of these, with a few others, turning their attention to the herring fisheries in winter.

EASTPORT TRADE IN FISHING PRODUCTS.—There were eleven firms dealing extensively in fishery products which they bought from the American and Provincial fishermen. They furnished constant employment to twenty-seven men, and required fifteen additional hands during the busy season. These firms occupied property worth $27,000, and required a cash capital of $52,000 for carrying on their business. They handled in 1879, according to estimates by Mr. S. B. Hume, Paine Brothers, Mr. B. F. Milliken, and others, 50,000 quintals of dry fish, 13,700 barrels of pickled fish, 375,000 boxes of smoked herring, 45,000 boxes of bloater-herring, 210,000 pounds of smoked haddock, 53,000 pounds of dry fish-sounds, 3,600 barrels of liver and herring oil, and 5,000 barrels of pomace, the whole having a value of $330,000. The frozen-herring, sardine, and lobster interests mentioned elsewhere foot up about $840,000 more, making the total trade in fishery products at Eastport $1,170,000.

5. THE FISHING TOWNS BETWEEN EASTPORT AND LUBEC.

PEMBROKE.—Pembroke is a town of about 2,500 inhabitants, lying to the north of Cobscook Bay. It is traversed throughout its entire length by Penmaquan River, which in its lower half is of considerable width and is known as Penmaquan Bay. The lower part of its western boundary is formed by the north branch of the Cobscook River, an arm of Cobscook Bay, into which the Dennys River empties. The water in the vicinity of the town is quite salt, and is much affected by the tides, which are unusually strong.

The town has two post-offices. The principal one is at Pembroke, a village of over a thousand inhabitants, with extensive lumbering interests, and a large iron mill; the other, called West Pembroke, is at the head of navigation of the river, a mile or more above Pembroke village. The latter was formerly engaged in ship-building and had a small lumber trade, but it is now an agricultural section, with no business of note.

The fishing for salt-water species is of little importance. The fishing fleet consists of two ves-

sels, the Josie L. Day and Beauty, of 15.88 and 26.25 tons, respectively. In 1879 these vessels furnished employment to sixteen men, and landed about 2,200 quintals of fish, two-thirds of the catch being hake. They also engaged in herring netting on the coast of New Brunswick during the winter season, selling their catch to the vessels employed in the frozen-herring trade.

In addition to the vessel-fishing, a number of farmers and mechanics living in the lower part of the town go in small boats to the pollock grounds of 'Quoddy River at intervals during the summer and catch fish for family use, often selling a few quintals to their neighbors. Aside from the parties mentioned, few persons are interested in the fisheries, as the fishing grounds are too far distant.

DENNYSVILLE.—Dennysville is a town of about 500 inhabitants, near the head of the northern branch of Cobscook River. It has a village of the same name, with about 300 inhabitants, at the head of navigation on the Dennys River. The residents are engaged chiefly in farming and lumbering, and there is no salt-water fishing of note, though a few parties go down the bay in small boats for a few days during the height of the pollock season, catching a supply for their own tables. A small business is done in river fishing and several weirs have been built for catching salmon and alewives.

EDMUNDS.—The town of Edmunds has a scattered population of 450 inhabitants, engaged chiefly in agricultural pursuits. It forms the west bank of one of the arms of Cobscook Bay, but has no fishing interests, if we neglect the few farmers that occasionally resort to the pollock grounds of 'Quoddy River for local supply.

6. LUBEC AND ITS FISHERIES.

GENERAL STATEMENTS.—The town of Lubec is made up of a series of irregular peninsulas, separated from each other by the various branches of Cobscook Bay. It has a shore-line greater in proportion to its area than almost any other town on the coast. It was settled about 1780, and was a part of Eastport up to 1811, when it was incorporated as a town and named in honor of Lubec, Germany. In 1850 its population numbered nearly 3,000, but of late it has been gradually losing in numbers from year to year, and at present has only 2,136 inhabitants. There are three post-offices in the town, called Lubec, North Lubec, and West Lubec, respectively. The first-named is the only village of importance. It is situated at "The Narrows," on the main ship channel of 'Quoddy River, and is, next to Eastport, the leading commercial center of the region. In other portions of the town the people live along the shores, and divide their time about equally between farming, fishing, and herring smoking.

ORIGIN AND GROWTH OF THE SMOKED-HERRING INDUSTRY.—By the beginning of the present century Lubec had become extensively engaged in the fisheries, and its people soon became largely interested in catching and smoking herring, which have for many years been remarkably abundant in that locality. They soon took the lead in the smoked-herring trade, and have retained it to the present day. In 1821, according to Mr. Jacob McGregor, there were twenty smoke-houses in the town, putting up a yearly average of 2,500 to 3,000 boxes of herring each. Prior to 1828 the herring were mostly taken by "torching." At that date brush weirs were introduced for their capture by fishermen from Nova Scotia, and they soon came into general favor.

As early as 1830 Lubec began sending vessels to the Magdalen Islands for an additional supply of herring for smoking and pickling. In 1860 she had eleven vessels engaged in this fishery, bringing cargoes of 700 to 800 barrels each, about one-half of the entire quantity being smoked. Since 1860 she has sent only a small fleet, but one or two vessels going yearly for several years.

The business reached its height between 1845 and 1865, when there were about forty-five weirs owned in the town. During these years, according to Mr. P. Gillis and others, from 400,000 to 500,000 boxes of herring were smoked annually. Since that date, owing to various circumstances, the business has fallen off greatly. The principal cause of this is said to be the result of the war, which virtually destroyed the herring trade with the South, where a large part of the fish was consumed. This market destroyed, years of overproduction followed, which so reduced the price that all parties lost heavily.

The business continued to decline until in 1879 the Magdalen supply was entirely cut off, and there were but thirty-one weirs fished by Lubec parties. There were at that time seventy-four smoke-houses in the town, but some of them remained idle and others were little used. The total product of these smoke-houses in 1879 reached only 153,000 boxes, of which the greater part were sent to New York, the remainder going to Boston and Portland. In 1880 the quantity of fish smoked at Lubec will be even less than in 1879, though herring are more abundant. In addition to the "hard herring," a few bloaters have been put up each season for several years, the total for 1879 amounting to 3,000 boxes of 100 fish each.

THE SARDINE INDUSTRY.—For two or three years a part of the catch of small herring from the various weirs has been sold to the "sardine" canneries at Eastport, and considerable money has been realized by the fishermen from this source. In the fall of 1880 a sardine cannery was built at Lubec to utilize the catch of small herring, and others will doubtless be established during the coming season.

GENERAL FISHERIES IN 1880.—Aside from its herring interests, the town has never been extensively engaged in the fisheries. In 1854 a vessels was sent to Labrador for codfish, and one or two were sent yearly up to 1858, when the business was discontinued.

In 1879 eight small vessels were engaged in the various shore fisheries, but in 1880 the fleet had been reduced to six vessels, with a total of 81.42 tons. There were a few line-fishermen who fished from small boats during the summer months.

7. THE FISHERIES OF TRESCOTT AND WHITING.

TRESCOTT.—Trescott is a town of 600 inhabitants, lying to the west of Lubec. Its northern part is a peninsula bounded by the various branches of Cobscook Bay, while its southern portion borders on the ocean, and has three little coves or harbors, affording fair anchorage for small vessels and boats. The first harbor, called Bailey's Mistake, is in the extreme eastern portion of the town. The next is a little cove known as Haycock's Harbor, with half a dozen houses near its shores. Formerly several herring weirs were owned and fished at this cove, and the catch was smoked and sold in Lubec, but for several years there has been no fishing of any kind. The third harbor is Moose River, where in 1868 two weirs were fished regularly for herring, and houses were built for smoking the catch. At that time herring were abundant, and a profitable business was carried on for a number of years, after which it was entirely abandoned. At the present time two men are engaged in boat-fishing from the harbor, selling their catch in Lubec. According to Mr. F. Warren, there was formerly some ship-building at the place, but this interest has died out, and the people of the neighborhood are now engaged chiefly in farming.

From the northern portion of the town a few men go occasionally in small boats to the lower fishing grounds, but no extensive business is carried on, and no fish are caught for market.

WHITING.—Whiting is a town of 400 inhabitants, lying to the north of Cutler. In its extreme

eastern part is a small village of the same name, situated at the head of navigation of the south branch of Cobscook River. The residents are engaged chiefly in lumbering and farming, and there is no professional fishing from the town, though boats go down the bay occasionally for pleasure fishing.

C.—THE MACHIAS DISTRICT.

8. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

GENERAL ACCOUNT OF THE FISHERIES.—The people of the Machias customs district, which includes the coast-line between Cutler and Gouldsboro', are engaged chiefly in farming and lumbering. Large saw-mills are located on the principal water privileges, and a large quantity of lumber is prepared and shipped to other localities. The inhabitants have never been extensively engaged in the fisheries, and at the present time only fifteen fishing vessels are owned in the district. Of these vessels only one is engaged in the offshore fisheries, the remainder being small craft fishing on the inner grounds. The boat-fisheries also are of little importance, the men giving their attention chiefly to the capture of lobsters in the summer and to clamming in winter.

Formerly a good many brush weirs were fished for herring, the catch being smoked or pressed for oil. Recently, however, the weirs have been neglected, and the business is now quite unimportant, though, owing to the establishment of several sardine canneries in 1880, a new impetus has been given to this particular fishery, and many new weirs are being built, as herring are reported very abundant.

The clamming interests of Mason's Bay are quite important, and a number of small vessels from various portions of the State, and even from Massachusetts, spend several months in the region each winter, their crews being provided with small boats, in which they visit the flats at low water to secure a supply of bait for their own use during the following season, or for sale to the fishing fleets of the larger cities. The vessel serves both as a home and work-shop during their stay in the region, and at the close enables them to transport the products to any desired locality without additional expense. Many of the local fishermen, having little to occupy their attention in winter, naturally resort to the clam-flats, deriving a considerable revenue from this source.

The lobster fisheries began in 1855, since which time they have gradually increased in importance, until they now take the leading place among the fisheries of the region.

STATISTICAL RECAPITULATION FOR 1880.—Detailed statistical statements of the fisheries may be found in the following table:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	62	Capital in vessels and boats	$30,465
Number of boat-fishermen	360	Capital in nets and traps	12,075
Number of curers, packers, fitters, &c	10	Other fixed and circulating capital	*a* 40,643
Number of factory-hands	129	Total	$83,183
Total	561		

a Other fixed and circulating capital.—Cash capital, $26,748; wharves, shorehouses, and fixtures, $2,245; factory buildings and apparatus, $11,650; total, $40,643.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							*Nets*		
In food-fish fishery:							Gill-nets:		
Active	11	246.17	$6,217	$1,885	$4,780	$12,882	In vessel-fisheries	45	$612
Idle	3	27.97	850			850	In boat-fisheries	250	3,000
In lobster fishery	1	32.97	1,500	10	160	1,670	Haul-seines:		
							In boat-fisheries	23	615
Total	15	307.11	8,567	1,895	4,940	15,402	Total	318	4,227
Boats.							*Traps.*		
In vessel-fisheries	26		495			495	Weirs	15	1,610
In shore-fisheries	281		9,468	3,600	1,500	14,568	Fykes	10	50
							Lobster-pots	8,251	6,188
Total	307		9,963	3,600	1,500	15,063	Total	8,276	7,848

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	7,496,124			$116,972
Fresh fish.				
For food	477,200			6,363
For bait	2,202,000		11,010 barrels	8,258
For fertilizer	60,000		300 barrels	150
Total	2,739,200			14,771
Dry fish.				
Cod	1,040,325	358,512		11,204
Hake	316,170	131,152		1,756
Haddock	264,915	94,192		1,892
Pollock	107,880	41,664		744
Cusk	29,640	12,768		314
Total	1,758,930	638,288		15,910
Pickled fish.				
Mackerel	27,900	18,600	93 barrels	535
Herring:				
Ordinary	42,500	34,000	170 barrels	510
Miscellaneous	29,000	16,000	80 barrels	400
Total	99,400	68,600	343 barrels	1,445
Smoked fish.				
Herring:				
Ordinary	74,094	53,533	6,298 boxes	1,260
Canned fish.				
Mackerel	41,250		33,000 cans	3,437
Lobsters.				
Fresh	107,950			3,958
Canned	2,474,300		462,768 cans	57,729
Total	2,582,250			61,687
Clams.				
For food	111,060		11,106 bushels	3,887
For bait	9,940		994 bushels = 71 barrels	355
Canned	80,000		8,000 bushels = 100,000 cans	10,000
Total	201,000			14,242
Miscellaneous.				
Fish-oil			2,850 gallons	1,140
Sounds		1,756		1,580
Marine products used for fertilizers				1,500
Total				4,220

REVIEW OF THE FISHERIES BY TOWNS.—If we except Jonesport, there are no important fishing settlements in the district, though the residents of several villages are more or less interested in the capture of the different species. Below may be found a brief description of the fishing interests of the different towns.

9. CUTLER TO JONESBORO', INCLUSIVE.

CUTLER.—The town of Cutler lies to the eastward of Machias Bay, with the open ocean on the south. Its population, numbering less than 1,000, is scattered along the shore, the interior being nearly uninhabited. The people are now engaged almost wholly in farming, though formerly considerable fishing was done. Fifteen years ago more than a dozen brush weirs were fished in Little Machias Bay and Little River by the residents of the town; but at present the fishing interests in this line are confined to one weir. Two vessels of 18.42 and 42.07 tons, respectively, furnishing employment to fifteen men, are fished from the harbor; but one of these is chartered from Jones port. About thirty men engage in lobstering and line-fishing from boats during a part of the summer. There are eight smoke-houses, but only two of them are in repair, and the total quantity of herring smoked yearly does not exceed 2,000 boxes. The vessel-catch amounted to 850 quintals in 1879, and to 600 quintals in 1880. The catch of herring in the weirs has been constantly decreasing until during the present season it will not exceed 15 hogsheads. According to Mr. S. B. French, Cutler was for a short time interested in the Magdalen herring fisheries, sending her first vessel in 1860, and two or three each season until 1864.

MACHIASPORT.—Machiasport is a town of 1,500 inhabitants, lying to the south of Machias. It is divided by the Machias River, and has a village of 300 inhabitants at the head of steamboat navigation. The region is one largely interested in the lumber trade, and it has a fleet of vessels engaged in coasting. The southern portion of the town is a peninsula, with Machias Bay on the east and Little Kennebec River on the west. The shores are indented by numerous harbors and coves, and from these twenty-three men, with 17 boats, are engaged in lobstering from April to August, selling their catch to the cannery on Little Kennebec River. There are no professional boat-fishermen, though a number catch a few cod, hake, and haddock each season for home use and for sale in the neighborhood. The smoked herring business amounts to less than 300 boxes yearly.

Two fishing-vessels with a total of 54.37 tons are owned in the town. These are engaged in the Bay of Fundy and La Have fisheries, with trawl and net, during the summer months, and in the herring fisheries in winter. They carry a total of fourteen men, and in 1879 landed 600 quintals of dry fish. The present season, 1880, the catch will be about 825 quintals.

EAST MACHIAS.—East Machias, with its extensive lumber mills and ship-yards, is a town of nearly 2,000 inhabitants, lying to the north of Machiasport. No fishing vessels and but three or four fishing-boats are owned in the town. The largest of these makes Grand Manan her head-quarters during the summer season while fishing for cod and pollock, and in the fall she is employed in the herring fishery in the same locality. Her total catch for 1879 was about 75 quintals of dried fish, and 50,000 herring. The other boats go only occasionally to the fishing grounds near Cross Island in summer, catching a few quintals of cod and hake for home use. The town is supplied with fresh fish by peddlers from Jonesboro and other places.

MACHIAS.—Machias is a small town of about 2,200 inhabitants, lying to the northwest of Machiasport on the Machias River. It has a village of 1,500 inhabitants at the head of navigation. Many of the residents are engaged in the coasting trade, but the majority are interested in or find employment at the extensive saw-mills of the village. It is the county seat of Washington

County, and contains the custom-house for the Machias district, which embraces the section of coast lying between Cutler on the east and Gouldsboro' on the west.

The people of the place have never engaged extensively in the fisheries, as they are fully 15 miles from the fishing grounds. There are at present no professional fishermen in the town, and no fishing-vessels are owned at the village. A few men go to the outer islands occasionally in small boats during the summer months, for cod and pollock, fishing more for pleasure than for profit. Mr. H. V. Knight, who keeps the only fish market in the place, estimates the total catch by these parties at 50 quintals yearly. The supply of fish, lobsters, and clams comes overland from the vicinity of Jonesport.

JONESBORO'.—The town of Jonesboro', situated to the north and east of Mason's Bay, has a population of 550, engaged chiefly in farming in summer and in lumbering in winter. The only settlement of note is a village of fifteen to twenty houses on a small stream known as Chandler's River. There are no important fisheries in the town. Ten men fish for lobsters from April to August, and, later in the season, some of them go out occasionally with hand-lines to catch a few fish for their own tables. There are four small brush-weirs, which in 1880 caught 12 barrels of mackerel (*Scomber scombrus*), in addition to a quantity of herring and other species that were used for bait or as a dressing for the land. A small vessel owned in the town took 25 quintals of fish in 1879, but in 1880 she was not employed in the fisheries.

The shores of Mason's Bay, especially those of Rogue Island, are bordered by extensive mud-flats, in which clams (*Mya arenaria*) are peculiarly abundant, this being a favorite resort for the clam-diggers of the adjoining towns. Large quantities are dug here annually by the residents of other places, but only two of the Jonesboro people engage in the work.

10. JONESPORT AND ITS FISHERIES.

GENERAL ACCOUNT.—The town of Jonesport, lying between Jonesboro' and Addison, was incorporated in 1832, and has at present 1,300 inhabitants. It is situated on Moose-a-bec Reach, an inside passage for vessels and steamers between the mainland and the outlying islands. It has a fair harbor, protected from the ocean by the ledges and islands, and is one of the principal steamboat landings of the region, having direct communication with Rockland and Portland. The people of the town divide their attention about equally between the land and the water. Many of them "follow the sea" during a greater part of the year, while others catch fish and lobsters in summer and dig clams in winter, most of them having small garden spots, on which they raise a few vegetables to supply their own tables.

Seven small fishing-vessels, valued at over $3,000 and carrying thirty-two men, are owned by the villagers and the inhabitants of the outlying islands. Six of these are engaged in the shore fisheries, landing an average of $1,200 worth of fish each, and one is employed in "running" lobsters to Boston and to the cannery at Jonesport.

THE LOBSTER INDUSTRY.—The catching of lobsters constitutes an important business, and seventy-one men, with an average of sixty-five pots each, are engaged in the fishery. The best lobstermen make $300 yearly, while the average is about $125 for the season, which lasts from April to August. Prior to 1855 no lobsters were shipped from the town, the few secured being taken with gaffs or hoop-nets for local supply. At this time Capt. John D. Piper arrived at Jonesport in a well-smack, bringing a crew of fishermen, who were provided with pots for catching the lobsters, which he purposed taking to Boston. As soon as this fact became known great excitement prevailed, the local fishermen fearing that the supply of lobsters would soon be exhausted. According to Captain Piper, a town meeting was at once called to consider the subject, and it was

only after he had convinced them of the extent and importance of the lobster fisheries in other localities, and of the advantages which they might derive from the capture of lobsters, that he was permitted to engage in the work. From the first the fishery was very successful, many of the fishermen soon providing themselves with pots, and from that date the industry has been of peculiar importance. In 1863 a lobster cannery was built at Jonesport, since which time it has been in successful operation. It now does a flourishing business in the canning of lobsters, clams, and mackerel, employing over forty hands during the height of the season.

THE BOAT-FISHERY FOR COD.—After the lobster season is over many of the men turn their attention for several months to line and trawl fishing, catching cod and other species for local supply and for shipment. Fifty-nine men were employed in this way in the fall of 1880, seven of them being professional boat-fishermen.

THE CLAM FISHERY.—In the winter the principal business of the people is clamming. Jonesport and Jonesboro' have each very extensive clam-flats, which, barring those about Sedgwick, are the most important on this portion of the coast. Small vessels come to the locality from Portland, Booth Bay, Deer Isle, and other points along the shore, and engage in clamming during the season, which lasts from December to April. Some crews dig large quantities, which they shuck and salt for sale to the offshore fishing-vessels, and others merely lay in their stock of bait for the following summer. Aside from the non-residents above mentioned, seventy-nine of the local fishermen made clamming a regular business during the winter of 1879–'80. These dug over 16,000 bushels, a part of which were sold to the cannery at Jonesport, the remainder being shucked and salted in barrels for use as bait.

THE HERRING FISHERY.—Jonesport has taken little interest in the herring fisheries of late, and at present there is but one weir within the limits of the town, though small herring are reported fairly abundant. During the summer of 1880 a sardine cannery was built, and in the fall several thousand cans of fish were put up. The building will be enlarged in 1881, and it is thought that herring can be taken in sufficient numbers to make the business both extensive and profitable. An Eastport firm located at the village in the summer of 1880 for the purpose of putting up Russian sardines, and succeeded in packing several hundred barrels during the season. The supply of fish was obtained largely from Millbridge. In the spring of 1881 it intends building a large cannery for the preparation of oil sardines.

11. MILLBRIDGE, STEUBEN, AND OTHER TOWNS IN THE VICINITY.

ADDISON.—The town of Addison is situated to the westward of Moose-a-bec Reach, between Harrington and Jonesport. It has a population of over 1,200, composed chiefly of sea-faring men and farmers. There are two post-offices; one, called Addison, is a village of several hundred inhabitants at the head of navigation of Pleasant River; the other, known as Indian River, is a scattered settlement of farmers and fishermen. Formerly considerable ship building was done in the town, but this business has gradually died out, and no vessels have been built for several years.

As early as 1835 Addison sent two or three vessels each season to the Gulf of Saint Lawrence for codfish. In 1857 its fleet consisted of three vessels engaged in the Bay of Fundy cod-fisheries, and one "hooking" mackerel in the Gulf of Saint Lawrence. In 1880 there was but one fishing-vessel, of 10.58 tons, owned in the place. This vessel carried three men, and landed 100 quintals of cod and haddock, taken during occasional visits to the inshore grounds. There are thirty-seven semi-professional fishermen, with fifteen boats, engaged in trawling and hand-lining along the shore, at intervals, from May to October. About half of the catch is sold fresh,

while the remainder is dried for local use. Twenty-four men fish for lobsters from April to August, selling their catch to the lobster cannery that was built in the lower part of the town in the spring of 1879. Four brush weirs are fished by the people of Addison for herring, mackerel, flounders, and smelt. The catch in 1880 amounted to 350 hogsheads of herring and 340 barrels of mackerel, in addition to a quantity of refuse fish that was used for lobster bait. There are two smoke-houses, in which a few herring are cured each season; the quantity for 1880 amounted to 3,200 boxes.

HARRINGTON.—Harrington, which includes the coast-line between Millbridge and Addison, is a town of 1,280 inhabitants. Its shores are very irregular, being cut up by numerous bays, the principal ones being Pleasant Bay, Harrington River, and Flat Bay, each separated from the other by long but narrow peninsulas. There are two post-offices in the town. The larger, called Harrington, is a village of 600 inhabitants at the head of navigation of Harrington River. Formerly there was considerable ship-building at this place, but for several years nothing has been done in that line. The other post-office, called West Harrington, is an agricultural district, with no village worthy of note. Most of the inhabitants are interested in farming, while the remainder "follow the sea" during the greater part of the year.

The fisheries of the town are of little importance, as there are no vessels engaged in the business, and no boats going regularly to the shore fishing grounds. Nine men pursue lobsters during the season, selling their catch to the Gouldsboro' and Addison canneries. These men fish occasionally with hand-lines near the shore, catching cod, haddock, and hake for family use and for sale in the neighborhood.

There are three brush weirs, two being fished for smelt (*Osmerus mordax*) and other anadromous species, while the third takes a small quantity of herring, flounders, and mackerel, the greater part being used for lobster bait and as a fertilizer. Two men engage in clamming, selling about 600 bushels yearly to the local trade.

MILLBRIDGE.—Millbridge was set off from Harrington and incorporated as a separate town in 1848. It had at that time about 1,100 inhabitants. In 1870 its population had increased to 1,558. The town forms the shore-line between Harrington and Steuben, and is divided by the Narraguagus River. It has a thriving village of nearly 1,000 inhabitants, extensively engaged in coasting and ship-building.

Millbridge has never been engaged in the offshore fisheries, and only to a limited extent in boat fishing, aside from that for herring and lobsters. Its people, in common with those of Steuben, are more or less interested in the herring fisheries, and, according to Mr. Sanborn, an old resident of the place, the first herring weir was built just opposite the village about 1820. From that date the business increased very slowly up to 1850, when parties came from Lubec and built large smoke-houses and presses for utilizing the catch. The fishery was at its height between 1858 and 1863, when 12 weirs were fished regularly and 75,000 to 100,000 boxes of herring were smoked annually. Many herring were pressed for their oil, the pomace being used locally as a fertilizer. None have been pressed since 1870, and the trade in smoked herring also gradually declined, until in 1880 only 500 boxes were put up. Though large herring are abundant on the spawning-grounds, a few miles of the village, and many vessels from other places catch large numbers of them, none of the local fishermen have provided themselves with nets for their capture, and for several years the weirs have been fished simply to secure bait for the lobster-men and to obtain manure for the land.

In the fall of 1880 Eastport parties decided to build a sardine cannery at Millbridge for the purpose of utilizing the small herring that are said to be abundant. It is purposed to have it in

readiness for the season of 1881. This will doubtless throw new life into the fishery, and, if the herring are as plenty as the residents claim, it seems destined to assume important proportions.

The shore fishing is confined largely to the capture of lobsters, which are sold to the cannery near the village and to the Portland and Boston smacks. Many of the farmers of the region devote part of their time between the first of April and the middle of August to lobstering, and other persons depend wholly upon it for a livelihood during these months. Lobsters are very abundant, and the catch is often large, some of the more industrious fishermen making $200 or even $300 during this short season.

Aside from lobster fishing, the boat-fisheries of the town are of little importance, and we learn of but 10 men who give any considerable portion of their time to the work. These go to the inshore grounds in large boats at intervals between May and November. A few others fish for home supply, and fully forty of the lobster fishermen of Millbridge and Steuben fish occasionally with hand-lines after the lobster season is over.

CHERRYFIELD.—Cherryfield is an inland town of 1,760 inhabitants, lying to the north of Millbridge and Steuben, on the Narraguagus River, with extensive lumbering interests. It is fully 10 miles from the fishing grounds and has no commercial fisheries, though a few people fish occasionally for pleasure during the summer months.

STEUBEN; GENERAL STATEMENTS.—Steuben is a town of 1,000 inhabitants, lying between Millbridge and Gouldsboro'. Its southern shore is formed by two long and narrow peninsulas, which are nearly surrounded by the waters of Pigeon Hill, Dyer's, and Gouldsboro' Bays. Several small outlying islands also belong to the town. There are no villages of note, the houses being grouped together in little settlements along the country roads and about the numerous coves. The people are chiefly engaged in farming and the coasting trade, while a few find employment in the small tide-mills of the region.

THE HERRING FISHERY OFF BOISBUBERT ISLAND.—As a fishing town Steuben is of little importance, though the ledges in the vicinity of the island are noted as an important spawning ground for the herring; and weirs were built for their capture as early as 1850 by Lubec fishermen, who came to Boisbubert Island to engage in the capture of the herring, which they either smoked or pressed for their oil. This business reached its height between 1858 and 1862, and has since gradually declined until during the present season (1880) there were but two weirs fished within the limits of the town. These caught 350 hogsheads of herring and 150 barrels of mackerel, half of the former being turned out for want of a market. No herring have been smoked since 1879. The herring netting at Boisbubert begins about August 1, when the large fish "strike in" for the purpose of spawning. The first vessel that fished on these spawning grounds came from Deer Isle about 1868, and in 1874 there were twenty-eight to thirty small ones fishing in the region, some of them making two trips. In 1880 eight sail visited the locality, catching a total of 700 to 900 barrels of herring, which they sold in Boston and Portland and Booth Bay.

OTHER FISHERIES.—The lobster fisheries are quite important, as the species is abundant about the southern headlands and among the outer islands. Eighty men from Millbridge and Steuben engage in this fishery from April to August, selling their catch largely to the canneries at Millbridge and Prospect Harbor. Over half of these fishermen live in Steuben. The line-fisheries for cod, haddock, and hake are of little importance, a few of the lobster fishermen going out occasionally to supply the local demand, though the greater part of the fish consumed in the district are brought from the town of Gouldsboro.'

D.—THE FRENCHMAN'S BAY DISTRICT.

12. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

EXTENT OF THE FISHERIES.—The Frenchman's Bay customs district, which includes the coast-line between Gouldsboro' and Blue Hill, is not an important fishing district, though several towns send a number of vessels to the distant banks for cod, and quite a fleet of small vessels is employed in the shore-fisheries. Both the offshore and inshore fisheries were formerly more extensive than at present. Thirty to fifty years ago several vessels were employed in the Labrador cod fishery and in the herring fishery at Magdalen Islands. The former fishery was abandoned some years since, and in 1880 no vessels were sent to the Magdalens, though up to that time a number had made yearly trips to that region. About 1810 parties came to Gouldsboro' to engage in the whale fishery, going out from the shore in small boats in pursuit of the whales whenever they came in sight. Later, small vessels were employed, and the fishery was continued up to 1860.

THE FRENCHMAN'S BAY HAKE FISHERY.—A large fleet of small vessels was engaged in the Bay of Fundy cod fisheries for a number of years, but this interest gradually declined, and the fishermen turned their attention to the capture of hake in Frenchman's Bay. This fishery has been, perhaps, the most important one in the district. It began in 1840, when vessels from different parts of Maine and Massachusetts were regularly employed in this fishery, securing large fares of hake which were sold in Portland and Boston. For some years not less than a hundred sail came regularly to the region, and as many more made occasional visits, but since 1865 few vessels have visited the locality, and the fishery is now practically abandoned.

THE MENHADEN FISHERY.—It is claimed by the fishermen of Surry that the menhaden fishery of the United States originated with the people of that town. For many years menhaden were abundant in all of the shore-waters of the district, being particularly so in Frenchman's and Union Bays. At first they were taken only in small numbers for use as bait in the shore-fisheries, but later, when it was discovered that marketable oil could be obtained from them, the fishery increased enormously, and hundreds of fishermen provided themselves with nets and kettles for engaging in the work. Between 1855 and 1863 it is estimated that not less than a hundred try-houses, with two to four kettles each, were in operation between Lamoine and Gouldsboro'. Since 1870 the fishery has been less important, and for a number of years, owing to the absence of menhaden from these waters, it has been entirely discontinued.

THE LOBSTER FISHERY.—The lobster fisheries of the district have been important for some time, and the majority of the shore-fishermen devote their attention to the capture of this species. Several canneries have been built for utilizing the catch of small lobsters, while a fleet of well-smacks is regularly employed in "running" the larger ones to Portland, Boston, and New York.

THE HERRING FISHERY.—The herring fisheries were formerly of little importance. At present, however, a number of brush weirs are fished in the vicinity of Mount Desert, and a good many herring are taken. The majority are sold fresh to be used as bait in the shore and bank vessel-fisheries, while considerable quantities are smoked and boxed for shipment.

STATISTICAL RECAPITULATION FOR 1880.—The fishing fleet of the district at present numbers fifty-two sail, forty-six of them being actively employed. The majority are small craft, engaged in the shore-fisheries in the vicinity of Mount Desert Island. Several others are large vessels belonging at Hancock and Lamoine. These are among the largest fishing-vessels in the State, and are employed regularly in the Grand Bank cod fishery.

STATISTICAL RECAPITULATION FOR 1880.—In the following statement may be found a summary of the fisheries of the district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	318	Capital in vessels and boats	$136,311
Number of boat-fishermen	408	Capital in nets and traps	22,799
Number of curers, packers, fitters, &c	69	Other fixed and circulating capital	a 105,775
Number of factory hands	107	Total	264,885
Total	902		

a *Other fixed and circulating capital.*—Cash capital, $70,200; wharves, shorehouses, and fixtures, $24,575; factory buildings and apparatus, $11,000; total, $105,775.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.
Vessels.						
In food-fish fisheries:						
Active	46	1,489.17	$49,855	$8,245	$43,015	101,115
Idle	6	296.48	10,800			10,800
In lobster fishery	2	26.97	600	20	320	940
Total	54	1,812.62	61,255	8,265	43,335	112,855
Boats.						
In vessel fisheries	193		4,370			4,370
In shore fisheries	439		13,506	4,080	1,500	19,086
Total	632		17,876	4,080	1,500	23,456

Nets and traps.	No.	Value.
Nets.		
Gill-nets:		
In vessel fisheries	128	$1,920
In boat fisheries	350	4,200
Purse-seines:		
In vessel fisheries	7	3,800
Haul-seines:		
In boat fisheries	17	425
Total	502	10,345
Traps.		
Weirs	17	2,612
Fykes	20	100
Lobster-pots	12,990	9,742
Total	13,027	12,454

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	17,438,857			$250,402
Fresh fish.				
For food	797,800			10,637
For bait	2,287,000		11,435 barrels	8,576
For fertilizer	60,000		300 barrels	150
Total	3,144,800			19,363
Dry fish.				
Cod	6,534,125	2,251,760		70,368
Hake	1,642,950	681,520		9,127
Haddock	1,512,000	537,600		10,800
Pollock	210,250	81,200		1,450
Cusk	101,400	43,680		1,073
Total	10,000,725	3,595,760		92,818
Pickled fish.				
Mackerel	918,900	612,600	3,063 barrels	17,612
Herring:				
Ordinary	631,250	505,000	2,525 barrels	7,575
Miscellaneous	26,000	13,000	65 barrels	325
Total	1,576,150	1,130,600	5,653 barrels	25,512
Smoked fish.				
Herring:				
Ordinary	802,141	579,547	68,182 boxes	13,636

Detailed statement of the quantities and values of the product—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Canned fish.				
Mackerel	104, 125		70, 536 cans	$7, 695
Miscellaneous	21, 660		12, 996 cans	1, 928
Total	125, 785		83, 532 cans	9, 623
Lobsters.				
Fresh	269, 000			9, 863
Canned	1, 368, 726		316, 381 cans	46, 587
Total	1, 637, 726			56, 450
Clams.				
For food	63, 850		6, 385 bushels	2, 235
For bait	13, 300		1, 330 bushels = 95 barrels	475
Canned	74, 380		7, 438 bushels = 127, 476 cans	13, 855
Total	151, 530			16, 565
Miscellaneous.				
Fish-oil			16, 053 gallons	6, 421
Sounds		9, 127		8, 214
Marine products used for fertilizers				1, 800
Total				16, 435

13. GOULDSBORO' AND ITS FISHERIES.

GOULDSBORO'.—The town of Gouldsboro' occupies a rocky peninsula lying between Gouldsboro' Bay and Frenchman's Bay. It includes several small settlements, the chief of which are Prospect Harbor, Winter Harbor, and West Gouldsboro'. The town has a population of 1,700. Many of the inhabitants devote their attention to farming, while others "follow the sea," being engaged in the coasting or foreign trade.

Fifty years ago the people of Gouldsboro' were largely interested in the fisheries, and each season a fleet of vessels was fitted for the cod and hake fisheries of the Bay of Fundy and Frenchman's Bay. Later a good many boat fishermen were employed in the Frenchman's Bay hake fisheries; while others devoted their attention to the menhaden fisheries, which were, at one time, very important in this locality.

SHORE WHALING.—According to Capt. George A. Clark and Captain Bickford, whaling was extensively carried on from Prospect Harbor for many years. The fishing began about 1810, when Stephen Clark and Mr. L. Hiller, of Rochester, Mass., came to the region, and built try-works on the shore, having their lookout station on the top of an adjoining hill. The whales usually followed the menhaden to the shore, arriving about the 1st of June, and remaining till September. When one was seen the men, armed with harpoons and lances, would immediately launch their boats and start in pursuit. If they succeeded in killing the whale, it was towed to the flats of the harbor at high-water, where it was secured and left to be cut up at low tide. Ten years later they began using small vessels in the fishery, and by this means were enabled to go farther from land. The fishery was at its height between 1835 and 1840, when an average of six or seven whales were taken yearly. The largest number taken in any one season was ten. The average yield of oil was 25 to 30 barrels for each whale. The business was discontinued about 1860, since which date but one or two whales have been taken.

OFFSHORE VESSEL FISHERIES.—It is stated by Mr. Curtis Stephens, that Gouldsboro' has never sent any vessels to Labrador or to the Magdalen Islands. She sent two sail to Grand Banks for several years, beginning with 1867. The first mackerel vessels were sent to the Gulf of Saint Lawrence in 1855, from which time to 1863 four or five sail were sent annually to that locality.

THE HAKE FISHERY.—Perhaps the most important fishery in which the people of Gouldsboro' have been interested is that for hake in Frenchman's Bay. According to Mr. Stephens, this fishery began about 1840, when vessels from the westward, probably from Massachusetts, first resorted to the region. The fleet increased yearly until 1858 to 1860, when there were often 100 sail in the bay at one time, and fully twice that number came occasionally to the locality. Between 1860 and 1865, owing to the Rebellion, which necessitated the absence of a large percentage of the male population, the fishery declined very rapidly. A few years later the hake are said to have left the bay, and for this reason the fishery has never been revived.

THE MENHADEN FISHERIES.—Menhaden were formerly very abundant in the waters of this region, but for many years they were taken only in limited quantities for use as bait in the hake fisheries. When the value of their oil became known, the Gouldsboro' fishermen at once engaged extensively in their capture. The business began about 1855, and by 1863 there were, according to Mr. D. D. Hodgkins, of Lamoine, fully one hundred try-houses, with two to four kettles each, in active operation along the shore between Jordan's River and Winter Harbor. Each of these "stands" is said to have produced an average of fifty casks of oil yearly. By 1870 the business began to decline, and now, owing to the absence of the fish from these waters, it is wholly discontinued.

THE PRESENT CONDITION OF THE FISHERIES.—At the present time Gouldsboro' has but two vessels engaged in the fisheries; one fishing for herring at Wood Island in the fall; while the other fishes for cod and other species along the shore. In addition to the above there are two smaller craft engaged in the lobster trade. The four vessels, valued at $1,300, measure but 75 tons in the aggregate, and furnish employment for only twelve men.

The principal fishing of the town is for lobsters. In the summer of 1880 seventy-eight men were engaged in this work, setting an average of sixty pots each. Two canneries, established in 1863 and 1870, respectively, are at present in operation. These use all of the small lobsters taken by the fishermen, and the larger ones are sold to Portland and Boston smacks. The two factories employ over fifty hands during the height of the season.

Most of the professional boat-fishermen of the town have small camps and flake-yards on the outer headlands or islands. When the fishing season arrives they repair to their camps with provisions and cooking utensils, and spend the summer in catching and curing the cod, hake, and haddock, which they often take in considerable numbers. There are fourteen of these camps, with twenty-five regular fishermen, and eight others that fish occasionally during the summer months. In addition to these, nearly all of the lobstermen fish, more or less, with handline and trawl after the lobster season is over.

In the early spring, eight men make a business of clamming on the flats, near West Gouldsboro', shucking and salting their catch, which they sell to the Hancock vessel fishermen.

14. SULLIVAN, HANCOCK, AND LAMOINE.

SULLIVAN.—Sullivan is a town of 1,200 inhabitants, lying to the north of Gouldsboro', with important mining interests. It is too far from the fishing grounds to have any extensive fisheries. One small fishing-schooner, of 7.65 tons, is owned here, but the captain usually makes his headquarters at other places. Aside from this, the fishing is confined to eight lobstermen, who

fish for the Gouldsboro' canneries during the summer months. The residents of the town go out occasionally to catch a supply of fish for their own tables, but none fish extensively for profit.

HANCOCK.—The town of Hancock, lying to the north of Frenchman's Bay, between Gouldsboro' and Lamoine, was first settled in 1776. It has at present about 1,000 inhabitants, the majority of whom are engaged in agricultural pursuits. Comparatively few follow fishing for a livelihood, as the town is too far removed from the fishing-grounds to warrant them in making daily trips in their boats. As in many of the adjoining towns, however, a few take a supply of provisions and such other things as may be necessary and proceed to the outer islands where they spend several months each summer in catching fish and lobsters, for which they find a ready market.

According to Mr. Charles Wooster, small fishing vessels were owned in the town during the early part of the present century, but they fished wholly in the vicinity of Gouldsboro', and it was not until 1845 that the people became interested in the fisheries of the Bay of Fundy. Two larger craft were sent to the Western Banks for three or four years, beginning with 1852. Hancock vessels were first sent to the Magdalen Islands for herring about 1860, one to three going yearly from that time till 1878, when the business was discontinued. The herring were mostly smoked and shipped to Boston and the West Indies. At that time from 30,000 to 40,000 boxes were put up annually in the town.

In 1860 the schooner Laurel was sent to the Grand Banks for codfish, this being the first vessel from the town to visit that locality; in 1868 and 1870 five vessels were engaged regularly in the fishery, and the business has been continued to the present time.

In 1880 there were four fishing vessels owned in Hancock, of which three went to the Grand Banks, and the other fished along the shore. The vessels have a total value of $12,650, and furnished employment to fifty-nine men. They landed during the season 5,300 quintals of fish. This fleet includes the schooner Mary Jane Lee, of 128.23 tons, which is the largest fishing vessel owned in the State, and the schooner Omaha, of 116.77 tons.

LAMOINE.—Lamoine, a small town set off from Trenton in 1870, has a population of 650, of whom the greater part are engaged in farming. It lies between Hancock and Trenton, to the north of Mount Desert Island.

According to Mr. D. D. Hodgkins, the people of the region became interested in the fisheries about 1835, when they began sending "pinkies" of 30 to 40 tons to the Bay of Fundy, and in 1848 the fleet numbered 20 to 25 sail with six to eight men each.

This fishery began to decline about 1850, and in 1857 it was discontinued, the smaller vessels being sold to the fishermen of the Fox Islands, Deer Isle, and Eastport, while the larger ones were retained and sent to the Grand Banks and other offshore grounds. The first was sent to Grand Banks in 1857, since which time this fishery has been continuously prosecuted, though for a number of years it has been on the decline. The business was at its height about 1866, when ten vessels were sent annually; the average has been about six sail. Men employed in the Grand Bank fishery from this town have always worked for wages instead of on shares as in most localities.

Two vessels went to Labrador for cod in 1850, but none have since been sent. Occasionally, after returning from the banks, the vessels have fished for mackerel along the shore for a number of weeks, though none have made the mackerel fisheries a specialty, and no purse-seines have been used.

Lamoine has been extensively engaged in herring smoking for about thirty years, and as the catch of herring in the brush weirs of the locality was much too small, a fleet of vessels was fitted out for the Magdalen Islands for an additional supply. The first schooner was sent by N. B. Coolidge in 1855; and from that date till 1880 vessels were sent yearly, their cargoes being smoked and

shipped to Boston and New York. In 1865 or 1866 six cargoes, equal to 125,000 boxes, were landed and smoked here. The average for the different years has been 30,000 to 40,000 boxes. Twenty-four smoke-houses are owned in the town, though few of them are now in use.

The shore fishermen of Lamoine were at one time extensively engaged in the manufacture of menhaden oil in common with the fishermen of Hancock and Gouldsboro'.

At present there are five vessels, aggregating 409.93 tons, valued at $14,700, and furnishing employment to 68 men, fishing from Lamoine; while two others, formerly engaged in the fisheries, have remained idle the present season. The catch in 1879 amounted to 10,570 quintals, and in 1880 to 6,350 quintals.

The shore fisheries are prosecuted by a few men who fish from small boats for lobsters and cod during the summer months. Three small brush weirs are fished for herring, but they are not properly cared for and the catch is unimportant.

In the fall of 1880, Eastport capitalists, hearing of the abundance of herring in the locality, built a sardine cannery at Lamoine, and put up a small quantity of fish. They intend erecting larger buildings in 1881 and hope to do an extensive business. A large number of weirs will be built for catching the fish.

15. MOUNT DESERT ISLAND AND ITS FISHERIES.

GENERAL DESCRIPTION.—The island of Mount Desert, containing the towns of Eden, Mount Desert, and Tremont, is about 18 miles long by 12 to 15 miles wide. It lies between Frenchman's and Union Bays, being separated from the shore by a narrow channel which is spanned by a toll-bridge. It was first settled by the French in 1608, but eight years later the settlement was broken up by the Virginians. In 1760 it was resettled by the English, and in 1789 was incorporated as a town under the name of Mount Desert. Since that time it has been divided into three townships, that portion lying along the eastern shore retaining the original name. The island is peculiarly attractive on account of its native wildness and picturesque scenery, and is the most popular summer resort on the coast of Maine. It has at present over 4,000 inhabitants. Several small islands, or groups of islands, lying within a few miles of its shores are very naturally included with it. The more important of these are Cranberry Isles, and Gott's, Bartlett's, and Tinker's Islands. If these be included, Mount Desert has a very important relation to the fisheries. The northern portion, including the greater part of the towns of Eden and Mount Desert, has no fishing interests, aside from a few brush-weirs and smoke-houses for the capture and preparation of herring, but the southern portion has a large fishing fleet, and many of its people are wholly dependent upon the fisheries for a livelihood. The residents in the vicinity of many of the small harbors and coves along the southern shore own vessels, and nearly every cove of importance has extensive boat-fisheries. The two principal fishing stations, however, are Southwest Harbor, in the town of Tremont, and Cranberry Islands, lying two or three miles to the eastward. These places have long been noted for their fisheries, and they are still the principal fishery centers.

THE VESSEL-FISHERIES.—According to J. S. Mayo, vessels from the island were engaged in the Labrador cod fisheries early in the present century, and by 1840 not less than seven or eight sail were employed in this way. The business continued to be important for a number of years, after which it gradually diminished and was wholly abandoned in 1862. Many of the same vessels were engaged in the herring fisheries at the same time, and in the early spring, before starting for Labrador, a majority of them made a trip to the Magdalen Islands and secured a cargo of herring, which were salted and brought home for pickling or smoking. Prior to 1864, no vessels from the

locality were sent to the Grand Banks, but from this date to 1875, two or three sail were employed regularly in this fishery.

At present, two fishing vessels are owned in the town of Mount Desert, eighteen in Tremont, and thirteen at the Cranberry Islands, making a total of thirty-three sail, aggregating 621.86 tons. These vessels, which furnish employment to 152 men, are valued at $16,650. All are engaged in fishing along the shore for cod, mackerel, and other species, and in 1880 none of them went beyond the limits of the Gulf of Maine.

THE CATCHING AND CANNING OF LOBSTERS.—The principal boat-fishing is for lobsters, and eighty-two men were employed in this work from April to August of the present year. Each man tends about ninety pots. The lobster fisheries of the island are among the oldest on this portion of the coast. As early as 1853, a lobster cannery was built by Boston parties at Southwest Harbor. It has continued in operation to the present day, still doing a large business. In addition to lobsters, clams and mackerel are canned in considerable quantities. The first "shell lobsters" canned in North America were put up at this place in 1879. This brand is the outgrowth of a demand by wealthy British customers for whole lobsters for garnishing purposes. Finding it difficult to get lobsters as commonly prepared for the trade sufficiently fresh for this purpose, the London agent for one of our leading packing establishments suggested the idea of meeting this demand, and, after a certain amount of experimenting, methods were hit upon by which satisfactory results were obtained. The "shell lobsters," as they are called, are selected of uniform size and perfect condition from the general stock, and are placed, without being removed from the shell, in long cylindrical cans, made expressly for the purpose. The method of boiling is similar to that for ordinary canned lobsters, the only difference being that they are boiled a little longer that the heat may penetrate the shell and thoroughly preserve the meat. During the height of the season this cannery furnishes employment to fifty hands.

THE BOAT-FISHERIES.—The regular boat-fishermen number sixty-two, and thirty-four others fish occasionally in summer. About thirty of the lobstermen also spend more or less time in fishing after the close of the lobster season. Some of the fishermen have large boats, and venture quite a distance from the shore, while others remain constantly within three or four miles of the harbor.

EXTENT OF THE FISHERIES IN 1880.—There are thirteen brush-weirs, valued at $2,300, owned in the region. In these were caught, in 1880, over $11,000 worth of herring and mackerel. The principal business in this line is at Tucker's and Gott's Islands, where large weirs are fished for supplying the fishermen with bait. Some of the weir-fishermen have built ice-houses, and now furnish both ice and bait to the vessels. Any surplus of large herring taken in the weirs is smoked. In 1880 there were twenty-eight smoke-houses, in which 38,000 boxes of fish were prepared, the bulk of these being put up at Bar Harbor, in the town of Eden.

Five firms are engaged in buying and curing fish taken by the vessels and boats, the principal business being at Cranberry Isles and Southwest Harbor. In 1880 these parties employed thirteen men and handled 11,000 quintals of cod, hake, and haddock. Fully three-fourths of this entire quantity were sold in Boston.

16. TRENTON, ELLSWORTH, AND SURRY.

TRENTON.—Trenton is a small town lying to the west of Lamoine and to the north of Mount Desert. It has at present no interest in the fisheries of the coast beyond the digging of a few clams that are sold to the cannery at Southwest Harbor, in the town of Tremont. Formerly a few

boat-fishermen and five or six small vessels were engaged in the Frenchman's Bay hake fishery, but none of its people have been employed in this way since 1868. Two vessels were sent to the Grand Banks for cod each season from 1868 to 1873, after which they were sold and the fisheries were abandoned.

ELLSWORTH.—Ellsworth, a town of 5,257 inhabitants was first settled in 1763; it was incorporated in 1800. A city of the same name at the head of navigation of Union River is next to Bangor the leading commercial settlement along this portion of the coast. Its people, in addition to their mercantile trade, are extensively engaged in the manufacture and shipment of lumber.

The town is too far removed from the sea to have any extensive fishing interests. One fishing schooner of 68.11 tons is owned by a resident merchant, but the catch is landed at Penobscot, where the fish are cured for the Boston market. The boat-fishing for salt-water species is confined to the capture of mackerel at the mouth of Union River during the summer months. Two fresh-fish dealers are engaged in supplying the city and country trade. They depend chiefly upon the fishermen of the outer islands for their supply, and, on account of the distance, find it necessary to keep a steam launch plying between the city and the fishing grounds.

SURRY.—The town of Surry forms the shore-line between Ellsworth and Blue Hill. Formerly some of its inhabitants were engaged in the manufacture of menhaden oil from fish taken in the locality, each fisherman being provided with nets and kettles for this work. At the present time, no fishing fleet is owned in the town, and only four men are extensively engaged in the fisheries. These go out in small open boats for cod, hake, and mackerel in summer. During the height of the mackerel season they are joined by some of the farmers of the region. The entire catch is sold in the locality.

E.—THE CASTINE DISTRICT.

17. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

ORIGIN AND DEVELOPMENT OF THE FISHERIES.—The Castine district, including the eastern shore of Penobscot Bay and the larger islands off the eastern headlands, was settled about 1760 by parties who came to the region to engage in the fisheries. The land is more arable than that of the districts further east, and a large percentage of the population is engaged in farming. A majority of the early settlers, however, devoted their entire attention to the fisheries, and for many years fishing was the principal occupation of the people. It was at one time the most important fishing district of Eastern Maine. A number of the towns had large fleets engaged in the Grand Bank cod fisheries; others sent a good many vessels to the Gulf of Saint Lawrence for mackerel, while nearly all had fleets of small vessels and Chebacco boats engaged in the shore fisheries along the coast of Maine and in the Bay of Fundy. Early in the present century the fishing vessels were very small, and the number was comparatively limited, a majority of the fishermen using small open boats for the prosecution of the work. Gradually, larger and better vessels were introduced, and, between 1850 and 1865, from 200 to 300 sail of the different sizes were actively employed. In 1860, Deer Island alone sent nearly 100 vessels to the different fishing-grounds, this fleet being larger than that of any other town in the district. About this time the vessel fisheries began to decline, and many of the larger schooners were sold to the westward, the men engaging in the boat fisheries or seeking employment on the land. By 1865 the fishing interests of most localities had been greatly reduced, and until recently they remained in this con-

dition. At present, however, there are indications of a revival of the industry, and in some localities vessels are being purchased and extensive preparations are being made for the work, but in in others there is no disposition to resume the business, as the profits to be derived from it are not satisfactory.

CASTINE'S TRADE WITH FISHING VESSELS.—Prior to 1825, a majority of the vessels of the region were obliged to visit Portland to secure their fishing outfit, including salt and provisions. About this time a Castine merchant, knowing the importance of this trade, turned his attention to it, and began the importation of salt from Liverpool and Cadiz. He also secured such other articles as were needed by the fishing vessels, and soon built up an extensive trade with the local fleet. Other merchants soon engaged in the business, and within a few years most of the vessels of Eastern and Central Maine came regularly to Castine to secure their outfits, and not less than 2,000 tons of salt were imported annually to be used in the vessel fisheries. It is said that between 1850 and 1860, when the business began to decline, fully five hundred vessels were fitted at Castine. At present, however, the business is practically discontinued, and less than a dozen small vessels are fitted from the place, the majority of these belonging to Deer and Swan's Islands.

THE LOBSTER FISHERY AND CANNERY INTERESTS.—The lobster fisheries, which now furnish employment to the boat-fishermen during the greater part of the fishing season, began about 1850, when parties from the westward brought pots to Deer Isle to catch lobsters, which were carried to Portland and Boston. Soon a number of the local fishermen became interested in the capture of the species, and since that date the lobster fisheries have continued to increase in importance. In 1880, 311 men were engaged in the capture of lobsters during some portion of the year, many of them following the business during the entire season, while others fished only for a few weeks or months in the spring and early summer. Fifty additional persons were employed in marketing the catch, which amounted to 2,967,860 pounds. Five canneries are now in successful operation, three of them being located on Deer Island. In 1880, these furnished employment to 190 persons, and upwards of 2,000,000 pounds of lobsters were canned, the products having a value of over $52,000.

THE CLAM FISHERY.—The clamming interests of the Castine district are quite important, a large number of men finding employment on the mud-flats during the winter months, when there is little else to occupy their attention. Nearly 60,000 bushels of soft clams are dug annually, three-fourths of them being shucked and salted to be used for bait in the vessel-fisheries. Nearly half of the remainder are sold to the canneries.

STATISTICAL RECAPITULATION FOR 1880.—The following statement shows the extent of the fisheries of the district for 1880:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	623	Capital in vessels and boats	$228,000
Number of boat-fishermen	605	Capital in nets and traps	46,610
Number of curers, packers, fitters, &c	59	Other fixed and circulating capital	*a* 71,550
Number of factory-hands	165	Total	356,160
Total	1,452		

a Other fixed and circulating capital.—Cash capital, $44,200; wharves, shorehouses, and fixtures, $11,800; factory buildings and apparatus $15,550; total, $71,550.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.
Vessels.						
In food-fish fishery:						
Active	90	2,902.87	$81,435	$13,110	$77,505	$172,050
Idle	10	457.18	14,500			14,500
In lobster fishery	9	128.04	3,250	100	1,580	4,930
Total	109	3,488.09	99,185	13,210	79,085	191,480
Boats.						
In vessel fisheries	275		16,915			16,915
In shore fisheries	656		21,555	6,050	2,000	29,605
Total	931		38,470	6,050	2,000	46,520

Nets and traps.	No.	Value.
Nets.		
Gill-nets:		
In vessel fisheries	265	$3,872
In boat fisheries	600	7,200
Purse-seines:		
In vessel fisheries	25	13,750
Haul-seines:		
In boat fisheries	8	200
Total	898	25,022
Traps.		
Weirs	8	450
Fykes	20	100
Lobster-pots	28,050	21,038
Total	28,078	21,588

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	24,853,257			$407,335
Fresh fish.				
For food	421,500			5,620
For bait	4,430,000		22,150 barrels	16,613
For fertilizer	30,000		150 barrels	75
Total	4,881,500			22,308
Dry fish.				
Cod	5,600,725	1,930,096		60,316
Hake	1,465,290	607,824		8,140
Haddock	486,675	173,040		3,476
Pollock	97,730	37,744		674
Cusk	22,880	9,856		242
Total	7,673,300	2,758,560		72,848
Pickled fish.				
Mackerel	7,130,700	4,753,800	23,769 barrels	136,672
Herring:				
Ordinary	990,250	792,200	3,961 barrels	11,883
Total	8,120,950	5,546,000	27,730 barrels	148,555
Smoked fish.				
Herring:				
Ordinary	117,647	85,000	10,000 boxes	2,000
Canned fish.				
Mackerel	506,800		333,408 cans	34,730
Lobsters.				
Fresh	868,500			31,845
Canned	2,099,360		425,220 cans	52,387
Total	2,967,860			84,232
Clams.				
For food	75,000		7,500 bushels	2,625
For bait	445,200		44,520 bushels=3,180 barrels	15,900
Canned	65,000		6,500 bushels=97,932 cans	9,385
Total	585,200			27,910
Miscellaneous.				
Fish-oil			12,315 gallons	4,926
Sounds		8,140		7,326
Marine products used for fertilizers				2,500
Total				14,752

Below is given a brief account of the past and present fishing interests of the different towns:

18. BLUE HILL, BROOKLIN, AND SWAN'S ISLAND.

BLUE HILL.—Blue Hill, a town of 1,700 inhabitants, was first settled in 1762, and incorporated as a town in 1789. It forms the shore-line between Surry and Brooklin. The principal business of the town is quarrying and mining, and at present the mining for copper and silver is more extensive here than anywhere else in the State.

Blue Hill seems never to have been extensively interested in the fisheries, though about 1863 many of its people were engaged in the manufacture of menhaden oil from fish taken in nets along the shore. At the present time nothing is done in this line, and the fishing is confined largely to lobstering, clamming, and weir-fishing in the shore waters. Seven lobstermen, set an average of seventy pots each; after the lobster season is over they fish with lines and trawls for cod and other species, landing an average of fifty quintals to the man. Others fish occasionally during the mackerel season for home supply and for sale to the canneries. Six weirs are owned in the town, most of them being located on the outlying islands. The value of the weir catch in 1880, including mackerel and herring, was $1,850. Eleven men are engaged in this fishery. In the fall and spring fifteen men are extensively engaged in clamming. The quantity dug in 1880 was 2,900 bushels, most of them being shucked and sold as bait. There are two small vessels, with crews of two and three men, respectively, fishing on the inshore grounds. Their catch is usually very small; in 1880 it amounted in value to only $500.

BROOKLIN.—The fisheries of Brooklin are quite similar to those of Blue Hill, though the number of people employed is considerably larger. Twenty-eight men fish from April to August for lobsters, setting about one hundred and twenty-five pots each. There are no professional boat-fishermen, but a number go out occasionally for local supply. Six small vessels fish along the shore with trawls, lines, and nets for cod, mackerel, and herring. In 1879 a large schooner was fitted with a purse-seine for catching mackerel. She engaged in the southern fishery in the spring, went to the Gulf of Saint Lawrence in summer, and returned in the fall to fish on the coasts of Maine and Massachusetts. She was sold to Portland in 1880. Two small vessels owned by residents of the town are employed in "running" lobsters to the various canneries of the region. The entire fleet, numbering nine sail, is valued at $5,875; they aggregate 194.13 tons, and carry a total of forty-two men.

Brush weirs were first fished at Brooklin about 1860. In 1880 there were two small ones, the catch of which amounted to 150 barrels of mackerel and 650 barrels of herring, in addition to 10,000 boxes of herring that were smoked by the weir-fishermen.

There are extensive mud-flats in the region, where long-necked clams (*Mya arenaria*) are peculiarly abundant. An investigation showed that one hundred and seventeen men made a business of digging and shucking clams to be used for bait in the vessel fisheries. The quantity dug is enormous. In the winter of 1879–'80 over 13,000 bushels were shucked and salted, and 1,000 more were used fresh. The value of the catch was about $4,000. The clamming season lasts from October to the middle of the following May, though little is done in midwinter. Four bushels of shell clams is an average catch for a tide, and the total for the year is about eight barrels of shucked clams to the man.

When menhaden were abundant a good many small try-houses were built upon the shore for utilizing the catch of the net-fishermen. At present, on account of the absence of the fish, nothing is done in this line.

In 1870 a lobster cannery was built at Brooklin by Portland capitalists; it has since been in successful operation, and during the present season furnished employment to twenty-five hands.

SWAN'S ISLAND; ITS EARLY FISHERIES.—Swan's Island, formerly known as Burnt Coat, lies a few miles south-by-west of Mount Desert. It is 6 or 7 miles long by 4 or 5 broad, and has about 450 inhabitants. According to Capt. John Staples it was settled in 1775. From the first the people have been largely dependent upon the water for a livelihood, though the soil is capable of producing bountifully after it has once been cleared. Formerly, in common with other portions of the coast, it had small vessels engaged in the shore and Bay of Fundy fisheries. In 1853 the first large vessel, the schooner Constitution, was brought to the island and fitted for the Grand Bank cod fisheries. Soon three or four others were purchased and sent to the same locality, the majority fishing for mackerel after their return in the fall.

THE MACKEREL FISHERY.—About 1868 the Bank fisheries were almost wholly discontinued, and the vessels turned their attention to the capture of mackerel. This fishery has continued to develop, until Swan's Island has now, next to Portland, the largest mackerel fleet of any town on the coast of Maine. Purse-seines were first used by these fishermen in 1870, and within a few years all of the vessels were provided with them. Five of the mackerel vessels go south in the spring, and the remaining four are usually hauled up till July, when the fish reach the coast of Maine; the crews in the mean time devoting their attention to the lobster fisheries. From the beginning of the fishery to the present day, according to Mr. G. M. Staples, only three or four trips of mackerel have been inspected on the island, the vessels almost invariably landing and packing at Portland, Boston, or Gloucester. In 1879 the Swan's Island fleet landed 14,966 barrels of mackerel, two of them being among the high-line vessels of the American fleet.

THE VESSEL-FISHERIES OF THE ISLAND.—In addition to the mackerel vessels, a fleet of twelve sail are engaged in the shore fisheries, five of them going to Wood Island for herring after the fishing for cod and hake is over. The herring are usually packed in Portland, and many of the "ground-fish" are sold at Deer Island and Mount Desert.

A summation of the vessel-fisheries of the island for 1879 shows twenty-one sail, aggregating 885.05 tons. These had a value of $30,000, and furnished employment to 186 men. The catch for the season was 14,966 barrels of mackerel, 1,055 barrels of herring, and 1,623 quintals of cod, hake, and haddock.

Two menhaden oil and guano factories were built on the island in 1875, one of them being provided with boilers and hydraulic presses for doing an extensive business. They were run a portion of three seasons, after which, owing to a scarcity of fish in the locality, the business was discontinued.

THE LOBSTER FISHERY.—Next to mackereling, the trapping of lobsters is the principal business of the people. According to Mr. David Smith, the first persons to engage in the capture of lobsters for profit were fishermen from Gloucester, Mass., who came to the island on a smack about 1850, bringing their traps with them. They hired one or two of the resident fishermen to assist, and the smack remained until her well had been filled, when she sailed for Boston. The following season some of the islanders became interested in this fishery, and about 1855 ten men were regularly employed in this way during the summer months, smacks coming frequently to purchase the catch. Fewer lobsters were taken from this time up to 1860, when the fishery was again revived, and has continued to increase to the present time. There are now twenty-three men who devote their attention to the capture of lobsters during the entire season, with fifty-one others, who lobster from the middle of March till the 10th of July, when they pile their pots upon the beach and ship in the vessels to engage in the mackerel fisheries.

Over 8,000 lobster pots are owned by the fishermen of the island, and about 5,600 barrels of

herring, flounders, and sculpins (*Cottus octodecimspinosus* and *C. grœnlandicus*) are used for bait in this fishery alone during the season.

FISH-CURING.—A few of the boat-fishermen engage in the capture of cod, mackerel, &c., in the fall for home supply, selling a few to the three curing stands on the island. In 1879 these parties cured 1,000 quintals of fish, a larger part of which were bought from small vessels.

19. DEER ISLAND AND ITS FISHERIES.

HISTORY OF THE FISHERIES FROM 1800 TO 1880.—The town of Deer Isle, lying to the south of Sedgwick, is separated from the mainland by Eggemoggin Reach. It includes Great Deer Isle, Little Deer Isle, and Eagle Island. The first is by far the largest and most important of the group; it is about 9 miles long by 7 or 8 miles broad. It has a very irregular coast, being indented by long and narrow bays and coves that nearly meet from opposite sides. The region was first settled by William Eaton in 1762, and was incorporated as a town in 1789. In 1790 it had 682 inhabitants; in 1812, about 1,250; in 1850, 3,037; and in 1870, 3,414.

The following facts relative to the early history of the town were gathered during several interviews with Mr. William Webb, for many years one of the leading officials of the town. Mr. Webb was born on the island in 1803, and was actively engaged in its fisheries as early as 1818. Up to this time there were but two vessels of over 40 tons burden and twelve to fifteen Chebacco boats fishing from the island, though many of the residents had been employed on fishing vessels belonging to Newburyport. The principal business at that time was the trade in lumber, and half a dozen large saw-mills were in active operation. About one-fourth of the inhabitants were then dependent on the fisheries. In 1830 twelve large vessels were sent to the more distant fishing grounds, and forty smaller ones fished along the shore. In 1840 the fleet had increased to thirty large vessels (over 40 tons old measurement) and fifty small ones. The height of the fishing business for the island occurred between 1860 and 1865, by which time a better class of vessels had been introduced, and about thirty-five sail of large schooners and fifty smaller craft were actively employed. The large vessels were almost without exception engaged in the mackerel fishery, most of them being employed in freighting from the close of the season in November till the following June, when they sailed for the Gulf of Saint Lawrence. They usually landed two trips each during the season. The first Deer Isle vessel to fish for mackerel in that locality was sent in 1834. The fishing was wholly with hand-lines up to 1873, when purse-seines were introduced. The smaller vessels fished on the inner grounds, some of them frequenting the Bay of Fundy regularly for many years.

Since 1868 the fisheries have rapidly declined, all of the better and larger vessels having been sold to other localities, and Deer Isle to-day owns the poorest class of vessels of any town on the entire coast. Some of the merchants claim that this decline is largely due to the difficulty of making suitable arrangements with the custom-house authorities for obtaining their salt free of duty. It seems that they made an effort to have a quantity kept on the island to supply the vessel fleet, but, failing in this, they were obliged to make the trip to Castine or pay the duty, which they often did to avoid the delay. A more probable cause for the rapid decline is found in the relations that existed between the fitters and crews, whereby a settlement with the fishermen was often delayed for nearly a year, during which time they were subjected to all the disadvantages of the credit system in its worst forms. In this way the Deer Island fishermen were seriously inconvenienced, and they were gradually driven to seek employment on the vessels of other fishing ports, even to the neglect of their own fleet. This practice has been continued, and there are now not less than

seventy-five men who go to Gloucester and Portland each spring to ship in the fishing vessels of these cities.

As early as 1815 one of the Deer Isle vessels was engaged in the Gulf of Saint Lawrence cod-fisheries. In 1822, two vessels were sent to Labrador for cod, a vessel from Newburyport accompanying them and taking their catch direct to Spain. Only three vessels have been engaged in the Labrador fisheries since that time, none of them going more than four or five years. Crews from the island have, however, frequently visited the Labrador coast in vessels belonging to Newburyport.

Next to Isle au Haut, Deer Isle was the first to engage in the Magdalen Island herring fishery. In 1830 she fitted out six vessels for this fishery, but since that date only one or two have been sent yearly. In 1829 the schooner Caleb, 54 tons, was engaged in sealing, taking her catch at the Magdalen Islands. Two vessels from Mount Desert were engaged in the seal fishery the same season. Only one Deer Isle vessel has ever fished on Grand Banks; none have fished on George's, and none have engaged regularly in the capture of halibut. Up to 1836 the vessels sailed without charts; in 1845 stoves were substituted for fire-places, and in 1849 the patent steering-wheel was introduced in place of the old-fashioned tiller.

EXTENT OF THE VESSEL AND BOAT FISHERIES IN 1879.—In 1879 Deer Isle had forty-two vessels, aggregating 915.35 tons, engaged in the fisheries. This fleet, valued at $18,910, furnished employment to one hundred and ninety-nine men. Four of the vessels fished wholly for mackerel; thirty-three were engaged in the shore-fisheries for cod, hake, haddock, herring, and mackerel; and the five remaining ones were employed exclusively in the lobster trade. Seven of the shore fleet carried lobsters to the canneries of the locality in spring and summer. The vessel catch was sold largely to the fish-merchants of other places; but there were cured on the island during the season about 1,800 quintals of cod and hake. In addition to these, 200 barrels of mackerel were put up by the dealers.

Not less than one hundred and forty men are engaged in fishing from small boats. These, with few exceptions, fish for lobsters from March till August; they then engage in the shore mackerel fishery for a few weeks; and the remainder of the season is spent in fishing with line and trawl for other species. A few parties clam more or less during a greater part of the year, and by the middle of November a large number of the boat and vessel fishermen resort regularly to the mud-flats, where they spend a considerable portion of their time in clamming till the following April. The fishermen of Little Deer Isle are almost wholly dependent upon the clam-flats for a livelihood, and many of them are engaged in clamming during the entire year. The clams, after being shucked and salted, are sold to the dealers on the island, or to those of Brooklin and Sedgwick. These in turn ship them to the larger fishery ports to be used for bait. The island merchants alone handled 1,500 barrels during the season of 1879-'80.

THE LOBSTER FISHERY.—The lobster ranks first in importance among the species taken along the shore. Prior to 1853 none of the residents had any knowledge of the abundance of lobsters in the locality, as up to this time they were taken only with gaffs among the rocks and sea-weeds where they had been left dry at low water. In the spring of that year Capt. John D. Piper, who owned a smack for carrying lobsters to market, brought traps to the island and hired men to engage in the fishery. The business proved very profitable, and by 1860 twenty men were employed in this way, the bulk of the catch being sold to Portland and Boston smacks. In 1858 the first lobster cannery was established on the island, and in 1877 two others were built. In 1880 these canneries employed about one hundred persons, paying out $10,000 in wages. During the same season 10,500 lobster pots were fished by the residents of the town.

20. ISLE AU HAUT, SEDGWICK, AND BROOKSVILLE.

ISLE AU HAUT.—Isle au Haut is a small island lying several miles to the southeast of Deer Isle. It was permanently settled about 1790. Being surrounded by excellent fishery grounds on three sides, it has from the first been largely interested in the fisheries; and as early as 1825, according to Capt. James Turner, there were forty sail of vessels fitting at Castine and landing their catch at the island. Several of these vessels were engaged in the herring fishery during a portion of the season, and between 10,000 and 15,000 boxes were smoked annually on the island. Later vessels were sent to the Magdalen Islands for herring, and both smoked and pickled herring were put up in considerable quantities.

The vessel-fisheries continued with but little diminution up to 1855, after which they declined very rapidly, and the fleet at present consists of three small vessels, none of which do any extensive business. A majority of the people are now engaged in the boat-fisheries. They fish for lobsters about the many rocky islands and ledges in the locality from April to August, after which they turn their attention to the capture of cod and other species with line or trawl, as is most desirable. Not less than forty persons are employed in this way. About 1860 a lobster cannery was built at Isle au Haut for utilizing the catch, but, owing to an unpleasantness between the owners and the fishermen, it was closed in 1873.

According to Captain Collins, many herring were netted about the shores of the island at certain seasons of the year up to 1850, and even in later years they have often been quite plenty. In 1874 a Sedgwick vessel anchored in one of the small harbors, and with eight nets and a crew of two men succeeded in taking 150 barrels in three weeks. It is said that two schools of herring visit the locality, one arriving about the middle of July and leaving early in August, the other coming by the 15th of September and remaining about a month. Little has been done in this fishery by the islanders, beyond the capture of a limited quantity for bait, for several years.

SEDGWICK.—Sedgwick, formerly known as Naskeag, was first settled in 1763. It was incorporated as a town, under its present name, in 1789, since which time the towns of Brooklin and Brooksville have been taken from it. In 1870 it had a population of 1,113. Mr. Samuel Wasson, of Surry, in his Survey of Hancock County, refers to it in the following language:

"Sedgwick . . . is another of our misshapen towns. The 'pompet' which darkens its agriculture is its maritime facility. A large portion of this town is non-arable or grazing land, the bushy acres of which should be made to turn out annually tons of superior mutton. From Sargentsville to Sedgwick, following the shore of Eggmoggin Reach, the soil is easy of cultivation and is quite productive. Like most of our seaboard towns, the sea and not the soil furnishes the bread. The industrial establishments are mainly those which are related to the fishing industry."

At the present time Sedgwick has four vessels, valued at $6,200, engaged in the fisheries. Two of these are employed in the shore fishery, another visits Grand Banks for cod, and the fourth fishes for mackerel between Cape Hatteras and the Gulf of Saint Lawrence.

There are extensive clam-flats along its shores, and during five months of the year thirty-eight men depend on clamming for a livelihood. In the winter of 1879–'80 there were dug, according to the estimate of Herrick & Byard and W. G. Sargent & Son, over 5,000 bushels of clams. Of the entire quantity about 4,300 bushels were shucked and salted, the remainder being sold fresh in the locality. The two firms above mentioned handled during the season 2,326 barrels of shelled clams, all of which were bought from the fishermen of the surrounding towns. The catch was shipped to the principal fishery centers of Maine and Massachusetts for use as bait in the offshore cod fisheries. Beyond the vessel fisheries and the clamming interests almost nothing is done, though three men fish

occasionally from small boats to furnish residents of the locality with fresh fish, and others catch a supply for their own tables.

BROOKSVILLE.—Brooksville, lying to the south of Penobscot between Castine and Sedgwick, is almost an island, being connected with the main shore by two very narrow necks of land. It was incorporated in 1817, and named in honor of Governor Brooks, of Massachusetts. In 1870 it had 1,276 inhabitants. Its principal interests are in connection with agriculture, quarrying, and coasting. Mr. Samuel Wasson says of it: "West Brooksville is the Coastville of Western Hancock [Hancock County]. Nearly every man sails, helps to man, or is part owner of a 'coaster,' which gives a peculiar idiom to their language, which is perfect Greek to a backwoodsman."

At present Brooksville has one vessel of 6.50 tons with a crew of two men engaged in the shore-fisheries. About thirteen men fish for lobsters from April to August, selling the bulk of their catch to the Castine cannery. Seven men clam in winter, and an equal number make a business of line-fishing in summer. In addition to these, fully seventy-five men fish for mackerel from two to six weeks in summer, most of their catch being canned at Castine. There are also extensive smelt fisheries in the town.

21. CASTINE AND ITS FISHERIES.

ITS FISHERIES, PAST AND PRESENT.—Castine is a small town lying to the south of Penobscot, between the Penobscot River and South Bay. It contains the village of Castine, which is one of the oldest and most interesting settlements in the State. Members of the Plymouth colony occupied it as a trading post as early as 1630, when it was known as Pentagoet; it was permanently settled by the English in 1760. In 1796 it was set off from Penobscot and incorporated. From its earliest settlement it has been the scene of bloody conflicts, and has been frequently taken and retaken by the armies of the French, Dutch, and British. In 1850 it had 1,260 inhabitants and the census of 1870 showed a gain of only 44.

Its history as a fishing town is both peculiar and interesting. Its distance from the shore fishing grounds prevents any extensive boat-fisheries, though several parties are engaged in the capture of lobsters and mackerel in summer, and a number of others dig a few clams from the mud-flats in winter. In 1880 ten men were engaged for a number of weeks in the shore mackerel fishery, selling their catch to the cannery at the village. All of these "clam" to a greater or less extent in winter, and four of them fish for lobsters from April to August. Aside from this and the smelt fisheries which will be mentioned elsewhere, there is at present no fishing of importance from the town.

Though the boat-fisheries have never been extensive, the excellent harbor gave Castine an advantage in the vessel-fisheries which she retained for many years. By the beginning of the present century she had a few large vessels engaged in the various offshore fisheries; and the number continued to increase until her vessels frequented all of the important fishing grounds, including Grand and Western Banks, Labrador, Bay of Chaleur, and the Magdalen Islands. The Grand Banks cod fisheries are said to have been peculiarly important. They began early in the century, and by 1833 a large number of vessels were employed in this work. The fishing continued to be extensively prosecuted till 1855, after which it rapidly declined, the vessels being sold to other places or employed in the coasting trade. In 1878 the offshore fleet had been reduced to two sail. These returned from the fishing grounds with small fares, whereupon their owners became discouraged and decided to give up the business. Both vessels were immediately stripped and secured to the wharves, where they have since remained.

During the years of greatest activity a considerable number of small vessels were fitted out for

the shore and Bay of Fundy fisheries. These went regularly to the nearer grounds and returned with good catches. But the causes that led to the reduction of the offshore fleet had their influence upon the smaller craft, and though some of them were kept for a number of years they gradually disappeared, and to-day not a fishing vessel sails from Castine. True, several small ones have been granted fishing licenses, but on examination it is found that they are employed chiefly in other work, and it would be misleading to include them with the fishing vessels of the coast.

THE TRADE WITH FISHING VESSELS.—While the fisheries proper of the town have been important, the trade with the fishing fleet of other places has been of much greater value to the people, and Castine was for a number years, next to Portland, the principal fisheries center of the State.

Up to 1824, according to Mr. William Webb, of Deer Isle, little attention was paid to the vessel trade by the merchants of the city, and some of them even sent their own schooners to Portland for their salt and other outfits. About this time the first cargo of salt was imported by one of the Castine dealers. This was the beginning of a large trade, and vessels from the surrounding country, including Deer Isle, Swan's Isle, Fox Islands, Mount Desert, and many other fishing towns along the shore, soon came to depend wholly on Castine for their fittings, including salt, gear, and provisions. The business continued to increase, and by 1845, according to a correspondent of the Bangor Whig, fully three hundred vessels, carrying upwards of two thousand men, "fitted" at Castine for the various bank and shore fisheries, while 2,000 tons of salt were annually imported and consumed. The most of this came direct from Cadiz and Liverpool.

Mr. Webb informs us that the trade began to decrease just prior to the rebellion, and that since 1870 "bankers" have gone elsewhere for their supplies, and the shore vessels have gradually sought other markets. At present the trade is confined to eight or ten small vessels belonging at Deer and Swan's Isles, and it is practically of no importance.

Aside from the interests already mentioned Castine has one of the largest line factories in the country, where most of the cod and mackerel lines used by the New England fishermen are made.

THE CANNING OF FISHERY PRODUCTS.—A large cannery was built at the village in 1871 and is now doing an extensive business in the canning of lobsters, mackerel, clams, and various kinds of berries and fruits. About fifty hands are employed during the working season. This cannery was probably the first to use a steamer for gathering its supplies of sea products from the fishermen of the adjoining shore and the numerous outlying islands. The change from sailing vessels to steamers has proved thoroughly satisfactory and it seems probable that steamers will soon be generally introduced for this work.

22. PENOBSCOT, ORLAND, AND BUCKSPORT.

PENOBSCOT.—The town of Penobscot is too far from the fishing grounds of the coast to have any extensive salt-water fisheries. The only business in this line is the curing of a cargo of codfish caught by a vessel belonging in Ellsworth.

Penobscot has extensive smelt fisheries, and a few of its inhabitants go to the outer islands occasionally and fish for cod and mackerel for home supply. Beyond this no fishing of any kind is done.

BUCKSPORT AND ORLAND.—The towns of Bucksport and Orland, situated on the eastern bank of the Penobscot, 18 miles below Bangor, are so intimately connected in their fishing interests that they should properly be considered together. The region was first settled in 1762, and as early as 1825 Mr. Joseph Cook and one or two others had fair-sized vessels engaged in the offshore fisheries. The business continued to increase till 1855, when, according to Mr. N. H. Powers, there were about 20 vessels, ranging from 50 to 125 tons, carpenter's measurement, landing a total

of 20,000 quintals of fish during the season. Most of the vessels went to "the Bay" for mackerel after their return from the banks. The "ground-fish" were dried by professional curers at Orland and sold in Boston, and the mackerel were packed at various places. From 1858 the fishing interests began to decline, and in 1870, according to Mr. Powers, the fishing fleet of the two towns numbered only three or four sail, the majority of the old vessels being employed in the coasting trade.

In 1877 the business again revived, and in 1880 Orland had 6 schooners, aggregating 373.02 tons, engaged in the Grand Bank cod fisheries. The vessels are valued at $10,500. During the same season Bucksport had 6 large vessels fishing on Grand Banks, and two smaller ones engaged in the shore fisheries; this fleet was valued at $13,600, and aggregated 459.03 tons. About 150 men are employed in the vessel fisheries of the two towns. The crews are usually hired at wages varying from $120 to $150 for the season. The vessels, as a rule, make but one trip during the summer, starting late in the spring and returning early in the fall. Nearly all land their catch at Orland, where the fish are cured before being shipped to Boston and other places.

In 1880 there were six curing-stands in the vicinity. These had an aggregate value of $3,000, and furnished employment to 27 men for two months. The quantity of fish cured was 13,200 quintals, all but 400 quintals of which were cod.

F.—THE BELFAST DISTRICT.

23. GENERAL REVIEW OF THE FISHERIES.

A DESCRIPTION OF THE DISTRICT AND ITS FISHERIES.—The Belfast customs district extends along the western border of Penobscot Bay, from Stockton to Rockland. It also includes the Fox Islands, lying in the mouth of the bay, about midway between its eastern and western shores. The soil of the mainland is well suited for agriculture, which occupies the attention of a majority of the people. The residents of the Fox Islands are engaged chiefly in quarrying and fishing. At the principal harbors along the main shore are settlements of greater or less importance. The largest of these are the cities of Belfast and Camden. The people of these places, as well as those of the smaller villages, are extensively interested in the coasting and foreign vessel trade, and many large merchantmen are owned and manned by them.

Camden and Belfast are the only places on the mainland that have been extensively engaged in the fisheries. The residents of these cities became interested in the fisheries about 1825, and for a quarter of a century the business continued to increase in importance, though it has since declined, and the vessel-fisheries are now almost discontinued. The residents still continue to engage in the shore fisheries to a greater or less extent in summer, catching lobsters, mackerel, cod, and other species for local supply. The river fisheries of the region are quite extensive, many salmon, alewives, and smelt being secured.

The only islands of importance in the group known as the Fox Islands are North Haven and Vinal Haven. These were settled about 1765 by parties from other localities, who came to Vinal Haven for the more successful prosecution of the fisheries. Up to 1830 the vessels owned in this locality were small craft, most of them being under 30 tons, carpenter's measurement. A majority of these were owned at Vinal Haven, this island, owing to its nearness to the fishing-grounds, having the largest fishing interests. A little later better vessels were added to the Vinal Haven fleet, but the North Haven fishermen continued to use small ones up to 1850, since which time her fish-

ing interests have been constantly increasing. To-day each island has twenty vessels, those of North Haven averaging about 40 tons, while those of Vinal Haven are only half as large.

The shore boat-fisheries furnish employment to 180 men, all but 10 of these being engaged in the lobster fisheries during the spring and early summer, while the remainder of the season is spent in the capture of mackerel and other fishes.

STATISTICAL RECAPITULATION FOR 1880.—The following statement shows the extent of the fisheries of the district for 1880:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	343	Capital in vessels and boats	$134,705
Number of boat-fishermen	490	Capital in nets and traps	28,468
Number of curers, packers, fitters, &c	32	Other fixed and circulating capital	*a* 59,455
Number of factory-hands	84	Total	222,628
Total	949		

a Other fixed and circulating capital.—Cash capital, $34,200; wharves, shorehouses, and fixtures, $14,255; factory buildings and apparatus, $11,000; total, $59,455.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							*Nets.*		
In food-fish fishery:							Gill-nets:		
Active	53	1,330.84	$48,375	$10,155	$43,870	$102,400	In vessel-fisheries	118	$1,770
Idle	3	31.90	550			550	In boat-fisheries	400	4,800
In lobster fishery	5	120.49	6,400	50	800	7,250	Purse-seines:		
Total	61	1,483.23	55,325	10,205	44,670	110,200	In vessel-fisheries	14	7,500
Boats.							Haul-seines:		
In vessel-fisheries	153		4,835			4,835	In boat-fisheries	13	325
In shore-fisheries	474		12,770	4,900	2,000	19,670	Total	545	14,395
Total	627		17,605	4,900	2,000	24,505	*Traps.*		
							Weirs	13	1,975
							Fykes	30	150
							Lobster-pots	15,930	11,948
							Total	15,973	14,073

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	15,192,662			$247,558
Fresh fish.				
For food	472,000			6,293
For bait	1,441,000		7,205 barrels	5,404
For fertilizer	20,000		100 barrels	50
Total	1,933,000			11,747
Dry fish.				
Cod	1,898,000	654,080		20,440
Hake	3,284,820	1,362,592		18,249
Haddock	1,004,850	357,280		7,178
Pollock	120,930	46,704		834
Cusk	67,080	28,896		710
Total	6,375,680	2,449,552		47,411

Detailed statement of the quantities and values of the products—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Pickled fish.				
Mackerel	4,476,600	2,984,400	14,922 barrels	$85,802
Herring:				
Ordinary	195,000	156,000	780 barrels	2,340
Miscellaneous	10,000	5,000	25 barrels	125
Total	4,681,600	3,145,400	15,727 barrels	88,267
Smoked fish.				
Herring:				
Ordinary	14,118	10,200	1,200 boxes	240
Haddock (Finnan haddies)	6,800	3,000		175
Total	20,918	13,200		415
Canned fish.				
Mackerel	232,350		108,612 cans	19,874
Lobsters.				
Fresh	699,000			25,630
Canned	1,177,464		207,612 cans	28,335
Total	1,876,464			53,965
Clams.				
For food	18,750		1,875 bushels	656
For bait	46,900		4,690 bushels = 335 barrels	1,675
Canned	7,000		700 bushels = 7,824 cans	750
Total	72,650			3,081
Miscellaneous.				
Fish-oil			10,935 gallons	4,374
Sounds		18,249		16,424
Marine products used for fertilizers				2,000
Total				22,798

24. BELFAST AND ADJACENT TOWNS.

STOCKTON.—Stockton is situated about five or six miles below Bucksport, on the west side of the Penobscot River. It has a resident population of about 1,550, including a village of 500 inhabitants at Cape Jellison Harbor. The people of the town are largely interested in agriculture, and in vessels employed in the foreign or coasting trade. Many of the inhabitants "follow the sea" for a livelihood. The fisheries of the town are very limited. One vessel of 8 tons is engaged in the shore fisheries during a part of the summer, and another of 16 tons "runs" lobsters and clams to the Castine cannery; these two comprise the fishing fleet of the town. In 1880 seven or eight men were engaged in the lobster fisheries, and twenty or more fished for mackerel for several weeks in midsummer, some of them fishing for pleasure only. A few of the residents go down the river to fish for cod and hake for home supply, but none follow the business regularly. The river fisheries for salmon and alewives are quite important. They will be described in the chapter on the fresh-water fisheries of the State.

SEARSPORT.—The town of Searsport, forming the western boundary of Penobscot River, between Stockton and Belfast, has about 2,200 inhabitants. It has a village of the same name, with about 1,000 inhabitants. Many of the residents are extensively interested in the coasting trade, while others own or man larger vessels that run between the United States and various European countries; the remainder are engaged in farming. The fishing interests of the town

are very similar to those of Stockton. It has one vessel of 18 tons engaged in the shore fisheries, landing her catch at the curing-stands at North Haven. Eight men are interested in the lobster fisheries, and seventy or eighty fish for mackerel during the height of the season. Some catch enough for home use only, while others fish more extensively, selling their catch to the residents of the village. It is estimated by Mr. W. H. Matthews that 160 barrels of mackerel were taken by the local fishermen in 1880. The salmon and alewife fisheries are quite extensive, and a number of weirs have been built for their capture by the fishermen of the town.

BELFAST.—The town of Belfast, on the west bank of the Penobscot River, 25 to 30 miles above Rockland, was first settled in 1770. It was incorporated in 1773 and named in honor of Belfast, Ireland. In 1776 it had 229 inhabitants, and in 1870, 5,278. Williamson, in his History of Belfast, says: "The first settlers were of course strangers to the luxuries of living. For several years they depended for the means of subsistence almost exclusively upon their crops and upon fishing and hunting. The rich, newly-burnt land produced a plentiful supply of cereals and potatoes. Moose, deer, and even bears were abundant, and the river furnished salmon, shad, and alewives."

Capt. Charles H. Wording informs us that Belfast was interested in the fisheries to a limited extent only prior to 1826, when she built or purchased a fleet of small vessels. About 1835 a better class of vessels were introduced, and soon twenty sail were owned in the town, the larger ones fishing on the nearer offshore banks for cod in spring, and in the Gulf of Saint Lawrence and along the Maine shore for mackerel later in the season. Most of the cod were cured on the lower islands, and prior to 1840 the mackerel were packed in Boston. A considerable portion of the fleet "fitted" at Castine. About 1855 the business became less prosperous, and it was almost wholly discontinued before the war. Since that time Belfast has had a few vessels engaged in the shore fisheries each season, but the catch has usually been so small as to be quite unimportant. In 1879 she had five fishing vessels, averaging 20 tons each, fishing on the inshore grounds. The fleet was valued at $1,650, and furnished employment to twenty-nine men.

The boat-fisheries vary considerably, and are at times quite important. The principal fishing occurs in midsummer, when the mackerel enter the bay. They are very abundant for several weeks, and many of the inhabitants, including men and boys of all classes, engage in the fisheries to a greater or less extent for pleasure and profit. Some fish only occasionally for home supply, others devote their entire time to fishing while the mackerel remain, and realize a considerable profit from their sales. It is said that there are at times over one hundred boats, with one to four men each, fishing within a few miles of the city.

Mr. Frank W. Collins, of Belfast, sends us the following account of the boat-fisheries for 1879:

"It is estimated by competent judges that, during the season of 1879, there were 1,000 barrels of mackerel caught in our bay (mostly by hand-lines); of this amount about one-third were shipped to Boston, and the larger cities of our own State.

"The smelt-fishing has been poorer here this season than for many years. Owing to the prevailing warm weather, and ruling low prices, not more than half of the usual number have engaged in this fishery. (The smelts here are all caught with hand-lines.) From December 1, 1879, to the present time [March, 1880], there have been about five tons of smelts caught here; of these, nearly two tons have been shipped to Portland, Boston, and New York.

"The past season there were twelve men engaged in lobster fisheries, using a total of 375 traps. Although the season was considered a poor one by the fishermen, about 75,000 lobsters were caught, one-third of them being sold to the smacks, and shipped to Boston, and towns in this State.

"From the most careful inquiries among the clam-diggers, and other persons having a knowledge of our local fisheries, we learn that there have been 5,000 bushels of clams dug here the past year,

though none have been salted for fish-bait this season as in previous years. Of the 5,000 bushels dug, about one-half have been shipped to other places. On account of their fine flavor the Belfast clams are considered superior to those of any other locality, and they always find a ready market in our neighboring cities and towns where they are known. It would be impossible to form any correct estimate of the large quantity of flounders taken here during the year. This branch of the fishing is followed, not only by our local fishermen, but there is a little multitude of boys who throng the heads of the piers and the bridge for weeks, to fish for flounders. The fish are neatly dressed and strung in bunches (usually twelve in a bunch) for the market. Thousands of bunches are shipped to cities and towns in this vicinity.

"Although Belfast is not engaged in the salmon fishery to any great extent, there is probably no place in the State where more Penobscot salmon are sold. The past season, 1879, there were about 25,000 pounds of Penobscot salmon sold (by the fishermen in this vicinity) to the marketmen and inhabitants here; of this amount not more than 2,000 pounds were shipped to other places, the rest being consumed locally. Salmon are no longer a luxury here, to be enjoyed by the rich only, but during plentiful seasons they are now often sold by our local dealers as low as ten cents per pound. Through the untiring efforts of the Fish Commission, for the past eight years, in restocking the Penobscot River, this once rare and delicate fish has been placed within the reach of the poor as well as the rich, and to-day the Penobscot is, in every respect, a salmon stream."

NORTHPORT.—Northport, lying just south of Belfast, on Belfast Bay, is a town with a scattered population, engaged largely in agriculture, though a few of its inhabitants are more or less dependent upon the sea. A number of small coasting vessels are owned by the residents and some of the men are interested in the salmon fisheries during a portion of the year. As the town has no fishing fleet, the catch of marine species is very limited, the work being largely confined to the capture of mackerel during a few weeks in mid-summer, while a number of parties take lobsters and clams to a limited extent for local supply.

25. CAMDEN AND ITS FISHERIES.

The town of Camden, which includes the villages of Camden and Rockport, forms the western bank of the Penobscot River between Rockland and Lincolnville. It was settled in 1769, and incorporated in 1791.

According to Messrs. J. and B. C. Adams, Camden was for many years extensively interested in the fisheries, and had a fleet of 15 to 20 schooners engaged in the Labrador, Magdalen, bank, and shore fisheries, with a considerable number of others from the Fox Islands that came to Camden for their fittings. Later the causes that led to the decline of the fisheries of the region affected Camden equally with the other places, and, after a few unprosperous years, the business was almost wholly discontinued. At present the fishing fleet of the town, including the two lobster smacks owned at Rockport, is made up of five sail vessels and one steamer. Three of the vessels are engaged exclusively in the mackerel fisheries, and the others, including the steamer, are employed in the transportation of fishery products. The steamer carries herring, mackerel, and clams to the canneries at the village, and the smacks "run" lobsters to Portland and Boston.

The boat fisheries are of little importance. A number of men from both Camden and Rockport are interested in the lobster fisheries; others go to the outer islands occasionally to fish for cod and other species; while all, with many of the shoresmen, are engaged in "hooking" mackerel for several weeks in summer.

A lobster cannery was built at Camden, by Portland capital, in 1878, and during the past season thirty hands were employed in canning lobsters and mackerel. In the summer of 1880 a sardine

cannery was located here for the purpose of utilizing the small herring that were reported as peculiarly abundant in the region. Weirs were built at different points along the mainland, and about the various islands, but thus far the catch, with few exceptions, has been so small that the cannery has not been fully supplied. A scarcity of herring has resulted in experiments in the canning of mackerel, and Mr. Sellmann, the proprietor, has succeeded in producing a very palatable article which is now being placed upon the market under the name of "broiled mackerel." The fish are received with great favor by the trade, and the demand for them is constantly increasing. The process of preparation is radically different from that heretofore employed in the canning of this species. Fat mackerel of small size are selected, and after their heads and tails have been removed, the fish are thoroughly cleaned and washed; they are then spread on wire trays and placed on a revolving frame in a large oven, where they are broiled for several minutes in a manner similar to that by which the sardines are prepared. When thoroughly cooked, they are taken out, and, after cooling, packed in tin cans with tomato or other sauce and hermetically sealed. Mr. Sellmann has certainly made an important discovery, and there is every reason to believe that the business begun by him will develop enormously within the next few years.

26. THE FOX ISLANDS.

THE LOCATION AND IMPORTANCE OF THE ISLANDS.—The Fox Islands, including the islands of Vinal Haven and North Haven, are situated in the mouth of the Penobscot River, about midway between either shore. They were first permanently settled in 1765, and incorporated under the name of Vinal Haven in 1789, North Haven being set off in 1846. The southern island is one huge mass of granite, with hardly a patch of soil large enough to warrant any one in engaging in agriculture. For this reason nine-tenths of the men are employed in the granite quarries at Carver's Harbor, which rank among the most important on the continent. The northern island is quite different, and though very rocky in parts has much arable land, and a large part of its people are engaged in farming.

The location of the islands in the vicinity of excellent fishing-grounds has naturally led many of the inhabitants to engage extensively in the fisheries. The first settlers are said to have been fishermen who came to the region for the purpose of prosecuting their work to better advantage.

THE FISHERIES OF VINAL HAVEN.—According to Mr. James Roberts, Vinal Haven had twelve to fifteen sail of Chebacco boats, ranging from 15 to 30 tons, engaged in the fisheries as early as 1817, the smaller ones fishing along the shore while the larger ones went to the Seal Island grounds and Brown's Bank. The fleet was gradually increased by purchase from Cape Ann and elsewhere, and before 1830 a larger and better class of vessels had been brought to the town.

The Labrador fisheries, says Mr. Roberts, began in 1804, and were continued to 1840, though the business was never extensive. One season two or three vessels would engage in this fishery, and for several years following none would be sent.

The Magdalen herring fisheries have been peculiarly important and extensive. They began about 1830 and continued without interruption till 1858. The height of the fishery was from 1840 to 1850, when eight or nine sail went yearly, starting early in April and returning late in May. The herring were landed on the island, where the bulk of them were smoked. Some crews contracted their catch in advance to the Vinal Haven dealers, agreeing to land their cargoes at a stipulated price. The crews often purchased their fish from the natives, though this practice was not universal, and many of them "went on shares," catching, salting, and smoking their fish, and carrying them to Boston to be marketed. As far as we could learn, but one vessel from Vinal Haven has fished on Grand Banks, and this for but one or two years only. One vessel, the

Black Swan, made two trips to George's in the winter of 1861–'62, after which the business was abandoned on account of the danger attending the work.

As has been said, the fisheries continued to increase from year to year from the first settlement of the island to the middle of the present century. They were most prosperous between 1845 and 1858, when from ninety to one hundred sail were owned at Vinal Haven, and thirty-five or forty belonged at North Haven. Probably four-fifths of these were under 50 tons, carpenter's measurement. These vessels usually fitted at Castine, but cured their fish at home and sold them to the Boston dealers. According to Mr. David Vinal, Vinal Haven alone marketed $70,000 worth of dry fish in 1855.

The first real hindrance to the prosecution of the fisheries was the civil war, which called many of the fishermen to the South. Later, large quarries were opened, and as these furnish regular employment to the men at good wages, many have sold their vessels and remain at home. Others have gradually drifted into the lobster fishery, finding it more profitable than any other branch of the fisheries of the region.

THE FISHERIES OF NORTH HAVEN.—North Haven continued to use small vessels and Chebacco boats for many years. Mr. Nelson Mullin informs us that in 1845 the largest vessel on the island was the Hawk, of 44 tons, old measurement. About 1850 a larger class of vessels was purchased, and as the fisheries of Vinal Haven decreased those of North Haven became more extensive. Soon a number of these vessels were sent regularly to the banks for cod in the spring, after which they fitted for "the Bay" mackerel fishery. By 1861 some of the larger craft were engaged in the mackerel fishery during the entire season, going south in spring and following the fish northward as the season advanced.

In 1879 there were twenty vessels, aggregating 636.09 tons, fishing from North Haven. These were valued at $22,625, and required the services of one hundred and forty-five men. Of the entire fleet six were engaged exclusively in the mackerel fisheries, three of them going south in the spring. Three of the remaining fourteen fished for cod, and the rest were engaged in the shore fisheries for cod, haddock, pollock, hake, mackerel, and herring. During the same year Vinal Haven had twenty vessels aggregating 390.55 tons, engaged in the fisheries during some part of the year. The fleet was valued at $15,550, and carried ninety-eight men. Two of the vessels were engaged in carrying lobsters to the local canneries, and all but two of the remainder fish on the inshore grounds.

The boat-fishermen of the island engage chiefly in the capture of lobsters during the spring and early summer, and in a limited fishery for mackerel in midsummer, and for hake in the fall. The lobster fishery, according to Mr. Vinal, began about 1851, when J. B. Hamden, of Boston, built a cannery at Carver's Harbor. This was operated regularly up to 1859, when it was closed. From that date nothing was done till 1870, when Portland parties bought the property, and have continued the business to the present time. Mr. Mullin informs us that a cannery was built at North Haven in 1857. Each of these canneries puts up both lobsters and mackerel, the two employing a total of sixty-five hands during the height of the season. There are now 180 boat-fishermen living on the islands. About 170 of these are engaged in the lobster fishery from early spring till the 1st of August, some of them continuing the work throughout the entire year. The small lobsters are usually sold to the canneries, and the large ones are carried to Portland, Boston, and New York by the smacks that come regularly to the region. The men tend about sixty pots each, setting them on almost any of the rocky ledges in the vicinity of the island. When the mackerel arrive many of the above fishermen, together with a number of farmers and quarrymen, spend a few

weeks in their capture, after which the landsmen return to their work on shore and the others fish for cod, hake, and haddock till cold weather sets in.

A greater part of the fish caught by the small vessels and boats are sold to dealers, or landed at the stand of some professional curer to be prepared for the market. In 1879 there were nine curing stands on the two islands, employing an average of two men each. The quantity of fish cured during the season, including 1,060 quintals handled by the boat-fishermen, was 18,400 quintals, the greater part being sold in Boston.

G.—THE WALDOBORO' DISTRICT.

27. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

ORIGIN AND DEVELOPMENT OF THE FISHERIES.—The Waldoboro' customs district, which includes the coast-line between Camden and Booth Bay, as well as the islands of Matinicus and Monhegan, is from a historical standpoint one of the most interesting in the United States. It was visited by European voyagers as early as 1602, and by 1617 British merchants sent vessels regularly to Monhegan to engage in the fisheries. It was originally included under the Pemaquid patent, granted by King Charles I to Elbridge and Aldsworth in 1629. According to Williamson, the section lying between Sagadahoc and Saint George had a population of 500 as early as 1630; of this number it may fairly be inferred that two-thirds were within the present limits of the Waldoboro district. Nearly all of the early settlers came to the region to engage in the fisheries, which at that time formed the principal occupation of the people.

The district is now quite thickly settled. It includes the cities of Rockland, Thomaston, and Damariscotta, and several small villages. Many of the inhabitants devote their attention to agriculture, but a majority of those living along the coast are engaged in the fisheries, while not a few are employed in ship-building or are dependent upon the coasting trade.

THE VESSEL AND BOAT FISHERIES.—The fishing vessels of the region have, as a rule, been quite small, and now as in the past, only a few large ones are owned in the district. Those of suitable size are sent to the more important fishing grounds, but the majority are engaged in the shore fisheries only. The present fleet numbers 111 sail, these averaging about 22 tons each.

The boat-fisheries have long been important, though owing to the menhaden fisheries they have decreased somewhat in certain towns during the last ten or fifteen years. They now furnish employment to 483 men, only one hundred less than the number on the vessels. Of these, 250 are engaged in the capture of lobsters during some portion of the year. The catch for the season reached 1,695,882 pounds, of which quantity 748,182 pounds were put up at the Port Clyde cannery. The remainder of the boat fishermen are engaged in the capture of cod, herring, mackerel, and other species along the shores of the outer headlands and islands.

THE MENHADEN INDUSTRY.—The menhaden fisheries of Maine began in a small way more than twenty years ago. In 1864, a factory was built at Bristol near the eastern boundary of the district. Later, the business became very important, and Bristol came to be the center of the industry for the State. In 1878, according to reliable authorities, there were eleven factories at Bristol, valued, with machinery and fixtures, at three-quarters of a million dollars. Twenty-nine steamers with five hundred fishermen were employed, and two hundred additional hands were engaged in manipulating the catch. The production of these establishments during the season was

1,176,310 gallons of oil, and 12,588 tons of guano. In 1880 no menhaden were taken and all of the factories were necessarily closed.

STATISTICAL RECAPITULATION FOR 1880.—The extent of the fishing interests of the district for 1880 will be found in the accompanying statement.

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	575	Capital in vessels and boats	$228,075
Number of boat-fishermen	483	Capital in nets and traps	33,542
Number of curers, packers, fitters, &c	70	Other fixed and circulating capital	*a* 251,125
Number of factory hands	41	Total	512,742
Total	1,169		

a Other fixed and circulating capital.—Cash capital, $16,200; wharves, shorehouses, and fixtures, $34,125; factory buildings and apparatus (including $190,800 for menhaden oil and guano factories not in use since 1878), $200,800; total, 251,125.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							*Nets.*		
In food-fish fishery:							Gill-nets:		
Active	111	2,435.79	$80,935	$18,275	$72,815	$172,025	In vessel-fisheries	588	$9,837
Idle	4	33.46	650			650	In boat-fisheries	580	7,000
In menhaden fishery	1	79.20	7,000			7,000	Purse-seines:		
In lobster fishery	11	211.91	5,800	110	1,760	7,670	In vessel-fisheries	10	5,500
In oyster fishery							In boat-fisheries	1	300
Total	127	2,760.36	94,385	18,385	74,575	187,345	Haul-seines:		
Boats.							In boat-fisheries	8	550
							Total	1,187	23,187
In vessel-fisheries	290		7,175			7,175	*Traps.*		
In shore-fisheries	437		26,925	4,830	1,800	33,555			
Total	727		34,100	4,830	1,800	40,730	Weirs	6	480
							Fykes	100	500
							Lobster pots	12,500	9,375
							Total	12,606	10,355

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	22,976,515			$296,465
Fresh fish.				
For food	337,300			4,497
For bait	2,710,000		13,550 barrels	10,162
For fertilizer	160,000		800 barrels	400
Total	3,207,300			15,059
Dry fish.				
Cod	6,550,700	2,257,472		70,546
Hake	5,368,950	2,227,120		29,828
Haddock	1,411,515	501,872		10,082
Pollock	782,420	302,176		5,396
Cusk	260,520	112,224		2,756
Total	14,374,105	5,400,864		118,608

Detailed statement of the quantities and values of the products—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Pickled fish.				
Mackerel	2,462,100	1,641,400	8,207 barrels	$47,190
Herring:				
Ordinary	1,012,750	810,200	4,051 barrels	12,153
Miscellaneous	12,000	8,000	40 barrels	200
Total	3,486,850	2,459,600	12,298 barrels	59,543
Smoked fish.				
Herring:				
Ordinary	9,118	6,588	775 boxes	155
Canned fish.				
Mackerel	55,280		38,664 cans	4,308
Lobsters.				
Fresh	947,700			34,749
Canned	748,182		138,264 cans	17,790
Total	1,695,882			52,539
Clams.				
For food	29,400		2,940 bushels	1,029
For bait	118,580		11,858 bushels=847 barrels	4,235
Total	147,980			5,264
Miscellaneous.				
Fish-oil			24,111 gallons	9,644
Sounds		29,828		26,845
Marine products used for fertilizers				4,500
Total				40,989

A description of the past and present fishery interests of the various towns of the Waldoboro' district may be found in the following pages.

28. ROCKLAND, THOMASTON, AND SAINT GEORGE.

ROCKLAND.—Up to 1848 Rockland was a part of Thomaston. At that time it was set off and incorporated under the name of East Thomaston, and in 1850 the present name was adopted. Its population in 1870 was 7,073. The principal business of the town is the quarrying of limestone for the manufacture of lime. Nearly all of the inhabitants are employed at the kilns and quarries or on the vessels engaged in the transportation of the products.

Rockland has never been a fishing town and has had very few fishing-vessels sailing from its harbor. The largest fleet at any time has not exceeded ten sail. In 1879 there were four vessels engaged in the fisheries to a greater or less extent, only one of them being constantly employed. Other small vessels were sailing under fishing license, but they fished so little that they should not be considered as dependent upon the fisheries. In 1880 a small steamer, the Hurricane, was fitted out with a purse-seine for menhaden, but not finding any of that species the captain turned his attention to the capture of mackerel. This is the first instance of a steamer being employed extensively in the mackerel fishery, and it is not impossible that this small beginning may result in such a change in the methods of fishing as to completely revolutionize the mackerel fisheries of the country.

The boat fisheries of the town are very limited, and scarcely a dozen men follow fishing for a livelihood, though fully fifty fish for mackerel for four or five weeks each summer. The bulk of the catch is sold fresh, though some are salted and sold to the local dealers. Rockland is obliged to send to Saint George and South Thomaston for a large part of her fresh fish.

The merchants of the place have a limited trade with the fishing-vessels of the islands, and they fit out fifteen to twenty-five sail each season. The greater part of these belong at Matinicus Island, which is a large fishing center. The merchants also buy many dry fish from these people to supply their country trade. According to Mr. R. F. Crie, there were handled by the four firms engaged in the fish trade at Rockland, in 1880, about 1,000 quintals of cod, 300 quintals of haddock, 200 quintals of pollock, and 50 quintals of hake, in addition to 700 barrels of mackerel, 250 barrels of pickled herring, and 100 barrels of smoked herring.

SOUTH THOMASTON.—South Thomaston, about 4 miles below Rockland, was set off from Thomaston and incorporated in 1848. It has a population of 1,693, with a small village of two or three hundred inhabitants located on the Weskeag River. It depends largely for its trade upon the surrounding country and the quarrymen of Dix and adjoining islands. There is no fishing of importance from the village, a few parties going out occasionally for pleasure during the summer only. Clams are dug in small quantities from the extensive flats in the vicinity. The town gets its supply of fish and clams, mostly through peddlers, from the boat-fishermen of Ash Point and Owl's Head.

THOMASTON.—Thomaston, at the head of navigation of the Saint George River, 3 miles southwest of Rockland, was known as a trading post as early as 1630, and was permanently settled about 1719. It was incorporated as a town in 1777, and up to 1848 included both South Thomaston and Rockland. It has a present population of 3,092. The residents are largely engaged in ship-building, confining themselves almost exclusively to the larger class of ships, brigs, and barks; and it is said more tonnage is owned in Thomaston in proportion to its population than in any other American city. Formerly the people were somewhat interested in the sea-fisheries, having a small fleet engaged regularly in the shore-fisheries; but, owing to the distance from the fishing grounds, this business has gradually died out, and now not a fishing vessel is owned here.

Clams abound in the Saint George River, near by, and several hundred barrels are dug each winter by the inhabitants. A number of parties are extensively engaged in the river fisheries, and 15 to 20 tons of smelt, with 10,000 alewives, are taken annually by means of weirs located just below the city. Mackerel and menhaden occasionally ascend the river to this point, but none of the other important salt-water species occur. Some of the inhabitants go to the lower islands in summer for a few days' fishing, but the catch is of little importance. The town is usually supplied with fish by peddlers who drive in from the fishing settlements at Owl's Head and Cushing, while a few shore-fishermen of Cushing and Friendship "run" fresh fish to the market in their boats.

SAINT GEORGE.—Saint George occupies a peninsula of land 10 miles long by 3 or 4 miles wide, lying just south of Thomaston, between the Saint George River and Penobscot Bay. It includes two groups of small islands known as George's Islands and the Mussel Ridges. The town was included in the Muscongus patent, and was visited by fishermen and others at a very early date. Williamson, in his History of Maine, says: "In 1636 there were a few settlers at the river Saint George and upon George's Island within the Muscongus patent, though they were principally fishermen." The town was set off from Cushing and incorporated in 1803, and has a present population of 2,318. It has four small settlements or post-office centers. These are Tenant's Harbor, Saint George, Martinsville, and Port Clyde. The last-named, formerly known as Herring-gut, is the principal fishing center, while the first is a village of some note with a large fleet of vessels engaged in the coasting trade.

As already mentioned, Saint George was formerly a fishing town of considerable importance, and in 1838 there were three firms that did an extensive "fitting" business, and cured annually about 6,000 quintals of fish. Many were also cured by the fishermen of the town. At that time

fish are said to have been very plenty in the vicinity, and the vessels, which, with few exceptions, were quite small, fished along the shore or in the vicinity of Matinicus Island. About 1845 the business began to decline and the dealers soon removed to other localities, thus compelling the fishermen to cure their own catch or to seek a market elsewhere. During the "war period," or from 1860 to 1868, on account of the more encouraging prospects, the business was revived, and a fleet of 25 to 30 sail of small schooners were owned in the town, most of them belonging at Herring-gut, which, from its nearness to the fishing ground, has from the first maintained its lead in the fisheries. Gradually, however, the fisheries became less important, and the people, who were already considerably interested in the coasting trade, turned their attention more largely to that business.

In 1879 fifteen small schooners were licensed for the fisheries from the various harbors of the town. Of these, only three measured over 20 tons, and some of the smaller ones were engaged largely in other work, fishing only occasionally during the season. There were no professional dealers on the mainland, but one firm located at George's Island did a considerable business, buying large quantities of fish from the fishermen of Friendship, Bristol, Cushing, and other places. About 3,500 quintals of the various species were cured during the season. This quantity includes those dried by the fishermen, as well as those handled by the dealers.

The shore-fishermen, numbering about 100, are extensively engaged in the capture of lobsters, selling their catch to the Boston and Portland smacks and to the lobster cannery at Port Clyde. Lobsters are perhaps more abundant in this district than in any other locality east of the Penobscot River. The Mussel Ridges have been continuously fished since 1850, and have probably furnished more lobsters than any grounds of similar size on this portion of the coast. During the summer months, when mackerel are abundant, many of the fishermen turn their attention to their capture for both pleasure and profit, and a good many barrels are annually taken. Most of them are sold fresh for canning, while a few are salted and shipped to market.

Other parties, including ship-builders, sailmakers, blacksmiths, and ice dealers, were formerly dependent on the fisheries, to a considerable extent, but the business is now of little importance, and they are turning their attention to the trade with vessels engaged in coasting.

29. MATINICUS ISLAND AND ITS FISHERIES.

EARLY SETTLEMENT OF THE ISLAND.—Matinicus is an important island, situated 17 miles southeast of Owl's Head. It is the largest of several rocky islands which together constitute Matinicus Plantation. It contains about 800 acres of excellent land, and has a population, including those of Ragged Island, of 250, devoted exclusively to fishing and farming. This island, on account of its early settlement, is of considerable historic interest. Williamson in his History of Maine, published in 1832, says: "The island of Matinicus was inhabited very early, and 'remains of stone houses are still apparent, generally supposed to have been built by French or Dutch fishermen,' though unknown." He also adds that "there are about 100 souls on the island, in sixteen families," saying of them: "They are a very industrious, humane, and moral people; the men are engaged mostly in fishing and farming; they own six fishing crafts from 10 to 50 tons each, and raise annually about 400 bushels of wheat and abundance of vegetables; living together in prosperity, quietude, and happiness, without law and without rulers."

THE HERRING FISHERY.—We learn from the inhabitants that as early as 1800 Matinicus vessels were engaged in the Bay of Fundy cod fisheries. The island has been a favorite resort for the herring for many years, and by 1840 there were seven smoke-houses, where 10,000

boxes of these fish were cured annually for the Boston market. This trade seems to have gradually died out, until at present there is but one smoke-house, curing in 1878 about 2,700 boxes. Herring are still quite plenty during the summer months, when many of the vessels of Cape Ann and Portland come regularly to the region to procure fresh bait. In addition to the resident fishermen, many of the smaller fishing vessels from the adjoining towns are provided with nets, and their crews often engage extensively in the herring fisheries when the fish are abundant. They not only catch bait for themselves, but sell large quantities to the vessels that come only to purchase. The herring fisheries of Matinicus yielded during the summer of 1879 about 1,870 barrels, these being used almost wholly for bait.

Haul-seines were first used at the island for the capture of mackerel in 1840, and they have been employed to a limited extent in this fishery to the present time. Purse-seines were first introduced in 1870. Trawls were frequently used as early as 1866, and are now almost universally adopted. The lobster fisheries were inaugurated in 1867, and from that time the shore fishermen have taken them in considerable numbers.

THE BOAT AND VESSEL FISHERIES.—About forty of the residents engage in the shore fisheries to a considerable extent, some of them spending a part of their time in farming. On account of the location, many of the fishermen on the mainland camp on the island during the summer months that they may be convenient to the fishing grounds, which they visit in small open boats during pleasant weather. Some of them fish for any species that happens to be abundant, while others devote themselves exclusively to some particular fishery. The vessel fleet, which numbers eleven sail, aggregates 248.51 tons, and is valued at $10,250. The quantity of fish cured on the island in 1879, including the catch of the boat fishermen, was about 3,600 quintals. With a good harbor Matinicus might develop a large fishing business, but there is little shelter for the vessels, and to guard against serious loss great care must be taken in mooring them. During a gale in 1841 nine were driven ashore, where they became a total loss. After the fishing season is over most of the fleet are now taken to Carver's Harbor for the winter.

BOAT-BUILDING.—During their leisure hours in winter many of the fishermen give their attention to boat-building. They build a peculiar style of boat that has won for itself an enviable reputation on account of its seaworthiness and its sailing qualities. They are sloop-rigged, open boats, of large size, and fine appearance, suitable for the prosecution of the winter fisheries in the vicinity of the various harbors. Since 1867 upwards of one hundred and fifty of these boats and twenty dories have been built on the island.

30. CUSHING, FRIENDSHIP, WALDOBORO', AND BREMEN.

CUSHING.—Cushing, a small farming district lying on the west bank of the Saint George River between Thomaston and Friendship, was incorporated as a town in 1789, at which time it included Saint George. Its population, numbering 704, are interested chiefly in agricultural pursuits.

Owing to its location it has been interested in the fisheries from its first settlement, but the industry has been of little importance, as it has been chiefly confined to a class of semi-professional farmers who fished only during the height of the season, and few have followed fishing exclusively.

Several traps or pounds are employed by people of the town for taking alewives as they ascend the Saint George River in spring, and three or four smelt-weirs are located along the shore, the catch being mostly sent to New York. The shore boat fishermen, eight in all, are engaged in fishing and lobstering; most of the catch being sold fresh to peddlers who carry them into the

country. Aside from these a few farmers go out occasionally, retaining the bulk of their catch for their own use. There are seventeen small fishing vessels belonging in Cushing; seven of these are lobster smacks "running" to Boston and Portland, while the others are engaged in "dragging" and "hooking" mackerel, netting herring, and trawling for cod, hake, and other species.

FRIENDSHIP; GENERAL DESCRIPTION OF THE TOWN AND ITS FISHERIES.—The town of Friendship, which includes a number of the adjoining islands, was formerly known as Meduncook. It is located just west of Cushing at the southern extremity of the peninsula formed by the Medomak and Saint George Rivers. It was first settled in 1775, and was incorporated as a town in 1807. In 1870 it had a population of 890 scattered about the town or living in the small village half a mile from the principal harbor.

From the first many of the people of Friendship have been dependent upon the fisheries. They have engaged extensively in the shore fisheries, and have had a considerable number of small vessels employed in the capture of the different species. Almost no large vessels have been owned in the town, and few of the fleet have ever ventured beyond the Bay of Fundy.

MACKEREL DRAGGING.—About 1868 the method of "dragging" for mackerel was introduced into the region from Monhegan Island, where it was employed by the Cape Cod fishermen as early as 1845. Within a few years of its first introduction nearly every vessel was provided with nets for mackerel fishing. Some of them devoted their attention to this work during the entire season, while others fished for cod till late in June, when the mackerel usually became abundant along this portion of the coast. They then laid aside their trawls and turned their attention to the capture of mackerel, following the fish as far south as Cape Cod in the fall. Up to 1877 they met with remarkable success, but from that date, owing partially to the smaller size of the fish and thier comparative scarcity, many of them failed to pay expenses and were compelled to abandon the work, and in 1879 only one was employed in this way.

THE VESSEL-FISHERIES IN 1879.—In 1879 there were thirty-four vessels owned in the town, aggregating 688.86 tons, and valued at $22,375. These furnish employment to one hundred and twenty-three men. The largest of the fleet measures but 45 tons, while the majority are under 20 tons, many of them being old and comparatively worthless. Of the entire fleet five vessels are engaged in the lobster-carrying trade, and one fishes on the Western Banks; the remainder are engaged in the shore fisheries. A greater part of the fleet "fit out" for the herring fisheries in the vicinity of Wood Island in the fall, and some of the crews succeed in catching large quantities, which they sell to the Portland and Booth Bay dealers.

FISH CURING.—A number of the Friendship farmers make a business of curing fish at a certain percentage of their value. The schooners usually take their fish directly to these persons and have them cured, after which they are sent by vessels to Portland and Boston. Including those salted and dried by the boat fishermen, fully 8,000 quintals were cured in Friendship during 1879.

THE BOAT-FISHERIES.—On account of the distance from the fishing grounds, the boat-fishermen have been obliged to build large sloop-rigged boats which are provided with small cuddies. These are known as lobster boats, and, although too small to "paper," they are sufficiently seaworthy to warrant the fishermen in venturing a considerable distance from the shore. In fact, during pleasant weather, they often remain away nearly a week at a time, though they always return to some convenient harbor at the approach of a storm. Most of the catch is "sold from the knife" to the curers at New Harbor, Brown's Cove, and other places. Much of the bait used by these parties is taken from a weir owned by several of the local fishermen.

The boats already described are admirably adapted to the winter lobster fisheries, and after the fishing season is over, many of the men devote their time exclusively to the capture of this

species. On account of the scarcity of lobsters in market at this season, the price advances, and the catch is readily sold at a good figure to the smackmen who run regularly between Friendship and Portland.

Clams are fairly abundant in the numerous mud-flats, and many are dug for bait by the local fishermen, while a few are shelled and salted to be sold to the Bremen vessels engaged in the bank fisheries.

BOAT AND VESSEL BUILDING.—As early as 1830 Friendship parties became interested in ship-building, and from that date to the present time fourteen fishing-vessels have been built. Some of these were sent to other localities, but the majority have been purchased by the Friendship fishermen. A number of the fishermen spend their leisure hours, in winter, in building boats and dories; and, during the last 15 years, twenty-five to thirty lobster-boats and upwards of one hundred and fifty dories have been built by them.

WALDOBORO'.—Waldoboro' township is located about sixteen miles southwest of Rockland. It has a population of 4,140. This region, which was first settled in 1748 by German emigrants, has important agricultural interests but small fisheries. The principal settlement is a village of several hundred inhabitants at the head of navigation of the Medomak River. The chief business of the place is ship-building and milling, though several traders depend upon the fine agricultural neighborhood for a large business. Ship-building was formerly extensive, and on one occasion fifteen ships and barks were on the stocks at once. Of late, however, the industry has declined, and in 1879 only two vessels were built.

Thirty years ago twenty-five or thirty small boats from Bremen and Bristol came regularly to the village for a market, exchanging their fish for vegetables and produce brought in by the farmers; but of late there are few transactions of this kind. There have never been any vessels from the village engaged in the fisheries, though we find two or three small schooners hailing from Waldoboro' that are owned and run by parties living a few miles down the river. Six men from the village engage in the boat-fisheries in summer, selling their catch mostly to the curers at Round Pond and New Harbor. On visiting their homes, which they do once in eight or ten days, they usually take a quantity of fish for the markets, of which there are three in the village.

The principal fishing interest of Waldoboro' is the smelt-fishery, which is carried on through the ice in winter. This began in the winter of 1876–'77, when it was accidentally found that smelt could be taken in that locality. The fishery developed with surprising rapidity, for within three weeks after the first smelts were taken over a hundred people were making a business of catching them. In the winter of 1878–'79, 103 shanties with about 225 people (men and boys) were on the ice daily during the height of the season. Some ship their fish direct to New York, others pack together and ship in larger quantities, and still others (perhaps one-half of all) sell to local dealers. Mr. G. H. Matthews estimates that during the winter of 1878–'79 not far from 16 tons were shipped. They go wholly to New York and Boston, netting the fishermen about 5 cents per pound. The best fishing is said to be on the last half of the flood-tide, though it sometimes lasts well into the ebb. The largest catch for one person during any one tide was 45 pounds, equal to about 200 fish, while the average was 15 to 20 pounds per man.

After the ice went out in the spring, some went to the shoal water near the falls and secured great quantities of the spawning smelt with dip-nets, but on account of the warm weather they could not be shipped and most of them were thrown away. One party reported his catch at 30 bushels in a single day. The law now forbids this kind of fishing.

Fishways have been built over the different dams in the vicinity, and in 1874 laws were enacted

forbidding the capture of alewives for six years. Assisted and protected in this way the fish have grown to be very abundant.

BREMEN.—Bremen, a small town with a scattered population of 796, is located on the west side of the Medomak, between Bristol and Waldoboro'. It was first settled in 1735, and was a part of Bristol until 1828. There is no village of importance, and it even lacks the advantages of a country post-office.

The fishing interests seem to have been small in early times, but they gradually increased, reaching their maximum between 1865 and 1872, when six large vessels went regularly to Western Banks and Quereau, and nine or ten smaller ones engaged in the shore-fisheries.

The first "banker" was sent from the town about 1860; vessels began going south for mackerel in the spring of 1868; and one vessel went on a halibut-fletching trip in 1869.

The only mackerel seining from this vicinity is by small vessels that fish along the coast of Maine.

The present fleet consists of ten vessels, four of these being engaged in the bank-fisheries. Besides the vessel-fleet, about forty small boats are engaged in the shore-fisheries, taking lobsters, mackerel, cod, and other species. The residents dig several hundred barrels of clam-bait each season for the Bremen and Portland bankers. About 7,000 quintals of fish are cured annually in the town.

For a number of years several parties have been more or less interested in boat-building, and since 1865 about eighty lobster-boats and thirty dories have been built.

31. BRISTOL AND ITS FISHERY INTERESTS.

EARLY SETTLEMENT OF BRISTOL.—Bristol township including within its limits Pemaquid, one of the oldest settlements on the coast, belonged to the Pemaquid patent granted to Elbridge and Aldsworth of Bristol, England, in 1629. It was visited by Gosnold in 1602, and settled as early as 1625, under a title from the Indian chief Samoset—"probably the first Indian deed to a white man."

In the fifth volume of the Maine Historical Collections we read that "in 1607 Popham and Gilbert had not been at anchor near Pemaquid two hours when they were visited by a party of savages in a Spanish shallop"; thus showing that the place had been visited earlier by Spaniards, who doubtless came not only on a voyage of discovery, but also to fish in the vicinity. Williamson, in his History of Maine, gives a table of populations of different portions of the coast for 1630, in which he claims 500 inhabitants for Sagadahock, Sheepscott, Pemaquid, Saint George, and George's Islands. He does not give the number for each place separately. The town was incorporated in 1765, and in 1790 had a population of 896, at which time it included the present town of Bremen. It now has 2,916 inhabitants. It is situated a few miles south of Waldoboro', and occupies most of the large neck of land lying between the Damariscotta River on the west and the Medomak River and Muscongus Sound on the east. The peninsula is divided in its lower half by John's Bay and River, and the larger part is again partially subdivided by the Pemaquid River, thus giving it an extensive shore-line in the near vicinity of the fishing grounds.

THE VESSEL-FISHERIES.—Bristol has long been noted for the number of its small vessels and the interest it has taken in the shore-fisheries. As early as 1830, twenty-five vessels were owned there, three or four of them being large enough to visit the Gulf of Saint Lawrence for cod, while the rest, ranging from 5 to 25 tons, were engaged in the shore-fisheries. In 1846 the first vessel was sent to Grand Banks; in 1854 the Western Bank fisheries were inaugurated; dories were first used by the Bristol vessels engaged in the latter fishery in 1868. The fishermen of the

town have never engaged in either the Labrador or George's cod fisheries, or in the bank halibut fisheries; they have sent no vessels south for mackerel, and have used purse seines only to a limited extent.

The fleet at present numbers thirty-three sail, all but nine being under 25 tons. Two fish on Quereau and Western Banks, one visits Cape Sable and the Gulf of Saint Lawrence, while the remaining thirty are interested in shore trawling, herring netting, and mackerel dragging.

THE BOAT-FISHERIES.—One hundred and ten men are employed in the boat-fisheries from Bristol, and twenty others are engaged in lobstering and clamming for three or four months. Several fish-dealers do a large business, buying extensively from the boats and vessels of the region; and parties at South Bristol have a number of vessels engaged in the offshore cod fisheries. If we include the quantity dried for family use, there were not less than 14,700 quintals of fish cured in the town in 1879.

THE MENHADEN INDUSTRY.—During the past fifteen years the menhaden fisheries of Maine have grown to enormous proportions, and Bristol has come to be the center of the fishery for the entire State. This industry has had a decided influence in reducing the value of the boat-fisheries of the town, which are now far less important than they were ten to twenty years ago. The first oil and guano factory was built here in 1864, and in 1878 the number had increased to eleven factories, valued, with machinery and fixtures, at $750,000. Twenty-nine steamers were engaged in the fishery, and five hundred fishermen with two hundred additional factory hands were employed. According to Mr. Luther Maddocks, secretary of the Maine Oil and Guano Association, these factories produced 1,176,310 gallons of oil and 12,588 tons of crude guano from 431,000 barrels of fish; and in addition sold 8,000 barrels of bait to the fishermen of the coast. Since 1878, owing to the absence of the fish, the factories have not been in operation.

OTHER FISHERY INTERESTS.—Bristol has four or five deep-water traps, in which considerable bait is taken for the shore-fishermen; and there are several small weirs in the rivers for the capture of alewives and smelts. The catch is of little importance, the greater part being used locally. Lobsters are abundant in the shore waters, and many are taken at certain seasons, the winter lobster fisheries being quite important. Clams also are quite plenty, and a good many are dug by the fishermen of John's Bay and John's River; but in other localities little attention is paid to them.

BOAT AND VESSEL BUILDING.—Capitalists of Bristol have been extensively engaged in ship-building for many years, and since 1853 sixty-three fishing vessels and ten menhaden steamers have been built in the town. The ship-yards are mostly at South Bristol, and a majority of the business has been done at that village. The town probably ranks second only to Boothbay for the entire State in this particular industry. Several firms are extensively engaged in boat-building, and quite a number of dories and other boats are built yearly for the fishermen of this and adjoining towns. One party has been employed in this work regularly for eighteen years, and has built as high as twenty boats in a single season.

MUSCONGUS ISLAND.—Muscongus Island, locally known as Loud's Island, is so closely connected with Bristol in its fishing interests as to be properly considered with that town. It is about three miles long by half to three-fourths of a mile wide. It lies a little to the eastward of the town of Bristol and has a population of 142, engaged in farming and fishing. Several small fishing vessels have been owned there from time to time, but at present the largest are mere boats, all being too small to "paper". The boat-fishermen engage in lobstering, trawling, and hand-lining during a greater part of the year, selling their catch of fish mostly to dealers at Round Pond and

New Harbor in the town of Bristol. The principal business connected with the fisheries was, up to 1879, at the menhaden oil and guano factory known as the Loud's Island Oil Works, built on the island in 1873.

32. MONHEGAN ISLAND AND ITS FISHERIES.

REVIEW OF MONHEGAN AND ITS FISHERIES FROM ITS EARLIEST SETTLEMENT.—The island of Monhegan, lying 12 miles southeast of Pemaquid Point, is about 1 mile wide by 2½ miles long. It is historically one of the most interesting localities in the State, and the early voyagers in their descriptions of the country refer to it as bearing an important relation to the early fisheries of America. Being situated at so short a distance from the land, with excellent fishing grounds on every side, it is natural that it should be a favorite resort for the Europeans who came both to catch fish and to exchange trinkets and merchandise with the natives for furs.

Capt. John Smith, in his description of New England, gives the following account of an early visit to this island:

"In the month of April, 1614, with 2 ships from London, of a few merchants, I chanced to arrive in New England, a part of America, at the Isle of Monahiggan, in forty-three and a half of northerly latitude. Our plot was there to take whales and make trials of a mine of gold and copper. If this failed, fish and furs was then our refuge, to make ourselves savers howsoever. We found this whale-fishing a costly conclusion. We saw many, and spent much time in chasing them; but could not kill any, they being a kind of jubartes, and not the whale that yields fins and oil, as we expected. For our gold, it was rather the master's device to get a voyage that projected it than any knowledge he had at all of any such matter. Fish and furs was now our guard; and by our late arrival and long lingering about the whale, the prime of both those seasons were past ere we perceived it; we thinking that their seasons served at all times, but we found it otherwise; for, by the midst of June the fishing failed. Yet in July and August some were taken, but not sufficient to defray so great a charge as our stay required. Of dry fish we made about 40,000, of corfish about 7,000. Whilst the sailors fished, myself, with eight or nine others of them might best be spared, ranging the coast in a small boat, we got for trifles near 1,100 beaver skins, 100 martens, and near as many otters; and the most of them within a distance of twenty leagues. We ranged the coast both east and west much further; but eastwards our commodities were not esteemed, they were so near the French who afford them better; and right against us in the main was a ship of Sir Francis Popham's, that had there such acquaintance, having many years used only that port, that the most part there was had by him. And forty leagues westward were two French ships, that had made there a great voyage by trade, during the time we tried those conclusions, not knowing the coast nor salvages' habitation. With these furs, the train and corfish, I returned for England in the barque; where, within six months after our departure from the Downs, we arrived safe back. The best of these fish was sold for five pound the hundredth, the rest by ill-usage betwixt three pound and fifty shillings. The other ship stayed here to fit herself for Spain with the dry fish, which was sold, by the sailor's report that returned, at forty rials the quintal, each hundred weighing two quintals and a half."*

Mr. Lorenzo Sabine, in his Report on the Principal Fisheries of the American Seas, says: "At the time the Pilgrims landed at Plymouth the island of Monhegan, in Maine, had become a noted fishing station. In 1622 no less than thirty-five ships from London and the west counties of England made profitable voyages to our shores. 'Where, in Newfoundland,' says Smith, 'a common fisherman shared six or seven pounds,' in New England he 'shared fourteen pounds.'"

* Col. Mass. Hist. Soc., vol. VI, 3d series, pp. 103, 104.

W. D. Williamson, who wrote in 1832, gave the following account of Monhegan:

"Monhegan Island was in ancient times, without exception, the most famous one on the seaboard of this State. It was the land aimed at and first mentioned by the original voyagers and fishermen about these waters, and was so noted a stage for the latter as to be sometimes called a plantation. To this the New Plymouth settlers resorted early and frequently to exchange furs for provisions. In 1626 Abraham Shurte was sent over by Elbridge and Aldsworth to purchase the island of the owner, Abraham Jennings, of Plymouth, for which he gave £50. It is situated 9 miles southerly of George's Islands, 5 leagues east-southeast of Townsend, and 3 leagues westwardly of Metinic. It contains upward of a thousand acres of good land, has a bold shore on all its sides, a large projection of rocks at its northeastward part, and has one good harbor. On its south side is the Menanah Island, of two acres, distant a cable's length, and the harbor is between the two islands, the entrance into it, on the southwest of Monhegan, being safe and easy.

"The number of people on the island is between seventy-five and one hundred, who inhabit twelve or fourteen dwelling-houses, and are the owners of the soil, industrious, moral, and well informed. They have a school-house, where their children are educated and religious meetings are attended. Fishing and agriculture are the employments of the men. They own several vessels, and while the more able-bodied are engaged in the former business at home and in the codfishery on the Grand Banks, the old men and boys cultivate the land, raising good crops, keeping cows, swine, and sheep.

"The island, though within the county of Lincoln, belongs to no town. It is a democratic community. It has no officers of any kind, not even a justice of the peace. The people's affairs are governed and guided by themselves conformably to certain prudential rules and usages which they have mutually established. They have paid one United States direct tax, otherwise they are strangers to taxation, except what they pay toward the support of their school."*

THE FISHERIES SINCE 1820.—From a conversation with Mr. Henry T. Studley, one of the oldest fishermen of the island, Captain Collins gathered the following information relative to the more recent fishing interests of Monhegan:

As early as 1820 residents of the island commenced building small vessels for use in the fisheries. This business continued till 1837, since which time little has been done. The two principal builders were Henry Trefethen and Josiah Sterling, these building eighteen vessels, aggregating about 525 tons. Some of the larger vessels built by these parties were engaged in the Grand Bank cod fisheries, while others went to the Gulf of Saint Lawrence for cod and mackerel. Mr Studley estimates that from 1830 to 1840 eight vessels were engaged regularly in the bank fisheries, and that 9,000 quintals of fish were cured yearly on the island. From this time the bank fisheries declined very rapidly, and were soon wholly discontinued.

The method of "dragging" for mackerel, which has been so extensively employed by the fishermen of the island, was first introduced into the locality by Capt. N. E. Atwood, of Provincetown. In the summer of 1845 he, in company with a brother, came to the island with a "gang" of nets and fished from dories, going out from the shore every night when the weather was suitable. In speaking of his work, he says: "We were gone from home four weeks, and made $90 to a share." Other Cape Cod fishermen joined him the following season, and soon the island fishermen provided themselves with nets and took part in the fishery. In 1859 there were seventeen boats, with two men each, engaged in mackerel dragging from the island. In 1862 four purse-seines were bought by the residents and fished from small boats. This method has been fairly successful, and three seines are still owned by the Monhegan fishermen, who use them dur-

* Williamson's History of Maine, vol. I, p. 61.

ing the height of the mackerel season. In 1868 some of the fishermen from other towns in the vicinity engaged in mackerel dragging more extensively, using small vessels and going further from the shore. About the same time a few small vessels were bought for this purpose by the islanders, who found the business a profitable one.

PRESENT CONDITION OF THE BOAT-FISHERIES.—With the exception of the early Grand Bank fisheries, boat-fishing has been the chief occupation of the people. Mr. Studley places the height of this business in 1864, when $35,000 worth of fish were taken by fifty men, the "high-liner" stocking $1,600. Few, if any, lobsters were taken prior to 1876, and now only eight men are engaged in this fishery. The catch is sold largely to the Portland and Boston smacks.

There are now about 150 inhabitants on the island. In 1879 forty-two men and eight boys engaged in the boat-fisheries, while several others fished from the two small schooners that composed the Monhegan vessel fleet. The quantity of fish cured was 3,460 quintals, the greater part of which were sold in Portland.

33. DAMARISCOTTA AND ADJOINING TOWNS.

DAMARISCOTTA.—Damariscotta is situated at the head of navigation on the Damariscotta River, about 15 miles from its mouth. Originally a part of the Pemaquid patent, it was separated from Bristol and Nobleborough and incorporated in 1847. Its present population is 1,332. The principal village, bearing the same name, is situated on the river two miles below the head of tide-water. It has long been engaged in ship-building, the work being confined chiefly to vessels of large size, and only five fishing vessels and four menhaden steamers have been built during the past twenty years.

The town has never been engaged to any extent in the sea fisheries, and though small parts of several menhaden steamers are owned by the residents, neither steamers nor schooners make their headquarters in Damariscotta, and they may be properly considered as belonging to other localities.

The fish dealers get their supply of fresh and salt fish at the mouth of the river in summer, but in winter all of the fresh fish are shipped by rail from Portland and Gloucester.

Quite a number of farmers and mechanics visit the fishing grounds once or twice each season, combining pleasure and profit. They usually catch and salt enough fish to supply their families during the greater part of the year. In addition, some of the inhabitants of the place engage extensively in the winter smelt fisheries of Broad Bay, near Damariscotta Mills, sending their catch to New York and Boston.

DAMARISCOTTA MILLS.—Damariscotta Mills is a village of 200 inhabitants at the head of tide-water on the Damariscotta River, two miles above the city. It is located on the stream that connects Damariscotta pond with the river. This pond—a sheet of fresh water twelve miles long by one-fourth to one and a half miles wide—has long been a favorite breeding place for the alewives. During their spring migrations great quantities are caught by means of dip-nets, one man frequently dipping 2,000, and occasionally as many as 10,000 fish in an hour. In 1879 it is estimated that about 600,000 fish were taken, the town letting the fishing privilege for $2,000.

There is a very extensive smelt fishery in the bay just below the village. Mr. T. J. York informs us that about 25 tons are taken yearly, four-fifths of them being shipped to New York and Boston for a market.

Eels are also taken from their winter quarters in the mud by means of spears.

The above are the only fisheries of note from the place, as it is too far from the fishing or clamming grounds to admit of a profitable business. Occasionally some of the farmers and mechanics

of the vicinity, in common with those of Damariscotta and New Castle, go down the river on a fishing trip during the summer, but the catch is unimportant.

NOBLEBORO'.—Nobleboro' is an agricultural section lying to the north of Damariscotta. It has a small interest in the smelt and alewive fisheries in common with the people of Damariscotta Mills. Aside from this it has no fishery interests, for the town, which is devoted almost exclusively to agricultural pursuits, is 20 miles from the sea, with only fresh water within its boundaries. It is not uncommon for some of the residents to visit the fishing grounds at intervals during the summer months to catch a supply of cod and hake for their own tables.

H.—THE WISCASSET DISTRICT.

34. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

ORIGIN AND DEVELOPMENT OF THE FISHERIES.—The Wiscasset customs district, extending from Damariscotta River to Georgetown, was settled as early as 1630 by families who came to the region to engage in the fisheries. The first residents located in the vicinity of Booth Bay. We know little of the fishing interests of the district prior to 1800, but at this time a fleet of small vessels was sent to the Bay of Fundy and to Cape Sable for cod, while vessels of similar size were engaged in the shore fisheries along the coast of Maine. By 1817 large schooners were built to engage in the Labrador fisheries. Between 1840 and 1845 ten to twelve sail of vessels were sent annually to Labrador, and the fishery was continued to a comparatively recent date, though it is now entirely abandoned. Considerable attention has been paid to the capture of mackerel from the beginning of the century, and by 1825 jigs were introduced.

In 1837 several vessels were sent to the Bay of Chaleur for mackerel, this locality having since been visited regularly by a large fleet.

The first purse-seine used by the fishermen of Maine for the capture of mackerel was brought to Damariscove in 1860, and in 1861 it was taken to Southport, where it was used by the boat-fishermen for one or two seasons, after which it was manipulated by the crew of a small schooner. No vessels were interested in the Southern mackerel fishery off the coasts of Virginia and New Jersey prior to 1867.

THE HERRING AND MENHADEN FISHERIES.—The herring fishery in the vicinity of Southport was formerly quite important, and a number of small craft from different localities came to the region to secure cargoes. A large part of the catch was smoked and many of the fishermen owned small smoke-houses for preparing their fish. By 1830 vessels were sent to the Magdalen Islands to catch or purchase herring which were to be smoked for the West India trade. This business continued to be important up to 1855, and cargoes have been landed from time to time since that date.

Six menhaden oil and guano factories are located in the town of Booth Bay. The first was built in 1866, and the fishery was prosecuted with much vigor up to the spring of 1879, Booth Bay having, next to Bristol, the most extensive menhaden fisheries in the State.

SHIP-BUILDING.—Nearly all of the towns of the district have been more or less interested in ship-building, and not less than three hundred fishing vessels have been launched during the last fifty years. The ship-builders of East Booth Bay at the mouth of the Damariscotta River have built

fully half of the entire number, while those of Booth Bay proper, North Booth Bay, and Westport, have been extensively engaged in the work.

PRESENT CONDITION OF THE BOAT AND VESSEL FISHERIES.—The fishing fleet at present numbers sixty-three sail, sixty of them being actively employed. Nearly half of the fleet are engaged in the shore fisheries, the remainder being employed in the offshore fisheries for cod and mackerel.

There are in the district one hundred and forty-six boat-fishermen. These spend a greater part of their time in the capture of "ground-fish," though some of them are extensively interested in the lobster fishery, which is fairly important.

STATISTICAL RECAPITULATION FOR 1880.—The following table gives a detailed statement of the fishing interests of the district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	561	Capital in vessels and boats	$227,620
Number of boat-fishermen	146	Capital in nets and traps	23,586
Number of curers, packers, fitters, &c	87	Other fixed and circulating capital	a 159,237
Number of factory-hands	27	Total	410,443
Total	821		

a *Other fixed and circulating capital.*—Cash capital, $28,600; wharves, shorehouses, and fixtures, $39,100; factory buildings and apparatus, $92,137 (of this amount $88,387 is for menhaden oil and guano factories not used since 1878); total, $159,237.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							*Nets.*		
In food-fish fishery:							Gill-nets:		
Active	60	2,461.87	$87,275	$15,795	$97,385	$200,455	In vessel fisheries	51	$815
Idle	2	152.98	4,900			4,900	In boat fisheries	125	1,500
In menhaden fishery	1	35.95	2,500			2,500	Purse-seines:		
Total	63	2,650.80	94,675	15,795	97,385	207,855	In vessel fisheries	30	16,500
Boats.							Haul-seines:		
In vessel fisheries	422		11,750			11,750	In boat fisheries	2	250
In shore fisheries	128		5,855	1,460	700	8,015	Total	208	19,065
Total	550		17,605	1,460	700	19,765	*Traps.*		
							Fykes	20	100
							Lobster-pots	5,895	4,421
							Total	5,915	4,521

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	17,111,666			$261,685
Fresh fish.				
For food	198,000			2,640
For bait	592,000		2,960 barrels	2,220
For fertilizer	100,000		500 barrels	250
Total	890,000			5,110
Dry fish.				
Cod	7,462,325	2,571,632		80,365
Hake	1,731,510	718,256		9,620
Haddock	337,995	120,176		2,414
Pollock	285,070	110,096		1,966
Cusk	316,080	136,416		3,349
Total	10,133,580	3,656,576		97,712

Detailed statement of the quantities and values of the products—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Pickled fish.				
Mackerel	4,969,500	3,313,000	16,565 barrels	$95,249
Herring:				
Ordinary	20,000	16,000	80 barrels	240
Miscellaneous	3,000	2,000	10 barrels	50
Total	4,992,500	3,331,000	16,655 barrels	95,539
Smoked fish.				
Herring:				
Ordinary	18,824	13,600	1,600 boxes	320
Canned fish.				
Mackerel	200,000		166,308 cans	17,324
Lobsters.				
Fresh	428,800			15,723
Canned	367,342		68,988 cans	8,896
Total	796,142			24,619
Clams.				
For food	9,500		950 bushels	333
For bait	71,120		7,112 bushels = 508 barrels	2,540
Total	80,620			2,873
Miscellaneous.				
Fish-oil			16,324 gallons	6,530
Sounds		9,620		8,658
Marine products used for fertilizers				3,000
Total				18,188

35. NEW CASTLE AND EDGECOMB.

NEW CASTLE.—New Castle is practically a part of Damariscotta, though it is on the opposite side of the river and has a separate municipal government. The residents of the village, like those of Damariscotta, engage to a greater or less extent in the smelt and eel fisheries of Damariscotta Mills during the winter months. Two or three "hedges" have been placed in the river for the capture of alewives on their way to the spawning grounds, but these are fished to a limited extent only, and the catch is very small. The supply of fish is obtained largely from the towns at the mouth of the river in summer, and from Portland, Boston, and Gloucester in winter.

EDGECOMB.—The town of Edgecomb, lying just north of Booth Bay, extends from the Sheepscott River on the west to the Damariscotta on the east. It has a population of 1,056, the majority being engaged in agriculture. Two small fishing boats are owned in the town. These visit the fishing grounds occasionally during the summer months and return with small fares of cod, hake, and mackerel, which are peddled among the residents of the region, since there are neither fish markets nor curing-stands in the town. A few of the inhabitants of the lower part of the town lobster and clam to a limited extent, and a number of small weirs have been built along the banks of both rivers for the capture of smelt and alewives, but the catch is so small that it may be wholly neglected.

36. BOOTH BAY AND ITS FISHERIES.

EAST BOOTH BAY.—East Booth Bay, locally known as Hodgdon's Mills, is a little village in the eastern part of the town of Booth Bay, at the mouth of the Damariscotta River. It has a fleet of nine vessels. Eight of these are engaged in the shore and Bay of Fundy fisheries and one visits

the Western Banks in early summer and fishes for mackerel later in the season. Twenty-five residents of the village and adjoining shores are engaged in the boat-fisheries. The principal part of their catch consists of cod, hake, mackerel, and lobsters.

The quantity of fish cured annually at East Booth Bay varies greatly. At the present time it is about 3,500 quintals. Most of the menhaden factories are situated in this part of the town. The village has long been noted for the number and quality of the fishing vessels launched from its ship-yards, and they are now found in all the principal fishing towns from Cape Cod to Eastport. Over one hundred and fifty sail have been built within the past fifty years, some of them being among the staunchest and swiftest on the coast. The subject is treated more fully under the Booth-Bay fisheries.

BOOTH BAY AND ITS EARLY FISHERIES.—The town of Booth Bay occupies the southern portion of the peninsula formed by the Sheepscott and Damariscotta Rivers. It was first settled about 1630, and was known as Cape Newagen for many years. Later the name was changed to Townshend, and in 1842 it was again changed to Booth Bay, the first name being reserved for the extreme southern point of the island of Southport and the second for the principal harbor of the town. It was incorporated in 1764, and at the present time includes the post-office districts of Booth Bay, North Booth Bay, and East Booth Bay, with a total of 3,200 inhabitants.

The location is an excellent one for the prosecution of the sea-fisheries, and fishing has been the principal occupation of a large number of the inhabitants from the time of the earliest settlement. We find no records dating back of the present century, but in 1800 the fleet was composed almost exclusively of small craft fishing along the shore or visiting the grounds in the vicinity of Cape Sable. The fleet continued to increase slowly, reaching its maximum shortly after the close of the rebellion.

The Labrador fisheries were prosecuted from this region as early as 1817, when the schooner Ruby was sent out from North Booth Bay. This fishery continued to be followed quite regularly by a few vessels from this and other ports of the town for some time. It reached its height about 1844, when the fleet numbered eight or ten sail. Six years later it was entirely discontinued. The smallest craft that ventured to these distant grounds was the schooner Frederick, of 45 tons, carpenter's measurement, belonging at East Booth Bay.

The fishermen of the town have been largely interested in the mackerel fisheries for upward of seventy-five years. Jigs were introduced from the westward by 1825. The first bait-mill was bought before 1830. Seines were first used about 1865; and the first vessels were sent South to engage in the spring mackerel fisheries in 1867. During the early days the mackerel were sent to Boston, Gloucester, and Portland for inspection; later they were landed at Southport; and it was not until 1864 that Booth Bay firms became interested in packing and inspecting their own catch. Since that time the business has been quite important.

Trawls were first introduced in 1858, when the schooner Albatross fitted out with them for a trip to the banks. In 1860 dories were first used for hand-lining on the Western and Grand Banks. The Grand Bank fisheries have never been extensively prosecuted.

PRESENT CONDITION OF THE FISHERIES.—At present the town owns forty-three vessels of over 5 tons burden. These are distributed in the different fisheries as follows: Mackerel seining, eight; seining and trawling, six; Western Banks and Quereau cod fisheries, six; Grand Banks cod fisheries, one; and shore fisheries, twenty-two. A number of the vessels are partly owned by Portland capital, and a few land their catch in that city, while others sell at Boston and Gloucester. The boat-fishermen, of which there are ninety-seven, fish during the summer for cod, hake, and lobsters,

some going to the outer headlands or islands to camp during the height of the season. The quantity of fish annually cured in the town is about 17,000 quintals.

Lobstering and clamming are not much followed by the fishermen, as neither species seem to be as plenty as in the districts on either side. A lobster cannery was built here by Portland parties in 1876, and by sending its smacks as far as Pemaquid Point on one side and to Small Point on the other a fair supply is obtained. A good many mackerel are put up at the cannery during the season.

THE MENHADEN INDUSTRY.—Between 1867 and 1878, the principal fishing interests of the town centered in the menhaden oil and guano factories located at East Booth Bay. In this fishery the town ranked second in importance in the State. Four of the factories were built in 1866 and a fifth the following year. About the same time another was transferred to the town from Southport, where it had been in operation but a short time. These six factories had a total value in 1878 of $146,612. At this time the firms owned and equipped seventeen steamers at a cost of $216,800, and captured 170,380 barrels of fish. They employed two hundred and twenty-one fishermen and eighty-six factory hands, and made 475,247 gallons of oil and 4,948 tons of fish guano.

INDUSTRIES DEPENDENT ON THE FISHERIES.—The principal business depending upon the fisheries for its support is ship-building, and in the number of fishing vessels launched from the yards Booth Bay ranks first in the State, the little village of East Booth Bay alone having built over one hundred and fifty sail within the last fifty years, while those built in other parts of the town would swell the aggregate to about one hundred and seventy-five, most of them being of large size. Quite a number of schooners, ships, and brigs have been built during the same period. One firm now does a small business in boat-building.

The entire commercial interests of the town are largely dependent upon the fisheries, and most of a vessel's needs, in the way of repairs, gear, or provisions, can be supplied. There are four sail-lofts and two marine railways, with a considerable number of mechanics who are busy in keeping the schooners in repair. In 1870 store-houses were built to supply the fishing-fleet with ice for the preservation of bait and market-fish. In 1874 the Cumberland Bone Company built extensive works in the lower part of the town for the manufacture of fertilizers, and in 1878 they used 1,500 tons of "green" fish-chum, valued at $15,000, in the preparation of their products.

A company for the manufacture of sea-weed fertilizers, known as the Algæ Fertilizer Company, was formed in 1869; the work was continued for about three years, when the small demand for the products forbade further operations.

NORTH BOOTH BAY.—North Booth Bay, including Sawyer's, Barter's, and Hodgdon's Islands is an agricultural section extending along the east side of the Sheepscott River. There is no village of note, the population being considerably scattered. Formerly quite an extensive fishing business was carried on by people living along or near the shore, and vessels were sent to Labrador for cod, and to Magdalen Islands for herring, beginning with 1831, only a few years after the origin of these fisheries. It has now a fleet of seven vessels engaged in the fisheries: three of these divide their time between trawling and seining; one goes only to Western Banks and Quereau, and three fish along the shore. Fifteen men are employed in boat-fishing during a greater part of the summer, and in lobstering and clamming in the spring and fall. The majority of the vessels are fitted and owned by two firms that cure annually about 4,200 quintals of codfish, which are sold largely in Boston and Portland.

37. SOUTHPORT AND ITS FISHERIES.

SOUTHPORT.—Southport, a high rocky island about 6 miles long by 3 miles wide, lying to the south of Booth Bay, is separated from the mainland by a deep but narrow channel. It formed a part of Booth Bay until 1842, when it was incorporated under the name of Townsend; in 1850 it received the name of Southport, which it has since retained. The island has a population of 684, all being largely dependent upon the fisheries for a livelihood.

Its fishing interests have been extensive for many years, and its vessels have met with more than average success, bringing considerable money to the inhabitants, who are at the present time in a better financial condition than those of the average fishing community. The fisheries of this island, like those of Booth Bay, originated with the earliest settlers, when boats and small vessels fished only in the immediate vicinity. The residents engaged to a limited extent in the Labrador cod fisheries, sending their last vessel as late as 1856.

Vessels from this place visited the banks near Cape Sable and Sable Island before 1825, and they have continued to resort to these grounds ever since. Mackereling came into prominence about this time, and in 1827 the first bait-mill was brought here from Gloucester by the schooner Echo. The first vessel sent from Southport to the Gulf of Saint Lawrence was the schooner Olinda, in 1837. Mackerel were inspected here as early as 1855. In 1861 a purse-seine was purchased by resident fishermen from parties living at Damariscove; it was used for several years by boat-fishermen, who rowed out from the shore after the fish had been discovered. In 1868 vessels from the island engaged for the first time in the spring mackerel-fisheries off the shores of Virginia and New Jersey. The schooner American Eagle was the first to supply herself with dories for bank-fishing in 1858, and in 1860 trawls were introduced by the schooner Island Queen.

Southport has occasionally sent vessels to engage in the winter fisheries of George's Banks; two schooners went to this locality in 1859; one in 1862; and two, several years later; but the hardships and dangers encountered soon caused the fishermen to abandon the business.

The smoking of herring for family use dates back beyond the present century, and in 1806 quite a quantity of herring were smoked annually by the inhabitants of the island. Each fisherman had a little smoke-house on the shore, and took large quantities of "sperling" (young herring) from the waters of Ebenecook Harbor, which has long been a favorite resort of the species. A little later twenty-five sail of vessels frequented this locality from different fishing towns along the shore, and either smoked their catch on the island or carried it elsewhere for that purpose. The business has not yet entirely died out, and in 1879 four fishermen smoked 1,600 boxes for the Boston market.

The fishing fleet from the island now numbers thirteen sail, distributed as follows: Eight in the bank fisheries, four seining and trawling during different parts of the same season, and one employed in seining. In addition to these, half a dozen small craft just under 5 tons engage in the shore-fisheries. The boat-fishermen, numbering twenty-seven men, reside mostly at Cape Newagen, near the southern extremity of the island. They usually fish during the summer months, after which they turn their attention to lobstering and clamming. The quantity of fish cured on the island is annually decreasing, and is now about 10,300 quintals.

38. WISCASSET AND WESTPORT.

WISCASSET.—The town of Wiscasset, on the west bank of the Sheepscott River, near the head of navigation, was first settled in 1663 under the name of Pownalboro. The present name was adopted in 1802. In 1840 it had a population of 2,314, which in 1870 was reduced to 1,978. The business of the place is chiefly dependent on the large lumber interests.

According to Mr. W. P. Lennox, Wiscasset was formerly extensively engaged in the fisheries, and being the only port in the district all of the vessels of the region were obliged to go there to paper. The business began about 1822, and increased so rapidly that in 1832 $3,000 was paid in bounties to the fishermen belonging to the Wiscasset district.

The fishery was at its height between 1858 and 1860, when thirty to thirty-five sail of "bankers" and an equal number of shore-vessels fitted at Wiscasset. Many of them were owned wholly or in part in the town, and the rest belonged to the towns of Woolwich, Southport, Westport, and Booth Bay, where the bulk of the catch was landed to be cured for market. The vessels usually made short trips in the early spring to Cape Sable, after which they went to "the Cape shore" for cod, returning in time to engage in the mackerel fisheries of the New England coast in the late summer and fall.

The method of trawling was introduced into the region about 1845, and from the first was remarkably successful among the "bankers," the vessels securing full cargoes of larger and better fish in about two-thirds of the time required with hand-lines. Very little bait was carried by the Wiscasset vessels, the greater part of them using herring that were taken in gill-nets from day to day while the vessel lay at anchor on the fishing grounds The vessels were "fitted at the halves," and the crews were gathered from the surrounding country.

From 1860 the fishing interests of the town gradually declined, and by 1873 Wiscasset had entirely lost the trade in this line, the vessels for the most part fitting in Booth Bay and Portland.

At the present time Wiscasset has only one vessel, a schooner of 53.59 tons, engaged in the fisheries. This vessel carries twelve men, and lands her catch wholly at Gloucester and Portland, seldom returning home during the fishing season. There are no boat-fisheries of note, and, aside from the vessel mentioned, the only fishing consists in the capture of a few fish and lobsters for the Wiscasset market by fishermen belonging at Edgecomb and other towns nearer the fishing grounds.

A small part of the business of the town is indirectly dependent on the fisheries. One of the largest saw-mills is extensively engaged in the manufacture of fish-box shooks, shipping annually to Gloucester and Provincetown from 22,000 to 25,000 in number, valued at $10,000. The mill employs about fifty men and boys, and is engaged chiefly in the manufacture of sugar-box shooks and hogshead heads for the West India trade; and it is only the refuse lumber, that cannot be used for this purpose, that is worked up for fish-boxes. The shooks are shipped by vessel, fully nine-tenths of the entire quantity going to Gloucester. About one-fourth of the business of the mill is dependent upon this trade.

WESTPORT.—Westport is a narrow island forming the western bank of Sheepscott Bay. It lies just south of Wiscasset, extending to the lower part of Georgetown, a distance of 10 or 11 miles. It was formerly a part of Edgecomb, but was set off and incorporated in 1828. In 1870 it had a population of 699.

Many dilapidated buildings along the shores of the island mark the location of defunct curing-stands, where formerly an extensive business was done, showing that Westport must have taken a prominent place among the fishing towns of the State. Ship-building was carried on to some extent, and two or three yards furnished a good many vessels to this and adjoining towns. Westport vessels joined the Booth Bay fleet in the Labrador fisheries in 1819, and three or four schooners were sent yearly until 1850. Vessels were sent from Westport to the Magdalen Islands for herring at an early date, the schooner Banner visiting the locality before 1830. By 1840 six sail of large vessels went regularly to these islands in the early spring, bringing their catch home in bulk, where the fish were smoked and boxed for the Boston market. Several parties engaged extensively in the business, and large smoke-houses were built in different parts of the town.

Mackerel jigging was introduced about 1820, and the method is still in use. Attempts were made to introduce purse-seines into the fisheries of the island in 1872, and again in 1875, but the experiments resulted in considerable loss to the parties interested, and the method was finally abandoned. Captain McCarty was the first to supply himself with dories in the bank fisheries, in 1872, but they have never come into general use.

The present fleet consists of seven vessels, three visiting the banks with hand-lines during a part of the year, and joining the other four in the shore fisheries during the balance of the season, which with some of them lasts through a greater part of the winter.

The boat-fishermen, numbering twenty-eight, generally camp on the outer islands during the height of the fishing season in summer, returning to their homes occasionally for a supply of provisions. These follow fishing during a few months only, spending the rest of their time in farming.

There are at present three curing-stands on the island, only one of them doing any extensive business. The amount of fish handled varies considerably from year to year. In 1878, according to Mr. B. F. Jewett, the quantity, including those cured by the boat-fishermen, was about 3,400 quintals. In 1879 not over 2,500 quintals were handled, as a considerable portion of the catch was landed in other places.

I.—THE BATH DISTRICT.

39. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

The Bath customs district, including the coast-line between Westport and Harpswell, contains some of the oldest settlements on the coast of Maine. It includes the Kennebec River, which was the favorite resort for the Europeans who came in early times to trade with the natives. European fishermen came to the locality during the first quarter of the seventeenth century, and the region has never since been wholly deserted. Between 1800 and 1870 the fisheries were extensively prosecuted from a number of the more important settlements. Since that time they have been less important, and, if we neglect the residents of Georgetown, few persons are at present extensively interested in them. Bath had formerly a large trade with the fishing-vessels of the vicinity, and at present has anchor and cordage factories which supply a considerable percentage of the local fleet, besides shipping large quantities of their goods to other localities. It has also extensive ship-building interests, and many of the best fishing-schooners of New England have been built here.

STATISTICAL RECAPITULATION FOR 1880.—The following statements show in detail the present condition of the fishing interests of the district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	73	Capital in vessels and boats	$36,545
Number of boat-fishermen	191	Capital in nets and traps	7,026
Number of curers, packers, fitters, &c	30	Other fixed and circulating capital	*a*25,600
Total	294	Total	69,171

a Other fixed and circulating capital.—Cash capital, $13,200; wharves, shorehouses, and fixtures, $12,400; total, $25,600.

Detailed statement of capital invested in vessels, boats, nets and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.
Vessels.						
In food-fish fishery:						
Active	16	253.45	$10,850	$4,550	$9,300	$24,700
Total	16	253.45	16,850	4,550	9,300	24,700
Boats.						
In vessel fisheries	48		960			960
In shore fisheries	140		8,225	1,860	800	10,885
Total	188		9,185	1,860	800	11,845

Nets and traps.	No.	Value.
Nets.		
Gill-nets:		
In vessel fisheries	20	$300
In boat fisheries	150	1,800
Total	170	2,100
Traps.		
Weirs	3	2,000
Fykes	10	50
Lobster-pots	3,835	2,876
Total	3,848	4,926

Detailed statement of the quantities and values of the products.

Products specified.	Pounds fresh.	Pounds prepared.	Bulk.	Value as sold.
Grand total	6,233,615			$72,250
Fresh fish.				
For food	522,500			6,967
For bait	785,000			2,944
For fertilizer	240,000		1,200 barrels	600
Total	1,547,500			10,511
Dry fish.				
Cod	2,134,275	735,504		22,985
Hake	967,680	401,408		5,376
Haddock	506,520	180,096		3,618
Pollock	380,480	146,944		2,624
Cusk	122,200	52,640		1,292
Total	4,111,155	1,516,592		35,895
Pickled fish.				
Mackerel	227,400	151,600	758 barrels	4,358
Herring:				
Ordinary	42,500	34,000	170 barrels	510
Miscellaneous	6,000	4,000	20 barrels	100
Total	275,900	189,600	948 barrels	4,968
Lobsters.				
Fresh	213,400			7,825
Clams.				
For food	76,000		7,600 bushels	2,660
For bait	9,660		966 bushels = 69 barrels	345
Total	85,660			3,005
Miscellaneous.				
Fish-oil			6,770 gallons	2,708
Sounds		5,376		4,838
Marine products used for fertilizers				2,500
Total				10,046

40. GEORGETOWN AND ITS FISHERIES.

Georgetown is an island forming the eastern boundary of the Kennebec, a few miles south of Bath. It is said to have been first settled by John Parker in 1629. The town formerly included a number of islands in the mouth of the Kennebec and the present towns of Woolwich, Bath,

Arrowsic, and Phipsburg. It now includes only the island, originally known as Eraskohegan, and later as Parker's Island, about nine miles long by an average of two miles wide.

The locality was visited by John Smith as early as 1614, and from his writings we learn that French fishermen visited it at an earlier date. The first permanent settlers were engaged in the fisheries, which, from that date to the present time, have been continued without interruption. Though little has been written of the extent of its early fisheries, it is said that as early as 1794 a Mr. Riggs was engaged in fitting vessels and in curing the fish landed by them. His business continued to increase, and by 1812, according to the estimates of his son, Moses Riggs, about twenty-five "bankers" and an equal number of shore vessels fitted and cured their fish at his place. Others soon engaged in the trade, and in 1843, according to the same authority, between 25,000 and 30,000 quintals of fish were cured at Riggs Cove alone.

Up to this time few fish had been cured on other parts of the island, it being the custom for the catch to be handled by the professional curers, who either charged one-sixteenth of the market value of the fish or reserved one quintal of fish out of every sixteen for their services. Gradually, however, the fishermen began to build small curing-stands of their own, and they usually kenched the fish that were landed from time to time until the close of the season, when they could give their attention to "making" them, or, as was not unfrequently the case, their wives and children cured the first cargo while they were out after another trip.

Both the shore and bank fisheries increased in importance until 1868, when, according to Mr. W. K. Riggs, one of the largest dealers, Georgetown handled annually nearly $250,000 worth of fishery products, the greater part of which were landed by the fishermen of Georgetown and the adjacent towns of Westport, Woolwich, and Phipsburg.

The fleet has since been gradually reduced, until there are now but six fishing vessels, aggregating 91.65 tons, owned on the island. These are valued at $5,600, and carry a total of thirty men. In 1879 there were six curing-stands, each doing a small business, the total quantity of fish cured being about 5,500 quintals, of which more than one-third were hake.

The boat fisheries of Georgetown are quite varied. The fishermen of the western part of the island are chiefly engaged in the river fisheries for alewives, shad, salmon, and other species, though a few go to the outer islands to fish for cod, haddock, and hake. The residents of the eastern and southern sides of the island are more largely dependent upon the fisheries, and, while they work on land during a portion of the year, a greater part of their revenue comes from the water.

About the 1st of April the trawling season begins, continuing till September, when a small school of herring reach the shore. These remain for several weeks, and the fishermen engage in their capture as long as they find it profitable, after which most of them fish for lobsters. Some continue in the lobster fisheries till the following spring, while others "haul out" at the approach of stormy winter weather, and devote their attention to clamming till the spring trawling season arrives. In 1879 there were thirty boats, with fifty-two men, engaged in the shore fisheries, the average stock to a man being about $125 to $150. This is said to have been from $50 to $75 below the average for other years.

Ship-building was formerly an important business in the town. The fishermen began giving their attention to this work during the winter months as early as 1835. From that date they have built a greater part of their own vessels, in addition to a number that have been sold elsewhere. Nine different firms have been engaged in this business to a greater or less extent since 1835, and from that time to 1878 thirty-eight fishing vessels have been built, in addition to a considerable number of larger crafts for the coasting and foreign trade.

41. BATH AND OTHER LESS IMPORTANT TOWNS.

WOOLWICH.—Woolwich is a settlement of two or three hundred inhabitants, on the west bank of the Kennebec, nearly opposite the city of Bath. It is surrounded by an agricultural district, on which it is largely dependent for its trade. About thirty or forty years ago a few fishing schooners were built at the village for the resident fishermen, as well as for those of Wiscasset, Westport, and Georgetown; but though ship building is still carried on to a limited extent, it is now confined wholly to vessels of larger size.

As early as 1825 Woolwich became interested in the bank fisheries, and about 1855 there were not less than twelve sail of "bankers" belonging to the town. At this time two large curing-stands were located at the village, both of which handled considerable quantities of fish. Later the fishing interests gradually declined, and by 1865 not a "banker" remained. For the past fifteen years the people of the town have wholly neglected the sea fisheries, though they still engage in those of the river, catching considerable quantities of shad, alewives, smelt, and other species.

BATH; AN ACCOUNT OF ITS COMMERCIAL INTERESTS.—The city of Bath is situated on the west bank of the Kennebec River, fifteen miles above its mouth. The region was first explored in 1604. It was a part of Georgetown up to 1781, when it was set off and incorporated under its present name. In 1840 it had a population of 5,143, which in 1870 was increased to 7,371.

It has long been noted for its extensive ship-building interests, being at one time more largely engaged in this industry than any other city on the continent. The banks of the river in the vicinity of the city are lined with large ship-yards; but the recent depression in this business has had its effect upon them, and at the present time they present an appearance of lifeless inactivity.

THE FISHERIES AND THE TRADE WITH FISHING VESSELS.—As a fishing town Bath has never taken an important rank, though, like Wiscasset, it has served as a market where the vessels from the lower islands could secure their outfit. The merchants of the city have been interested in the fisheries to the extent of owning parts of many different vessels in order that they might more effectually control their trade; but even when the fleet was owned in this way the catch was usually landed at the lower fishing towns, and at no time has Bath served as a market for any considerable quantity of fish. The trade with the fishing fleet began before 1840, and in 1850 fifty to sixty sail from the lower towns came to the city for provisions, gear, salt, and other necessary outfit. The height of the business was between 1860 and 1864, when upwards of seventy vessels fitted at Bath. At that time several cargoes of salt were imported annually for this trade. The repeal of the "bounty law" is said to have virtually put an end to the business, and at the present time few vessels resort to this place for their fittings, and the business is almost wholly discontinued. The local fleet has been greatly reduced, and there are now but two fishing vessels, aggregating 23 tons, owned in the town, and these do not fish with any regularity.

INDUSTRIES DEPENDENT ON THE FISHERIES.—The people have been indirectly dependent upon the fisheries in other ways. Several of the ship-builders have been engaged, to a limited extent, in building fishing vessels, two of the firms, Thomas M. Hogan, and Deering & Donnell, having built twenty-four vessels each since 1866, when this particular branch of ship-building began.

In 1843 a cordage factory was built at Bath by Mr. Donnell, of Newburyport, Mass., who had been in business at the latter place since 1804. He soon developed a trade with the Maine fishing fleet, selling an average of $2,000 worth of cordage yearly up to 1870. At this time an agency was established at Gloucester, Mass., and by 1873 the business had increased to $10,000

annually. Later a further increase was noticeable, and from 1874 to the present time the trade with fishing vessels alone has averaged $16,000.

In 1840 an anchor foundry was built at Bath. This from the first depended largely on its trade with fishing vessels. In 1850 its sales to this class of vessels had increased to about $5,000 yearly. The anchors averaged 100 to 150 pounds each, the largest made here up to that time being 211 pounds. This was considered too large for use by the fishing fleet, and it was held for over a year before a purchaser could be found. About 1850 the demand for larger anchors began, and by 1864 those of 700 pounds weight were sometimes made. During the height of the business anchors were shipped extensively to the principal fishing ports of Massachusetts, the sales amounting to $20,000 annually. Little is done in this line at present, and the firm has turned its attention to the trade with the coasting fleet.

PHIPSBURG.—The town of Phipsburg occupies the western bank of Kennebec River between Bath and the ocean. It is an agricultural region with few commercial interests, and has no villages of importance. Several small fishing vessels are owned in the town, these being employed in the shore fisheries, the captains selling their catch to the Georgetown dealers or "running it" fresh to Bath and Portland. A number of weirs are built for the capture of salmon, alewives, and other river species, and a few parties fish for lobsters and cod along the outer shore during the summer months. Aside from this, the fishing interests of the town are at present quite limited, though in former years they were of considerable importance.

J.—THE DISTRICT OF PORTLAND AND FALMOUTH.

42. GENERAL REVIEW OF THE FISHERIES OF THE DISTRICT.

RELATIVE IMPORTANCE OF THE FISHERIES OF DIFFERENT LOCALITIES.—The Portland and Falmouth district includes the coast-line between Cape Small Point and Cape Elizabeth, which mark the limits of Casco Bay. This region, like many other portions of the State, was early visited by people interested in the fisheries. For many years fishing was the principal occupation, and the fishermen were distributed along many portions of the coast and on the principal islands, so that all sections were equally interested. Since 1840 the fisheries of the central portion of the district have decreased greatly in importance, while those of Portland have increased enormously, and this city now practically controls the fishing interests, not only of the district, but also of the greater portion of Western Maine. The people of Harpswell still continue to engage in the shore fisheries to a considerable extent, and the fisheries of that town are to-day nearly as important as at any time since its first settlement.

STATISTICAL RECAPITULATION FOR 1880.—The following statement shows, in detail, the extent of the fisheries of the district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	776	Capital in vessels and boats	$343,930
Number of boat-fishermen	570	Capital in nets and traps	45,421
Number of curers, packers, fitters, &c	234	Other fixed and circulating capital	*a* 366,600
Number of factory-hands	71	Total	755,951
Total	1,651		

a Other fixed and circulating capital.—Cash capital, $86,800; wharves, storehouses, and fixtures, $224,800; factory buildings and apparatus, $55,000; total, $366,600. Of the $55,000 for factory buildings and apparatus $1,500 is for menhaden oil and guano factories not in use since 1878.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total Value.
Vessels.						
In food-fish fishery:						
Active	91	3,259.18	$134,650	$25,325	$117,745	$277,720
Idle	1	32.24	500	.....	.....	500
In menhaden fishery	3	205.83	10,500	.....	.....	10,500
In lobster fishery	10	227.82	6,975	300	1,600	8,875
In oyster fishery	1	69.96	3,000	.....	150	3,150
Total	106	3,795.03	155,625	25,625	119,495	300,745
Boats.						
In vessel fisheries	518	.....	14,895	.....	.....	14,895
In shore fisheries	489	.....	21,240	5,050	2,000	28,290
Total	1,007	.....	36,135	5,050	2,000	43,185

Nets and traps.	No.	Value.
Nets.		
Gill nets:		
In vessel fisheries	374	$6,460
In boat fisheries	500	6,000
Purse-seines:		
In vessel fisheries	40	22,000
Total	914	34,460
Traps.		
Fykes	700	4,200
Lobster-pots	9,015	6,761
Total	9,715	10,961

Detailed statement of the quantities and values of the products.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	42,230,420	.....	.....	$649,153
Fresh fish.				
For food	6,896,000	.....	.....	91,947
For bait	1,040,000	.....	5,200 barrels	3,900
For fertilizer	80,000	.....	400 barrels	200
Total	8,016,000	.....	.....	96,047
Dry fish.				
Cod	14,495,000	4,995,200	.....	156,100
Hake	4,036,500	1,674,400	.....	22,425
Haddock	1,291,500	459,200	.....	9,225
Pollock	913,500	352,800	.....	6,300
Cusk	689,000	296,800	.....	7,287
Total	21,425,500	7,778,400	.....	201,337
Pickled fish.				
Mackerel	6,884,400	4,589,600	22,948 barrels	131,951
Herring:				
Ordinary	600,000	480,000	2,400 barrels	7,200
Miscellaneous	1,260,000	720,000	3,600 barrels	18,000
Total	8,744,400	5,789,600	28,948 barrels	157,151
Smoked fish.				
Herring:				
Bloaters	400,000	233,333	7,000 boxes	4,900
Haddock (Finnan haddies)	2,400,000	1,200,000	.....	66,000
Total	2,800,000	1,433,333	.....	70,900
Canned fish.				
Mackerel	75,000	.....	51,804 cans	5,396
Lobsters.				
Fresh	241,000	.....	.....	8,836
Canned	305,000	.....	59,400 cans	7,763
Total	546,000	.....	.....	16,599
Clams.				
For food	56,500	.....	5,650 bushels	1,977
For bait	517,020	.....	51,702 bushels = 3,693 barrels	18,465
Canned	50,000	.....	5,000 bushels = 69,996 cans	6,708
Total	623,520	.....	.....	27,150

Detailed statement of the quantities and values of the products—Continued.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Miscellaneous.				
Fish-oil			34,725 gallons	$13,890
Sounds		22,425		20,183
Marine products used for fertilizers				3,000
Enhancement in value of southern oysters, in transporting and transplanting				37,500
Total				74,573

43. HARPSWELL AND ITS FISHERIES.

The town of Harpswell consists of three long and rocky peninsulas, separated from each other by deep but narrow channels. It also includes a number of islands, some of which are quite small, while others are of considerable importance. It is situated about 15 miles from Portland, near Cape Small Point, which marks the eastern limit of Casco Bay. The region was first settled in 1720, when it was known as Merryconeag. The town was incorporated in 1758, and in 1840 had a population of 1,440, which had increased to 1,749 in 1870. The inhabitants are principally occupied in farming or fishing. Those on the upper part of the peninsulas devote the greater part of their time to the land, while the fishermen live about the southern headlands or on the islands convenient to the fishing grounds.

It seems that Harpswell has been engaged in the fisheries to a considerable extent from its earliest settlement, and many of the early writers refer to it as a fishing town. Some of its vessels were sent to Labrador as early as 1825, and it is said that others engaged in the Grand Bank fisheries for many years.

EXTENT OF THE FISHERIES IN 1879.—In 1879 there were seven curing-stands, and 20,575 quintals of cod, hake, haddock, pollock, and cusk were dried by the fishermen and dealers, in addition to 175,000 pounds of the same species reserved for local consumption or for the country trade. A large quantity of haddock are taken by Harpswell vessels in winter and sold directly to the Portland dealers. In 1879 there were twenty-one fishing vessels, aggregating 451.92 tons, and valued at $20,350, owned at Harpswell. These furnished employment to one hundred and four men, nearly all of whom were Americans. Twelve of the vessels engaged exclusively in the shore fisheries; five others, after fishing along the shore in summer, engaged in the winter haddock fishery for the Portland market; and the remaining four were employed in "running" lobsters to Portland and to the Harpswell cannery.

THE BOAT-FISHERIES.—The boat-fisheries of the region are quite important, giving employment in 1879 to one hundred and fifty-two men. Some of them fish for lobsters in the early spring, and the remainder for cod and other species. In summer nearly all are engaged in the cod and hake fisheries with lines and trawls. Early in September the herring arrive in considerable numbers, and a greater part of the vessels, with many of the boats, engage in their capture with nets. Part of the catch is salted, and the remainder is sold fresh in Portland.

THE MENHADEN FISHERY.—Prior to the disappearance of the menhaden many of the fishermen engaged extensively in their capture, the catch being salted and sold for bait to the offshore fleet. Between 1870 and 1878 several thousand barrels were put up annually. Casco Bay has been a favorite resort for the menhaden for many years; and in 1876 an oil and guano factory was

built on Sebascodegan Island, a few miles from Cundy's Harbor. The following season another factory was built on the same island. Each of these employed a seining vessel and two "carry-aways." The business was continued till the fall of 1878, when, owing to a scarcity of fish, both factories were closed. About 25,000 barrels of fish were landed at the two establishments while they were in operation.

THE CLAM FISHERIES.—In winter many of the farmers and fishermen spend their spare hours digging, shucking, and salting clams, which are very abundant on the mud-flats along the shores. According to Mr. A. T. Trufant, this business is on the decline and now amounts to only 12,200 bushels annually, while formerly the quantity was considerably greater.

Quahaugs are said to be fairly abundant in Quahaug Bay, in the eastern part of the town. This practically marks the northern limit of the species on the Atlantic coast, for though they may be occasionally seen beyond it, they do not occur in any numbers.

THE LOBSTER FISHERY AND CANNING INTERESTS.—Next to Eastport, Harpswell was the first town in the State to engage in the canning of lobsters. A cannery was located here by Boston parties about 1849, and was run for five or six years. About 1858 Portland parties came to the town and engaged in the same work for one season. From that date till 1877, when the present cannery was erected, nothing was done in this line. Since 1877 the business has been prosecuted with considerable vigor, and during the past two or three years both lobsters and mackerel have been put up. The packing-season formerly lasted from April to November, with a suspension of work, on account of the poor condition of the lobsters, during two months in midsummer. The season, as now regulated by law, lasts from the 1st of April to the 1st of August.

In addition to the canning interests, Harpswell has shipped many fresh lobsters to Portland, Boston, and New York, in smacks. This business began as early as 1830, and had assumed important proportions before the fishermen living farther east had any knowledge of the value of the lobster fisheries. Owing to long continued and excessive fishing, the species is not so abundant as formerly, and few of the fishermen depend wholly upon this fishery for a livelihood, though many engage extensively in it in the spring, and some do so at other seasons.

44. THE FISHING TOWNS OF CASCO BAY.

The towns lying along the shores of Casco Bay between Harpswell and Portland, including Brunswick, Freeport, Yarmouth, Cumberland, Falmouth, and Westbrook, were in former times engaged extensively in the fisheries.

BRUNSWICK AND VICINITY.—Wheeler's history of the region contains the following statement about the early fisheries of Brunswick:

"The earliest business carried on here, in addition to farming and trading in furs, was salmon and sturgeon fishing. Thomas Purchase, soon after his settlement here in 1628, caught, cured, and packed salmon and sturgeon for a foreign market, and it is stated that there were at one time 'saved in about three weeks thirty-nine barrels of salmon, besides what was spoiled for lack of salt, and about ninety kegs and as many barrels of sturgeon, and that if they had been fitted out with salt and apt and skillful men, they might have taken abundance more.' It is also stated in Douglas's history that there was a company formed in London for the purpose of importing cured or dried sturgeon, and that they had an agent at the foot of Pejepscot Falls and a building erected there. This was no doubt, as McKeen observes, a very considerable business, and it was carried on upon quite a large scale, from time to time, until into the last century; and until the commencement of King Philip's war, in 1675, it was doubtless a great business with Mr. Purchase. The business has not been carried on to any extent within the present century, the salmon having entirely dis-

appeared from the river, and there being fewer sturgeon than formerly and a lessened demand for the latter. Present indications betoken, however, a return of the salmon fishery before very many years."*

One hundred and twenty-one years later, judging from another passage in the same volume, the fisheries were still important. Wheeler says:

"The town, at a special meeting in January, 1749, appointed Ensign William Vincent to inspect the fishery at Brunswick, and to regulate the same according to instructions from the selectmen."†

These statements evidently relate to the river rather than the sea fisheries. It is, however, known that the people of the region were also interested in the bay fisheries to a considerable extent for many years. But later, other industries sprang up, and the fisheries were neglected.

The inhabitants are now principally engaged in agriculture, having large and fertile fields, to which they devote most of their energies. Ship-building has been extensive, and a considerable number of mechanics have, until a very recent date, found constant employment in building large vessels for the coasting and foreign trade. None are wholly dependent upon the fisheries for a livelihood, and, barring those living on the islands, few visit the fishing-grounds with any regularity except in midsummer, when the mackerel are abundant.

THE CLAMMING INTERESTS.—The shores of the bay abound in clams, and almost every cove between Portland and Harpswell has extensive mud and sand flats where the species is peculiarly abundant. During the winter and early spring the farmers have many spare hours, and the mechanics, carpenters, and ship-builders are out of employment. At such times many of them engage extensively in clamming, and after selling as many as possible in shell to the peddlers and to Portland dealers, they "shuck" the remainder for use as bait in the vessel fisheries.

A few parties begin digging as early as October, but the majority usually find other employment until late in December. From this time till the following May not less than one hundred and eighty-five men and boys engage in this work, some of them continuing till the first of June.

In addition to the above, quite a number of fishermen from the adjoining towns and numerous islands engage in this business to a greater or less extent. The men build small shanties along the shore where they spend the hours of high water in shucking their clams. At about half-ebb they start for the flats, following the water line as it recedes, and gradually working back with it as it advances. Several crews often occupy the same shanty, and two or three frequently join in the purchase of a small boat, which enables them to visit the more distant flats. When the tides "serve" they can spend a greater part of the day in digging, but ordinarily only one tide is utilized. The average clammer will dig from 2½ to 3 bushels at a tide, while a rapid worker who knows the grounds will often get twice that quantity.

One of the largest dealers of the locality, Mr. Hamilton, of Chebeague Island, estimates the quantity of clams dug during the season of 1878–'79 at 46,100 bushels, over 39,000 bushels of which were shelled and salted for bait. If to this quantity we add the catch of the Portland and Harpswell fishermen it is seen that not less than 60,000 bushels are taken annually from the flats along the shores of Casco Bay. The price, according to the same authority, varies greatly from year to year, the average for shell clams being from 75 cents to $1 per bushel. The shelled, or salted clams, range from $3 to $6.50 per barrel, according to the supply and demand. These figures represent the value received by the fishermen for the clam-meats, as the salt and barrels are always furnished by the dealers. In 1875 the fishermen received $6 per barrel, and in 1879 the price had dropped to $3.

* Wheeler's History of Brunswick, Topsham, and Harpswell, Maine, p. 115. † *Ibid.*, p. 552.

THE FLOUNDER FISHERY.—Another business in which the fishermen of the Casco Bay islands, Portland, and Cape Elizabeth are interested, is the winter flounder fishery. The first to engage in the capture of this species for market along this portion of the coast was Mr. Fowler, of New London, Conn. Hearing of the abundance of flounders about Portland, he came to the region with twelve fyke-nets in the winter of 1871–'72, and after renting an old sloop which was to answer both as home and packing-house, set his fykes on the soft bottom of the outer harbor in 3 to 8 feet of water at mean low tide. Finding no market for his flounders in Portland he shipped them by rail and steamer to New York. From this beginning the business has gradually increased until in the winter of 1878–'79, according to Mr. Robert Hamilton, of Chebeague, twenty-five men from Portland, and twenty-four from the various islands of the bay were employed regularly in this fishery. The season lasts from October to April, the average weekly catch being about 1,500 pounds for each fisherman. A portion of the flounders are now sold in Portland for shipment to Canada, but a greater part still go to New York.

THE CANNING OF FISHERY PRODUCTS.—Several canneries have been built along the shore of Casco Bay for putting up fruits, vegetables, and meats. One of these, located at South Freeport, began the canning of lobsters and clams in the summer of 1876. The business has been continued regularly since that time, with a gradual increase in the quantity of clams put up. In the summer of 1879 the canning of mackerel was begun at this place. The supply of clams is obtained wholly from the people of the locality, while small vessels are sent to the outer islands to purchase lobsters and mackerel from the professional fishermen.

45. PORTLAND AND ITS FISHERY INTERESTS.

THE EARLY FISHERIES OF PORTLAND.—Portland, the metropolis of Maine, is located on one of the best harbors of the coast, a few miles above Cape Elizabeth. It was first settled in 1632, and was included in the town of Falmouth up to 1786, when it was incorporated as a separate town. The city charter was adopted in 1832. The place has suffered much from wars and fires, having been on several occasions almost completely destroyed. In 1790 it had a population of 2,246, which had increased to 12,815 in 1850 and to 33,810 in 1880. Its location on so excellent a harbor, in the very center of one of the best fishing districts of the coast, has given it a prominence in this industry from its earliest settlement. Richmond's Island, but a few miles from the harbor, was one of the most important fishing stations of New England for many years, beginning with 1630, and was annually visited by fishing vessels from different parts of Europe.

A few extracts from those who have examined into the early history of the region will suffice to show that fishing occupied the attention of a majority of the early settlers. Hon. William Gould, in writing of the early history of Portland, says:

"Of course the first business at Casco, like most other localities in New England, was to choose a favorable place, fell the forest, and build the trunks of the trees into a habitation; and while doing this, and preparing a clearing for cultivation, the early settlers could get the quickest returns from their labor from the sea, such as wild fowl, shell and other fish, because these required no cultivation. To know how well this was improved in our harbor it is only necessary to examine the shell heaps at Cushing's Point. Some idea of the facilities for fishing and of those engaged in it may be obtained from an account of 'Two Voyages to New England; * * * * a description of the country, natives, and creatures, by John Jocelyn, gentleman, London, 1675.' The author had a brother, Henry Jocelyn, at Black Point, who was a leading man in the infant colony, whom he first visited in 1638. He was a close observer of men and things, and describes all he saw in a quaint style. He was the first European traveler who remained long enough to get a correct idea

of the country and people. After speaking of the immense number of alewives in all the streams in April, he says, 'Trout there be good store in every brook, ordinarily two and twenty inches long.' He further says, 'A wonderful number of herring were cast up on shore at high water in Black Point Harbor, so that they might have gone half way the leg in them for a mile together.'"*

He continues:

"Our first trader established himself on an outlying island when the mainland was a howling wilderness, dealt with Indians and fishermen, and was killed for cheating his customers. * * * His successor, John Winter, was an honorable man, and carried on an important foreign trade. There is a halo of romance about those early days when dried fish, which, with skins of wild animals, were the only products of the country, were shipped direct to Spain and cargoes of wine brought back in return."

In another place he again refers to Mr. Winter, who seems to have been acting as agent for an English company that had obtained a grant of Richmond's Island and the present town of Cape Elizabeth in 1631. He says of him:

"He soon built a ship on the island and settled a place for fishing, and employed many servants in fishing and planting."

In March, 1634, says Winthrop: "Seventeen fishing-ships were come to Richmond Island and the Isle of Shoals."

These were from Europe to load with fish cured at the several stages which must have employed a large number of men. These ships brought all the stores needed at the settlement from England.

Winthrop says:

"In the spring of 1635 a ship of 80 tons and a pinnace of 10 tons arrived at Richmond's Island."

In 1636 (after a change in proprietors of the land) Winter was to receive one-tenth of the profits and £40 premium in cash annually. They employed the ships Hercules and Margery and one other whose name is not mentioned. In 1638 Trelawney (the land proprietor) sent a ship of 300 tons from England to the island laden with wine, probably the proceeds of a cargo of fish sent to Spain or Portugal. The returns sent to the proprietor in England were oak pipe-staves, beaver skins, fish, and oil.†

The site of the present city was visited by two fishermen, who made it their home as early as 1632. Mr. Gould refers to the matter as follows:

"In 1630 Richard Tucker, joined soon after by George Cleaves, established himself at Spurwink River in planting, trading, and fishing, where both remained till 1632, when they were 'ejected by Winter' and 'sought refuge on the north side of Casco, on Fore River, and laid the foundation for the first settlement upon the Neck, now Portland,' where they continued many years."

Other trading posts were established in the vicinity at a later date, of which Mr. Gould mentions several. He says:

"Just outside the breakwater is Cushing's Point, which was another business center. Col. Ezekiel Cushing, its owner, came here from Provincetown about 1738. He was largely engaged in the fisheries and the West India trade, and owned several whalers, which were engaged in the business when whales could be taken nearer home than now."

As the settlement grew in size and importance its people gradually came to own a large fleet of vessels, that were sent to different parts of the United States and to foreign countries. About

* Elwell's Successful Business Houses of Portland, pp. 168, 169.
† *Ibid.*, pp. 166, 170, 171.

the beginning of last century a limited trade sprang up between Portland and the West Indies, and large quantities of lumber were shipped to that region.

In addition to lumber, according to Mr. Gould, these West Indiamen soon began carrying out soap, candles, and dried codfish in "drums" of the weight of 500 to 800 pounds each. These were consigned to the captain, who sold his cargo, bought another of sugar, molasses, and rum, and returned, paying no commission to the foreign merchant.

The business continued to increase, and soon a greater part of the Portland fish were sent there for a market.

"After the war," says Mr. Gould, "the West India trade, which had grown before the Revolution to be an object of considerable importance, was revived, and a profitable business was done in exchanging lumber and fish for rum, sugar, and molasses."

This trade was extensive up to 1850, and even later a few vessels were sent, the last one going in 1878.

From the first, Portland has taken a leading rank as a fishing port, and by the beginning of the present century she had a fleet of vessels engaged in the Grand Bank cod fishery. A little later she sent vessels to Labrador for cod, and in 1832 the first vessel from the town started for the Gulf of Saint Lawrence for mackerel. She has had no vessels regularly engaged in the George's Bank cod fishery, and has been interested only to a limited extent in the fresh-halibut fishery; but aside from these her fishermen have been engaged in all the leading sea-fisheries of the New England coast.

Space forbids a review of the Portland fisheries during the years of their development, and though it might be interesting to trace each branch of the business through its various stages of growth, and to show the causes that have led to the transfer of many of the fishing vessels from the smaller towns of the State to Portland, we must confine ourselves to a description of the fisheries as they are found at the present time.

THE VESSEL FISHERIES.—In the summer of 1879 the Portland fishing fleet numbered seventy-nine sail, valued at $114,775. These vessels aggregated 3,004.13 tons and carried six hundred and sixty-one men. Of the entire fleet sixteen visited the more distant fishing grounds for cod, twenty-one were provided with purse-seines for catching mackerel, thirty-two engaged in the shore fisheries, four were employed in the halibut fisheries to a limited extent in summer, and six carried lobsters to the Portland market. Six of the codfish fleet, after returning from their first trip, were fitted out for the mackerel fishery, and nineteen of the shore fleet joined them during the height of the season, making a total of forty-six vessels engaged in the mackerel fishery during the summer months. About the 1st of November nine of the vessels are fitted for the winter haddock fishery, continuing the business till the following spring.

The vessels are usually owned by a number of parties rather than by a single individual. In most cases the ship-builders, riggers, sail-makers, fitters, and packers each own a part, in order that they may control the trade of the vessel in their respective lines. It is also customary to induce the captain of the vessel to buy a small part, thus causing him to feel a deeper interest in the work and to give more attention to the interests of all concerned. One of the owners is selected as the "managing owner," and it becomes his duty to act as agent for the vessel and to keep full and accurate accounts of all expenditures and receipts. This party is usually selected on account of his knowledge of the business, and is frequently the captain of the schooner or the merchant who furnishes the supplies.

The vessels are usually "fitted at the halves," the owners furnishing provisions, gear, and

salt. The crew must man and sail the vessel, and catch, dress, and salt the fish. They usually pay for half of the bait and ice, and hire their own cook.

Nearly all of the Portland vessels engaged in the bank cod fisheries carry dories for hand-lining, none of them being provided with trawls on account of the additional expense involved in their use. These vessels as fitted for an average trip usually carry from 125 to 150 hogsheads of salt and about 40 barrels of clam-bait. On their return the men are expected to land and wash the fish and to put the vessel in order. This done their work is completed, and they are at liberty to turn their attention to other occupations or to ship in other vessels. The fish are "made" by professional curers, who take one quintal in twelve in payment for their labor.

As a rule the fisherman has no ready money, and must be furnished with a certain quantity of provisions for his family during his absence. The owners usually assume the responsibility of furnishing a limited quantity of goods to each man, but care is now taken that their value shall not exceed $30. Each member of the crew keeps his fish separate, and receives a share in proportion to the number taken by him. On his return his proportional part of the trip is figured up, and more goods are advanced, if necessary, provided his share of the trip is thought to considerably exceed the value of the goods already furnished. He must wait, however, until the fish have been cured and sold, and the money has been received by the owners before he can settle his accounts in full. Some of the men being anxious to get their money immediately, will sell their interest in the catch as soon as they arrive, to the fitters or owners, at a considerable sacrifice.

In the mackerel fishery the vessels fit "at the halves," the fish being usually sold at the end of each trip, though they are occasionally retained till the close of the season. Portland was among the first towns to send vessels to the Gulf of Saint Lawrence for mackerel. According to Mr. Cushing, one of the oldest inspectors in the city, she sent her first vessel to that region in 1832, and has continued the business regularly ever since. She has now, next to Gloucester, the largest mackerel fleet in the United States, having twenty-eight sail of vessels owned by Portland capital engaged in the purse-seine mackerel fishery.

In 1879 sixteen of the vessels fished wholly in the Gulf of Maine; seven fished from Cape Hatteras to Mount Desert Island; two spent a greater part of the season in the Gulf of Saint Lawrence, and two divided their time between the Gulf of Saint Lawrence and the Gulf of Maine. In 1880, so far as we have been able to learn, none of the fleet fished in British waters. In addition to the above, nineteen of the shore vessels engaged in the mackerel fishery with line or net during the height of the season.

The shore-fishing vessels, numbering thirty-two sail, are engaged in the capture of cod, hake, haddock, pollock, cusk, mackerel, and herring, fishing first for one kind and then another, according to the season, or the relative abundance of the different species. The fishing season begins about the first of April and continues till late in November. Formerly many of the smaller craft fished for menhaden with gill-nets, but as none of these fish have visited the waters of the State since 1878, they have been obliged to engage in other fisheries.

Early in September large schools of herring make their appearance along the outer shores, and most of the smaller vessels, with many of the boats, are engaged in their capture for a number of weeks. The herring are taken in gill-nets, and sold to the packers and smokers.

During the winter months haddock are quite abundant, and nine of the local vessels, together with some from other places, are engaged in this fishery, selling their catch to the smokers, who prepare them for shipment to Canada and different parts of the United States. Trawls are used in this fishery, and the catch is often enormous, while the price paid makes the profits to the fishermen larger than those of any other fishery.

THE BOAT FISHERIES.—The boat fishermen of Portland, about one hundred and forty in number, are almost wholly Americans. Few of them live in the city, the greater part being scattered about on the islands in the vicinity and at Cape Elizabeth, both for cheapness of living and for convenience in getting to and from the fishing grounds. They use lap-streak, keeled, and center-board boats, 18 to 22 feet in length. These are provided with two movable masts, with sprit sails, and have an average value of $50 to $75 each. The fishing begins late in March and continues till November, when most of the boats are hauled up, though a few fish more or less all winter.

At first trawls are extensively used, the fishermen setting from 800 to 1,200 hooks each; but as the season advances and bait becomes scarce hand-lines are substituted for them, as the dog-fish are usually so plenty at this season as to seriously interfere with trawl-fishing. "Conch" (*Natica clausa*) constitute the principal bait in summer, the fishermen gathering them on the flats at low water and keeping them in live-cars till needed. The catch is composed largely of cod, pollock, hake, and mackerel. Some of the boat-fishermen are beginning to carry harpoons for sword-fish, and nearly all own a "gang" of lobster-pots, which they fish with more or less regularly. The fish are sold to the fresh-fish dealers, or to the hawkers, at prices depending largely upon the quantity in market. The supply is usually greater than the demand, and in order to be sure of a market each fisherman must find some one who will agree to take his catch at a stated price; otherwise he does not care to venture out. On account of the uncertainty of finding a market much time is lost that might otherwise be profitably employed. The curers on the islands usually buy all the fish that are offered, but they require the fishermen to split them, and cannot afford to pay as much as the fresh-fish dealers in the city. For this reason many do not care to sell to the curers, though if the time gained through the certainty of a market be considered, they could doubtless make good wages in this way. This condition of affairs occurs only in summer, for at other seasons the market readily consumes all the fish that are offered.

FISH-CURING IN PORTLAND.—The fish landed in Portland are, with few exceptions, cured by parties making a specialty of this work. Land in the heart of the city, where the fish-wharves are located, is quite valuable, and the fish dealers do not have curing-stands of their own, as is the case with those in smaller cities, but are dependent on the curers for "making" any fish that their vessels may bring. Two firms, however, have utilized the roofs of their buildings as flake-yards, and in this way cure several thousand quintals annually. The principal curing-stands are on the islands of the outer harbor, where suitable buildings and flake-yards have been constructed. On arriving from the banks the vessels proceed to these islands, the crews landing and washing the fish, after which they wheel them to the flake-yard, when the curer takes charge of them and prepares them for the market, taking one quintal in twelve for his services. If they cannot be cured at once, the crew pitch them out of the vessel and carry them to the buildings, where they are "kenched" until they are needed. In this case the curer "washes them out" before they are placed on the flakes, charging six cents per quintal additional for this work.

In some localities the flakes are provided with cloth covers, which are spread over the fish to protect them from the heat of the sun, which is often so great at mid-day as to render them nearly worthless. In other localities the fish are "bunched" early in the day before the sun becomes too warm, and spread again late in the afternoon. In many places along the coast no attempt is made to dry the fish in summer on account of the danger of burning them, and the catch is "kenched" till fall.

In Portland, however, the curers have a very simple way of overcoming the difficulty, and

continue their work with little or no loss during the hottest weather. Their flakes are built so as to run nearly east and west, and are so arranged that the tops may be easily turned on a central axis. The fish are spread in the morning, and as the day advances and the heat increases the flakes are tilted toward the north, so that the sun's rays shall fall obliquely on the fish, and thus have little effect upon them.

The property devoted to the curing of fish in Portland is valued at $26,000. The business furnishes employment to twenty-one men during eight months of the year and to several additional ones during the busy season. The quantity cured in 1880 was somewhat larger than for several years past, though Portland has long been extensively interested in the business. The figures furnished by Messrs. C. & H. Trefethen, who are more extensively engaged in curing than any other firm, show the business for 1880 to have been 49,426 quintals, of which nearly seven-eighths were landed by Portland vessels. The catch was divided as follows: 21,788 quintals large cod; 16,813 quintals small cod; 6,626 quintals hake; 1,437 quintals cusk; 1,369 quintals pollock, and 1,193 quintals haddock.

INSPECTION OF FISH.—Portland is largely interested in packing and inspecting fish of different kinds, including mackerel, herring, cod, haddock, sword-fish, and other species. She is more extensively engaged in this business than any other city in the State, leading all cities in the United States in the quantity of herring inspected, and is excelled only by Gloucester in the quantity of mackerel packed. The mackerel are mostly taken by vessels belonging in Portland and other Maine fishing towns, though a few vessels belonging to Cape Ann, Cape Cod, and other fishing districts of Massachusetts pack in Portland to a greater or less extent. Nine firms engage regularly in this branch of the business. They occupy property valued at $89,000 and furnish employment to ninety-three men, forty-three of them being employed throughout the year. Up to 1879 the inspection charges were $1.50 per barrel, but in the spring of that year the price was reduced to $1.25.

Mr. Charles Dyer, one of the leading packers in Portland, in referring to the business of the city for 1880, writes:

"Portland has packed, in round numbers, 75,000 barrels [76,417] of mackerel, valued, clear of salt and packing, at about $5 a barrel. This has been a very prosperous year, and, were it not for the English mackerel coming into the country free of duty, it would have been more so."

After speaking of the habit of packing English fish under American brands by the fish inspectors of other cities, and of the injury to the trade resulting therefrom, he continues:

"Portland does not handle any English-caught mackerel, and for this reason Portland mackerel stand highest in market."

The nearness to the extensive fall herring fisheries brings Portland into prominence in connection with this trade. She has a fleet of her own engaged in the herring fishery, and, in addition, buys nearly all of the fish taken by fleets of other portions of the coast, though Boothbay handles a small percentage and Boston secures a considerable quantity.

The figures furnished by Mr. E. G. Willard show 12,000 barrels to be the quantity of herring handled in 1880. In addition to the above, Portland handled 1,800 barrels of pickled haddock and cod, and a few barrels of sword-fish and alewives.

SMOKED HERRING AND HADDOCK.—Several Portland dealers have large smoke-houses, and are engaged in the preparation of Finnan haddies and bloater herring. These parties have a monopoly of the Finnan haddie trade of America. Eastport, the only other city extensively engaged in the preparation of these fish, is working wholly under contract with the Portland dealers, who purchase the products and distribute them to the trade. Jonesport, Vinal Haven,

and Rockland, in Maine, Portsmouth in New Hampshire, and Boston in Massachusetts have each smoked a few haddock, but their trade has been wholly local and of comparatively little importance.

From Messrs. Wyer Brothers and John Lovett & Co., the two largest dealers in the country, we gathered the following facts about the origin and growth of the Finnan haddie trade:

The haddock was first smoked in America at Montreal, Canada, by Mr. Thomas McEwan, a Scotchman, who had become familiar with the method of preparation before removing to this country. He began the business in a small way about 1860, sending to Portland for his fish. The first few lots, consisting of only 100 to 300 pounds each, were smoked in barrels. The trade soon increased so that smoke-houses were built, and, finding the expense of transportation so great, Mr. McEwan removed to Portland for engaging more extensively in the work. He soon formed a partnership with Mr. Lovett, one of the leading fish dealers of Portland, and continued the business on a larger scale than ever. At first the trade was wholly with Canada, and largely among the Scotch. Later the Americans commenced eating smoked haddock, and at the present time nearly one-third of the trade is with the United States. Up to 1868 Portland was the only town engaged in the business. At this time Portland dealers, learning of the abundance of haddock along the eastern part of the coast of Maine, located at Eastport to engage in the work, and the business has been continued to the present time, the season lasting through the winter only. During the season of 1879–'80, according to Mr. R. C. Green, Eastport smoked and shipped to Portland dealers about 211,000 pounds of cured fish, valued at over $12,000.

The following extract from a letter received from Wyer Brothers, of Portland, gives the extent of the business of that city. They write:

"The quantity of haddock cured here in the season of 1879–'80 did not vary materially from that put up the previous season. Though the demand increased, the catch of haddock from which the supply must be obtained fell a little short of that of previous winters, and it was often quite difficult to get a sufficient quantity for smoking. * * * We have carefully estimated the amount of haddock used for this purpose and find it to be about 2,100,000 of fresh fish, and, as they shrink almost one-half in curing, the whole amount of smoked fish would be about 1,200,000 pounds."

Adding to these the quantity shipped from Eastport we find that Portland now handles nearly 2,500,000 pounds of Finnan haddies annually. Property valued at $8,000 is used by the smokers, and twenty-four men are employed for six months of the year in preparing the fish.

Wyer Brothers place the quantity of bloater herring smoked in Portland during the winter of 1879–'80 at 2,000 barrels of 350 fish each, equal to 700,000 herring in number. These were largely sold in Canada with the haddock. No hard herring are smoked in the city.

THE LOBSTER FISHERY AND THE LOBSTER TRADE.—Lobsters are caught off Portland during the entire year, though the fishing is most extensive from March to July, and again from October to December. Thirty men, living chiefly on the islands or at Cape Elizabeth, fish exclusively for lobsters, while nearly all of the boat-fishermen have a few pots which they tend with more or less regularity at certain seasons. The local fishing-grounds are around Hog, Peak's, and Cushing's Islands and near Portland light in summer, and along the outer shore of Cape Elizabeth in winter. The traps are set in from three to twenty fathoms of water, one man tending from forty to sixty-five of them, usually visiting them once a day when the weather is suitable. During the height of the season some haul their pots twice a day. Twenty-five years ago, according to Mr. Trefethen, of House Island, an average catch was six or seven lobsters, weighing 4 to 6 pounds each to the pot. From that time they have gradually diminished, and, according to the same authority, the catch in 1879 averaged only one marketable lobster (which must be 10½ inches long), and three

smaller ones to the pot, the average weight of the former being 2 pounds and of the latter 1 pound. The fishermen in the vicinity of the city bring their catch direct to market, while those living farther off are obliged to depend upon the smacks.

The Portland lobster market is largely controlled by two firms, while a third does a limited business. Thirteen smacks, aggregating 287.68 tons, valued at $9,575, make frequent and regular visits to different portions of the coast between Cape Porpoise and the Grand Manan and buy the "count lobsters" of the fishermen, carrying them to the Portland markets. Others, though not regularly employed, bring occasional cargoes to the city. The fisherman keeps his lobsters in live cars until the smack arrives, when he sorts them out, those of marketable size being purchased by the captain, while the smaller and soft-shelled ones are retained to be sold to the boats running to the canning establishments. The time required for the round trip varies from one to two weeks, according to the weather, the abundance of lobsters, and the distance traveled. The average smack carries from 4,000 to 5,000 lobsters each trip; if the well is overcrowded, many die in transit, the loss in this way, especially in summer, being often very great. The price paid to the fishermen ranges from three to four cents each, and the selling price in Portland averages about six cents. On the arrival of the smack, the live lobsters are transferred to the cars of the dealers, where they remain until needed. When an order is received for them they are taken out, boiled, and packed in boxes or barrels for shipment to the trade. A few live ones are shipped to the principal dealers of Boston, but this method is not usually adopted, as many are killed by the jarring to which they are subjected on the train. Live lobsters are received in considerable quantities from Eastport, the usual method being to pack them in barrels with a quantity of ice: when carefully packed in this way they will keep from two to three days.

As already stated, three firms are more or less interested in the lobster trade of Portland. These occupy property worth $12,000, and furnish employment to nine men. According to Mr. A. L. Johnson, one of the principal dealers, Portland, in 1880, handled 800,000 lobsters in number These cost the dealers about six cents each, making the total cost at first hands $48,000. The lobsters are variously estimated at from 1½ to 2 pounds each; allowing them to average 1¾ pounds, the total weight would be 1,400,000 pounds. Of this quantity about one-half goes to Boston, one-fourth to New York, and the remainder to the country trade in Maine, New Hampshire, Massachusetts, and Canada.

LOBSTER-CANNING BY PORTLAND CAPITAL.—Portland capitalists are more extensively interested in the canning of lobsters than those of any other city in the United States. The business was begun at Eastport nearly forty years ago, and three or four years later a cannery was built in Boston. Before 1850 Portland people had become interested in the work, and from that date they have taken the lead in the business, showing remarkable energy and judgment. At first a good many lobsters were put up in the city, but as the demand increased the supply became insufficient, and they were obliged to establish canneries at different points along the coast, gradually increasing the number and going farther and farther from home, until to-day Portland has twelve canneries on the coast of Maine, employing about 300 laborers on shore and nearly 1,000 fishermen.

These canneries, with their fixtures, are worth $38,000, and it requires an additional capital of $80,000 to carry on the business. The three firms controlling this trade are the Portland Packing Company, Burnham & Morrill, and J. Winslow Jones. These firms have consulted their books and furnished figures from which the following summary of the business for 1880 has been obtained: 4,731,988 pounds of lobsters were used, and 849,8971 one-pound and 99,371 two-pound cans were put up. In addition, 267,943 one-pound and 5,597 two-pound cans of mackerel (*Scomber scombrus*) were packed, 516,864 pounds of round fish being required for this purpose. About 3,500 bushels of soft-

shelled clams (*Mya arenaria*) were used, from which 38,400 cans of clams and 14,400 cans of clam-chowder were prepared. Over $53,000 were paid to the fishermen for their catch; $19,000 were paid to the employés for their labor; and the manufactured products, including cans, cases, &c., had a market value of $157,500.

In addition to their work on the coast of Maine, the above firms have seventeen canneries in the British Provinces, distributed as follows: Three in New Brunswick, 11 in Nova Scotia, 1 on Prince Edward Island, 1 on the Magdalen Islands, and 1 in Newfoundland. About $214,000 capital is required for carrying on their business, and the figures for 1880 showed that 10,588,578 pounds of live lobsters were used in packing 1,916,096 one-pound cans, and 281,928 cans of other brands. Owing to the duty on the tin in which the lobsters are packed, over 95 per cent. of the products were sent directly to England, France, and Germany, or passed through the United States, in bond, en route for those countries.

The above firms have storehouses, can-factories, and offices in and about Portland valued at over $50,000, and eighty men are employed for three or four months each winter in making the cans that are to be used during the following season, which, in Maine, is limited by law to the months of April, May, June, and July.

THE FRESH-FISH TRADE.—The wholesale fresh-fish trade of Portland is controlled by seven firms located in the vicinity of Custom-house and Commercial Wharves. They obtain a greater part of their cod and haddock in summer from the local fishermen, who set their trawls off the outer islands of Casco Bay in from thirty to forty fathoms of water. The boats land about 400 pounds each trip, making an average of three trips a week during the fishing season. Formerly the mackerel were furnished by the numerous "drag-boats" of the locality, but of late, owing to the scarcity and small size of the fish, the number of these boats has greatly diminished, and the supply is now obtained from the seining fleet, or is occasionally brought from Boston. Sword-fish are landed in considerable numbers by the boats and vessels fishing along the shore from the 1st of July till the 15th of August. Three or four small schooners visit different localities from Cape Elizabeth to the Bay of Fundy for halibut, but the catch is usually very limited and a large part of the supply is brought from Gloucester. Late in the fall some of the larger vessels that have previously been employed in the offshore cod and mackerel fisheries fit out with trawls for the winter shore fisheries, catching cod, hake, and haddock, which are usually sold fresh in Portland.

The wholesale dealers handle between seven and eight million pounds of fresh fish annually. Probably three-eighths of the entire quantity, if we include those used for smoking, are haddock, one-fourth are cod, the bulk of the remainder being composed of mackerel, hake, pollock, sword-fish, salmon, and herring.

About half of the fresh fish are sold in Canada and the greater part of the remainder are sent to Boston and the interior cities of Maine, New Hampshire, and New York. The dealers occupy property valued at $24,000, and have $10,000 additional capital invested in the business. Twenty-four men are constantly employed in boxing and icing fish, and twenty seven others are required to assist during the busy season, which lasts about five or six months.

The retail fish trade is divided between the regular merchants, who rent buildings and deal exclusively in sea products, and the peddlers that vend fish from hand-carts and wagons through the city and surrounding country. There are eight regular retail dealers, each doing a fair trade. They buy chiefly of the wholesalers and seldom deal directly with the fishermen. The number of peddlers varies considerably with the season, the average being about forty. This class is made up largely of aged fishermen who have worn themselves out by exposure in their open boats, and are now satisfied with the small amount of money that can be made in this way.

THE TRADE IN FISH OIL.—A large part of the oil saved by the Maine fishermen is carried directly to Boston for a market, and outside of Portland and Eastport there are no oil dealers in the State of Maine. Eastport handles but a limited quantity, the greater part of which is obtained from the provincial fishermen. The firm of John Conley & Son controls the oil trade of the city, less than 5 per cent. of the total quantity brought to Portland being handled by other parties. Mr. Conley furnishes the following statement of the trade for 1880:

"On account of the higher prices paid for oil in the West, we have allowed much that is usually landed in Portland to go to Boston and other places. The quantity handled in this city was 49,851 gallons of liver oil from the coast of Maine, and 2,475 gallons from Nova Scotia; also 595 gallons of herring and 2,372 gallons of menhaden oil from different sources. This gives a total of 52,818 gallons, costing at first hands $20,422.36. About 4,464 gallons of the above were sold to dealers in New York, and the rest was shipped direct to the consumers throughout the country."

THE TRADE IN PROVISIONS AND OUTFITS.—With so large a fishing fleet of its own, and so many outside vessels visiting the city for a market, it is reasonable to suppose that Portland does a large business in supplying the fishermen with provisions, salt, and ice. Five firms depend wholly on their trade with fishermen and fishing vessels, and a sixth supplies a large amount of ship-chandlery to the vessels of the port. The dealers depend largely on Boston for their provisions and other supplies, but a portion of their stock comes direct from the factories along the coast. The lines and trawls are made in Castine; the cordage in Plymouth and Boston; the nets in Boston; the seine-boats in Gloucester, and the dories in Salisbury, Newburyport, Gloucester, and Harpswell. The trade amounts to $150,000 annually, and requires the services of sixteen clerks and accountants.

The salt trade has been extensive for many years. From 1812 to 1866, it was largely controlled by Dana & Co., and by E. G. Willard from 1867 to the close of 1878. Mr. Willard acted as agent for the large importing house of J. P. & G. C. Robinson, of New York, and for the thirteen years during which he controlled the fishing trade in salt he estimates that 30,000 hogsheads were sold annually at $1.50 to $1.75 per hogshead. About one-half of the entire quantity was used by Portland vessels, and the remainder was sold to vessels belonging in Southport, Westport, Boothbay, and other towns along the coast of Maine.

With so extensive a trade in fresh fish and so large a market fleet, Portland requires a large supply of ice. This is supplied by several firms, the principal one being D. W. Clark & Co., who estimate the annual quantity consumed by the fishing trade to be about 2,200 tons, worth $6,600. This is divided as follows: 1,000 tons to the fresh-fish dealers, 700 tons to the large vessels in the mackerel and halibut fishery, and 500 tons to the smaller market vessels and boats.

THE TRADE IN DRY AND PICKLED FISH.—Having spoken of the quantity of fish cured and inspected in Portland, we now consider the city as a distributing center. We are indebted to Mr. E. G. Willard, who buys a greater part of the fish landed in Portland either for himself or on commission for the largest houses in New York and Boston, for many of the following facts which, though only estimates, probably vary but little from the actual figures.

Most of the Portland cod are kench-cured, many of them being prepared for exportation to the West Indies. Formerly nearly all of the cod were packed in drums before shipping, but now the curers on the islands are beginning to carry their large fish in bulk to Boston and New York. At the present time, fully 50 per cent. of the cod are packed in drums and sold to the larger dealers of Boston and New York, by whom they are exported to the West Indies. The remainder are purchased by the same parties for shipment to the Western and Southern States. In 1880, Portland

dealers handled 27,000 quintals, in addition to those shipped by the curers of the islands. A considerable portion of them were brought from the fishing towns farther east.

The hake trade of Portland is largely controlled by Mr. Willard, who buys nearly all that are caught by Portland vessels, as well as those from other portions of the State. The quantity handled annually varies from 12,000 to 14,000 quintals, but in 1880 it reached fully 15,000. These fish are all hard-dried and packed in eight-quintal drums. The greater part are sold to J. Van Prague & Co., of Boston, who in turn export them to Surinam.

No city in the United States offers so good a market for dried pollock as Portland. The trade is controlled largely by the wholesale grocers, who buy all that are offered by the Maine fishermen, and send to Cape Ann and the British Provinces for an additional supply. Mr. George Trefethen, the principal dealer in pollock, writes as follows:

"In reply to your inquiries about the pollock trade of Portland for 1880, I will state that the catch has been very light. At Eastport [which has the most extensive fishery in the country], it was almost a total failure. * * * I think there were about 18,000 quintals sold in Portland in 1880. Of those handled by us, 30 per cent. were from Nova Scotia, 15 per cent. from Cape Ann, 40 per cent. from the Portland district, and the balance from the eastern part of the State, including Eastport. The prices have ruled about 50 cents per quintal higher than in 1879, or $2 to $2.50 per quintal. The demand has been good all through the season, and the stock now on hand is not more than 50 per cent. of what it was last year at this time. The prices are now [January 22, 1881] higher than for several years, owing to the small catch of last season, good light salted dry-cured fish bringing 3 to 3¼ cents per pound."

The grocers depend almost wholly for their trade on the counties of Cumberland and York, in Maine, and Rockingham, Strafford, Belknap, and Merrimac, in New Hampshire. In most places there is a foolish prejudice against pollock, and outside of the above-named and adjoining counties there is little demand for them. Here, however, according to Mr. Trefethen, they are esteemed equally with the cod by a majority of the people, and some even prefer them to the latter species.

About 3,000 quintals of haddock, and 2,500 quintals of cusk are handled here annually. These are mostly sold in Boston, Gloucester, and Plymouth, to be cut up and shipped to the West as "boneless cod". Boston takes about three-fourths of all, and Gloucester and Plymouth divide the remainder equally.

Portland's trade in mackerel is rapidly increasing. The city has the second largest fleet of "seiners" in the country and, in addition to the quantity landed by these, many vessels from other places fishing along the coast of Maine in summer find it convenient to pack a portion of their catch in Portland. Mackerel are also sent here for a market from other fishing ports in the State. Mr. Willard estimates that an average of 40,000 barrels were handled annually for several years; the quantity for 1880 was 76,417 barrels. Over two-thirds of the entire quantity are sold in New York, the remainder going chiefly to Boston, Philadelphia, Baltimore, and the West.

The quantity of herring handled in Portland from year to year depends largely upon the size of the school that visits the shore. In 1876, the catch was unusually large, and 25,000 to 30,000 barrels were brought in for a market. In 1878, the school was smaller than for many years, and only 10,000 barrels were received. In 1880, the quantity reached 12,000 barrels. Half of the products of this fishery are sold in New York, and the remainder are usually shipped to Boston and Canada.

About 2,000 barrels of pickled cod and haddock reach the Portland market yearly. Three-fourths of these are sent to Philadelphia and New York, and from thence to the mining districts of

Pennsylvania; the remainder go mostly to Boston. In 1880, only about 1,800 barrels were received.

CAPE ELIZABETH.—Cape Elizabeth has no fisheries that can be treated separately from those of Portland. The two places are separated only by the waters of Portland Harbor, and being so unequal in size the larger has naturally absorbed the business of the smaller. Cape Elizabeth has at the present time not even a retail fish market, and the forty boat-fishermen living in the town are obliged to take their catch to Portland for a market. A number of fishing vessels are officered and manned by fishermen from the Cape, and some are largely owned by these people; but all fit and sell in Portland, and are largely controlled by the Portland dealers. The two places are so intimately related to each other in the fisheries that the smaller is very naturally included with the larger, and the vessels and boats of the former are treated as a part of the Portland fleet.

K.—THE SACO, KENNEBUNK, AND YORK DISTRICTS.

46. GENERAL REVIEW OF THE FISHERIES.

THE GENERAL FISHERIES.—The Saco, Kennebunk, and York customs districts extend from Cape Elizabeth to the southern boundary of the State. The region was visited in the fall of 1880 by Mr. W. A. Wilcox, secretary of the Boston Fish Bureau, for the purpose of making a careful study of the past and present condition of the fisheries. From his report we learn that the section was formerly extensively engaged in the fisheries, and had quite a fleet of vessels visiting the off-shore banks. Of late, however, the vessel interests have declined, and the fisheries are now chiefly confined to the capture of ground-fish, herring, lobsters, and clams in the inshore waters. A few small vessels are still owned, but a majority of the men are provided with small open boats for engaging in the work.

THE CLAM FISHERIES.—The clam flats are very extensive, and enormous quantities of soft clams are dug annually, many being sold fresh, while the remainder are used as bait by the shore and vessel fishermen.

THE HERRING FISHERY.—The fall herring fisheries in the vicinity of Wood Island are also important, these waters being visited by larger schools of spawning fish than those of any other locality on the New England coast. In fact, the Wood Island region is the principal herring spawning ground in the United States, and each season immense numbers of fish visit the locality, where they remain until their eggs have been deposited, after which they return to the deeper waters. During the season, which lasts for several weeks, hundreds of vessels are engaged in the fishery, the catch, which varies greatly from year to year, being marketed in Portland, Boston, and Boothbay.

STATISTICAL RECAPITULATION OF THE SACO DISTRICT FOR 1880.—The following statements show separately the extent of the fisheries of the region for 1880, a separate statement being given for each district. The data from which these statements are derived were gathered by Mr. Wilcox:

STATISTICAL RECAPITULATION FOR 1880.—The following statement shows in detail the condition of the sea fisheries of the Saco customs district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	37	Capital in vessels and boats	$18,825
Number of boat-fishermen	152	Capital in nets and traps	3,225
Number of curers, packers, fitters, etc.	10	Other fixed and circulating capital	a 8,500
Number of factory hands	53	Total	30,550
Total	252		

* *Other fixed and circulating capital.*—Cash capital, $4,800; wharves, shorehouses, and fixtures, $2,500; factory buildings and apparatus, $1,200; total, $8,500.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	Number.	Value.
Vessels.							*Nets.*		
In food-fish fishery:							Gill-nets:		
Active	10	86.04	$5,750	$2,850	$4,900	$13,500	In vessel fisheries	50	$750
							In boat fisheries	60	720
Total	10	86.04	5,750	2,850	4,900	13,500	Total	110	1,470
Boats.							*Traps.*		
In vessel fisheries	30		600			600	Fykes	60	360
In shore fisheries	124		2,505	1,520	700	4,725	Lobster-pots	1,860	1,395
Total	154		3,105	1,520	700	5,325	Total	1,920	1,755

Detailed statement of the quantities and values of the product.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	3,538,340			$71,254
Fresh fish.				
For food	240,000			3,200
For bait	225,000		1,125 barrels	844
For fertilizer	40,000		200 barrels	100
Total	505,000			4,144
Dry fish.				
Cod	942,500	324,800		10,150
Hake	324,000	134,400		1,800
Haddock	252,000	89,600		1,800
Pollock	87,000	33,600		600
Cusk	59,800	25,760		632
Total	1,665,300	608,160		14,982
Pickled fish.				
Mackerel	60,000	40,000	200 barrels	1,150
Herring:				
Ordinary	212,500	170,000	850 barrels	2,550
Total	272,500	210,000	1,050 barrels	3,700
Lobsters.				
Fresh	405,600			14,872
Clams.				
For food	225,000		22,500 bushels	7,875
For bait	429,940		42,994 bushels = 3,071 barrels	15,355
Canned	35,000		3,500 bushels = 52,800 cans	6,620
Total	689,940			29,850
Miscellaneous.				
Fish-oil			2,715 gallons	1,086
Sounds		1,800		1,620
Marine products used for fertilizers				1,000
Total				3,706

STATISTICAL RECAPITULATION FOR 1880.—The following statement shows in detail the condition of the sea fisheries of the Kennebunk customs district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	68	Capital in vessels and boats	$27,610
Number of boat-fishermen	180	Capital in nets and traps	3,748
Number of curers, packers, fitters, &c	12	Other fixed and circulating capital	a6,500
Total	269	Total	37,858

a *Other fixed and circulating capital.*—Cash capital, $2,500; wharves, shorehouses, and fixtures, $4,000; total, $6,500.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
In food-fish fishery:							*Nets.*		
Active	13	206.16	$12,700	$3,950	$5,640	$22,290	Gill-nets:		
Total	13	206.16	12,700	3,950	5,640	22,290	In vessel fisheries	40	$650
Boats.							In boat fisheries	80	960
							Total	120	1,610
In vessel fisheries	46		920			920	*Traps.*		
In shore fisheries	79		3,110	890	400	4,400	Fykes	75	450
Total	125		4,030	890	400	5,320	Lobster-pots	2,250	1,688
							Total	2,325	2,138

Detailed statement of the quantities and values of the product.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	7,502,425			$82,586
Fresh fish.				
For food	452,000			6,027
For bait	310,000		1,550 barrels	1,162
For fertilizer	80,000		400 barrels	200
Total	842,000			7,389
Dry fish.				
Cod	2,233,725	769,776		24,055
Hake	1,601,100	664,160		8,895
Haddock	1,376,550	489,440		9,833
Pollock	469,800	181,440		3,240
Cusk	140,400	60,480		1,485
Total	5,821,575	2,165,296		47,508
Pickled fish.				
Mackerel	142,500	95,000	475 barrels	2,731
Herring:				
Ordinary	550,750	440,600	2,203 barrels	6,609
Total	693,250	535,600	2,678 barrels	9,340
Lobsters.				
Fresh	108,600			3,982
Clams.				
For food	37,000		3,700 bushels	1,295
Miscellaneous.				
Fish-oil			9,666 gallons	3,866
Sounds		8,895		8,006
Marine products used for fertilizers				1,200
Total				13,072

STATISTICAL RECAPITULATION FOR 1880.—The following statement shows in detail the condition of the fisheries of the York district:

Summary statement of persons employed and capital invested.

Persons employed.	Number.	Capital invested.	Amount.
Number of vessel-fishermen	15	Capital in vessels and boats	$13,693
Number of boat-fishermen	290	Capital in nets and traps	6,494
Number of curers, packers, fitters, &c	8	Other fixed and circulating capital	a3,000
Total	313	Total	23,187

a Other fixed and circulating capital.—Cash capital, $1,500; wharves, shorehouses, and fixtures, $1,500; total, $3,000.

Detailed statement of capital invested in vessels, boats, nets, and traps.

Vessels and boats.	No.	Tonnage.	Value.	Value of gear, exclusive of boats and nets.	Value of outfit.	Total value.	Nets and traps.	No.	Value.
Vessels.							*Nets.*		
In food-fish fisheries:							Gill-nets:		
Active	3	45.73	$2,550	$858	$1,185	$4,593	In vessel fisheries	6	$90
Total	3	45.73	2,550	858	1,185	4,593	In boat fisheries	225	2,700
Boats.							Haul-seines:		
In vessel fisheries	11		200			200	In boat fisheries	3	75
In shore fisheries	193		5,000	2,900	1,000	8,900	Total	234	2,865
Total	204		5,200	2,900	1,000	9,100	*Traps.*		
							Weirs	3	2,500
							Fykes	50	300
							Lobster-pots	1,105	829
							Total	1,158	3,629

Detailed statement of the quantities and values of the product.

Products specified.	Pounds, fresh.	Pounds, prepared.	Bulk.	Value as sold.
Grand total	5,958,980			$76,803
Fresh fish.				
For food	1,595,000			21,267
For bait	828,000		4,140 barrels	5,105
For fertilizer	20,000		100 barrels	50
Total	2,443,000		4,240 barrels	24,422
Dry fish.				
Cod	975,000	336,000		10,500
Hake	837,000	347,200		4,650
Haddock	567,000	201,600		4,050
Pollock	304,500	117,600		2,100
Cusk	104,000	44,800		1,100
Total	2,787,500	1,047,200		22,400
Pickled fish.				
Mackerel	42,000	28,000	140 barrels	805
Herring:				
Ordinary	93,750	75,000	375 barrels	1,125
Total	135,750	103,000	515 barrels	1,930
Lobsters.				
Fresh	99,000			3,630
Clams.				
For food	373,750		37,375 bushels	13,081
For bait	119,980		11,998 bushels = 857 barrels	4,285
Total	493,730			17,366
Miscellaneous.				
Fish-oil			4,675 gallons	1,870
Sounds		4,650		4,185
Marine products used for fertilizers				1,000
Total				7,055

47. SCARBOROUGH BEACH, PINE POINT, AND SACO BAY.

SCARBOROUGH BEACH.—The settlement at Scarborough Beach is situated 6 miles south of Portland and 3 miles from the village of Scarborough. The only branch of the fisheries to which the inhabitants give any attention is clam-digging; in this they are almost as largely interested as the residents of the adjoining settlement of Pine Point. About twenty men from the Beach are at work on the clam-flats the year round, and from September to April the number is increased to forty. Formerly a large part of the clams dug by the people of this settlement, after being shelled and salted, were sold for bait to the fishermen at various places along the coast. Fully 3,000 barrels were frequently disposed of in this way during a single season; but owing to the establishment of a cannery, the quantity salted for bait in 1880 did not exceed 1,000 barrels, the bulk of those taken being used for canning purposes. Many are shipped in shell during the year to the Boston and Portland markets, while a few are sold to peddlers from the smaller towns of the interior. The total catch for 1879 was about 30,400 bushels.

PINE POINT.—At the eastern end of Old Orchard Beach, 8 miles west of Portland, is the railroad station of Pine Point. The place is by many supposed to have been named from Mr. Charles Pine, one of the early settlers, while others contend that the name was suggested by the abundance of pine trees in the locality. The ocean shore in this neighborhood is neither more nor less than a low sandy plain a mile and a half in width, extending inland to the base of a series of elevated ridges known in colonial times as Blue Point Hills. From these heights the spires of Portland are distinctly visible, and during the war of 1812 a signal station was established here to give notice at Portland in case any strange vessels should be seen in the offing.

Although clams are abundant everywhere in this vicinity, they are taken in greatest numbers on the flats bordering the estuaries of the Dunstan, Spirwink, Libby, and Nonesuch Rivers. The clam-beds on the Dunstan are a quarter of a mile wide, lining both sides of the stream for 2 miles from its mouth; on the Spirwink they extend one and a half miles, and are only one-eighth of a mile wide; on the Libby they are a mile in length, and one-fourth of a mile across; while the Nonesuch has a belt of the same width, along either bank, 3 miles long. It will thus be seen that their total area is equal to that of a strip 7½ miles long by a quarter to half a mile broad. These clam-flats are among the most important along this portion of the coast, and it is here that the well-known "Scarboro' clams", which have the reputation of being the best on the New England coast, are obtained. They have an excellent flavor, and are more attractive in appearance than those found in many places, the shells, as well as their contents, looking very white and clean. Some claim that there is danger that such immense numbers of clams will be dug that the species will ultimately become extinct in this region, where they are now so plenty. To guard against such a contingency, the following State law, which is almost wholly neglected elsewhere, is strictly enforced in the town of Scarborough.

"No person shall take or destroy any shell-fish, or obstruct their growth in their beds, unless the municipal officers of the town grant him a permit in writing, for an agreed sum for the use of the town, under a penalty of not less than twenty nor more than five hundred dollars."

In this town licenses are granted for the year, beginning with April 1, to any of the resident fishermen, on the payment of a fee of 25 cents; no one living outside of the limits of the town being allowed to engage in the fishery.

A cannery was established here in 1869 by Messrs. Burnham & Morrill, of Portland, since which time a considerable quantity of clams have been packed annually. The work begins in October and continues till the end of the year. From 60 to 80 bushels of clams are used daily,

and an average of twenty-three persons, the greater part of whom are children, are employed in the work of gathering them. Besides those used by the canneries, large numbers of clams are sold during the summer to the numerous seaside hotels, and many are shipped at all seasons of the year to the Boston and Portland markets; some are also carried to the interior by peddlers.

Fifty men are employed on the various sand-flats of the town. The average annual production is about 36,000 bushels of clams in shell, valued at upwards of $12,000. One bushel in the shell will yield a gallon and a half when shucked; but, owing to the extra labor required in shelling them, a gallon of meats is considered equal in value to a bushel in the shell. The usual price is about 35 cents per bushel.

Mr. Reuben Snow, who has given us valuable information respecting the clamming interests, informs us that there are fourteen men, owning ten dories and two small sail-boats, engaged in the shore fisheries between Wood Island and Cape Elizabeth for six months of the year. The catch consists for the most part of ground fish, mackerel, herring, and lobsters. In the fall and winter fishing is discontinued, and the men turn their attention to clamming.

SACO BAY.—Saco Bay lies 15 miles south of Portland, in latitude 43°, longitude 70°. It extends from Prout's Neck on the north to Fletcher's Neck on the south, a distance of 5 miles. On the point of the last-named peninsula is Biddeford Pool, a place of some interest historically, which, though extensively engaged in the fisheries, is more generally known for its attractions as a summer resort.

The towns of Biddeford, Saco, and Scarborough border on the bay, but the largest cities of the first two, each named after the town in which it is located, are 8 miles inland, on opposite banks of the Saco River. From the mouth of this stream, which enters the bay at Biddeford Pool, to that of the Dunstan River, 6 miles to the east, the shore is one continuous sand bank. The northern part of this stretch of sand lying within the town of Scarborough is known as Pine Point, and the central portion is called Old Orchard.

There are several islands in the bay, the largest of which is Wood Island, the great resort for the shore herring fleet during the months of September and October. It lies just off the entrance to Saco River, forming a natural breakwater for the protection of Biddeford Pool. On the eastern end of the island, which is about 800 yards long, is the Wood Island Light-house, which, being provided with a red flash-light and a fog-bell, is of considerable importance to the fishermen. About 250 yards west of Wood Island is Negro Island, and 800 yards further on is an island 400 yards long, known as Stage Island, on the northeastern end of which is Stage Island Monument, the daylight guide to the harbor of the Pool. At the mouth of the Saco River is a granite breakwater which extends about 1,100 yards from the shore. The channel leading to the river is between the monument and this breakwater, and a constantly changing sand-bar makes its navigation, without the aid of a pilot, both difficult and dangerous.

This bay has been the home of fishermen since the earliest settlements upon its banks, over two hundred and fifty years ago, and to this day the locality is noted for its abundance of herring, ground fish, lobsters, and clams; while the river was once scarcely less famed for its salmon and other fresh-water species.

48. MR. WILCOX'S ACCOUNT OF BIDDEFORD POOL AND ITS FISHERIES.

BIDDEFORD POOL.—Biddeford Pool, a settlement of several hundred inhabitants, is situated about 15 miles south of Portland, at the southern extremity of Saco Bay. The "Pool," from which the village has derived its name, is a well-sheltered haven about a mile square, connected by a narrow passage with a larger and more exposed outer harbor. It is wholly inaccessible at low

tide, and even at high water only small and medium-sized vessels, such as those usually employed in fishing and coasting, can enter.

The first recorded residence of Europeans on this portion of the coast was in the latter part of 1616. During that year an expedition, consisting of thirty-two men, under the leadership of Capt. Richard Vines, was sent over from England by Sir Ferdinando Gorges, for the purpose of prospecting the territory granted to the Plymouth Company by King James ten years earlier. The company arrived in September and spent the winter at Biddeford Pool, which they christened Winter Harbor, a name that is still retained by the outer harbor. At that time there were no whites in Massachusetts, and the nearest English neighbors were at Jamestown, Va. For much of the time during the next seven years Captain Vines and others were engaged in transporting colonists to this coast, and numerous settlements were made before the close of that period.

The first settlers, we are told, derived their principal support from the sea, which furnished them not only with food, but with a ready article of barter. So absolutely dependent were they upon the fisheries that between the years 1661 and 1665 the greater part of the salary of the resident minister, Rev. Seth Fletcher, was paid in sea-products. We may add that to this day fishing has continued to be the most important industry of the place, and that at the present time the pulpit is filled by a fisherman from Cape Porpoise.

The small vessels owned at Biddeford Pool are engaged principally in fishing for ground fish along the coast between Boon Island and Cape Elizabeth. The catch is taken with hand-lines and trawls, and consists principally of cod, hake, haddock, and pollock.

A portion of the fleet is engaged in the lobster fisheries during part of the year. Over 1,200 lobster-pots are fished among the islands in Saco Bay and along the outer shore. Eleven men engage in the business for ten months in the year, and ten more, who are employed in the capture of ground fish during the summer, go lobstering for five months.

As the water grows cold in the fall, the lobsters gradually work into deeper water, and pots are set as far as seven miles southeast of Wood Island at a depth of from 30 to 50 fathoms, where individuals of large size are frequently taken. Lobsters have decreased both in number and size of late years. In 1876, sixty-five would fill a barrel, but now (1880) ninety are required. The total catch of lobsters in the town during 1879 reached 238,000 in number.

Those engaged in the lobster fisheries report considerable quantities of large shrimp in the deeper waters of the vicinity. Thus far no one has engaged in their capture to any extent, and, none having been sent to market, the fishermen have very little idea of their value. If the species is abundant as represented, there is every reason to believe that a fishery will soon be developed, and that it will be found to yield large returns to those who engage in it.

The bottom of the pool is covered with well-stocked clam beds, which are exposed at low tide, when, with the exception of one narrow channel, it is left entirely dry. These flats are "worked" by ten men for eight months in the year, and produce annually 2,600 bushels of clams, which are usually sold to the large hotels of the town or carried by peddlers to the villages of the interior.

The State allows any and all fishermen to dig clams for bait whenever they desire, but by law of the town none but its own citizens are permitted to take them for sale. This law, however, is not very strictly enforced. A cannery was built here in 1868, and, with the exception of the seasons of 1872 and 1873, from 4,000 to 7,000 bushels of clams were packed annually up to 1876, when the business was discontinued. The working season lasted during October and November of each year. The supply of clams was purchased from the local fishermen at prices varying from 30 to 50 cents a bushel.

For many years large schools of spawning herring have annually made their appearance in the

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vicinity of Wood Island, Cape Porpoise, and Boon Island. They arrive between the 7th and 20th of September and remain for two or three weeks, after which they work their way southward, often going as far as the entrance to Boston Harbor. There they are met by quite a fleet of the so-called "Irish boats" from Boston, and by numerous small vessels from Gloucester, Marblehead, Salem, and Beverly; but although these all help to swell the total catch, the bulk of the fish are always taken off Biddeford Pool and vicinity. An extensive fleet of small schooners from Maine, New Hampshire, and Massachusetts resorts yearly to this region, and as many as 185 sail have been seen fishing here at one time. They take their catch with gill-nets, which are fished from dories manned by two men each. The vessels use from six to twenty nets according to their size, an average being from ten to twelve. The largest vessels carry six or seven dories and from twelve to fifteen men. The nets used are forty yards long, twenty-one feet deep, and have a mesh varying from two and a half to three inches. They are set in the afternoon and "run" or "picked" the next morning. The fish usually "mesh" in the night, but in exceptional instances they have been known to do so in the daytime. In this case the nets are visited twice a day. The average catch is 10 barrels to the net, although as high as 50 barrels are sometimes taken.

The herring are generally marketed at Portland, where they are packed "round" (*i. e.*, as they come from the water) in barrels filled with a salt-water pickle. The greater part are distributed through the Southern and Western States. The total quantity taken by the fleet in 1879 was 15,000 barrels, while in 1880 it was diminished to 7,500. The average annual catch is between 10,000 and 12,000 barrels.

A life-saving station was established near Biddeford Pool in 1874, the captain and crew of which are selected from the fishermen of the region. Captain Goldthwaite, who is in charge of the station, has shown us many courtesies and given us much valuable information about the fisheries of the place. From him and others we learn that the fleet of the town numbers ten vessels, valued at $5,750 and carrying thirty-seven men. There are, in addition, forty-eight men, with thirty boats, engaged in the capture of fish, lobsters, and clams during a greater part of the year. The value of the sea-products taken by these parties during the average season is about $22,000.

49. MR. WILCOX'S ACCOUNT OF THE FISHERIES OF KENNEBUNK AND KENNEBUNKPORT.

KENNEBUNK AND KENNEBUNKPORT.—About 25 miles south of Portland are the towns of Kennebunk and Kennebunkport. They are separated from each other by a river, at the mouth of which is a small harbor that affords shelter for the boats and vessels owned in the vicinity. Two villages, known as Kennebunk and Kennebunkport, respectively, are, with the exception of Cape Porpoise, the only settlements of importance.

The people of these villages have given little attention to the fisheries, their time being largely employed in ship-building, which for many years has been their principal business, and they have won an enviable reputation for the superior quality of their work, especially in the vessels of large size. Though the business has, for some years past, been less extensive than formerly, the four ship-yards constructed, between the years 1873 and 1879, sixty-four vessels, having a total of 25,863.20 tons. Thirty-eight of these, aggregating 1,078.97 tons (including seven menhaden steamers), were for the fisheries. A number of other fishing vessels, too small for enrollment, have been built here.

The few boat-fishermen of these towns fish from April to November along the outer shore and in Wells Bay, using hand-lines and trawls for ground fish, and nets for mackerel and herring. About one-third of the ground-fish taken are cod; the rest are mostly hake and haddock, the

proportion of cusk and pollock being rather small. Most of the catch is marketed at Portland. The value of the fish taken in 1879, including the mackerel and herring, was about $5,000.

Clams are found in considerable numbers on both sides of the river for a mile and a half from its mouth. About 500 bushels are dug during the season, some of which are used for bait by the fishermen, and others are distributed by peddlers through the surrounding country. Lobsters are caught near the mouth of the river, and four hundred pots are set for them during the spring and summer, the fishing being discontinued during the winter. The catch in 1879 amounted to thirty-eight thousand in number, valued at $2,280.

CAPE PORPOISE.—Three miles east of Kennebunkport is the little settlement of Cape Porpoise, which belongs to the town of Kennebunkport. The ground in the neighborhood is exceedingly rocky, and the soil is quite poor. The inhabitants being thus debarred from the pursuit of agriculture must turn their attention to other employments, and according to Mr. S. H. Pinkham, who has furnished us with much valuable information, nearly all of the men and boys are engaged in fishing. The harbor, although difficult of entrance, is otherwise well adapted for the small vessels and boats which are used in the fisheries of the region. A dozen schooners, varying from 8 to 32 tons each, are registered at the custom-house, and an equal number of smaller craft, measuring from 3 to 5 tons, with twenty-eight dories, are owned in the village. Including the vessel-fishermen, there are at the Cape one hundred and seventeen men and boys who depend chiefly on the fisheries for a livelihood. The fishing is confined largely to trawling for ground-fish in Wells Bay and along the shore from Boon Island to Cape Elizabeth, only one vessel going as far as Banquereau for codfish. Herring are usually plenty, in September or October, just outside the harbor, where they are taken in considerable numbers. The fishermen also engage largely in the herring fisheries of Wood Island. Little attention is given to the capture of mackerel, though a few are taken with nets in the fall. About one-fifth of the ground-fish taken by the fleet are cod, the remainder being principally hake and haddock.

During the winter months, when few fish are taken, some of the men turn their attention to the capture of lobsters, while others resort to the harbor flats for clams. About 2,000 bushels of the latter are dug annually for bait and food. From 1,200 to 1,400 lobster-pots are fished within 4 miles of the harbor at this season, the usual method being to set them on trawls containing 50 or 60 each. In the spring, when the fishery is at its height, 2,000 pots are often used. An average catch for a season is, at present, about thirty-five thousand lobsters in number, though formerly it is said to have been much larger.

50. MR. WILCOX'S DESCRIPTION OF THE FISHERIES BETWEEN WELLS AND KITTERY.

WELLS.—Thirty-six miles southwest from Portland, in Wells Bay, are situated the fishing stations of Wells Beach, Perkins Cove, and Ogunquit Harbor, all included in the town of Wells. The beach is 6 miles long, the eastern half being sandy while the western part is broken and rocky. The harbor being exposed and shallow, few vessels are owned here, and most of the fishing, according to Mr. S. S. Perkins, to whom we are indebted for the facts given below, is carried on from small sail-boats of from 13 to 20 foot keel. These are provided with movable masts; they carry from one to two men each. Twenty-five of the fishermen live at Wells Beach, the most northerly of the stations mentioned, twenty others reside at Ogunquit, on the southwest, while fifty-five belong to Perkins Cove, which is situated midway between the other two. The total fleet of the town is seventy-five boats, manned by one hundred fishermen.

The fishing is chiefly with hand-lines and trawls between Cape Porpoise and Nubble Light, which are about 8 miles apart. The men continue the work, whenever the weather is favorable, throughout the entire year, cod being the principal species taken in the winter, hake in the fall, and haddock in the spring. Mackerel, also, are captured in their season by means of hand-lines and gill-nets; and herring and menhaden are often taken in considerable numbers to be used as bait in the other branches of the fishery. The total catch, including the various edible and non-edible species, amounted in 1879 to 2,930,000 pounds of round fish. About one-half of the catch, exclusive of herring and menhaden, is cured and sold in Boston or Gloucester, and the remainder is purchased by peddlers and by the various dealers of the interior towns of Massachusetts and New Hampshire.

Lobsters have not been very plenty for several years, but many are still caught, both with pots and with the old-fashioned hoop-net. The latter consists of an iron ring, 2½ feet in diameter, covered with netting. When it is to be fished, the bait is fastened in the middle, and the whole is lowered through the water to the bottom, its position being marked by a wooden buoy, which floats at the surface. About 250 of these simple traps and 75 of the common lath pots are used. The catch amounts to about 7,000 lobsters annually.

Clams are found in large numbers along the shore near the mouths of the Ogunquit and Webhannet Rivers. One hundred and twenty-five men are employed in digging them during nine months of the year, or from September to the following June. One man will get about 4 bushels in a day; but, on account of unfavorable tides and bad weather, the average number of working days to a month is only 16. It is estimated by Mr. Perkins, and others, that 72,000 bushels were dug during the season of 1879–'80. A large proportion of the clams are used as bait by the local fishermen, and the remainder are sold to peddlers from the inland towns.

Prior to 1874 vessels for fishing and coasting were built at Wells, to some extent, but since that date the business in this line has been confined wholly to the construction of the small sail-boats to be used in the shore fisheries; during the season of 1879 sixty-five of these were made by one firm.

CAPE NEDDOCK.—The village of Cape Neddock, including the little settlement of Donald's Cove, has twenty-one men engaged in the fisheries during six months of the year. These devote their attention to the capture of cod, hake, and haddock, with hand-lines and trawls, in Wells Bay and other neighboring fishing grounds; but from April to July a number of them engage in the lobster fisheries. The catch of lobsters, which amounts to 21,000 in number, is sold in Boston, while the cod and other species are marketed at Portsmouth and Cape Ann. There were no fishing vessels from this place during 1879, though two or three small craft are usually owned in the locality.

YORK.—The port of York, 12 miles to the northwest of Portsmouth, N. H., has a history of considerable interest, for it is said to have been the first English city incorporated on this continent. A charter from King James I, in 1606, embraced the province of Maine as far north as the forty-fifth parallel of latitude, and supplies were sent out from England, as early as 1616, to the colonists who had settled under its provisions at various points along the coast from Saco to the Piscataqua River. In 1620 the Plymouth Company received a new grant, extending north to the forty-eighth parallel, and covering the entire province of Maine. Three years later, the first permanent settlement at the place where York now stands was made, under the auspices of Sir Ferdinando Gorges, a friend of Charles I; though it seems probable that English subjects had resided in the vicinity prior to that date. On the 3d of April, 1639 (the charter of the Plymouth Company having been previously revoked), the territory lying between the Piscataqua and Kennebec Rivers was bestowed

upon Sir Ferdinando, who thus became sole proprietor of the town. It was probably Gorges's influence at court which secured its incorporation as a city, under the name of Gorgeana, on the first of May, 1611. On the 25th day of the March following the issuance of the city charter, Thomas Gorges, a relative of the proprietor, was chosen as the first mayor. The descendants of some of the aldermen elected at the same time still live in the place. In 1652, as a result of the difficulties between the King and Parliament, the colonial possessions of Sir Ferdinando were transferred to the Massachusetts Bay Company, which abrogated the charter of the city of Gorgeana and changed the name of the town to that by which it is now known.

Coming down to the last century, we find the port with its custom-house, and with quite a fleet engaged in trade with the West Indies and other foreign countries, together with numerous vessels employed in the fisheries. Its maritime importance is, however, wholly a thing of the past, for other neighboring ports have long since absorbed its commerce, and the fisheries have gradually declined until at the present time one vessel of over 20 tons burden, together with several large sail-boats and a few dories, comprise the entire fishing fleet of the town. These are used by the fishermen in the capture of cod and other ground-fish, which they take with trawl and line on Jeffries' Banks, off Boon Island, and along the shore.

Clams are dug on both sides of the York River for a mile and a half from its mouth, and about 2,375 bushels are taken annually, of which the greater part are sold to peddlers and sent to the interior; but of late years the species is said to have decreased in abundance.

Lobsters are trapped among the rocky ledges near the harbor from April to the middle of July. The catch has been small for a number of years, amounting in 1879 to only 20,000 lobsters, and those taken have been of inferior size. The same is said to be true for many other places along the coast of Maine, the cause of it usually being given by the residents as over-fishing. With the present State law, which forbids the canning of lobsters between the month of August and the following April of each year, rigidly enforced, a decided improvement may be expected.

KITTERY.—The old town of Kittery is situated directly opposite New Castle, N. H., on the north side of the Piscataqua River. At the present time it has forty-seven men engaged in fishing and lobstering during the summer months, or from March to November. Two large weirs are located on the outer beach, and a third one in the mouth of the river. During the season of 1879 there were taken from these weirs 180 barrels of mackerel, 325 barrels of herring, 100 barrels of alewives, and 1,740 barrels of menhaden, the whole having a value of over $3,000. Other species, including tautog, scup, and salmon, were taken, but in such limited quantities that they may be wholly neglected. Salmon were formerly quite abundant in the river, but they gradually disappeared until, for fifteen years prior to 1878, none were seen. Since that time a few have been secured. The catch of salmon in 1880, for the three weirs mentioned, amounted to nineteen good-sized fish, taken during the months of April and May.

Two small schooners and twenty-three boats are owned by the fishermen, who engage to a considerable extent in fishing for different species along the shore. The catch in 1879, exclusive of those taken in the weirs, amounted to 525,000 pounds of fish, valued at $5,250, and 18,000 lobsters, worth $900.