I.—NATURAL HISTORY OF THE MACKEREL.

A.—LIFE HISTORY OF THE MACKEREL.

1.—GEOGRAPHICAL DISTRIBUTION.

The common mackerel, *Scomber scombrus*, is an inhabitant of the North Atlantic Ocean. On our coast its southern limit is in the neighborhood of Cape Hatteras in early spring. The fishing schooners of New England find schools of them in this region at some distance from the shore, but there is no record of their having been taken in any numbers in shoal water south of Long Island. A. W. Simpson states that the species has been observed in the sounds about Cape Hatteras in August, September, and October. R. E. Earll finds evidence that stragglers occasionally enter the Chesapeake. Along the coasts of the Middle States and of New England mackerel abound throughout the summer months, and are also found in great numbers in the Gulf of Saint Lawrence, where, in past years, fishermen of the United States congregated in great numbers to participate in their capture. They are also found on the coast of Labrador, though there is no evidence that they ordinarily frequent the waters north of the Straits of Belle Isle.

Captain Atwood* has expressed the opinion that they visit Northern Labrador only in seasons remarkable for the prevalence of westerly winds, and that in colder seasons they do not go so far north.

Professor Hind was told by the residents of Aillik and Kypokok, Labrador, 150 miles northwest of Hamilton Inlet, that mackerel were abundant there in 1871, and that a few were caught in cod-seines. While at Double Island harbor, some fifteen miles north of Hopedale, a French Canadian resident informed him that there is "a scattering of mackerel" on that part of the coast.

They appear also at times to have been abundant on the northeastern coast of Newfoundland, though their appearance there is quite irregular. Mackerel do not occur in Hudson's Bay nor on the coast of Greenland. It seems probable that the natural northern limit of the species in the Western Atlantic is not far from the Straits of Belle Isle. Professor Packard, who visited this region in 1866, recorded that a few mackerel are taken in August in Salmon Bay and Red Bay, but that the Straits of Belle Isle were evidently the northern limits of the genus, while Fortin, one of the best Canadian authorities on fisheries, in his annual report for 1864, stated that in summer they appear in some places, such

*Proceedings Boston Society of Natural History, vol. 10, p. 66.

as Little Mecattina on the adjoining coast, latitude 50½° north, and even sometimes enter the Straits of Belle Isle.*

Perley says that they are rarely known to visit the coast of Labrador. H. R. Storer, after carefully studying the fauna of Southern Labrador, in 1849, came to the conclusion that they were sometimes found at Little Mecattina.

In the various reports of the Canadian inspectors of fisheries on the Labrador coast from 1864 to 1870 may be found evidence that mackerel are rarely taken even on the Labrador coast of the Gulf of Saint Lawrence.

Professor Verrill, who visited Anticosti and Mingan in 1861, was unable to find any mackerel in the waters of that region, although the best methods of catching them were often used.

Some years ago mackerel were abundant in the Bay of Fundy, as many as twelve vessels from Eastport, besides others, being engaged in their capture, chiefly about Digby and Saint Mary's Bay. They have now so completely disappeared as not to form an item in the commercial record of the catch.

The species is found throughout the entire length of the Norwegian coast from the Christiana Fjord to the North Cape and Varenger Fjord, latitude 71°.

It occurs on the south coast of Sweden, and, entering the Baltic, is found along the shores of Eastern Denmark and Eastern Prussia, and also abundantly in the German Ocean and the English Channel, as well as everywhere in all parts of the British Isles, and southward to the Mediterranean, where it abounds, especially in the Adriatic. There is no record of its capture in Africa, South America, in the West Indies, Gulf of Mexico, or even about the Bermudas.

The mackerel, then, would appear to be a shore-loving fish, not addicted to wide wanderings in the ocean, and with range limited in the Western Atlantic between latitudes 35° and 56°; in the Eastern Atlantic between 36° and 71°.

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* In 1860 Capt. Peter Avery, of the schooner Alabama, of Provincetown, took 100 barrels of fat mackerel at Port au Port, Newfoundland. Captain Atwood, however, has seen them at the Bay of Islands. He has also seen large schools at Mecattina.

Capt. J. W. Collins writes:

"As early as 1836, Capt. Stephen Rich, in the schooner "Good Hope", of Gloucester, spent almost the entire mackerel-fishing season on the coast of Labrador in pursuit of mackerel. He was induced by the reports brought him by the Labrador cod-fishermen to make this attempt. They had reported seeing mackerel abundant in the vicinity of the Straits of Belle Isle, and Captain Rich being of an adventurous turn decided to devote one summer to the investigation of the subject, feeling in hopes of obtaining a large catch. My father was one of the crew, and I have often heard him tell that the trip was entirely unsuccessful, notwithstanding the fact that they cruised all the way from Mecattina Islands through the Straits of Belle Isle, and on the northwest coast of Newfoundland as far down as the Bay of Islands. Few or no mackerel were taken until the vessel returned in the fall to the southern part of the Gulf of Saint Lawrence, where a small fare was obtained in a few weeks' fishing."

2.—MIGRATIONS.

The migrations of the mackerel, the causes of their appearance and disappearance at certain seasons at different points along the coast, the causes of their relative abundance and scarcity in different years, have already been discussed by numerous writers. The subject has received special attention on account of the disputes between our own and the Canadian Government concerning the value to our fishermen of the right to participate in the mackerel fisheries in the Provincial waters.

Notwithstanding the great amount of paper which has been covered with theories to explain the various mooted questions, it cannot be said that the habits of the mackerel are understood at all better than those of other fishes which have not attracted so much attention. The most voluminous writer upon this subject has been Prof. Henry Youle Hind, who devotes many pages of his book, "The Effect of the Fishery Clauses of the Treaty of Washington on the Fisheries and Fishermen of British North America," to the attempt to prove that the mackerel which have been at certain seasons in the past so abundant in the Gulf of Saint Lawrence and on the Atlantic coast of Nova Scotia, remain there throughout the year, hibernating in deep waters not very remote from the shore.* I have attempted to show the weakness of his argument in an

*Mr. Barnet Phillips, in the New York Times, December 31, 1880, thus criticises the theory of Mr. Hind, while referring to Mr. William H. Rideing's essay entitled "First Families of the Atlantic":

"In an article entitled 'First Families of the Atlantic,' to be found in the January number of Harper's Magazine, certain assertions are advanced in regard to the habits of the mackerel which are entirely of an ex parte character and might unintentionally act injuriously to our interests in case future disputes arose between the Provinces and the United States on the fishery question. The writer states that, 'seeking a soft muddy or sandy bed at the approach of winter, it [the mackerel] buries itself therein, first drawing a scale or film over each eye.' In a prior paragraph of this same article the possibility of the hibernation of the mackerel is advanced. Now, exactly these two arguments were presented by Professor Hind, who wished to prove that the mackerel was a local fish, in favor of the Provinces, which assertions were entirely refuted by Prof. Spencer F. Baird, Secretary of the Smithsonian Institution, and by Prof. G. Brown Goode. The great argument used by the Provincial fish experts was to show that the mackerel belonged to their waters, and the ideas of hibernation were therefore represented. If this had been granted, our case would have had, as far as mackerel go, little to rest upon. As to hibernation of the mackerel there are innumerable reasons to suppose that nothing of the kind exists. In fact, hibernation is one of those ichthyological questions which require very long research to know anything about. It does seem that sturgeon in Russian waters, and carp in cold temperatures, take to the mud, and may, perhaps, do something like hibernation, but this habit has no precedent in sea-fish. It may happen that a few individuals of the *scomber* family have been inclosed in the winter season in the waters of the Newfoundland coast. Such cases have undoubtedly happened, for on page 62 of the late report of the United States Commission, the statement is made that in a river of Nova Scotia where a school of mackerel had been detained, the fish were speared out of the mud. Returning to the numbing effects of cold weather on sea-fish, in order to show how unusual it must be, the American turbot is taken with hooks in

essay published in the Fifth Annual Report of the United States Commissioner of Fisheries for the year 1877, pp. 50–70. It is by no means demonstrated that certain schools of mackerel do not remain throughout the year in waters adjacent to the coast of Canada, but the weight of evidence at present seems to rest with those who believe that the mackerel are given to extensive migrations north and south along our coasts. These migrations are believed to be carried on in connection with another kind of migration which I have called "bathic migration," and which consists in a movement, at the approach of cold weather, into the deeper waters of the ocean. The menhaden and many other fishes have these two kinds of migrations, littoral and bathic. The sea-herring, on the other hand, has extensive littoral migrations and probably very slight movements of a bathic nature. In some the latter is most extended, in others the former. Anadromous fishes, like the shad and the alewife, very probably strike directly out to sea without ranging to any great degree northward or southward, while others, of which the mackerel is a fair type, undoubtedly make great coastwise migrations, though their bathic migrations may, without any great inconsistency, be as great as those which range less.

Upon this point I cannot do better than to quote from a manuscript letter from Professor Baird to the Hon. Hamilton Fish, Secretary of State, dated July 21, 1873. Having expressed certain views concerning the well known phenomenon of the migration of the herring and shad, he continues:

"The fish of the mackerel family form a marked exception to this rule. While the alewife and shad generally swim low in the water, their presence not being indicated at the surface, the mackerel swim near the surface, sometimes far out to sea, and their movements can be readily followed. The North American species consist of fish which as certainly, for the most part at least, have a migration along our coast north-

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the dead of winter under the floe ice of North Greenland at a depth of 300 fathoms. If sea-fish were mummified in the ocean depths by the cold, because at the deeper strata of the ocean temperatures are fairly uniform, once a fish had hibernated, his sleep might continue on forever. There can be no better proof of the migratory character of the mackerel than to cite a paragraph from the Cape Ann Advertiser, published this week, where the fact is announced that the mackerel fleet have gone off Hatteras in hopes of securing mackerel, and that some time ago 'vessels reported having sailed through immense schools for forty miles.' The film over the eye of mackerel Professor Hind placed great stress on, as he supposed it was a preparatory step to the hibernating process. Now, this film over the eye, as Mr. Goode shows, is not peculiar to the *Scombers*, for many fish, such as the shad, the alewife, the menhaden, the blue-fish, the mullet, the lake white-fish, and various cyprinoid fishes, have this membrane, though it never does cover the whole eye. The fact remains also to be proved that a skin forms over the eye in winter only. The writer of this article has apparently culled his facts in regard to mackerel from one side, and has read most superficially the whole of the testimony. 'Public documents' are rarely of an amusing character, but when they happen to be of interest, as were those published as 'The Award of the Fisheries Commission,' it is most unfortunate when false deductions are derived from them."

ward in spring and southward in autumn, as that of the ordinary pleasure seekers, and their habit of schooling on the surface of the water enables us to determine this fact with great precision. Whatever may be the theories of others on the subject, the American mackerel fisher knows perfectly well that in the spring he may find the schools of mackerel off Cape Henry, and that he can follow them northward day by day as they move in countless myriads on to the coasts of Maine and Nova Scotia." 3

The movements of the mackerel schools, like those of the menhaden, appear to be regulated solely by the temperature of the ocean.

In my essay upon menhaden, which has just been referred to, I have attempted to show, in a preliminary way, the relations of the movements of the menhaden schools to the temperature of the water at different stations along the coast in accordance with certain crude observations, which at present constitute the only material available as a basis for such generalizations. I have there claimed that menhaden make their appearance near the shore in the spring as soon as the temperature of the water in the harbors has reached a weekly average of 50°, and that they disappear in the fall soon after the waters have again cooled down to the same average temperature.

The mackerel is partial to much colder waters. They range ten to fifteen degrees farther to the north, and their southern limit is proportionally high. They appear earlier in the spring and disappear later in the fall, and their presence is nearly synchronous with the time when the water temperatures of the harbor have reached a weekly average of 45°. It has been remarked that the presence of the menhaden depends upon a weekly average of the harbor temperature of 50° or more. These harbor temperatures are several degrees—it is not known exactly how many—higher than those of the open ocean at the same latitude, and there can be no question that the menhaden thrives in water as cold as 45°. Mackerel will remain active and contented in a temperature of 40°, or even less. The normal time of the departure of mackerel from the coast is, therefore, a month or two later than that of the menhaden. 4 5

There are well recorded instances of the capture of menhaden in Massachusetts Bay as late as December, and there are also many instances where mackerel have been taken not only on the New England coast, but also in the Gulf of Saint Lawrence, in mid-winter.* 6

*Twenty mackerel were caught in a gill-net at Provincetown January 17, 1878. Others were taken late in December. Captain Harding tells me that they sometimes come ashore frozen in cold weather, and are found in the ice on the beach.

Early in February, 1881, small mackerel 5 or 6 inches in length were found in considerable numbers in the stomachs of hake and cod, taken on the eastern part of George's Bank in 50 fathoms, and on the southeastern part of Le Have in 60 and 80 fathoms of water; sometimes ten, twelve, or fifteen in the stomach of a single fish. On the 8th and 9th of February, Captain Olsen observed them schooling at the surface on George's. Gloucester fishermen had before seen them in winter on George's, but never so abundant.

Mr. John Fletcher Wonson tells me that at one time he left Gloucester on a halibut trip January 1, and January 3 or 4 on George's Bank caught a hogshead of herring and 7 or 8 mackerel in a gill-net.

The Schooner Shooting Star took a number of mackerel on George's Bank in March, 1856.*

The fishermen on George's took tinkers from the stomachs of cod-fish in February, 1878, using them for bait. Sometimes five or six were taken from one fish.

In January, 1868 or 1869, Capt. Warren Brown, of the schooner Charles Frederick, of Gloucester, caught 30 mackerel on a trawl-line set on the middle bank.

The Yarmouth Herald (Yarmouth, Nova Scotia), January 2, 1879, states that "two fine fat fresh mackerel were found among the kelp at Green Cove on Friday, December 28, 1878."

Basing their arguments upon such occurrences as these, Canadian writers have attempted to prove that large bodies of mackerel hibernate along their shores throughout the winter. It is still believed by many fishermen that the mackerel, at the approach of cold weather, go down into the mud, and there remain in a state of torpidity until the approach of warm weather in the spring. All that can be said regarding this claim is that, although we do not know enough about the subject to pronounce this impossible, American ichthyologists think they know enough to be of the opinion that it is very decidedly improbable.†

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*Cape Ann Advertiser, April, 1856.

†It seems only fair to quote in this connection a letter printed in Forest and Stream, a leading New York journal devoted to field sports and the fisheries, in criticism of views published at the time in that paper and also in the report of the Fish Commission, part v. I feel the utmost confidence in Dr. Gilpin's statements as to facts observed, though my interpretation might perhaps be different.

"HALIFAX, *June* 19, 1878.

"*Mr. Editor:* In some papers published some time since in the Forest and Stream upon the habits of the mackerel, it is asserted by Prof. Brown Goode that there is no reliable evidence of mackerel being seen upon the coast of Nova Scotia after the 25th of October, quoting me as his authority. Had he quoted me as giving the 1st of November, 1868, when the fish market at Halifax was full, I should have felt more complimented, as I should have known he had read my paper with more attention. In summing up my remarks I stated that mackerel remain usually all November on the surface in Nova Scotia, and during mild winters linger to December. This, Professor Goode says, is not reliable as scientific evidence, because no specific dates are given. To admit this would be to destroy almost the whole mass of information compiled in the report of both the Royal and American Commissioners of English and American Fisheries. But as I am certain that Professor Goode's desire is to have the truth simply, will you allow me a place in your columns to add to my previous assertions such specific dates as I may be able now to obtain, though not admitting his principle.

"On May 23, 1875, going into the Halifax fish market, I asked generally how long are mackerel in market? I was answered, generally all through November. On asking how long in December they had known them in market, Mr. Greywire said: 'I recollect them as late as the 10th of December. We keep our nets out to the 30th of November. Men hire to that time. Mackerel are seen after that date, but the seas

The appearance of the mackerel schools at the approach of summer in ordinary years has been noticed somewhere in the neighborhood of the following dates: At sea, off Cape Hatteras, March 20 to April 25; off Norfolk, Va., March 20 to April 30; off the Capes of Delaware, April 15 to May 1; off Barnegat and Sandy Hook, May 5 to May 25, and at the same date along the whole southern coast of New England, and as far east as Southern Nova Scotia, while in the Gulf of Saint Lawrence they appear late in May, and in abundance early in June.*

There appears to be a marked difference between the movements of mackerel and the menhaden, for while the menhaden are much more gradual in their approach to the shore, and much more dependent upon a small rise of temperature, the mackerel make their appearance almost simultaneously in all the waters from New Jersey to Nova Scotia at about the same time. Stragglers, of course, appear much earlier than the dates just mentioned; a few mackerel were observed at Waquoit, Mass., as early as April 19, 1871.

In the fall the mackerel disappear as suddenly as they came in the spring, but they have only in one instance been observed off the Carolina coast, except during the spring run. This is very probably because no fishing vessels ever visit this region later than June.

The instance referred to is the experience of Mr. Peter Sinclair, a well-known fisherman of Gloucester, who states that he has frequently taken them in great abundance off Cape Hatteras in December, where they are not known at all in the summer season. He has found them in the

are so boisterous that our nets are destroyed. Some few parties will keep them out in December in spite of cold and storms.' Mr. White corroborated this. Mr. Thomas Brackett said he had taken them often in December, and often in weather so cold that the fish were frozen in removing them from the meshes of the nets, but could remember no dates. Mr. William Duffy stated he saw one once on the 24th of December. He recollected it because it was Christmas eve, and on account of its rarity; but he had frequently taken them during December, though having no dates. The nets used are about two fathoms deep, set near the shore in about five to ten fathoms of water. My own recollections, but without dates, are seeing stops made in very cold weather and frozen ground, which must have been late in November. I think I have now made good my assertion that they linger to December, and that in any future history of

*The following letter from the skipper of the schooner Edward E. Webster is important, in that it gives the exact positions as well as the dates of some of the earliest captures in 1878, '79, '80, and '81:

"NEW YORK, *April* 22, 1881.

"Captain COLLINS:

"DEAR SIR: I have just received your letter of March 14, in which you wanted to know whereabouts I caught my first mackerel. (The first catch) in 1878, April 16, lat. 36° 10′ N., long. 74° 45′ W.; in 1879, April 12, lat. 36° 35′ N., long. 74° 50′ W.; in 1880, April 1, lat. 35° 30′ N., long. 74° 15′ W.; in 1881, March 20, lat. 37° 10′ N., long. 74° 05′ W.; and this trip we got them April 18 in lat. 38° 38′ N., and long. 74° 00′ W. This is our second trip this season. I have seen mackerel in lat. 35° 15′ N., and long. 73° 46′ W., which is the fartherest south I have ever seen any. I have been off Cape Lookout many times, but have never seen mackerel there. * * *

"Yours, truly,

"SOLOMON JACOBS."

spring as far south as Charleston, and followed them from Cape Henry to the Bay of Fundy and the Gulf of Saint Lawrence.

The very vagueness of the statements just made is evidence to show how little is actually known about the movements of these fish. The subject must be studied long and carefully before it can be understood, and the interests of the American fishermen demand that it should be thus studied.

"There is," writes Professor Baird, "no very satisfactory evidence of the occurrence of mackerel in the winter or any other season south of Cape Hatteras, and it is not given by Poey and other writers as occurring in the West Indies. A few mackerel are said to be occasionally brought into the Charleston market, and Mr. Moses Tarr, of Gloucester, thinks that some years ago he saw in the early part of March, a short distance to the southeast of Key West, a large school of mackerel. He, however, did not capture any, and it is more likely that the fish observed belonged to some other small species of the mackerel family which occasionally school like the mackerel itself, and might easily be mistaken for it. The skip-jack or leather-back may possibly have been the species referred to.

"I have been quite surprised to find the extent of belief among Massa-

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their habits it must be assumed as truth that they remain in numbers during November, but are found sparingly later on our coasts. Where they are during those dates in any intermediate point from Maine to Virginia, must be left to American observers. When these blanks are filled and a generalization made their history will be more complete, a task we may well leave in the hands of the American Commissioners of Fisheries.

"In my paper (1865) I speak of their asserted torpidity and the story of their blindness as needing more proof before they are asserted as facts. I have had nothing to alter my opinion since. In examining the eyes of many mackerel on May 23 and 27 and October 27, in different years, I have found that, as in most fish, the bony orbit is much larger than the base of the eye, and that the space is filled by gelatinous substance, which may be called cellular membrane and adipose deposit to this transparent membrane arising from the outer angle of this orbit spreads half way over the pupil of the eye. It may easily be raised and defined by passing a pen-knife between it and the eye. At the inner angle there is also a similar, but much smaller, membrane, not reaching to the eye. As the mackerel appear on our coasts about the 15th of May, and these observations were made the 23d, I do not think it can be asserted the eye is closed entirely in spring; and as the same appearance is found in September, we must admit it to be a permanent structure. An analogous membrane is found in the clupidæ, and doubtless other fish. On asking Thomas Loyd, our roughest and oldest fisherman: 'I don't know anything about the scales of the eyes, but I do know that, curse them, they see too sharp for us, steering clear of our spring nets,' and doubtless old Tom was right.

"On dissecting a mackerel, May 23, I found the heart first presenting the tricornered ventrical with its white aorta and deep red auricle resting upon the fringe of cœca that covered the intestines, sweeping down to the vent. The liver and stomach were both covered by the cœca. The latter was about three inches long, its upper lobe thick and round, but ending in a narrow tail or point. The cardiac end of the stomach was prolonged two and a half inches, ending in a point. The cœcæ were attached to the gut about an inch below the pylorus. There was but little difference in appear-

chusetts fishermen that the mackerel goes into the mud in the winter time. I have, indeed, been assured by trustworthy parties that they have known mackerel caught on eel spears when fishing for eels in the mud of Provincetown harbor.

"A similar belief is referred to by Dr. Gilpin in his paper on the mackerel in the transactions of the Nova Scotia Scientific Association, and it is difficult to refuse assent to the testimony of otherwise credible observers. There is nothing apparently in the economy of the mackerel to prevent its following the example of the sand lance, the eel, and other fish. We know that the melanora, the tench, and many other fresh-water fish have the burrowing habit, some of them being imbedded very deep in the mud at the bottom of a dried-up pond, to emerge again when the water is restored.

"The entire disappearance of mackerel during the winter season is a noteworthy fact, as we can hardly suppose that if it schooled on the surface in the Gulf Stream during that season it would not be noticed by the experienced eyes of sea captains, and we can hardly imagine that the fish would remain in the depths without an occasional rise.

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ance and size between stomach and gut. This we may roughly sum up: Stomach and gut very simple; cœca usually large and complicated; liver small, all noteworthy facts in the study of comparative life. The fish being a male one, lobe on either side of ivory-white; milt reached from gills to vent, slightly adhering to the sides by thin membrane, and covered by a similar one. They were divided in lobes by shallow lines, the upper lobes slightly fimbriated. On removing both entrails and milt a dark-purple space about an inch wide extended from gills to vent beneath the back bone. This, when opened, seemed filled with coagulated blood. It had in some respects the appearance of the air bladder in the salmonidæ, though wanting in the direct communication they have with the œsophagus. But this communication is also wanting in the gadidæ, where, especially in the hake, the air bladder assumes its highest form of organization. I have often found coagulation and reticulated plexi in air bladders of other fish.

"It has been asserted the European mackerel have no air bladders, and a new genus proposed, but with more probability they have the same organization as our own, and the difference lies in the opinion whether or not it is an air bladder.

"The mackerel appear on the Atlantic coast of Nova Scotia, and almost simultaneously on the Bay of Fundy, about the 15th of May. Nearly all spawners, male and female, perform a somewhat easterly and northerly route, disappear from the surface in a few weeks and reappear again in September without spawn, and fat, remain in numbers during November, and very sparingly during December, coming from the eastward and then disappear. It may be asserted generalizing from observation extending over a series of 8 or 10 years, that they are irregular in their movements as regards localities, though probably not as regards ocean surfaces.

"The very great difficulty of accounting how these enormous masses of surface feeders find food after disappearing from the surface has caused many ingenious theories, as to the question in what state and where they pass that time. These are all pleasant reading, but valuable more or less as regards the ingenuity and scientific standing of the writers. In this paper and the one I inclose (1865) I have stated what I think are facts, and which must be accepted in the future history of American mackerel, which I hope soon to see written by that commission which has already done so much in Atlantic waters.

"BERNARD GILPIN."

"It appears to be a well-established fact that mackerel are not unfrequently found in the stomachs of cod, and possibly of halibut, taken on the George's Banks in the winter season. Perhaps the number noted would be still larger if fishermen had the time and inclination to examine more frequently than they do the stomachs of the fish captured by them.

"Another curious fact in relation to the mackerel is in respect to the membrane, the vertical edge of which is observed during the summer season on the corner of the eye. This, it is claimed, during the winter extends over the whole eye, and imparts the appearance of blindness. This the mackerel is said to possess on making its first appearance near the coast in the spring, when it extends over the greater part of the eye, thus preventing the fish from seeing the bait, and it is a matter of common remark that mackerel in the spring cannot be taken with the hook, but must be captured with the net. The membrane appears to recede with the advancing season, and during a considerable portion of the time of its abode in the north it is scarcely appreciable."

Mr. Perley, of Saint John, N. B., in his work upon the fishes of the Provinces, remarks that mackerel have been taken on cod-hooks in deep water, near Grand Manan, in the winter season, and there is evidence to show that a few remain on the coast. It is, however, believed that these cases are exceptional and confined to stragglers, as such instances frequently occur with all the migratory fish.

The mackerel belongs to what may technically be termed pelagic or wandering fish, as their movements, something like those of the herring, are apparently more or less capricious, though probably governed by some definite law, which has not yet been worked out. It moves in large schools or bands, more or less isolated from each other, which sometimes swim near the surface and give distinct evidence of their presence, and at others sink down into the depths of the ocean and are entirely withdrawn from observation. The army of fish, however, in its northern migration, moves along with a very broad front, a portion coming so close to the shore as to be taken in the weirs and traps along the coast of Southern New England, especially in Vineyard Sound and on Cape Cod; while at the same time other schools are met with from 20 to 50 miles, or even more, out to sea. It is, however, still a question whether the fish that skirt the coast of the United States enter the Bay of Saint Lawrence, or whether the latter belong to another series, coming directly from the deep seas off the Newfoundland and Nova Scotia coast. Until lately the former has been the generally accepted theory, in view of the alleged fact that the fishermen of the Nova Scotia coast always take the fish coming from the west in the spring and from the east in the fall.

Captain Hanson B. Joyce, of Swan's Island, Maine, one of the most expert and observing mackerel fishermen of New England, thinks that the movements of the spring schools of mackerel are very much in-

fluenced by the direction and force of the prevailing winds while the fish are performing their northerly migration. He has generally found, he says, that when there has been a continuance of strong northerly winds about the last of May and early in June, the season at which the mackerel are passing the shoals of Nantucket and George's Bank, that the schools have taken a southerly track, passing to the southward of George's Shoals and continuing on in an easterly direction to the coast of Nova Scotia, and thence to the Gulf of Saint Lawrence.

When southerly winds or calms prevail at that season the mackerel are carried into the waters of the Gulf of Maine, and in consequence are much plentier off the New England coast than in the Saint Lawrence Gulf.

On this theory Captain Joyce bases his actions in cruising for mackerel, always fishing off the New England shores when southerly winds have predominated in the spring, and going to the Saint Lawrence if northerly winds have been exceptionally strong and continuous about the last of May.

The movements of the fish, as already stated, season by season, are quite uncertain, sometimes being very abundant in one direction and sometimes in another, and occasionally, indeed, they may disappear almost entirely for several years, and then reappearing after a considerable absence. In some years mackerel are very abundant on the coast of the United States and at others rare; the same condition applying to the fish of the Bay of Saint Lawrence. It is not certain, of course, that this indicates an entire absence of the fish from the localities referred to, but they may, possibly for some reason, remain in the depth of the sea, or some change in the character of the animal life in it, which constitutes the food of the fish, may produce the changes referred to. A notable instance of a somewhat permanent change in the migration of the mackerel is found in the entire failure since 1876 of the mackerel fishery in the Bay of Fundy, which, a few years ago, enabled a merchant of Eastport to employ successfully as many as a dozen vessels, especially in Digby and Saint Mary's Bay, but which is now given up. There are indeed faint suggestions, in the early history of the country, of their total absence from the whole coast for several years, as was also the case with the bluefish.

3.—ABUNDANCE.

The wonderful abundance of mackerel in our waters has always been a subject of remark. Francis Higginson, in his "Journal of his voyage to New England, 1629," speaks of seeing "many schools of mackerel, infinite multitudes on every side of our ship," off Cape Ann on the 26th of June; and Richard Mather, in his "journal" 1635, states that the seamen took abundance of mackerel off Menhiggin (Monhegan). In Governor Winthrop's journal, speaking of the year 1639, he remarks: "There was such store of exceeding large and fat mackerel upon our

coast this season as was a great benefit to all our Plantations, since one Boat with three men would take in a week ten hogsheads, which were sold at Connecticut for £3 12*s*. 0*d*. per hogshead."

Their abundance has varied greatly from year to year, and at times their numbers have been so few that grave apprehensions have been felt lest they should soon depart altogether.

As early as 1670, laws were passed by the colony of Massachusetts forbidding the use of certain instruments of capture, and similar ordinances have been passed from time to time ever since. The first resource of our State governments has always been, in seasons of scarcity, to attempt to restore fish to their former abundance by protective legislation. It seems to us at the present day absurd that the Massachusetts people should have supposed that the use of shore-seines was exterminating the mackerel on the coast of Massachusetts, but it is a fair question whether their apprehensions were not as well grounded as those of legislators of the present century who have endeavored to apply a similar remedy for a similar evil. In connection with the chapter on the mackerel fishery will be shown a diagram, which, by means of curves, exhibits the catch of mackerel in New England for a period of seventy-five years.

From a study of this it seems quite evident that the periods of their abundance and scarcity have alternated with each other without reference to overfishing or any other causes which we are prepared to understand. In the year 1831, 383,548½ barrels of mackerel were inspected in Massachusetts. In 1881 the number of barrels inspected was 269,495; to this, however, should be added 125,000 barrels caught and marketed fresh by the Massachusetts fleet, making an aggregate of 394,495 barrels. The fluctuations in the catch year by year from 1804 to 1881 are shown most instructively in a plate accompanying this report.

The total catch of mackerel by the New England fishermen in 1880 amounted to 131,939,255 pounds; while the Canadian catch (according to official returns, barrels being estimated to contain 300 pounds, cans, one and one-half pounds of fresh round fish) was 70,271,260 pounds, making an aggregate of 202,210,515 pounds. The yield of New England in 1881 is estimated to have exceeded that of 1880 by 10,000,000 pounds. We have no means at present for estimating the decrease of the Canadian catch, but it is perhaps safe to put it at 11,000,000. This brings the catch of 1881 to about 201,000,000 pounds. In addition to this, at least 100,000 barrels or 20,000,000 pounds, according to estimates from competent authority, were thrown away by the New England fleet. This brings the total weight of mackerel caught up to 221,000,000, representing 294,667,000 fish, if the weight be estimated at three-quarters of a pound each. The catch of mackerel in the waters of Europe does not probably exceed ten per cent. of this quantity.

The stories which are told by experienced fishermen of the immense numbers of mackerel sometimes seen are almost incredible. Capt. King

Harding, of Swampscott, Mass., described to me a school which he saw in the South Channel in 1848: "It was a wind-row of fish," said he; "it was about half a mile wide, and at least twenty miles long, for vessels not in sight of each other saw it at about the same time. All the vessels out saw this school the same day." He saw a school off Block Island, 1877, which he estimated to contain one million barrels. He could see only one edge of it at a time.

Upon the abundance of mackerel depends the welfare of many thousands of the citizens of Massachusetts and Maine. The success of the mackerel fishery is much more uncertain than that of the cod fishery, for instance, for the supply of cod is quite uniform from year to year. The prospects of each season are eagerly discussed from week to week in thousands of little circles along the coast, and are chronicled by the local press. The story of each successful trip is passed from mouth to mouth, and is a matter of general congratulation in each fishing community. A review of the results of the American mackerel fishery, and of the movements of the fish in each part of the season year by year, would be an important contribution to the literature of the American fisheries. Materials for such a review are before me, but space will not allow that it should be presented here.

4.—Food.

The food of the mackerel consists, for the most part, of small species of crustaceans, which abound everywhere in the sea, and which they appear to follow in their migrations. They also feed upon the spawn of other fishes and upon the spawn of lobsters, and prey greedily upon young fish of all kinds.* In the stomach of a "tinker" mackerel, taken in Fisher's Island Sound, November 7, 1877, Dr. Bean found the remains of six kinds of fishes—of the anchovy, the sand-lance, the smelt, the hake, the barracuda, and the silver-sides, besides numerous shrimps and other crustaceans. Captain Atwood states that when large enough they devour greedily large numbers of young herring several months old. Specimens taken July 18, 1871, 20 miles south of Noman's Land, contained numerous specimens of the big-eyed shrimps, Thysanopoda, larval crabs in the zoea and megalops stages, the young of hermit crabs, the young lady crabs, *Platyonichus ocellatus*, the young of two undetermined Macrura, numerous Copepoda, and numerous specimens of *Spirialis Gouldii*, a species of Pteropod. They also feed upon the centers of floating jelly-fishes (*Discophores*). In Gaspé the fishermen call jelly-fishes "mackerel bait."

The greed with which mackerel feed upon the chum, or ground men-

*Near the New London light-house is a small brook which empties into the harbor and abounds with a small species of fish of which the mackerel appear to be fond.

A few days since the keeper of the light-house, while the mackerel were indulging in a meal, caught five hundred at one haul with a scoop-net.—(Gloucester Telegraph, December 3, 1870.)

haden bait, which is thrown out to them by the fishing-vessels, shows that they are not at all dainty in their diet, and will swallow without hesitation any kind of floating organic matter.

Large mackerel often eat smaller ones. Captain Collins has frequently found young mackerel three or four inches long in the stomachs of those full grown. This is generally noticeable only in the fall, and the young fish are probably those which have been hatched in the spring.

In the fall of 1874 the writer made a trip upon a gill-net schooner to the grounds off Portland, Me., some distance to sea, for the purpose of studying the food of the mackerel, and found their stomachs full of a species of *Thysanopoda* and of a large copepod crustacean. The greater part of the food of mackerel consists, however, of minute crustaceans. Owing to the infinite abundance of these in the sea, mackerel probably have very little difficulty in finding food at almost any portion of the ocean visited by them, whether on the edge of the Gulf Stream or near the shore.

In an interview with Capt. King Harding, of Swampscott, one of the most experienced mackerel catchers on our coasts, I obtained the following amusing observations: He described one kind which looked like spiders, which were red, and crawled over his hand when he took them up. They look like little spiders; the mackerel are especially fond of them. At Boone Island, Maine, in July, 1850, the water all around the island was red for 100 yards from the shore; they crawled up the rock-weed on the shore until it was red. He took the sprays of rock-weed in his hand and pulled them slowly to him, and the mackerel, one and a half pound fish, would follow in quite to the rocks. He killed three with his oar, and tried to catch some in a basket by tolling them over it, but they were too quick for him. He asked his old skipper, Capt. Gorham Babson, what they were, and was told that they were "Boone Island Bed Bugs." And, said he, "Young man, when you see this kind of bait, no matter if you don't see any fish, never leave; the fish will be there in a few days."

Then there is another kind, called "Snappers." These are white, and dart rapidly about in the water; they are doubtless small crustaceans. He says that sometimes they swim at the surface, where the mackerel follow them. A few days before he had been standing on the stern of his vessel, and though he could see nothing under the water he knew the snappers were there about two feet below the surface, for he could see a school of mackerel swimming along, opening their mouths and taking in their food, and then letting the water out through their gills.

When the mackerel are tolled up from 12 or 15 fathoms below the surface their stomachs are often full of bait; so it is certain that these little animals swim at all depths.

Another kind of food is red, and is hot to the hands. This is called "Cayenne"; it spoils the fish.

Years ago, according to Captain Harding, mackerel did not school as they do now.

When you see pollock jumping near the shore, it is a pretty good sign that there is plenty of mackerel food.

The presence of abundance of mackerel food is indicated by the great schools of sea-birds, particularly by the flocks of phalaropes, or sea-geese (*Phalaropus borealis*), as the fishermen call them, which congregate together, floating upon the water, and when seen in summer gives a sure sign of the presence of mackerel also.

The various invertebrate animals preyed upon by mackerel are known to the fishermen by such names as "Shrimp," "Red-seed," and "Cayenne."

"The wide-spread distribution from shore seaward of the Thysanopoda and other minute crustacea, which constitute to so great an extent the food of the mackerel and herring on our shores, was proved," writes Professor Baird, "during a trip of the 'Speedwell' from Salem to Halifax in 1877." At numerous points and at regular intervals on the way across, including the middle of the route, immense numbers of these shrimp were met with and collected by the towing net. They were found in especial abundance at Le Have Bank. These prove to be specifically identical with those found in immense quantities in Eastport Harbor at the surface.

"That these same animals occur at least as far east as the Gulf Stream is shown by the list of the collections made by Professor S. I. Smith off the Georges near the edge of the Gulf Stream, and published in the Transactions of the Connecticut Academy of Arts and Sciences, vol. iii, July, 1874."

Capt. Chester Marr, of Gloucester, confirms the statements of Captain Harding regarding the effects of "red-seed" upon mackerel; he states that when mackerel are feeding on "red-seed" the fishermen have great trouble in keeping them sufficiently long to dress them properly. Their bellies soften at once. When the weather is good and dogfish are not troublesome, the common practice is to allow the fish to lie in the net until they have disposed of the food in their stomachs. Capt. Henry Willard, of the schooner "Henry Willard," of Portland, Me., carries a large net of coarse twine, which is suspended over the side of the vessel from two long booms. Into this he turns the fish and leaves them until the seed works out.*

Captain Marr states that the "red-seed" is very troublesome to the men engaged in dressing the fish; it makes their hands very sore, often causing the blood to run. A man can clean twice as many fish in a given time if he is not annoyed by the "red-seed" in their stomachs.

Captain Marr describes another kind of mackerel food, which he calls "small brit," which, he says, resembles young herring, which also rots

*This "large net of coarse twine" is the mackerel pocket described in the chapter on the purse-seine mackerel fishery.

the fish. This is probably, as he supposes it to be, "white-bait" or the young of the sea herring, *Clupea harengus*. It is known as "eye-bait" to the Canadian fishermen.

Captain Merchant tells me that when mackerel are found with "red-seed" in their stomachs fishermen are sure that they are on the right fishing grounds.

I am told by Captain Collins that it is common for many of the American fishermen to consider it a good sign of mackerel when they see floating seaweed, more especially eel grass, "chopped up," *i. e.*, cut into short pieces, which they think is done by these fish. Perhaps there may be a good reason for this supposition, since the mackerel, while feeding on the diminutive shells with which the weeds are covered, may also bite the latter in two. The presence of gannets is also considered a good sign of mackerel.

In England the food of the mackerel is called the "mackerel mint," and this is said to consist at certain seasons of the year of the sand-lants and five other fish, especially the herring and the sprat, while they have also been observed to devour, in the summer months, minute crustaceans, the swimming larvæ of tape-worms, and the embryos of the small spiral shell of the genus *Rissoa*, which, in its adult state, is found in great abundance upon seaweed. It was probably some animal of this kind which was referred to by Captain Harding in the statement above quoted, concerning the abundance of red-seed about Boone Island. Mr. J. F. Whiteaves has recorded a similar habit for the mackerel of the Gulf of Saint Lawrence.*

Professor Hind has pointed out certain relations which exist in the Gulf of Saint Lawrence between the mackerel and the lant, or sand-eel, which appears to be one of its most important articles of diet in these waters. I quote here in full his observations upon this subject, and also his views upon the relations of currents and tides to the presence of mackerel food, and the constant movements of the schools of fish:

"The movements of the mackerel, like those of the cod, and indeed of most species of fish, are determined at different seasons of the year by the geographical position of its food; and the first important kind of food which appears to lure the mackerel inshore, after spawning in the Gulf of Saint Lawrence, is the launce or sand-eel.

"The relation of the launce or sand-eel (*Ammodytes americanus*) to the mackerel is very much greater than appears at the first blush, and resembles the relation of the herring to the cod in general, and in particular the relation of the so-called Norwegian 'Sull cod,' or launce cod, to this widespread and important bait-fish. The approach of the launce to the coast in spring is most probably the cause why the so-called spring cod fishing suddenly ceases on many banks and shoals, commencing again at different localities two and three weeks later.

* Report on the second deep-sea dredging expedition of the Gulf of Saint Lawrence, 1872.

"The cod leaves the banks and shoals to meet and to follow the launce as they approach the coast. In the same manner they meet and follow the caplin, guided no doubt by the peculiar odor developed by each species at the approach of the spawning season.

"But it is the habit of the sand eel of burying itself in the sand between the tides, or in submerged sand beaches, that leads the mackerel so close inshore.

"There can be little doubt that a similar indraught and outdraught of mackerel and other fish occur in our waters when the launce leave the deep sea to approach the land, or when they return to the deep sea again. Unlike many of the shrimps and larval forms on which the mackerel feed, which are drifted to and fro by winds and currents, the launce is independent of the wind; but it is only in certain favorable localities frequented by this fish that the burying process between tide-marks, from which it derives its name, can be easily effected; hence, these resorts are not only valuable as bait grounds, but generally noted mackerel grounds, such as Seven Islands, and some parts of Bay Chaleurs, and part of the gulf coast of New Brunswick.

"This bait-fish approaches the sandy beaches fringing the shores of the gulf in the early summer months to spawn; and here the mackerel are found pursuing them while engaged in depositing their comparatively large reddish-colored ova on the sands between high and low water. Hence, during flood tide, and in the launce season, mackerel are commonly taken close inshore on these coasts, in pursuit of the launce; and the best catches are said to be made during the period of high tide, for the following reason: In dull, cloudy weather the launce buries itself in the sand left bare by the ebbing tides; but in bright, hot weather it rarely seeks the shelter of the sands except near low-water mark, probably because the heat of the sun would be oppressive. The breadth of sandy ground in which the launce buries itself for the brief period between high and low water marks is thus dependent upon the clearness of the sky.

"A continuance of cloudy weather is conducive to this kind of close inshore fishery; whereas a bright sky, and a day with a drying wind, leads the launce to select the narrow bands of sandy beach near the margin of ebb-tide, which always remain moist. In cloudy weather with a moist wind, the area in which the launce bury themselves and emerge during the incoming tide is thus very much greater than in bright, hot weather; and it is not unfrequently found by experience that the mackerel catch in such localities is much greater in cloudy weather than in bright weather, because the bait ground is then far more extensive close inshore.

"As the summer advances and the launce retire to deep water the mackerel feed upon the free-swimming and floating embryonic forms of crustaceans; among the latter the zoea of different forms of crabs are the most common. Adult shrimps of many species form also a large por-

tion of their food, and the infinite numbers of these forms of life which exist in the sea, from the coast line to a thousand miles from land, may be inferred from the fact that, together with fish, they form the great staple of food of seals in northern seas.

"Dr. Robert Brown states that during the sealing season in Spitzbergen seas he has taken out of the stomachs of seals various species of *Gammarus* (*G. Sabini; G. loricatus; G. pinguis: G. dentatus; G. mutatus*, &c.), collectively known to whalers under the name 'mountebank shrimps,' deriving the designation from their peculiar agility in water.*

"These small crustaceans are found in countless numbers on the great outlying banks off the North American coast, and in the Labrador seas they are also in great profusion.

"It is of special importance to notice that very many if not all of these free-swimming creatures in the sea, from invisible microscopic forms to the largest shrimp, sink to different zones of water or rise to the surface with the variations in temperature and changes in the direction and force of the wind. In fine weather *when* the food is *at the surface*, the mackerel, the herring, and other surface feeders swim open-mouthed against the wind. Dr. Brown states that the right-whale and most of the whale species feed in a similar manner. The right-whale feeding, swims leisurely at the rate of about four miles an hour. Mackerel when feeding come often by millions, like a swiftly-moving ripple on the water, with eager staring eyes and mouths distended to entrap the floating prey. Many of the free-swimming Pteropeda are active only during the night time, sinking during the day to a certain zone of depth.

"The effect of currents and tides, assisted by winds, is to drive these free-swimming forms towards the different shores and into land-locked or sheltered bays. On the shores of the open sea a continued land breeze drives them far out to sea, and the fish following them will be lost to view. Off the coast of the United States the mackerel ground is not unfrequently found near the summer limit of the Gulf Stream where wide-spreading eddies prevail, caused by the meeting of the great Labrador current flowing in an opposite direction, or the surging up of the Arctic underflow. In these vast eddies the temperature is greatly reduced by the mixing of almost ice-cold water from beneath with a warm overlying stratum.

"It is here too that the free-swimming mackerel food will congregate, sometimes at the surface, at other times at different depths, dependent upon the temperature of the mixed waters. In the vicinity of the south edge of the Grand Bank of Newfoundland the line of contact between the Arctic and the Gulf streams is sometimes very marked by the local currents which 'boil and form strong eddies.' The line of contact of the two great cold and warm currents is continually changing for hundreds of miles with the varying seasons and under the influence of winds;

* "On the seals of Greenland."—*Dr. R. Brown.*

hence also the changes in geographical position and in the depth or zone of the open-sea mackerel grounds.*

"Inshore the floating and free-swimming food is drifted to and fro by winds and tides, and great accumulations are sometimes thrown up upon the beaches in windrows after storms. This floating and swimming food gathers in eddies, either near the coast line or at the junction of opposing tidal waves or currents. Hence, along sheltered and embayed coasts, confronting the open sea in the vicinity of banks where great tidal currents and eddies are formed, or in the gulf and estuary of the Saint Lawrence, where two opposite and wholly different tides dragging along the coast-line approach to meet, there will be the mackerel ground of the fishermen, but not necessarily *at the surface.*"

The winged Pteropods very properly form an important part of mackerel food, as they sink and rise with changes of the temperature of the zone or sheet of water in which they are feeding.

5.—REPRODUCTION.

Although little is actually known concerning the spawning habits of the mackerel compared with those of fish which, like the shad and the salmon, have been artificially propagated, it is perhaps safe to say that the subject is understood in a general way. The testimony of reliable observers among the fishermen of our coast and the coast of the British Provinces indicates that the spawning takes place in rather deep water all along the shore from the eastern end of Long Island to Eastport, Me., along the coast of Nova Scotia, and in the Gulf of Saint Lawrence. The spawning season occurs in May in southern New England, in May and June in Massachusetts Bay, and in June in the Gulf of Saint Lawrence, and on the Bradley Banks and about the Magdalenes early in the month, and, according to Hind, on the northeast coast of Newfoundland toward the end of the month.†

*There are no mackerel-fishing grounds within 250 miles or more of the Grand Bank, and certainly none nearer than 400 miles of its southern edge. It is possible that mackerel have occasionally been seen, or stray specimens captured, nearer the Grand Bank than this, but no mackerel fishermen would think of trying for these fish east of the west coast of Newfoundland. There are but three instances on record where mackerel fishermen have gone so far east as that. Whatever influence may be exerted upon other forms of ocean life by the meeting of the Gulf Stream and the Arctic current, it can be quite safely asserted that the mackerel is never found in summer near the junction of these currents, excepting, perhaps, on the southern edge of George's Bank and off the south shoal of Nantucket. These localities are the nearest mackerel-fishing grounds to the Gulf Stream of any on the United States coast. And even here mackerel are rarely or never taken nearer than 40 or 50 miles from the northern edge of the stream.—J. W. COLLINS.

†During the entire month of June mackerel are taken in the Bay of Saint Lawrence with roes well developed. 'Having been engaged in the mackerel fishery in the Gulf for twenty-two consecutive seasons, ten of which I went to the Bay early in June, I have therefore had abundant opportunity to learn the spawning season of the mackerel in that region. It is my opinion that mackerel spawn in the Gulf of Saint

Capt. Benjamin Ashby, of Noank, Conn., states that in the spring of 1877 mackerel spawned in great numbers in Vineyard Sound and Buzzard's Bay. Many mackerel were taken in the pounds, and the eggs were so ripe that when the fish were thrown from the net to the boat the eggs escaped to such an extent that in cleaning out the boat afterwards he found at least half a bushel at the bottom. This was as early as the second of May, and continued through the month.

Capt. R. H. Hurlbert, of Gloucester, found the spawn running out of mackerel taken off Kettle Island, south of Cape Ann, in May and June.

Capt. Henry Webb, who owns a weir on Milk Island, under the shadow of the Thatcher's Island lights, obtains many mackerel every year in his nets. He informs me that when they first make their appearance, about the first of June, the spawn is running out of them and many of them are half through the process of spawning. The eggs will spurt from a female fish in a stream six feet long, and there is a large percentage of females in the catch, probably two-thirds of the whole.

Lawrence some time between the 1st and the 15th of July. Have caught them in abundance and full of roe as late as the 4th and 5th of July, and it is exceedingly rare to find spent mackerel previous to the 20th of June. In the period when hook-and-line fishing was most prosperous, the fishermen usually planned to leave the Gulf about the first week in July if they had succeeded in getting nearly a fare of mackerel previous to that time, since while the fish were spawning, or between the 1st and 15th of the month, but little could be done, as the mackerel sunk at that time, and would not readily take the hook. The fishermen, therefore, knowing that they could catch few fish during this period, between "hay and grass," as they termed it, usually improved the opportunity thus afforded of making their passage home and refitting for another trip with comparatively little loss of time. Apparently one of the most favorite breeding grounds for mackerel in the Gulf of Saint Lawrence is the area along the shores of New Brunswick and Prince Edward Island (on the north side of the latter) lying inside of a line drawn from North Cape to Point Miscou. Bank Bradley is also a breeding-ground for mackerel of considerable importance. The fish seem to assemble on the grounds mentioned above during June, in a depth varying from 3 to 40 fathoms. The greater part, however, are found in a depth varying from 10 to 20 fathoms. The spawning season being over, they usually stay on the same grounds, though later in the summer and during autumn the mackerel were formerly abundant around the Magdalenes and the bend of Prince Edward Island; when the fall migration takes place they move farther south. It is probable that large numbers of mackerel may deposit their spawn around the Magdalene Islands, though it is worthy of note that but few or no fish have been taken in that locality on hook and line during the month of June. Considerable quantities are, however, caught by the gill-net fishermen early in June, though the catch has always been small compared with that formerly obtained by hook-and-line fishing in the western part of the Bay.—J. W. COLLINS.

As corroborative of the views of Captain Collins, I give the statements of Capts. Andrew Leighton and Joseph Rowe, two of the most keenly observant, and in consequence the most successful, of the old school Cape Ann "mackerel killers." The former writes to Captain Collins: "My observations are in harmony with yours." The latter remarks: "I have always thought that the mackerel in the Bay of Saint Lawrence sunk about the last of June to spawn. From the first to the middle of July was always a very dull time to catch mackerel on hooks. When the mackerel sunk they were full of spawn. When we got them again, about the middle of July, they would have the most of the spawn out of them and be some fat."

The spawn begins to dry up after the first of August, and young fish begin to appear about the 4th of August. He thinks that it takes mackerel four or five weeks to spawn; after that they begin to grow fat, and when they are fat there is no sign of spawn to be seen, the male and female not being distinguishable.

The growth is rapid, and in about seven weeks the young fish are about four or five inches long.

Mackerel spawn abundantly in Grover's Beach at a depth of one and a half to two fathoms. The eggs are very minute and the old mackerel feed upon them greedily.

Captain Fisher, of Portland, Me., told me, in 1874, that when the mackerel come in they are almost empty and have a muddy taste. They first engage in spawning, but toward the last of June they have finished and begin to grow fat.

Captain Hurlbert caught a dozen fish off Camden July 1, 1870, which were half spawned and had spawn running out of them.

According to Mr. Wilkins, of Two Isles, Grand Manan, the mackerel spawns there on the rocks and sand in water from 1 foot to 10 feet or more in depth. This is in the first half of June. The spawn is in bunches and does not float on the water.

During the spawning season mackerel are taken in seines, as they will not bite and are then very poor. They come again in September and October, and are then taken with the hook.

Mr. Hall, of Charlottetown, Prince Edward Island, says that mackerel spawn only once in seven years in large numbers, this period representing the interval between the successive large catches. The mackerel strike in there about the 10th of June. They spawn about the 2d or 3d of July on the Bradley Bank to the north of Prince Edward Island. At that time they have been taken with spawn running out of them. They cease to bite for several weeks while spawning. One of the principal spawning-grounds on our coast appears to be on the Nantucket Shoals, where for a period of three or four weeks after their first appearance the mackerel hug the bottom and rarely take the hook. At this time there is a lull in the prosecution of the mackerel fishery, although before its beginning great quantities are taken in the purse-seines far south along the coast. After the close of the spawning season the old fish are said to be very poor, but take the hook greedily along the entire coast, as also before the beginning of the spawning season; although the fish first brought to market are sold at a high price on account of their previous scarcity, it is not until after the close of the spawning season and the subsequent fattening up of the fish that they attain their highest excellence as an article of food. Fall mackerel are well understood to be by far the best fish. Storer, in his history of the fishes of Massachusetts, remarks: "From the 10th of May to the 15th of June they appear at the entrance to Massachusetts Bay, having been a few days previous at Nantucket and the Vineyard Sound.

Nine-tenths of those first seen are males, and they are all large but poor, weighing from one pound to one pound and a half. At their first appearance they will not take the hook, and are therefore captured in seines."

The contrast between the statements of Storer and Captain Webb should be carefully noted. The former states that the early fish taken near the end of Cape Cod are mostly males. This would naturally be the case, as the females at this time are either engaged in spawning or are perhaps so weak that they would not be likely to come to the surface. At Milk Island, however, which seems to be in the middle of the spawning region, the majority of the fish are females.

We are indebted to Capt. N. E. Atwood for the most complete series of observations upon the spawning of the mackerel which has ever been made, and what he has seen he shall be allowed to tell in his own words:

"I have many seasons been engaged in fishing for mackerel in our bay with gill-nets. I watched the mackerel more particularly in regard to their time for spawning. In 1856, owing to the fact that a measure had passed the Massachusetts legislature authorizing the appointment of three commissioners to make investigations with regard to the artificial propagation of the fish, and that I expected to be named one of the commissioners, I went to the upper part of Massachusetts Bay, where it is about twenty miles broad, and I found these spawning mackerel there near the bottom. This year the mackerel came in about the middle of May; few at first. On the 20th I went out for the first time with my drifting-nets all night in the bay; I caught 2,250 mackerel; on the following night I caught 3,520. When I first began to catch them I observed that the spawn had come to its full size, though it was not free to run from them, not being yet fully matured. On or about the 1st of June we found that some of them were depositing spawn, and as I took them from the nets the spawn ran freely. On the 5th of June I took the mature eggs as they came from the fish and put them in alcohol, marking the date, as I considered this time the middle of the spawning season. (By the 10th of June the fish had all deposited their spawn, and they then proceeded to the grounds where they expected to meet with better food in order to fatten and recruit. The spawning takes place at a depth of from five to fifteen fathoms.) Thirty days after I went out in the bay and found any quantity of schools of little mackerel which were, I should think, about two inches long, though their length might have been a little less. I took a number of specimens and put them in alcohol, marking the date. Twenty-five days later I procured another lot of them which had grown to double that size. I don't mean to imply that they were twice as long, but twice as heavy. I put them also in alcohol, marking the date. The first time I subsequently went to Boston I called on Professor Agassiz and gave him the specimens. He said that he had never before been

able to ascertain these facts so clearly and so well, and that he was very much pleased with them. I watched the growth of these young mackerel all along, and I saw them grow considerably from month to month, so much so that the same fall, in the latter part of October, I caught some of them with a very small mesh net and found they had grown to a length of 6½ or 7 inches. I kept a small quantity of them, split, salted, and packed them, in accordance with the Massachusetts inspection law, as No. 4's, and, since mackerel were then scarce and very high in price, I sold them for as much as $6 a barrel."

"Much yet remains to be learned in regard to the spawning season of the American mackerel" (writes Professor Baird), "and little more is known of this except in regard to the European variety. It is, however, well established by the researches of Sars that this fish, like the cod, and many of the flat fish, &c., spawns in the open sea, sometimes at a great distance from the land, at others closer in shore. Sars found them on the outer banks of the coast of Norway; and Mr. Matthew Dunn, of Mevagissey, England, communicates to *Land and Water* of his observations of mackerel found, with ripe spawn, 6 miles from the coast.*

"The fish taken in the wiers and pounds on Vineyard Sound and about Cape Cod, in the early spring, are filled with ripe spawn; and that the operation of spawning on the American coast is shown by the immense schools of small fish that are taken throughout the summer, of various sizes, from a few inches up, and from Buzzard's Bay to Portland and Penobscot Bay. No species of young fish is, at times, more abundant throughout the summer season than the mackerel.

"The egg of the mackerel is exceedingly minute, not larger than that of the alewife or gaspereau. It appears to be free from an adhesive envelope, such as pertains to the egg of the herring, and in consequence of which it agglutinates together, and adheres to gravel, the rocks, or the sea-weed at the bottom. As with the egg of the cod, that of the

*SPAWNING OF MACKEREL.

SIR: I have been again fortunate in taking a mackerel alive in the act of spawning, on the night of May 10, about 6 miles from land. A better specimen could not possibly be had, and the roe ran freely without assistance. I got a bucket of sea-water, and allowed the fish to spawn in it; for some time I had a difficulty in finding what became of it, as the globules would not reflect the light of the candle like the pilchard spawn; but by running the water into a clean bottle, and holding it to the light, I found them floating on the surface, but not so buoyant as the pilchard roe. In this state they continued for about half an hour, and then gradually sank to the bottom; but, unlike the pilchard spawn, they retained their vitality there for more than twelve hours. With the daylight the globules could scarcely be discerned by looking directly down into the water; but on holding it towards the light in a bottle they could be seen, with that healthy, bright, silvery hue so peculiar to living ones, each marked with a dark spot in the center. Believing the pilchard spawn would have reached you, I did not send you any of these. As I sent that spawn by post, I suppose the bottle must have been broken in the post-bag.—Matthias Dunn (Mevagissey, Cornwall, May 15, 1871.) (*Land and Water, May* 20, 353.)

mackerel is provided with an oil globule, which makes it float nearly at the level of the surface."

I am indebted to Mr. Frederick W. True for a count of the eggs in two mackerel taken at Woods Holl, Mass., in May, 1873. One of these (No. 10512, U. S. Nat. Mus.), contained 363,107, the other (No. 15205), 393,887.

The only enumeration of mackerel eggs previously recorded is that made by Thomas Harmer, in 1764, and published in the Philosophical Transactions of London, vol. 57, p. 285. He found in one large mackerel, weighing 1¼ pounds, 454,961 eggs; in a second, of much the same weight, 430,846; and in a third, weighing about 1 pound 2 ounces, 546,681. His estimate is probably too large.

6.—Rate of growth and size.

The rate of growth of the mackerel during the first summer has been quite carefully studied by Captain Atwood; and the same authority has, perhaps, more satisfactorily than any other interpreted the facts from which may be deduced the conclusions as to their growth year by year.

Referring to the small fish, 6½ or 7 inches in length, which he believed to be the young of the year, caught by him in October, 1856, he says: "Fish of this size are sometimes called 'spikes,' but I do not know their proper name. The next year I think they are the 'blinks,' being one year old; the following year they are the 'tinkers,' two years old, and the year after they return to us as the second-size, three years old. It is probable that the fish reaches its full maturity in four years." He continues: "The first mackerel that come in are very large and spawners, but these do not bite at the hook; and you don't catch them with the seine, because they don't show themselves. You would not know of their presence if you did not set nets for them. When they are taken in nets set anywhere along the coast, at Provincetown, &c., a good many people imagine that they are the remnant of the mackerel which were there the year before, and which have been imbedded in the mud; and when they taste these fish they fancy that they taste mud. When the next school arrives there appear mackerel of different sizes, which take the hook. They are carried to Boston market and are sold fresh in their season. They are not sold by weight, but are culled, and are denominated as follows: Large ones, second-size, tinkers, and blinks. When the large ones are worth 12 cents, the others may sell: second size, 8 cents; tinkers, 4 cents, and blinks, 1½ cents. These prices may fluctuate before a large proportion of one or more of the above-named kinds at the same time. Any man who is well acquainted with them will make the same culling, as there seems to be a line of demarkation between the different kinds which stands out prominently.

"Admitting this to be the fact, those that come as blinks are from

the spawn of the year before, while those which are called tinkers are from the blinks of the year previous, being the two-year-old fish; and those that are called second-size are from the tinkers of the year before, when they grow up and mix with the bigger ones, I don't know how they live, or much about them. This is my opinion about these matters. You will find fishermen tell you they think that mackerel are six or seven years in getting their growth."

Mackerel, when full-grown, are from 17 to 18 inches in length; sometimes they attain a larger size. Captain Collins has caught individuals measuring twenty-two inches. In August, 1880, a school of mackerel was taken in the vicinity of Plymouth; they weighed from three to three and a half pounds each, and were from 19 to 19½ inches long. They were regarded as extraordinarily large, and a barrel of them were sent to the Fishery Exhibition at Berlin as an illustration of the perfection to which the mackerel attains in this country. Although the size just mentioned is unusual at present, in past years many thousands of barrels have been taken nearly, if not quite, as large. The size varies from year to year, sometimes very few barrels which can be rated as No. 1's being found in our waters. A No. 1 mackerel, according to the Massachusetts inspection laws, measures 13 inches from the tip of the snout to the crotch or fork of the caudal fin. The average length from year to year for the whole coast is probably not far from 12 inches in length, and a weight of twelve to sixteen ounces. The following quotations from writers of two centuries ago are interesting, since they show that large mackerel were known to the early colonists of New England:

"The mackerel, of which there is choicefull plenty all summer long; in the spring they are ordinarily 18 inches long; afterwards there is none taken but what are smaller."—Joselyn, 1675.

"The Makarels are the baite for the Basse, & these have been chased into the shallow waters, where so many thousands have shott themselves a shore with the surfe of the Sea that whole hogges-heads have been taken up on the Sands; & for length they excell any of other parts: they have bin measured 18. & 19. inches in length & seaven breadth: & are taken with a drayee, (as boats use to pass to & froe at Sea on business,) in very greate quantities all along the Coaste.

"The Fish is good, salted; for store against the winter, as well as fresh, & to be accounted a good commodity."*

7.—Enemies.

Captain Collins writes: "The gannet is one of the most destructive enemies of the mackerel. I have often seen these birds so heavily weighted with these fish that they were unable to rise on the approach of the vessel until they had disgorged from two to four good sized mack-

* New England's Fish, John Smith, 1622. U. S. F. C. Rep., 153.

erel. This is so common an occurrence that there are but few fishermen who have not witnessed it."

"Porpoises and whales may also be included in the list of enemies of the mackerel. It is by no means an unusual sight on the fishing grounds to see hundreds of the former rushing and leaping among schools of mackerel scattering them in every direction."

"The shark, known to fishermen as the 'mackerel shark,' is one of the principal enemies of the mackerel. I have often seen them chasing mackerel, and, when jigging was practiced, it was a common occurrence for sharks to drive off a school from alongside of a vessel."

Dogfish often hover around the outside of large schools of mackerel, and doubtless feed on them. Great difficulty is sometimes experienced in saving fish that have been inclosed in a purse-seine, owing to the immense numbers of dogfish that gather around, and in their efforts to eat the mackerel, which they see through the meshes, they bite off the twine, making large holes in the seine through which the inclosed fish escape."

The dogfish is doubtless a dangerous foe to the mackerel weakened by the act of spawning, and remaining near the bottom. An old fisherman has described to me with great animation how greedily the dogfish devour the mackerel which have become gilled in the nets, how they follow them to the surface and linger about the vessel while the process of cleaning is going on, drinking the blood of the fish as it flows from the scuppers.

Among the other principal enemies of the mackerel are the bluefish, tunny, and cod. The appearance of a school of bluefish in waters crowded with mackerel is an almost sure signal for their disappearance.

The young mackerel are eaten also by squids. Professor Verrill has recorded the following description of the maneuvers of the squid known to zoologists by the name *Ommastrephes illecebrosa:*

"Messrs. S. I. Smith and Oscar Harger observed it at Provincetown, Mass., among the wharves, in large numbers, July 28, engaged in capturing and devouring the young mackerel, which were swimming about in 'schools,' and at that time were about four or five inches long. In attacking the mackerel they would suddenly dart backward among the fish with the velocity of an arrow, and as suddenly turn obliquely to the right or left and seize a fish, which was almost instantly killed by a bite in the back of the neck with the sharp beaks. The bite was always made in the same place, cutting out a triangular piece of flesh, and was deep enough to penetrate to the spinal cord. The attacks were not always successful, and were sometimes repeated a dozen times before one of these active and wary fishes could be caught. Sometimes after making several unsuccessful attempts one of the squids would suddenly drop to the bottom, and, resting upon the sand, would change its color to that of the sand so perfectly as to be almost invisible. In this

way it would wait until the fishes came back, and when they were swimming close to or over the ambuscade, the squid, by a sudden dart, would be pretty sure to secure a fish. Ordinarily when swimming they were thickly spotted with red and brown, but when darting among the mackerel they appeared translucent and pale. The mackerel, however, seemed to have learned that the shallow water is the safest for them and would hug the shore as closely as possible, so that in pursuing them many of the squids became stranded and perished by hundreds, for when they once touch the shore they begin to pump water from their siphons with great energy, and this usually forces them farther and farther up the beach. At such times they often discharge their ink in large quantities. The attacks on the young mackerel were observed mostly at or near high-water, for at other times the mackerel were seldom seen, though the squids were seen swimming about at all hours; and these attacks were observed both in the day and evening."

B.—STUDIES OF THE MOVEMENTS OF THE MACKEREL SCHOOLS.

8.—Hind on the causes of irregular movements.

In closing this chapter upon the natural history of the mackerel, it seems appropriate to quote from the writings of Professor Hind some very important paragraphs in which he has attempted to interpret the irregular movements of the mackerel schools in our waters, and to explain the causes of the alleged annual variation of their numbers:

"What is the proper interpretation of the movements of the mackerel from its first appearance in the spring to its disappearance in the fall? These movements vary with the geographical position of local schools of this fish. On the coasts of the United States and Nova Scotia, its annual movements resemble in all particulars those of the same species in European seas where the schools have a free and unobstructed ocean in which to seek their prey.

"In the spring, at the end of April and May, the Atlantic schools of this fish which have wintered off the coasts approach the land in separate bodies, full of spawn and poor, coming direct from winter homes where they have remained in a torpid condition, partially buried in sand or mud. After spawning, the different schools feed for a short time on the fry of fish, and as the temperature rises they go out to sea in search of free-swimming crustaceans and larval forms of food according as they are distributed by wind and tide.

"They pursue this food against the current or tide. They often feed during the night, because at that period great numbers of free-swimming larval forms approach the surface. This is one reason why mackerel schools are frequently missed by fishermen, and areas supposed to be deserted may really abound with this fish, which would be discovered

by sink-net fishing. The currents are constantly changing with the seasons under the influence of temperature and prevailing winds, hence the course of direction and depth of the food is constantly changing also.

"Sometimes it is carried far off from the land, at other times towards it, and the mackerel schools following the food move first in one direction, then in another, and range from close inshore to fifty miles and more seawards, and often, doubtless, at a considerable depth below the surface.

"The general direction of these movements, when plotted on paper, would be a series of irregular circles or elongated ellipses, the range of each school or group of schools being opposite, and often adjacent to that part of the coast where they spawn.

"As the fall approaches, owing to the diminution in the supply of their floating food out at sea, they come more inland.

"All the free-swimming larval forms of most species of shrimps, crabs, lobsters, sea-urchins, starfish, sea-worms, &c., have disappeared in the open sea, after passing through their final transformation. But near the shore there are great numbers of other forms of life, which are developed later in the year. Coming inshore to feed on these on the Atlantic coast, the mackerel are found by American fishermen later and later on their return voyage to the southwest, which gives rise to the impression that they are following the schools, when they are only meeting with fresh schools approaching the shore from their feeding grounds. Similar movements occur on the Atlantic coast of Nova Scotia and Cape Breton. As winter approaches, beginning at Cape Breton in November, the different schools retire to their winter homes off the coast in deep water later and later from north to south.

"In the Gulf of Saint Lawrence, where land is, as it were, on all sides, the local schools come from their winter haunts to the banks and beaches of the Magdalens, of Prince Edward Island, in the Bay Chaleur, &c., to spawn about the first week in June. They retire after spawning to deep water, and meet the incoming sand-launce. They follow the sand-launce inshore or on to banks, and for some weeks feed on these fish. When the sand-launce again retires to deep water, the season of the small crustaceans has arrived, and these by tidal action, already described, and winds, are concentrated near the coast lines of Prince Edward Island, New Brunswick, the north and south shore of the Estuary and Gulf of Saint Lawrence, and the shores of Cape Breton. On all these coasts the effect of the single and confluent tides, dragging along the coast line and retarded by it, is to produce eddies, where the free-swimming food concentrates. The course of direction of the different schools during the summer is thus dependent upon winds and tides, and their movements would, if correctly plotted, resemble long narrow ellipses adjacent to the coast, which are doubtless many times repeated.

"At the approach of winter the different schools seek their winter quarters opposite and near to the places where they spawned in the

preceding spring, as is the case of the schools on the Atlantic coasts. In these particulars their movements resemble those of different species of fish which feed and move in great schools in directions outlined by circles or ellipses throughout the period during which they are at the surface.*

*It is a fact well known to all experienced mackerel fishermen that during the month of May and the early part of June large bodies of mackerel pass along the shores of Nova Scotia and Cape Breton from west to east, and while many of these fish move through the waters of Chedabucto Bay and the Straits of Canso to the Gulf of Saint Lawrence, other schools pass in around the east end of Cape Breton Island, their destination being the same as those fish taking the shorter route. No better evidence of this migratory habit can be given than the fact that at this season of the year the fishermen along the Nova Scotian coast and about the Strait of Canso are busily employed in catching mackerel both in gill-nets and in drag-seines. On some occasions when the season has been exceptionally favorable the amount of mackerel so taken has often been very great. This movement of the mackerel is so regular and so well-defined that the fishermen rarely fail to tell within a few days, or, perhaps, even a few hours of the time when they will appear on certain portions of the coast. The fall migrations are quite as regular. As the season advances and the temperature of the water decreases, the mackerel, instead of simply changing their position into deeper water near their summer habitat, as has been stated by Professor Hind, move in vast bodies towards the southern part of the Gulf of Saint Lawrence, frequently striking in a succession of waves. as it were, on the northern shores of Cape Breton Island, where, deflected from their southern course, they divide into two streams or branches, one passing through the Strait of Canso, and the other out round the north cape of the island, by its eastern and southern sides, and so on up along the south coast of Nova Scotia. The mackerel which are found about the Magdalene Islands during the summer and early autumn apparently move in a nearly direct line towards the northeast end of Cape Breton Island when they begin their fall migration. I have often had occasion to notice, in a practical way, these movements, the knowledge of which is of vital importance to the fishermen and of considerable interest to the naturalist. On one occasion in the fall of 1867 an immense body of mackerel was found along the north shore of Cape Breton, and on the last day that the fish were seen the schools came near the surface of the water, and I feel safe in saying, from actual observation, that they moved at a rate of no less than three or four miles per hour in the direction of the north cape of the island. On another occasion, a body of mackerel that was found near Amherst Island (one of the Magdalenes) one day, were met with the following morning about 30 miles distant from the first locality, in the direction of the north cape of Cape Breton Island, towards which they were moving at the rate of one or two miles an hour. I have myself seen schools of mackerel off the Nova Scotian coast, in the fall, moving rapidly in a westerly direction, but all efforts to catch them with a hook failed, since they seemed to pay no regard whatever to toll bait. All of my own observations and those of the Nova Scotian fishermen with whom I have been brought in contact, lead me to believe that mackerel will not bite the hook to any extent during their fall migrations along the southern coasts of Nova Scotia. This is all the more remarkable since they seem to take the hook very eagerly up to the last moment of their stay on their feeding-grounds in the gulf. The spring and fall migrations of the mackerel on our own coast are carried on with equal regularity and precision. On more than one occasion, in autumn, I have followed these fish day after day in their progress to the south and west along the shores of Maine and Massachusetts. An instance of this kind occurred in the fall of 1862, when I caught mackerel nearly down to the Fishing Rip on the Nantucket shoals. These fish were moving rapidly southward, and the schools could be kept alongside of the vessel only a short time, and each trial had to be made two or three miles farther south than the previous one. At another time, in the fall of 1870, the mackerel moved in large schools

"Sars has shown that this form of movement is taken by the herring on the Norwegian coast.*

"The mackerel are pursued by cod and hake, and these fish gather where offal is thrown over from vessels on which the mackerel are cleaned. As a natural consequence the mackerel avoid the sea areas where their enemies are congregated, and fishermen attribute the desertion of the mackerel-ground directly to the throwing of offal overboard. Cod, and probably hake, follow up the scent of offal or food of any description carried by currents with remarkable facility, as may be witnessed during the process of jigging for cod in calm and clear waters. On looking over the side of the boat, with a man engaged in jigging at the bow or stern, as soon as a fish is wounded merely by the jigger and blood flows from the wound, the creature may be seen to dart here and there in pain. The neighboring fish of the cod tribe are attracted by the scent and follow the blood 'tracks' against the current, hunting their wounded comrade to the death. A fish coming across the stream of scent, immediately follows it up, and it is thus that fish offal or bait thrown overboard in the open sea, or some distance from shore, gathers the fish on the course of the current. In harbors and confined or landlocked bays, where there is no constant strong current to carry off the results of decomposition, and where the sea-scavengers are not sufficiently numerous to consume it, the effect cannot fail to be extremely prejudicial to young fry and to fish-spawn.†

very rapidly from Ipswich Bay across in the direction of Cape Cod. The schools were at the surface of the water, and it is not an exaggeration to say that their speed was not less than three or four miles an hour. The schools of mackerel spread over many square miles, each body of fish was separated from the others, perhaps many hundred fathoms, but all seemed to be impelled by the same motive and were moving steadily in the same direction. These fish would bite eagerly at the hook for a few minutes at a time, but so strong was their instinct of migration that it was impossible to detain them longer than a few minutes at a time in their onward movement.

J. W. COLLINS.

* See chart by Dr. G. O. Sars, in his report for 1874.

† Fisheries of British North America, pp. 20, 21. It is difficult to see how the offal of mackerel could injure the spawn of the young fry of this fish since the eggs are known to swim at the surface of the sea, and it is presumable that the mackerel, when first hatched out, also keeps near the surface. Therefore in a depth of ten or twenty fathoms it seems extremely problematical that the welfare of either the eggs or young fish could be interfered with by the viscera thrown over from the fishing-vessels. Another thing: It is well known that the waters of the Bay of Saint Lawrence swarm with small and extremely voracious crustacea—"sea-fleas"—which rapidly devour anything of this kind which is thrown into the sea. Indeed, so active are these small scavengers that codfish caught on a trawl are often completely devoured by them in three or four hours. Again, there can be no doubt but what throwing over the offal from the vessels is really beneficial to the mackerel, which feed upon it. The recent diminution in the abundance of mackerel in the Bay of Saint Lawrence, and the remarkable increase of this fish on our own shores, since the New England fleet has ceased to visit the waters of the Gulf in such numbers as formerly, seems to prove conclusively that the decrease or increase in the abundance of the mackerel is due to other causes than that of throwing over the offal which is taken from those which are caught.—J. W. Collins.

"The effect of temperature on the local movements of the mackerel may be recognized in the process employed by fishermen to 'raise' mackerel by toll-bait, and luring them seawards. The mackerel follow the bait for some distance from shore, where suddenly they cease to bite and disappear. They probably find long exposure to the warm temperature of the surface waters unsuited to their habits, and sink to a cooler zone.

"Hence the reason why a 'mackerel breeze,' mixing the heated surface water with the cooler understratum, is favorable to prolonged mackerel fishing with bait. The mixing produced by agitation cools the surface and permits the fish to feed for a lengthened period."*

"The mackerel, like the herring and the cod, seeks cold water for its spawning grounds wherever the Labrador current exercises its influence. Between Block Island and Noman's Land, where the spawning grounds on the United States coast south of Cape Cod are alleged to exist, a thin wedge of the Labrador current stretches far into Long Island Sound."†

"In Massachusetts Bay, where a mackerel spawning ground also exists, as also in the vicinity of Stellwagen Banks, the temperature when observed by Dr. Packard in September ranged from 41½ to 45 degrees, and the fauna resembled the cold-water species on each side of Jeffrey's Ledge. On George's Shoals the marine life is said by Verrill to be the same as that found in the deeper muddy parts of the Gulf of Saint Lawrence, and indicates a temperature not above 40 degrees, and probably considerably lower. Bradelle Bank, according to Mr. Whiteaves, presents the phenomenon of a small stony patch, tenanted by an assemblage of marine animals which usually inhabit very cold water, and are almost entirely surrounded by another series, which are for the most part prevalent where the bottom is warmer and more affected by surface conditions of temperature.‡

"Wherever the areas are situated where young mackerel are found in the summer, we find near at hand a cold-water zone, either existing as a part of the Labrador current at the surface, or brought up from greater depths by banks and shoals. On the coast of Prince Edward Island, and in the gulf generally, the cold water lies frequently near the shore, because the diurnal tides mix the strata warmed during the daytime with the cold underlying strata. In the estuary of the Saint Lawrence Dr. Kelly found the surface temperature 57 degrees Fah. on the

*It is often the case that a school of mackerel may be kept alongside of the vessel for many hours at a time, even during the hottest days of summer, though generally at such times they will not bite very much. For this reason, therefore, the fishermen do not usually endeavor to keep the fish alongside of their vessels, but prefer instead to change their position and try to secure a new school of mackerel. This action on the part of the fishermen, just referred to, may have led to the belief that their movements were caused by the disappearance of the fish from the vessels' side instead of on account of the disinclination of the mackerel to take the hook.—J. W. Collins.

†Hind, Fisheries of British North America.

‡Professor Verrill, page 485, Report of the United States Commissioner of Fish and Fisheries, 1871–'72.

9th July, but three feet below the surface it was 44 degrees, having in that short vertical space sunk 13 degrees; at 24 feet it was 40 degrees, or 17 degrees below the surface temperature.

"The coastal waters of Massachusetts rapidly acquire an elevated temperature in June, when the waters of the Gulf of Saint Lawrence are often still ice-cold. In April, May, and June the cod and haddock resort in large numbers to the banks and reefs off Stonington, Watch Hill, No Man's Land, and other similar places, but are quite unknown there later in the summer.

"Local winds and tidal currents bring the waters of the Gulf Stream on to this coast and displace the cold waters, even at the distance of twenty or thirty miles from the shore in summer.*

"In the Gulf of Saint Lawrence the temperature of the surface in summer rarely reaches, as far as observed, the temperature of the bottom of the sea off No Man's Land, or 59½ to 61½ degrees in 11 and 18 fathoms respectively.†

"Dr. Kelley records the following surface temperature in various parts of the gulf, and generally within view of the land:

Date.	Position.	Temperature of surface.
		°
June 19, 1832	Off Point de Monts	43
July 9, 1831	do	57
Aug. 10, 1831	Off Anticosti	54
Sept. 2, 1832	Mingan Harbor	53
June 28, 1832	Estuary of Saint Lawrence	48
Aug. 14, 1832	Off Kegashka	53
Aug. 15, 1832	In Kegashka Harbor	48
Aug. 18, 1832	do	38
Aug. 28, 1832	do	55
Aug. 30, 1832	do	52
Aug. 31, 1832	Off Mingan	51
Sept. 1, 1832	Mingan Harbor	39
Oct. 10, 1832	Near Cape Gaspé	41
Oct. 10, 1832	Off Cape Gaspé	43
Oct. 11, 1831	Near Mount Louis	41
Oct. 11, 1831	7 miles off	47
Oct. 12, 1831	Bay of Seven Islands	46
Oct. 13, 1831	do	42
Oct. 14, 1831	do	39

"In the harbors of the gulf coast, and even at a considerable distance off the land, the temperature of the surface is greatly affected by winds. A warm dry wind off the land diminishes the temperature of the surface by evaporation.

"Tidal currents have a powerful effect on the temperature of the surface over shoals near the shore, by bringing the cold water to the surface. On the 27th June, 1832, Dr. Kelley observed the temperature of the surface water over a shoal ledge which runs out a considerable distance from Mingan Harbor to be only 33 degrees; on the previous day the water in the estuary of the Saint Lawrence being 47 or 48 degrees.

*Professor Verrill, page 485, Report of the United States Commissioner of Fish and Fisheries, 1871–'72.

†Verrill, *op. cit.*, page 484.

"In these differences of surface temperatures, and the causes which give rise to them, we discover the reason why the mackerel retire, as the summer advances, from the warm coastal waters of the United States out to sea, where they find a stratum of water of the requisite temperature for their free-swimming food.* In the Gulf of Saint Lawrence this requisite temperature is best attained where cold substratum waters are mixed with warmer coastal waters by the tidal waves, the food being at the same time brought inshore by these currents as already described. Here it lingers, partly on account of a suitable temperature being attained, and partly because the efflux and reflux of the tides occasion a constant circular or elliptical movement of the water. Hence, while the off-shore waters on the coast of the United States alone possess the requisite degree of coolness in summer for the mackerel food, the inshore waters of the gulf acquire the degree of warmth best suited to the habits of these free-swimming creatures, which continues until late in the fall. The question of inshore and off-shore mackerel fishing grounds thus becomes, in a great measure, reduced to the different conditions of marine climate which prevail where the Labrador current is the controlling agent, or where the Gulf Stream asserts its power and influence during the summer season."†

9.—HIND ON THE CAUSES OF THE ALLEGED ANNUAL VARIATIONS IN THE NUMBER OF MACKEREL OBSERVED.

"It is well known that the spawn of the herring is deposited at the bottom; and owing to the glutinous secretion binding the eggs, one to the other, it adheres firmly to everything which may happen to touch it; and masses of eggs are found to be tightly glued together. But it has been conclusively established by Professor Sars that the mackerel spawn, like that of the cod, floats; and the spawn is developed at the surface of the sea, being drifted to and fro by currents and winds, and, wholly unlike the spawn of the herring, sculpin, smelt, caplin, &c., is at the mercy of the ever-varying currents of the ocean.

"The taking of mackerel on banks and shoals, dropping their spawn, must be accepted that the fish are ready to spawn at the place where they are then caught. The transparent floating spawn being very difficult to recognize and indeed rarely to be seen, except looked for and caught in tow-nets at the surface of the water.

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*Mackerel are frequently abundant close in to the shores of New England in midsummer. As a matter of fact large catches of mackerel have been occasionally made in Penobscot Bay, fifteen miles or more inside of the outer headlands and islands. Bluehill Bay, also in Maine, is a famous resort for small and medium-sized mackerel in summer. It is also well known that the immediate vicinity of Monhegan Island is one of the best mackerel grounds on the New England coast during the months of July and August.—J. W. Collins.

†Fisheries of British North America, pp. 42, 43.

"But mackerel *fry* are found near the land, in detached sea areas, all the way from the shores of Massachusetts to the shores of northeast Newfoundland.

"While the cod spawn on the North American coast during every month of the year wherever the temperature of the water is sufficiently low and ice does not interfere, and the herring spawn in like manner during spring and fall, when the *bottom* waters have acquired a certain temperature, the mackerel spawns, as a general rule, in the spring of the year, and large schools appear to be established where the Arctic current exercises its influence either as a distinct surface current, or where it is brought to the surface by banks or shoals, and thus secures the requisite coldness in the waters for the floating spawn.

"The floating spawn may be drifted by winds or tides many miles from the place where it is shed; and the birthplace of the fish will be that portion of the sea area where the young fry first issue from the egg, but not the spawning ground of the mother fish. In ordinary seasons the swing of the tides, apart from local currents, brings back twice every day the drifting surface matter, whatever it may be, near to the place from which it set out; but winds may greatly alter the course and distance to which floating ova would be drifted. Hence, except in the case of secluded bays like the Bay of Chaleurs, Pleasant Bay or Massachusetts Bay, the geographical position of mackerel fry is in a great measure dependent upon the winds which may have prevailed. A storm near the end of May or early in June on the coasts of the United States may drive floating spawn far out to sea, even into the heated waters of the Gulf Stream; and it has yet to be shown that mackerel spawn could survive the sudden and extreme change of temperature this would involve; or a continuance of southerly winds may drive the spawn on to the shore and destroy it. This occurs frequently with the spawn of those fish which are deposited near the shore, as in the case of the capelin and herring. The small size of the mackerel spawn would cause it to be unobserved, and it would be more distributed than the spawn of the herring and the capelin. The United States Signal Service charts show the course of storms and winds during the spawning season, which would produce these results.

"The relation of cod spawn to rain has been referred to elsewhere (Part I, page xii). Reasoning from analogy, which in so many instances must be for the present our only guide, the effect of rain or of a rainy month on mackerel spawn would be equally prejudicial, by causing it to sink below the surface and be removed from those conditions of light and oxygen which are essential to the development of the embryo.

"On the other hand, the spawn might be driven in an easterly direction, or in a westerly direction, and be hatched some miles off the coast in great abundance. These new schools might attain great magnitude in three or four years, being unobserved, and might so remain for sev-

eral years, pursuing their circular feeding movements until noticed by the fishermen. The same contingencies occur in the Gulf of Saint Lawrence, and similar distribution arising from winds or tides drifting the spawn far from the spot where it was shed, often lead to the establishment of new schools of fish in different localities.

"This feature in the natural history of the mackerel has already been noticed with regard to the Bay of Fundy schools.

"The occurrence of mackerel in great abundance on the northeast coast of Newfoundland, and their subsequent disappearance, may be explained in a similar manner, and may be attributed to unfavorable meteorological conditions, which would drive the floating spawn on shore, or far out to sea. There are, however, other probable reasons for the observed annual variations in the schools, which will now be noticed.

"In the foregoing paragraphs it is assumed that the fluctuations in the numbers of mackerel observed by fishermen correctly interpret a phenomenon which appears to be generally recognized.

"But while it is right to receive the statement that very large fluctuations in the numbers seen usually occur, it is wrong to infer that, because the schools are not visible, proof is afforded that they do not exist. There are strong reasons for believing that during many seasons the schools escape the notice of fishermen on account of their finding their food in a lower and colder stratum of water, and more rarely coming to the surface than during other seasons. It will now be shown how a cold stratum is produced, and that, as a necessary result of the mode of its formation, it varies each year and during every month of the year in vertical position and thickness, and that it is constantly brought to or near the surface on banks and shoals within certain geographical limits. These variations in depth of suitable feeding zones throw light upon the alleged inconsistency of the appearance of the mackerel, and its selection of coastal waters in some sea-areas and off-shore waters in other areas, and variations in both during different seasons."*

10.—Observations of American fishermen on the movements of the mackerel schools.

Since it is not practicable in this place to present a full account of the movements of the mackerel schools along the coast, it may be interesting to present the observations of a few reliable observers at different localities.

Captain King Harding, of Swampscott, gave me a very full account of the movements of the mackerel in Massachusetts Bay.

About the 20th of May the schools begin to draw around Cape Cod into the bay; the earliest date, in the memory of Captain Harding, is

*Hind, Fisheries of British North America, pp. 22, 23.

the 11th of May. The schools continue swimming at the surface until about the middle of June, when they sink down into deep water. Now none can be taken in the seines. When they disappear they are full of spawn; when they again appear, in twelve or fifteen days, they are spawned. When any are accidentally hooked up or tolled up during the slack season they are sometimes seen to have partially spawned. When they come to the surface they form in schools and move to the eastward. These remarks apply to the large fish. Small fish may be schooling at the surface all the time. A pound mackerel in the spring is apt to have spawn in it.

"When jigging was the ordinary method of catching mackerel," writes Captain Collins, "many thousands of barrels were taken each year during or just previous to the spawning season, when the ova was well developed. It was not an uncommon occurrence for vessels to secure fares in the Bay of Saint Lawrence before the spawning season was over."

Capt. N. E. Atwood, of Provincetown, Mass., gives the following account of the migrations and movements of mackerel:

"The mackerel comes to us from the south. As they are with spawn nearly mature when they arrive in our bay they probably come into the South Channel, passing east of Nantucket, then along the eastern shore of Cape Cod, then around the cape and on until they reach their spawning ground in from 15 to 5 fathoms of water, in the southern part of Massachusetts Bay, where they deposit, as I have answered in another reply."

"Mackerel leave the coast in the same manner as they came in in the spring. The mackerel is a migratory species, coming on our coast in the spring, and when the water becomes cold leaving the inshore ground and going to their winter quarters. We have no way of knowing where they are when away, but can only say they are at their winter home. The first that arrive are the largest; others come in later, but are smaller or rather a mixture of large and small fish. There are no equal intervals between the arrival of the different schools. When the fish leave our shores they go gradually, and they are several weeks passing away from our coast. The mackerel never fails to come, but often varies in abundance in different years. This may be due to the fact that the bait has taken a different course. The first run of mackerel is made up almost entirely of male fish, but the spawn of the *few* females that accompany them is always very nearly matured when they reach our coast. "I have to-day (July 1, 1877) examined a quantity of mackerel brought in by a vessel, caught in another locality, and find they are about three-quarters males. Neither sex will take the hook when they first come in; they seem to have no inclination to bite until they have deposited their spawn; they then commence to feed, and in time become fat. The large spawning mackerel, after they have deposited, pass on to the north. We do not see much of them until they return late in the autumn. When they pass by here going off the coast

they do not take the hook, so we catch them in gill-nets. The second run of mackerel that comes in the early part of the season, which Dr. Mitchell, in his 'Fishes of New York,' calls *Scomber grex*, is the kind that takes the hook; they are, no doubt, the younger class of fish. This fish (mackerel) on its arrival swims low in the day-time; in the night it comes near the top of the water and is caught in gill-nets. We would not know they had arrived if no nets were set. The ebb and flow of the tide does not affect them. I have never seen spawn run from this fish when taken with the hook; when spawning they do not bite in this locality. In fishing with gill-nets we see no spawn floating in the water. There are no pounds here. The mackerel does not run up from the sea into fresh water. We find no small young fish with the larger mackerel when they are spawning. Mackerel are liable to go anywhere when they are following the bait."

In his testimony before the Halifax Commission the same eminent authority stated:

"The mackerel, like some other species of fish I could name, come in poor and destitute of fat, being only number threes according to the Massachusetts inspection law; and when they reach Provincetown, those that have come in from the south have, I think, spawned at places at which they have found about the right depth of water for the purpose. I have never fished south of Cape Cod, and hence could not vouch for that; but the fish that come in east of Nantucket and South Channel do not fall in with land or a shoal channel until they strike back of Cape Cod, and, winding round, come into the southern part of Massachusetts Bay. In that locality I have fished with gill-nets for a great many seasons, at the time of their arrival, and they only last till the bluefish make their appearance. We have six or seven weeks of mackerel fishing, and generally do something considerable at it; but after the bluefish come in the mackerel leave, as that drives them all off and ruins our fishery.

"Question. When are mackerel in the finest condition off the coast of the United States, say from Cape Cod down?—Answer. I should say, taking one year with another—years differ a little—say from the middle of September to the middle of October, I could get as nice mackerel as could be procured at any time during the year, and then good mackerel, some years, can be obtained as early as the middle of August.

"Q. Is it your opinion that some of the schools of mackerel found on the coast of the United States remain there during the entire season, or do they all go north of the coast of Maine?—A. I think that the mackerel which come south of us, and then strike into Cape Cod and Massachusetts Bay, and north of that, and some of them farther eastward, come in from the deep water, where they have wintered, and strike on and back of George's Bank. This is my opinion. I consider that they come from their winter quarters all along the coast, from away down as far as Chincoteague Shoals to Newfoundland. I have no idea

that the mackerel which are on our coast in the region of Cape Cod and south of that, or anywhere near that, ever come down the coast here and pass Halifax. I have never thought that they did so; but then I cannot bring evidence to prove that they did. I never saw mackerel between Cape Sable and Cape Canso, though I have seen some at Louisburg, on the south shore of Cape Breton Island, when I was there once. I never saw these mackerel, but I fully believe that mackerel do come in the spring northward by Halifax, and again pass this way in the fall. But then I think that after the mackerel which pass Halifax get to Cape Sable they pass off the coast.

"Q. I wish you to state how late in the season you have successfully fished at the Magdalen Islands?—A. I could not remember the date exactly; but I should think that we never staid at these islands later than about the first of October, though it may have been the 10th of that month; but that is about the latest period.

"Q. Have you found mackerel good in quantity at the Magdalens as late as the first of October?—A. I think that is the case. I believe that it was October before we left these islands the first year I was there; and we caught mackerel just before we left them."

Mr. A. B. Rich, of Provincetown, Mass., makes the following remarks concerning the migrations and movements of mackerel:

"Mackerel come along the coast from the south. When the water becomes cold they strike off into the depths. It is quite likely that they spend the winter at the south, at points where the water is about as cold as along the Massachusetts coast in the summer time. They are first seen in June, and steadily increase until September, when the main body makes its appearance. The first run is the smallest. Their appearance is regular and certain. In November these fish begin to leave, and withdraw by degrees. Both sexes come together and the spawn of the female seems to be mature when they first appear. Very few mackerel will take the hook at first, but do so after the spawning season is over. Their arrival is known by their capture only, for they swim low. Very little spawn runs out of the mackerel caught with a hook, but large quantities out of those captured in nets. Mackerel are not anadromous. No small fish are seen on the breeding grounds. Mackerel seem to like deep water where the temperature is about 48° or 50°. About 20 fathoms is their usual depth."

Mr. Noah Mayo, of Boston, Mass., makes the following statements concerning the movements of mackerel:

"Mackerel come on this coast from the south, making their first appearance off Cape Hatteras and along the coast to Long Island. So along the Massachusetts and Maine coasts as it grows later, going into the Bay of Fundy and into the Bay of Chaleur and Gulf of Saint Lawrence. All mackerel found in the Bay of Chaleur come from the American waters. Most of them pass between George's Bank and Cape Cod on their journey from the south to their summer resort. They leave by

the same route they came. Mackerel spend their winters either in the Gulf Stream or south of it, none being seen or caught after they leave the coast of Massachusetts. Mackerel are first seen off Cape Hatteras and along by Cape May usually about the last of April. As a rule the head of the shoals are large and the smaller come right after. From April to July they continue to come at different times. They commence leaving about the 1st of November, and continue going in the same manner they had come, some earlier, some later, until into December, then they disappear. When they return in the spring they are very poor. Mackerel appear on the coast regular and certain; they never fail. In some years they are more abundant than in others. If the bait upon which they feed comes on the coast then they follow, and in proportion as the live bait is found so is the abundance of the mackerel. The sexes come together, and they spawn in about two to four weeks after they arrive. Mackerel take the hook at first as well as at any time, and both sexes are alike in this respect. Mackerel sometimes swim at the top of the water, but sometimes they cannot be seen. Birds are often attracted by them. The spawn often runs from these fish when taken by hooks, and it is frequently seen floating in the seines. Mackerel are not anadromous. Fish of all ages are found together on the breeding grounds. Mackerel are found in all sorts of water, deep and shallow, but they seem to prefer shallow water around the shore and on the off-shore shoals. They like warm water better than cold."

Mr. Josiah Snow, of Boston, Mass., makes the following report on the movements and migrations of mackerel:

"Mackerel come on this coast from the south, first appearing off Cape Hatteras and then off Long Island Sound, so continuing along the coast. After passing Cape Cod they become fatter as the season advances. They pass along the coast of Maine into the Bay of Fundy, to the Bay of Chaleur and the Gulf of Saint Lawrence. I do not think all the mackerel found in the Bay of Chaleur follow the American coast; part of them appear to come direct from the south, striking into Chaleur through the Gut of Canso. Mackerel leave the coast in about the same manner as they come, some passing off southeasterly, some following the coast closely and going around Cape Cod. At this time, the season being so far advanced, with bad weather, vessels do not follow them. Though there are many conjectures on this point, it is my opinion that they (mackerel) spend their winter in the Gulf Stream, or at the south of it. It is certain that when they leave this coast in the fall they are fat, and are very poor when they return in the spring. They generally spawn on our coast. Mackerel are first seen in quantity about May 1, and during May and June appear to be constantly coming. Perhaps a few arrived in April. As a rule the first to come are the larger ones, and the smaller soon after. They commence leaving the shore about November 1, and continue going through part of December. They always appear on this coast in summer. I think more come some

years than others, because more live bait upon which they feed is found on the coast some seasons. Runs differ, some being nearly all large, and some nearly all small. I know of no difference in the coming of sexes; they usually spawn in about two to four weeks after they arrive. I know of no difference in the sex in taking hook; as a general thing they take the hook freely when they first come. Mackerel swim both high and low. They are seen in large 'shoals,' or 'schools,' as sometimes called, and at other times they remain under water so they cannot be seen without throwing bait to attract them. The fishermen on this coast now need to see the fish on the surface because they use seines altogether. Spawn does not run out of mackerel caught by hook, nor is it seen in quantity floating in the nets. These fish never go into fresh water. Young and old come on the coast together. Mackerel prefer shallow water and shoals. The water must be quite warm to suit them."

Capt. David N. Mehlman, of Gloucester, Mass., gives the following account of the movements of mackerel:

"Mackerel come from the southern coast and pass through the Southern Channel between George's Bank and Cape Cod. They travel eastward, and return by the same route toward the south. It is probable that mackerel spend the winter on the coast of Florida and in the Gulf of Mexico. They are seen about Gloucester first in spring in May, and their numbers continue to increase until the 1st of July. Those fish that come first are the largest of all in size. There is no *regular* interval between the appearance of different schools. About November they begin to leave this coast, and their departure is very gradual. The appearance of mackerel is rather uncertain. Some years they are very abundant, while in others they are quite scarce. This may be in part due to the course they take in coming in, making their scarcity a matter of appearance and not a reality, and partly also to the change of the feeding-ground. Some runs are composed of all large fish, and some of all small ones. Both sexes come together, and it is quite certain that the spawn of the female is already matured when they first arrive on these shores. When the mackerel first come they are quite uncertain about taking the hook. However, after a short time both sexes take it readily. The mackerel schools swim high, and make their arrival known by their appearance at the surface. They always make a ripple, and not unfrequently attract birds. The spawn never runs out of these fish, whether caught by hook or in nets. Fish of all ages are found on the breeding-ground. Mackerel remain in places where the water may be very shallow or as much as 100 fathoms deep. They seem to prefer rather warm water."

Mr. Moses Pettingell, of Newburyport, Mass., presents the following report on the movements of the mackerel:

"In coming in to the shore the mackerel take a northwesterly course from the Gulf Stream off Cape Hatteras. The first are taken on the

edge of the Gulf Stream in April. They usually depart by the same route. The fish of the first school are seen in April, and are larger than those of the main body which arrives in June. The schools, which are many, are separated by intervals of nearly a hundred miles. The appearance of mackerel is uncertain in point of time, but they never entirely fail. Mackerel will not take the hook at all times. They will scarcely take it at all for ten days or more after they first arrive. They usually swim near the surface, and attract birds, and make a ripple. In the spring months the spawn runs out of the fish caught with the hook, but the eggs are never seen floating in the nets. The mackerel is not an anadromous fish; they seem to prefer shallow water and a sandy bottom"

Mr. E. J. Nealley, of Bath, Me., states that "mackerel appear to follow the coast northerly in the spring, and to return by the same route. Mackerel are found on the coast of Maine, for the first time in the season at any date from the 15th to the 20th of May, and seem to increase gradually in number until midsummer. The first school is of large size. Different schools leave at different times, but the main body appears to depart early in October. Their appearance is regular and certain. They all take the hook most readily after the spawning season is over. They swim low at their first arrival, but afterward very frequently swim at the surface. The spawn is often seen floating in the nets in considerable quantity. Mackerel are not anadromous. These fish seem to prefer a sandy or gravelly bottom in from 6 to 12 fathoms of water."

Mr. Benjamin F. Hinckley, of Georgetown, Me., states that "mackerel come along the coast from the south and go toward the east; they return by the same route. They spend the winter at the edge of the Gulf Stream. The first fish are seen about the middle of May, and the main body arrives about the middle of July. The first schools are largest in size. The fish continue to come in at intervals, and also leave at different times. Their appearance is certain. The female fish come first and appear to be ready to spawn. Neither sex will take the hook on first arriving, and this state of things continues for about a month after their arrival. The first schools swim low, but the later ones swim high and attract much attention. The tide has nothing to do with their movements. The spawn is often seen floating in the nets in large quantity. Mackerel are not anadromous. Young fish are not found among the spawning ones. After the spawning season is over the fish seem to have no preference in regard to depth of water."

Mr. George B. Kenniston, of Boothbay, Me., makes the following statements in regard to the movements of the mackerel:

"They come along the coast from the west, part remaining while others continue toward the east. They depart toward the west. About June 10 the first are seen, and after this some are always to be found until their departure altogether. There are no regular intervals of

scarcity and abundance. They leave the shores about October 1st to the 10th, quite gradually. Their appearance is regular and certain. The small ones appear first, but they continue to improve during their stay. Their arrival is known by their capture and the ripple on the water. Mackerel are not anadromous. Their favorite resorts are about rocks in shallow water."

Mr. U. S. Treat, of Eastport, Me., makes the following report in regard to the movements of mackerel:

"Mackerel come in from the west. Their presence is known by the ripple they make at or near the surface. They pass out toward the west, touching at the bays and harbors. They are last seen in the Gulf of Mexico late in the season. They first appear in April or May, and the main body arrives in August and September. The largest and fattest are taken in September and October. Several schools or 'runs' come in at short intervals. They leave in October and November in a body. Their appearance is regular, although they sometimes fail to go as far north as at other times. Want of food is supposed to be the cause of this thing. The first runs are of the average size, and are poor; the later runs are of good size, and are fat. Both sexes come at the same time, and the spawn in the female is well matured. Neither will take the hook readily on first arriving. They swim high, but rarely attract birds. They leave the shores at ebb tide and return at flood tide. The spawn often runs out of the female when taken with the hook or caught in a net. The spawn is often seen floating in seines and weirs. The mackerel is not anadromous. Fish of all ages are found on the breeding grounds. These fish are found in both deep and shoal water, and on very different bottoms. The general average temperature of bays and the ocean seems to suit this fish quite well."

Prof. H. Y. Hind thus discusses their movements in the Gulf of Saint Lawrence:

"The mackerel regularly appear at the Magdalen Islands in the Gulf of Saint Lawrence about one month after the first arrival of the herring. The time as far as observed during 1861 to 1866 inclusive, 1871 and 1873 to 1876 inclusive, varied from the 30th May to the 12th June.

"The following table shows the dates of the first appearance of the herring and the mackerel at Pleasant Bay during the years named. The authorities are to be found in the official reports of officers engaged in the protection of the fisheries, in Captain Fortin's reports, and in other published documents relating to the Canadian fisheries in the annual sessional papers.

"In Captain Fortin's report for 1853, herring are stated to have arrived about the 1st of May of that year, and the mackerel fishing to have been nearly finished on the 7th of June.

Table showing the period and the yearly differences in number of days between the first appearance of the herring and the mackerel at the Magdalen Islands, from 1857 to 1876.

Year.	First appearance of the herring.	First appearance of the mackerel.	Difference in days.	
1857	May 7	June 1	23	
1859	April 29			
1860	April 28	June 1	32	
1861	May 1			
1862	May 2	June 4	32	
1863	May 17	June 12	25	
1864	May 1	June 6	35	
1865	April 27	May 30	32	
1866	April 25	May 29	33	
1867	May 7	June 2	26	
1868				
1869				
1870				
1871	April 15			
1872	May 8	May 31	23	
	May 3	June 20		Mackerel three weeks later than usual—much ice.
1873	April 27	June 5	38	
1874	May 2	June 7	35	
1875	May 6	June 8	32	
1876	May 5	June 6	31	

"On the 31st May I went inside Amherst Harbor and boarded twelve vessels engaged in mackerel fishing."—(Report of Capt. L. H. LaChance, commanding the marine police schooner Stella Maria. December, 1871. Sessional papers 1872, page 158.)

The mackerel must have been in the vicinity of the Magdalens during the last week in May, in 1871, and fishermen were then taking mackerel simultaneously far south and far north, or in Martha's Vineyard, south of Cape Cod, in latitude 41° 20′, and Amherst Harbor, Magdalen Islands, in latitude 47° 20′, or six degrees of latitude apart.

"It will be seen from the table that generally when the herring were early the mackerel were also early, and when the herring appeared late the mackerel also were late.

"In 1872 the herring came in on the 3d of May, but owing to the prevalence of ice the mackerel were three weeks later than usual inshore. With this exception the greatest difference between the recorded times of the appearance of these fish inshore was thirty-one days, or about one month.

"In all instances the large mackerel are generally full of spawn when they are first seen in the spring, and the young fry are observed a few weeks later in many parts of the gulf.

"It will be observed that in the year 1871 the mackerel were first taken at the Magdalen Islands on the 31st of May, and in 1872 they were three weeks behind their usual time. A similar difference in point of time in the first appearance of this fish on the coast of Massachusetts occurred during those years. On that coast the following differences are recorded:

WAQUOIT, MASSACHUSETTS.*

1871	April 25
1872	May 10

Difference in time—15 days.

MAGDALEN ISLANDS.

1871	May 31
1872	June 20

Difference in time—21 days.

"At the Waquoit weir the earliest mackerel would probably be taken in 1871. At Amherst Harbor the mackerel vessels were actually engaged in fishing (see L. H. LaChance—Report of the marine police schooner Stella Maria, 1871), so that the fish must have been present in small numbers perhaps some days before the fishing began, and we may conclude that the difference in time between the arrival of the schools at the two places in 1871 and 1872 was very nearly the same, and due solely to local variation in marine climate.

"According to resident Newfoundland fishermen, young mackerel have been seen in great numbers in the Bay of Notre Dame during the months of September and October, about three inches in length.

"They appear on the coasts there generally about the 20th July, and during the period when mackerel were common on the northeast coast, Green Bay, at the extremity of the Bay of Notre Dame, was a noted place for swarms of mackerel fry."

To this may be added the following statement from the report for 1871 of the captain of the Canadian police schooner Water Lily:

"These fish, as a general rule, are to be found close inshore during the month of June and part of July; they then go off into deep water, their favorite resorts being on the Orphan and Bradley Banks, and from Point Miscou to North Cape, Prince Edward Island. There are some always to be found inshore, but the best fish are in deep water. From the middle of August till the end of September they are to be found more off the Prince Edward Island; that is to say, from North Cape to East Point, and in the bay formed by Cape George and Cape Jack, on the Nova Scotia shore. In October, at which time the mackerel are at their prime, they again strike inshore and are to be found in great numbers on the Cape Breton coast from Chetican to the Judique Shoals, but their position depends a great deal on the weather in the fall of the year, as heavy gales of wind drive them off into deep waters."

In this connection I cannot refrain from quoting also an extract from a statement made to the United States House of Representatives by Hon. Caleb Cushing, in 1836, which teaches us that the habits of the mackerel were very well understood nearly half a century ago, and were much the same as at the present day:

* Report of U. S. Commissioner of Fish and Fisheries, 1871–'72.

"The season for the first appearance of mackerel on those parts of our coasts where they are usually taken is from the 20th April to the 1st of May, according as the season is more or less forward; at which time they strike on the shore soundings off the capes of the Chesapeake and Delaware. Between the latter place and Egg Harbors they are usually plentiful for 15 or 20 days within a few leagues of the land, and mackerel vessels, which are on the ground seasonably, meet in general with good success, if the weather prove to be favorable; after which the mackerel move to the northeast, scattering over a large space of ground, from near the shore to the soundings inside the Gulf Stream, and extending down the coast off Long Island and Block Island to Nantucket, which they reach early in June. Sometimes they collect more in bodies off Long or Block Islands, and are plentiful for a few days, after which they proceed north through the South Channel and between the Vineyard Islands into Massachusetts Bay. They reach that bay from the 20th of June to the 1st of July and continue there until late in November.

* * * * * * *

"It occasionally happens that late in the year fishermen will reap a rich harvest, when the whole previous season had been comparatively unproductive. Thus it was in the autumn of 1831, in October of that year, the mackerel struck in very near to Cape Ann. Large fleets of vessels collected in such close order as to be continually coming in contact. The sea being smooth, and great quantities of the bait thrown out, the fish gathered in vast numbers, and some vessels took nearly one hundred barrels in a single day. At the same time they were very abundant off Cape Cod and on Jeffrie's Ledge; and it was computed more than 70,000 barrels were taken in a single week."

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TABLE SHOWING COASTWISE MOVEMENTS OF THE MACKEREL.

The following table, compiled in 1877, chiefly from the records of the United States Fish Commission, may be of interest, since it shows in a general way the dates of appearance, greatest abundance, disappearance, and spawning at several points along the coast.

MACKEREL.

Dates of appearance, greatest abundance, departure, and spawning, principally from records of the United States Fish Commission.

Locality.	Appearance.	Greatest abundance.	Departure.	Spawning.
Cape Hatteras	April 15-20			
Capes of Delaware	May 1	May 8-12		
Barnegat and Sandy Hook.		May 15-30		
Easthampton, N. Y.	April	July, November.	Autumn	In bays in spring.
Providence, R. I	May to September.	June	September 15, November.	June, on soundings.
Neushon	May 2			Spawn runs abundantly, May 2.
Wood's Holl, Mass	May 9		October	Spawn runs abundantly, May 10.
Wequoit, 1871	April 19	May 19		

MACKEREL.—*Dates of appearance, greatest abundance, departure, &c.*—Continued.

Locality.	Appearance.	Greatest abundance.	Departure.	Spawning.
Nantucket	May 1–25		October 20, November 20.	May and June, on shores.
Chatham	May 1–30	May 20		May.
Harwich	June	September and October.	November	June, spawn seen in nets.
Dennis	June		November	Do.
Provincetown	May 15–20	October, November.	November and December.	Do.
Wellfleet	June	September and October.	November	
Boston	May*	July, September.	November and December.	May and June, spawn seen in nets.
Newburyport	April	June, September 20 to October 10.	October and November.	Do.
Georgetown, Me	May	July 15, September.	September	Do.
Boothbay, Me	June 10	July 1, September.	October 1–10	
Seguin Island, Me	May	July, September.	October and November.	Before July 1.
Eastport, Me	April and May	August and September.	October, November.	Spawn seen in weirs.
Southern Nova Scotia	May†			

*At Gloucester, May 13, 1881. †Barrington, N. S., May 14, 1881.

II.—THE MACKEREL FISHERY OF THE UNITED STATES.

C.—THE PURSE-SEINE FISHERY.

The purse-seine has come into general use since 1850, and with its introduction the methods of the mackerel fishery have been totally revolutionized. The most extensive changes, however, have taken place since 1870, for it is only during the last ten years that the use of the purse-seine has been at all universal. As late as 1873 and 1874 a few vessels have fished with the old apparatus in the Gulf of Saint Lawrence, and also a few on the coast of New England. Such changes in the manner of fishing for mackerel have brought about also a change in the fishing grounds. Vessels fishing in the old style were most successful in the Gulf of Saint Lawrence, but the purse-seine can be used to very much better advantage along our own shores between Cape Hatteras and the Bay of Fundy.

The mackerel fleet in 1879 and 1880 is owned almost entirely by Massachusetts and Maine, a very few vessels from New Hampshire and Connecticut also participating. The distribution of the vessels in the mackerel fleet, their tonnage, and the number of men employed, is shown in the tables, prepared by Mr. R. Edward Earll and printed below in sections 40–43.

11.—THE FISHING GROUNDS.

In the spring, from March to the 1st of June, the mackerel seiners cruise between the capes of the Chesapeake and the South Shoal of Nan-

tucket. The mackerel are first encountered off Chesapeake and Delaware Bays, from 20 to 50 miles from the land, and gradually move northward, followed by the fleet. When off the coasts of New Jersey, Long Island, and Block Island, the fish usually draw closer in to the land, frequently approaching within one or two miles of the shore. During the summer and fall months the principal seining ground for mackerel is in the Gulf of Maine, from the Bay of Fundy to Cape Cod; the immediate vicinity of Mount Desert Rock, Matinicus Rock, Monhegan Island, Cape Elizabeth, Boon Island, and Massachusetts Bay being favorite localities. Good catches of mackerel are frequently made in summer on George's Bank and, within the last few years, near Block Island. Though mackerel have, at times, been taken in seines in the Gulf of Saint Lawrence, so little, comparatively, has been done in this locality that it can scarcely be classed among the grounds generally resorted to by the mackerel seiners. In a large majority of cases the mackerel schooners which have gone to the gulf within the last four or five years have met with decided failures, and in 1880 several returned home from there without a single barrel of fish.

12.—THE FISHERMEN.

The mackerel fleet contains a larger percentage of American-born fishermen than any other. The 113 mackerel vessels from Gloucester are manned by 1,438 men, of whom 821 are Americans; 322 Provincials; 24 British, most of whom are Irish; 39 Scandinavians; 6 French; and 13 Portuguese. The mackerelmen belonging to other ports in Massachusetts and on the coast of Maine have a still larger percentage of Americans in their crews, most of the vessels being manned entirely by natives of New England. Many of the Gloucester fishermen, engaged in the mackerel fishery, are, in winter, employed in the haddock fishery, in the Georges cod fishery, or in the fresh halibut fishery. Many others, like those from Provincetown and Maine, do not go to sea in winter. The winter herring trade is carried on almost entirely by the mackerel schooners and their crews from Gloucester and Maine, and the winter oyster business is, in the same manner, monopolized by the Cape Cod and Portland mackerel vessels, while some of them enter into the business of bringing fruit from the West Indies to the United States.

13.—THE VESSELS.

The mackerel fleet is made up of 468 vessels, which pursue this fishery to a greater or less extent. Of these, 235 vessels are employed exclusively in catching mackerel between March and November, though some of the fleet do not start before June or July. A large number of these, the best fishing vessels of New England, in winter are engaged in the haddock fishery, in the Georges fishery, in the herring trade, in the oyster trade, and in the West India fruit trade, as well as in the shore cod fishery.

There is a small fleet of vessels which, though, like their companions, designed for rapid sailing, are seldom employed in the winter, except in the herring trade to New Brunswick, on account of the shallowness and sharpness of their hulls, which renders them unfit to encounter the heavy winter gales in the open ocean.

The mackerel vessels are, as a class, swift sailers; they carry, while engaged in this fishery, all the canvas which their rig will allow. The manner in which their sails are managed, and the amount of canvas which they carry, are fully described in the chapter on the fishing vessels. The mackerel schooners, as a rule, spread more sail, in comparison with their size, than any other vessels in the world, except, perhaps, the extreme type of schooner-rigged yacht, which is essentially a development of the fishing schooner.

Vessels designed especially for the work of seining mackerel usually have a wide deck, much deck-room being necessary for the proper handling of the fish. Many of the schooners of 60 to 80 tons have a beam of 21½ feet to 22½ feet. But, although plenty of deck-room is considered of great importance to a mackerel vessel, even deck-room is held to be less necessary than speed. In consequence every effort has been made by the builders to construct swift sailing schooners, and the result is that many of the vessels composing the mackerel fleet are quite able to cope successfully with first-class yachts of the same size. The mackerel vessel is fitted for seining; (1) by placing upon her a summer outfit of repairs and sails;* (2) by removing the heavy cables used in winter fishing, and substituting chain cables. This change is not necessary in the case of many of the Cape Cod and Portland vessels which are employed in the oyster trade, or in the case of most of the Gloucester vessels engaged in the herring trade, since these use only chain cables at any season; (3) by the removal of gurry-pens, and all other incumbrances from the deck; (4) by the rigging of a seine-roller upon the port-quarter rail. This is a wooden roller of oak or other hard wood, 6 to 7 inches in diameter, and 6 to 8 feet long, which revolves on pivots in its ends, received into iron sockets in cleats, which are fastened to the rail. The forward end of the roller is about 3 feet aft of the main rigging.

* Whatever repairs are needed are first attended to, while, in the meantime, the jibboom is rigged out, the foretopmast (if the vessel carries one) is sent up, the spars cleaned and painted, and the rigging tarred. This having been done, the vessel is taken on the railway and thoroughly cleaned and painted. The work of cleaning and painting spars, tarring rigging, &c., was formerly done by the vessel's crew, but at the present time it is done by gangs of shoresmen organized for the purpose, the expense for the labor performed being paid for by the fishermen. The custom of hiring others to do this work began about 1863 or 1864. The fisheries were at that time very prosperous, and many of the fishermen preferred to pay some one for tarring and such work rather than to do it themselves. At first two or three men of the crew usually did the work, being paid for it by their shipmates, but in a short time it passed into the hands of the longshoresmen to the general satisfaction of both owners and crews. The work of cleaning the vessel's bottom, preparatory to painting it, is now often done by shoresmen, who are paid by the crew.

The use of this roller is to lessen the friction between the rail of the vessel and the seine, as the latter is being hauled on deck or overhauled into the boat;* (5) by the head-box being fastened to the forward end of the house. The head-box is a bin 10 or 12 feet long, and wide enough to receive the head of a fish barrel. In this box are stowed the heads of the barrels that happen to be on deck; (6) by placing the bait-mill on deck, and fastening the bait-box (when one is used) to the main rigging on the starboard side; (7) by nailing boards to the top timbers underneath the main rail, between the fore and main rigging. These are about 6 inches in width, and are provided with single ropes, or stoppers, 2 or 3 feet apart; the object of these stoppers is to hold the cork rope of the seine when brought over the rail, preparatory to bailing the fish from the seine upon the deck; (8) by taking on board an ice-grinder, these being used only on vessels which carry their fish fresh to market; (9) by clearing the hold of all bulkheads, ice-houses, or other appliances which may have been used in the course of the winter's fishery; (10) by properly adjusting the quantity of ballast; if the vessel has been in the haddock or Georges fishery, ballast must be removed; if in the herring trade, ballast must be added; a mackerel schooner of 60 tons will carry from 15 to 20 tons of ballast, and in exceptional cases somewhat more; (11) by an arrangement of ice-house on those vessels which intend to take their fish fresh to market, somewhat similar to that on board the halibut fishermen;† (12) and by taking on board the necessary supply

* Capt. George Merchant, jr., of Gloucester, Mass., states that purse-seines were used by the fishermen of that port for six or seven years before "seine-rollers" were put on the vessel's rails. This useful implement was first invented and used by Capt. Simeon Tarr, of Gloucester, about the year 1857, while he was in command of the pinkie "Andes."

† The mackerel schooner's ice-house, as a rule, occupies the middle portion of the hold, extending from side to side of the vessel one way, and from the grub beam to the forward side of the main hatch the other way. It is separated from the other sections of the hold by bulkheads, and is divided into a number of pens similar to those in the ice-house of a halibut schooner. Each of these pens is subdivided into three parts by shelves, which are constructed, when occasion requires, by laying some boards crosswise, the ends resting on cleats which are nailed to the sides of the pens. The first shelf is put in about fifteen inches above the floor of the ice-house, and a second shelf fifteen inches above the first. The front of the pens are closed by boards which slide in grooves on the stanchions, or bulkheads. The mackerel are iced fifteen inches deep on the floor of the pen, after which the first shelf is laid and another tier of the same depth is put on that. After the second shelf is put in the fish are iced on it nearly to the deck, a covering of ice being put over all. In this way the fish can be kept in a better condition than if they were packed in a large bulk. If stowed in bulk the fish are jammed and soon become worthless. An average sized ice-house has a capacity of about 200 barrels of fresh mackerel; some ice-houses will hold 300 barrels.

Capt. Joseph Smith, of Gloucester, tells us that at present few of the mackerel vessels carry ice-grinders, since the fishermen prefer to use the ice-pick instead. Each vessel employed in market fishing is provided with from 2 to 4 ice-picks, and three men can pick up ice fast enough to supply a whole crew, even if they should ice 100 barrels or more an hour, which is about the average speed with which mackerel are taken care of. Captain Smith thinks his crew, on one occasion, iced 300 barrels in an hour and a half. About 4 tons of ice are put on 100 barrels of fresh mackerel.

of barrels.* Vessels which take their fish fresh to market carry from 175 to 250 barrels; those intending to salt their fish carry from 175 to 500 barrels, about one-third of this number being filled with salt, which is used in curing the fish, and serves in the meantime as ballast.

Wellfleet has a three-masted schooner, the "Carrie D. Allen," employed in the mackerel fishery; her burthen is 175 tons, and she carries 25 men.†

14.—APPARATUS AND METHOD OF FISHING.

(*a*) *The seine-boat and its fittings.*—The boats used by the Gloucester fleet in the purse-seine fishery are built after a peculiar model and solely for this purpose. The present form of the seine-boat was devised about the year 1857 by Messrs. Higgins & Gifford, boat-builders, Gloucester, Mass.‡ The seines had previously been set from square-sterned, lap-streak boats, about 28 feet in length, and resembling in shape an ordinary ship's yawl.

The seine-boat, as now in use, resembles the well-known whale-boat, differing from it, however, in some important particulars.

The seine-boat, according to Mr. Gifford, must have three qualities: (1) It should tow well; consequently it is made sharpest forward. A whale-boat, on the other hand, is sharpest aft, to facilitate backing after the whale has been struck. (2) It should row well, and this qual-

* Vessels which carry a mackerel pocket or "spiller" are provided with outriggers on the starboard side and other necessary arrangements for its proper management. All of the seiners also have an outrigger on the port side, by the fore rigging, to fasten the seine-boat to.

† The three-masted schooner "Carrie D. Allen," of Wellfleet, Capt. Darius Newcomb, arrived at Gloucester, June 18, 1874, with 900 barrels of mackerel. Only vessel of her class in the coast fisheries; 175 tons, carries 25 men.—(Cape Ann Advertiser, June 26, 1874.)

‡ Capt. George Merchant, jr., of Gloucester, Mass., claims to have been the first to design and introduce the form of seine-boat now universally employed in the mackerel fishery, and which has been used to some extent in the menhaden fishery since 1857.

In 1856, while engaged in fishing for menhaden, he carried two boats, one of which was a whale-boat of the ordinary type. The latter, which he used for a "second boat," proved very serviceable—rowing and towing easily, and turning quickly—and was much better adapted for seining than the old-fashioned square-sterned seine-boats which were in general use at that time. Captain Merchant therefore conceived the idea that a decided improvement could be made in seine-boats by building them on the same general plan as the whale-boat, through making them somewhat wider than the latter, especially towards the stern, so that they would be better able to bear up the seine. Having decided on the dimensions required, Captain Merchant wrote to Mr. Higgins (now the senior partner of the celebrated boat-building firm of Higgins & Gifford, Gloucester, Mass.), who was then at Provincetown, desiring the latter to build a boat 21 feet long and according to the plan submitted, and which should be ready for the season of 1857.

Many of the old fishermen laughed at the idea of attempting to use a sharp-sterned boat for purse-seining, declaring that it would upset while the seine was being "pursed up," that it would tow under, and making other unfavorable predictions. Notwithstanding their croakings, they soon became convinced of the good qualities of the new boat, and in the following years hastened to adopt the same kind themselves.

ity also is obtained by the sharp bow; the whale-boat also should row well, but in this case it has been found desirable to sacrifice speed in part to the additional safety attained by having the stern sharper than the bow. (3) It should be stiff or steady in the water, since the operation of shooting the seine necessitates much moving about in the boat.

The Gloucester seine-boat of the present day is a modification of the old-fashioned whale-boat, combining the qualities mentioned above. The average length of such a boat is about 34 feet, its width 7 feet 5 inches, its depth amidship 33 inches. At the stern is a platform, measuring about 4 feet, fore and aft, on which the captain stands to steer; this is 6 to 8 inches below the gunwale. Another platform extends the whole length of the boat's bottom, from the afterpart of which the seine is set. In the bow is still another platform, on which stands the man who hauls the cork-line. There are four thwarts or seats, a large space being left clear behind the middle of the boat for the storage of the seines. Upon the starboard side of the boat, near the middle, is arranged an upright iron support, about 18 inches in height, to which are attached two iron snatch-blocks used in working the purse-ropes.* Upon the opposite side of the boat, generally near the bow and stern, but with position varied according to the fancies of the fishermen, are fixed in the gunwale two staples, to which are attached other snatch-blocks used to secure additional purchase upon the purse-ropes. In the center of the platform at the stern of the boat is placed a large wooden pump, used to draw out the water which accumulates in large quantities during the hauling of the seine. The steering rowlocks, with the peculiar attachment for the tow-rope and the metallic fixtures described above, are manufactured especially for seine-boats by Messrs. Wilcox & Crittenden, Middletown, Conn.

Until 1872 the seine-boats were always built in the lap-streak style; since that time an improved form of smooth-bottomed boats, built with battened seam, set-work, sheathed inside with pine, and with oak frame and pine platform, has been growing in popularity. The advantages claimed for this boat by the builders are: (1) increased speed; (2) greater durability, on account of the more solid character of the wood-work and tighter seams; and, (3) less liability to catch the twine of the nets by reason of the smooth sides. It is not so stiff as a lap-streaked boat of same width, but in other respects superior.

Since the general adoption of the purse-seine, in the menhaden and mackerel fisheries, an account of which is given elsewhere, there has

*The first iron purse-davit (with wooden snatch-blocks), according to Captain Merchant, was invented and used by Capt. Henry Blatchford, in 1858. With the exception of the blocks, it was essentially the same as the purse-davit in use at the present time. Previous to this a wooden davit (usually an old one), such as were in use on the fishing-vessels, was employed for the purpose of pursing up the seine. These davits were rigged out over the side of the boat, a place being cut in them three or four inches deep, so that they might fit over the gunwale of the boat in such a manner as to steady the outer end while the inner end was secured to the midship thwart by a grommet strap.

been a gradual increase from year to year in the size of the seine-boats, keeping pace with a corresponding increase in the size of the seines.

In 1857 all boats were 28 feet in length. In 1872 the length had increased to 30 feet, and in the summer and fall of the same year an additional foot was added to the length. In 1873 almost all boats which were built had a length of 31 feet, a few of 32 and 33. In 1874 almost all were 33 feet, as they were during 1875 and 1876, although some were made 35 and 36 feet. In 1877 34 feet is the most popular length, though one or two 38-foot boats have been built. Seven, eight, or nine oars, usually 13 or 14 feet in length, are used in these boats, besides a steering-oar of 16 or 17.

These boats last, with ordinary usage, six or seven years. At the close of the fishing season they are always taken ashore and laid up for the winter in a shed or under trees, and are completely refitted at the beginning of another season.

The seine boats carried by the "menhaden catchers" south of Cape Cod and by all the steamers are shaped like ships' yawls, square-sterned, smooth-bottomed, and batten-seamed, 22 to 26 feet long and 6½ feet beam. They are built at New Bedford, New London, Greenport, and at Mystic River, and cost about $125 each, the finest $185. The New Bedford boats are preferred by many fishermen.

The Cape Ann fishermen stow their seines in one boat, and in shooting the seine one end of it is carried in a dory.*

The arrangement of the thwarts are especially adapted for the mackerel fishery. There is some variation, however, as to the number of these in the different sizes of boats. In the size most commonly in use at the present time (1881) there are six thwarts, five of these being forward of midships, and one 7¾ feet farther aft. The following are the general dimensions of the boat: 36 feet long over all; 7 feet 7 inches wide; 2 feet 8 inches deep. The bow thwart is placed 4 feet from the stem, and there is a space of 2½ feet between each of the five forward thwarts. The boat is ceiled to the gunwales and platformed inside. In the bow she has a raised platform which comes up to the level, or nearly so, of the forward thwart, to which it extends, and is bulkheaded on the after end. The stern is covered over on the top of the gunwales, forming the stern sheets, this being 3 feet long forward of the stern-post, with a bulkhead on the forward side. Forward of this again, and a little below the level of the thwarts, is another platform, 3 feet in length, also bulkheaded on the forward side; on this the seine-master stands while steering the boat, and in it is placed the pump by which the boat is freed from water. The after portion of the boat between the two after thwarts is used for stowing the seine, this being a section 7¾ feet long by 7¼ feet wide. There are five rowlocks on either side, corresponding to each of the five thwarts. The purse-davit is placed on the starboard side and usually stepped in the midship thwart

*Goode, History of the American Menhaden, p. 122.

near the gunwale. At present, however, an improvement has been made in placing the purse-davit by stepping it in the thwart nearer to the center of the boat, it being placed at a distance of 18 inches to 2 feet from the gunwale. It is said that by this improvement the seine can be more easily pursed up and the pursings taken over the gunwale of the boat without the use of a pry or lever, and also that there is less probability of the boat being capsized. The boats of the most recent construction have their purse-blocks on the port side, nearer the bow and stern than formerly, the forward being 2 feet aft of the stem, and the after one close to the upper stern sheet, about 3½ feet from the stern-post. Galvanized iron plates, each provided with a projecting eye, are neatly fastened to the gunwale, and the snatch-blocks are hooked into these eyes.

Until recently it has been customary to build these boats with a raised garboard, in imitation of the whale-boat (whale-boats are constructed in this way by some builders), but within the present year, during 1881, Messrs. Higgins & Gifford, before mentioned, and the principal if not the only constructors of this style of boat in the United States, have built them with smooth garboards, which have given better satisfaction than the old style. They are remarkably well adapted for swift rowing and for towing. Both of these qualities are very desirable, especially the latter, since they are frequently towed at a rate of 10 or 12 knots. The thwarts are double-kneed but not dunnaged. The boat is steered with an oar similar to the whale-boat. On the port side are two oar rests in which the oars are placed after the seine has been shot. The after one of these is just forward of amidships, and the two are separated 8 feet.

The seine-boat is usually towed astern by a warp, a 2½ or 3-inch rope, 20 to 50 fathoms in length. When the vessel is making a long passage the seine-boat is hoisted upon the deck. Some of the larger vessels carry two seine-boats and two seines. In the largest schooners these boats are both of a large size; in other vessels, one of them is usually a small one. In addition to the seine-boats, each vessel carries two dories. One of these is usually towed astern when the vessel is on the fishing grounds; sometimes both. They are taken on deck in rough weather, when making a passage, or when not required for use in fishing.* When

*The following is the price-list of Messrs. Higgins & Gifford, of Gloucester, Mass., for 1880:

Seine-boats, including pump, iron breast hook, outside tow iron, and iron stem cap.

Smooth bottom, battened seam, 31 feet	$186 00
Smooth bottom, battened seam, 32 feet	192 00
Smooth bottom, battened seam, 33 feet	200 00
Smooth bottom, battened seam, 34 feet	210 00
Smooth bottom, battened seam, 36 feet	225 00
Galvanized rowlocks, with brass sockets, per set (8)	6 50
Pursing gear	8 50
Patent steering rowlock with socket	1 25
Pursing blocks, per pair	6 00
Towing iron and pin	2 00

a large catch is obtained at the last set of a seine for the trip, and more mackerel are secured than the barrels on board will hold, the dories are taken on deck and filled with fish. During the mackerel season it is a common occurrence to see, in any of the large fishing ports, vessels arrive with both dories piled full of mackerel.

(*b*) *The seine.*—Two kinds of seines are used. The large seine, only used in connection with the largest kind of seine-boat, is 190 to 225 fathoms in length, and 20 to 25 fathoms in depth when it is hung, being deeper in the center of the bunt than at the extreme wings, one of which, the "boat end," is from one to ten fathoms deep, and the other, the "dory end," varies from about seven to fifteen fathoms in depth.* It is made of three kinds of twine. The "bailing-piece," which is a section of the net occupying about 10 to 12 fathoms along the center of the cork-line, and having about the same depth as length, is made of the stoutest twine. Beneath this, and composing the remainder of the bunt and extending to the bottom of the seine, is a section knit of twine a size smaller. There is also a band of large twine, 15 meshes in depth, extending along the cork-line of the seine on either side of the bailing-piece to the extremity of each wing. The remainder of the net is made of smaller twine.

A seine 200 fathoms in length is usually about 1,000 meshes deep, both in the bunt and in the wings. The strongest twine is placed at those places where the seine is subjected to the greatest strain. On the cork-line are two or three sizes of corks, the largest being placed over the bailing-piece, the smallest generally at the ends of the wings. The cork in the middle of the seine is much larger than the rest, and is painted or covered with canvas in order that it may be easy to find the center of the net either night or day. To one end of the cork-line at the upper corner of the wing, which is first thrown out when the seine is set, is a buoy. The seine is hung to lines which are called the hanging-lines. The lead-line is placed as in an ordinary seine, and is weighted with sinkers about two ounces in weight, which are attached to it at intervals varying from a few inches to several feet. The arrangement of the pursing rings and bridle is described elsewhere. In a mackerel seine of 175 fathoms the bridles are about 15 to 18 feet in length, and the rings, which weigh 1¼ pounds and are 3 inches in diameter, are fastened to the middle of each bridle. The middle ring is on the bottom of the seine, opposite the middle cork already referred to.† The purse-line extends through the rings;

* Capt. Joseph Smith tells us that the depth of the seine-ends varies a great deal according to the fancy of the fishermen. Some of the skippers prefer to have the ends of their seines "taken up" enough to make them very shallow, while others think a net with deep ends will fish the best.

† The middle ring is usually made of different metal from the others, or is larger, so that the center of the bottom of the seine can be easily found.

its center is marked by a line tied around it or tucked through its strands, but more frequently now by a brass swivel, into which the purse-rope is spliced, and which serves the double purpose of marking the center of the line and preventing it from kinking.*

When the vessel is not searching for fish the seine is stowed on a grating forward of the house, between that and the after hatch. This grating is a frame-work, about 8 to 10 feet square, made of boards from 4 to 6 inches in width, crossing each other at right angles. The boarding is supported on a frame-work of joists. The top of the grating is 4 to 6 inches above the surface of the deck. When two seines are carried, the grating must be wider. When the seine is stowed in the boat or upon the deck, it is always "salted down" to prevent it from rotting or burning. From a bushel of salt to a barrel or more is used, according to the necessity of the case. When the seine is thus stowed, it is often protected by a canvas cover.

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*The following dimensions of an average-sized deep-water mackerel purse-seine have been supplied by Capt. George Merchant, jr., of Gloucester, Mass.:

Total length of seine when hung, 203 fathoms.

Depth, 1,000 meshes, or about 21 fathoms.

Size of mesh in all its parts, 2 inches.

Length of "bailing-piece" or "bunt," 500 meshes; size of twine, 12-9.

Depth of "bunt" or "bailing-piece," 500 meshes.

Length of "sides," each, 300 meshes; size of twine, 20-9.

Depth of "sides," each 500 meshes.

Length of "under," 1,100 meshes; size of twine, 20-9.

Depth of "under," 500 meshes.

The central section of the mackerel purse-seine, that portion composed of the bailing-piece, sides, and under, is generally spoken of as the "bunt," though the bunt proper constitutes only a small portion of it. Capt. Joseph Smith, of Gloucester, says that at present the whole center of the seine (including the bunt, sides, and under) is made of one size of twine, 20-12, this portion being 1,000 meshes square.

There is sometimes considerable difference in the length of the wing and arm of one end of the seine from that of the other, though some are constructed with both ends of equal length. Many of the seiners prefer to have the bunt of their seines a little to one side of the middle of the net. In such cases the ends are, of course, of unequal lengths. It may also be mentioned that a border of stout twine (size 20-9), 15 meshes deep, extends along both the top and bottom of the wings and arms of each end of the net.

Size of first wing, 125 yards long in the web, 1,000 meshes deep; size of twine, with the exception of that for the border, 16-6, hawser-laid; size of first arm on the same end of the net as the wing just described, 125 yards long in the web, 1,000 meshes deep; size of twine, exclusive of that in the border, 20-6, hawser-laid. Size of wing No. 2, on the other end of the net, 150 yards long in the web; depth, 1,000 meshes; twine, 16-6, hawser-laid. Size of arm No. 2, 150 yards long in the web; depth, 1,000 meshes; size of twine, 20-6, hawser-laid, exclusive of the border.

Captain Merchant writes: "We always use for hangings 6-thread manila right and left rope. In Boston factories they sometimes use 9-thread manila for bridle-rope, or 'loops,' as they are occasionally called." These loops, to which the purse-rings are attached at the bottom of the seine, are one part of the hanging-rope, and are made three fathoms long, the spaces between them being the same distance. Thus it will be seen that the purse-rings are about 6 fathoms distant from each other. Captain

When looking out for mackerel the seines are generally stowed in the seine-boats upon the platform arranged for that purpose between the two after thwarts. The cork-lines are stowed aft and the lead-lines forward, the seine always being set from the starboard side of the boat.

As has been stated, the small seine differs from the large seine only in its size, being from 150 to 175 fathoms in length and 10 to 12 fathoms in depth. These seines are used in shallow water, and those vessels which have gone to the Gulf of Saint Lawrence for the purpose of catching mackerel by this method have generally carried them.

Many of the large schooners carry two seines whether they have two seine-boats or not, since the deep seine cannot be used on rocky bottom in shallow water.

The seine is always passed from the boat to the vessel and *vice versa* over the roller upon the port side, which has already been described. To transfer the seine from the vessel to the boat requires five or more men. The operation can be performed in from fifteen to thirty minutes. To haul the wet seine from the boat to the vessel is a somewhat laborious task, but as less care is required than in stowing it in the boat, less time is usually needed to perform this operation.

(*c*) *Bait.*—Mackerel seiners usually carry a small supply of bait for the purpose of tolling the fish to the surface and, incidentally, of catching fish with the jigs when they are not schooling. Sometimes they toll the school along side and spread the seine around the vessel, and as she drifts over the cork-rope and away to leeward the net is pursed up

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Merchant adds: "We use the left-laid rope for loops and the right for the sinkers. The loops are formed by separating the ropes at what are called the 'bridle hitches.' Only one ring is attached to a loop." The net has attached to it, when completed, 800 No. 1 corks, 1,200 No. 2 corks. The No. 1 corks, which are the largest, are placed in pairs in the center of the bunt of the seine, at a distance of 10 inches between the pairs. The "middle cork," however, is made of three, joined together and covered with canvas. This is for the purpose of determining the center of the seine when it is being overhauled. The No. 2 corks are secured to the upper part of the seine upon the wings and arms, being placed 15 inches apart. From 65 to 75 pounds of lead sinkers, which weigh from 2½ to 4 ounces each, are placed at the bottom of the seine. None of these are put in the bunt, but are scattered along the foot of the wings and arms, being nearest together close to the ends of the net. The rings used at present are made of galvanized 1-inch iron, and weigh about 2½ pounds each; with the sinker-leads they make about 160 pounds weight attached to the bottom of the seine. One and three-fourth inch hemp rope is used for the purse-line, the length of this being generally about 25 fathoms more than that of the seine. In hanging the seine it is "taken up" at the ends, so that one end is 7 fathoms deep while the other is only 1 fathom deep, though the middle of the net will go down 125 feet. The first or deepest end is called the "dory end" or "outer end," and the other is known as the "boat end" or "inner end." As will readily be understood by reference to the preceding dimensions of the purse-seine, the difference in the depth of the several sections of the net, when hung, is due solely to the "taking up" in the process of hanging it, since the webbing is of the same depth throughout. The purse-seines, like many other things, are being improved. Those we are making now [for the mackerel fishery] are much lighter than we have been making them in former years, and can be handled with greater ease and rapidity.

and the fish captured. It is often the case, too, when mackerel are moving rapidly for the men in the dory to throw bait ahead of the school, and while the fish are thus induced to stop, the seine-boat circles around them, the net is thrown out, and while yet engaged in feeding the fish are inclosed in the big purse. Many good catches are obtained in this way. The favorite bait is slivered and salted menhaden, of which each vessel usually carries five to ten barrels. Many if not all of the vessels, however, at the present time, depend entirely upon small mackerel, which they catch and salt. The bait-mill, bait-boxes, and bait-throwers are similar to those used in the mackerel hook fishery, and are used in the same manner.

(*d*) *Methods of seining by day.*—The following description of the method of seining mackerel is mainly from the pen of Mr. J. P. Gordy: When a vessel is on the fishing grounds and there are no signs of fish, if the weather is favorable, a man is stationed at the mast-head on the look-out, while the rest of the crew, excepting, of course, the man at the wheel, lounge lazily around, amusing themselves as they feel inclined. If a whale is seen blowing or a vessel is "putting out her boat," the man at the wheel steers toward them. The skipper is usually on deck directing the evolutions of the vessel, and is consulted before any change is made in the course of the vessel. When signs of fish begin to be numerous and sea geese and gannets are plenty, and whales and porpoises show themselves frequently, the "fishy men" of the crew stop lounging and begin to survey the surface of the water intently. At such times one can count half a dozen here and there in the rigging, carefully observing the movements of other vessels, if any of the fleet are in sight. "There's crooked actions, men," the skipper exclaims, meaning that some vessel in sight suddenly alters her course, and that she is either on fish herself or sees another vessel that is. When one school appears, another is likely to be seen, and when a vessel has "crooked actions," those who observe them bend their course in the direction in which she is sailing. When a man sees fish, he shouts, "I see a school." "Where?" asks the captain. The direction is indicated. "How does it look; is it a good one?" He wants to know whether they are tinkers or whether the fish seem large. If they are abundant, he will wait until he gets a "sight" at a good school. Much attention is paid by the lookouts to the manner in which the school of fish is moving. The seiners prefer those schools which are "cart wheeling,"* or going round and round in circles in a compact body, in the act of feeding. Fish which are "cart-wheeling" can be surrounded with a seine much more readily than those going straight ahead in one direction.

If the man who has found the school is not experienced, the captain examines it for himself, and if satisfied that it is a good one he shouts, "Get in the seine boat; look alive, boys." As a pack of school-boys

*This habit of circling, which the mackerel performs, is also called "milling" by the fishermen.

jump from an apple tree when the indignant owner appears, so eleven men leap into the seine-boat one over another, as if they had meant to jump overboard but by accident had reached the seine-boat instead. The captain takes his place at the steering-oar. Two men sit on the forward part of the seine and one at the cork-line, ready to "throw out the twine" when the captain gives the word of command. The remaining seven row swiftly and silently until the fish disappear or the captain orders them to "stop rowing." All the while the captain is eagerly watching the fish, noticing which way they move and how fast. He wants, before beginning to put out his twine, to get near enough to enable him to make the wings of the seine meet around the school. He must, therefore, keep far enough away to prevent the head of the school from striking the seine until it is nearly pursed up. He calculates the speed of the fish, and sets the seine in such a manner that by the time the school gets thoroughly within the circle of the net he will be able to come round to the starting point and completely encircle them. If he fails in this, the wings of the seine must be towed together before it can be pursed up, and in the time thus occupied there is a chance of losing the fish. A skillful skipper rarely fails in making the ends of the seine meet. In seining on George's, or any other place where there is a strong tide, it requires much skill and judgment to set the seine in such a manner that it shall not be tripped and thrown out upon the surface of the water. Under these circumstances, to prevent "tripping," the seine should be so set that the bunt of it will be in the direction from which the tide runs; the force of the tide then aiding the act of pursing the net.

When the skipper is near enough to satisfy the conditions of the above problems he orders the men at the seine to "Put out the twine." They begin their work, the oarsmen in the mean time rowing as fast as possible. The skipper steers the boat around the school in such a manner that when the seine is fully out the cork-line approximates more or less closely to the form of a circle. Two of the men who did not get in the seine-boat now appear on the scene of action in the dory in which they have closely followed in the wake of the seine-boat until the act of setting begins. As soon as the first end of the seine has been thrown overboard they row up to it and seize the buoy at the end of the cork-line, which they hold until the seine-boat has made a circle, merely rowing fast enough to keep the end of the seine in its place and to prevent it from swagging. When the seine-boat has completed its circle, it approaches the dory, which is holding fast to the buoy. When the two ends of the seine meet, the men in the dory get into the seine-boat to assist in pursing; sometimes, however, the ends do not meet, and in this case they are brought together by means of a line, about 20 fathoms in length, which is always taken in the dory and is fastened by the men in the dory to the buoy and carried to the seine-boat.*

* Capt. Nelson A. Kenney, of Gloucester, states that two men usually go in a dory, one of whom pulls a little while the other holds to the end of the seine. If the one

The work of "pursing up" is now to be performed with all possible speed. Until this is begun the seine is in the form of a hollow cylinder, and the fish, in order to escape, have only to dive down and swim away under the lead-line. In pursing, the bottom of the seine is to be closed up, and in this operation the saying of the men, "A man who won't pull every pound he can and *an ounce more*, is not fit to be a fisherman," is fully exemplified.

The men stand six in one end of the seine-boat and seven in the other end, holding the two ends of the purse-line, which, having passed through the rings in the bridles on the lead-line of the seine, pass round the two blocks of the purse-davit and through the snatch-blocks on the opposite side of the seine-boat, one of which is forward and the other aft. One of the uses of the bridles now appears. As soon as the men in the seine-boat commence pursing up the seine the rings, which before this have been hanging downward below the lead-line, now extend the same distance laterally from this line. We have only to remember that they all extend toward each other to see that they considerably diminish the open area at the bottom of the seine. To be sure, the spaces between the bridles are open, but the fish are not likely to escape through these, for in such an attempt many of them would strike the bridles and finding such obstacles would turn, hoping to find an outlet in some other direction.

The men stand, as has been said, when pursing up the seine, six in one end of the boat and seven in the other. They are divided into three rows of three and one of four men. On the side of the boat next to the seine are two rows of men facing each other and pulling; one row on the end of the first line that passes over the blocks in the purse-davit nearest them, the other on the other end of the purse-line passing over the other block of the davit. Each end of the purse-line passes around another block, which changes the direction of the line, and two rows of men on the side of the boat away from the seine stand back to back, pulling on the purse-line, its direction having been changed by the pulleys.

As previously remarked, the seine before being pursed up is in the shape of a hollow cylinder. A strong tide may make it take the form of a hollow frustrum with a slit in the side. Its longer area is at the bottom. In such a case the slit is wider at the bottom and grows narrower toward the top, until it vanishes at a point where the two ends of the purse-line bring the seine together at the purse-davit. Then the purse-weight comes into play. This is "reeved out" to the two end lines, and its weight brings the two ends of the seine together, closing up the slit and

having the oars is an expert (and as a rule only old hands do the rowing), he will quickly and dexterously turn the dory as the seine-boat approaches "close to," so that the latter may shoot alongside of the former in such a manner that the purse-line held by the man in the stern of the dory may be easily transferred to the larger boat. As soon as this is done both of the dorymen jump aboard the seine-boat and assist in "pursing up" the seine.

destroying the frustrum shape of the seine. If this were not done the fish might escape at the side as well as at the bottom.*

When the seine is pursed up it is in the form of a bag, the bottom of which does not hang freely, for it is bent upward, having been drawn up by the purse-line near the side of the boat and during the operation of pursing up the boat is pulled nearly into the center of the circle made by the corks on the upper edge of the seine. Occasionally, when there is a current, the boat is brought up against the corks in the bunt of the seine. The object is now to get the fish, if they have any, into such close quarters that they may be taken on deck. To this end the larger part of the seine must be pulled into the seine-boat, and this operation, called "drying up," now begins. The seine is taken up entirely if there be no fish, partly if the school has not escaped, and the net is so drawn up that the "bailing-piece" will inclose the fish at last. The position of this part of the seine being marked by the central cork, already spoken of in the description of the seine, it is of course not difficult to bring it around the fish. The experienced fishermen can also quickly tell, either *night or day*, when the bunt of the seine is reached in the process of drying up, since the difference in the size of the twine of which the bailing-piece is made and that of the other parts of the net is readily detected.

If any fish have been caught, especially if the school is large, the dory, with the skipper and three or four men, go to the vessel to help the cook, who is the only man on board, to bring her alongside of the seine-boat. If the school is very large the dory is rowed to the vessel

*It should be stated that the large purse-weight is at present seldom used. The tide is rarely so strong as to make it useful, and even then the process of "reeving" is likely to be so tedious as to make the loss of time more than balance the gain through its use. According to Capt. Joseph Smith the majority of the mackerel seiners now use two purse-weights, each of 75 or 100 pounds weight, instead of the old-fashioned "Long Tom," which usually exceeded 300 pounds. The two weights above mentioned, being so much lighter than those formerly employed, can be handled by one man, and rove on the purse-line very much quicker than if the heavier, or "double weight," as it is called, was used. These small purse-weights are provided with one block, and each weight has a line attached of sufficient length to reach the bottom of the seine. The time occupied in reeving them on the purse-line rarely exceeds fifteen or twenty seconds. One of the purse-weights is most commonly used on the "boat end," or the end of the seine last thrown out, for the reason that this part of the net has not usually time to sink down to its full extent before the pursing begins. A weight is more rarely used on the end of the seine which is first thrown out; and, consequently, has had time to sink to its extreme depth; though sometimes, on account of the current, or for some other reason, it may be found necessary to put the purse-weight upon this end, as well as upon the other. In using one large weight, as formerly, it would be necessary, of course, to always put it on both ends of the purse-line of the seine, but in having two weights one can be attached and run down on either end of the purse-line as required. That sinks it and keeps the net deep, and if both ends "purse high" a weight should be put on each end. The ends of the purse-line, when the weights have been run down, in the manner above stated, will stand out from each other, something in the form of the letter A, both parts coming nearly together at the purse-davit and being separated several fathoms at the lower part of the net, as the first purse-rings are attached about 15 fathoms from the ends of the seine.

as rapidly as possible, and the second dory is rowed back to the seine for the purpose of holding up the bunt, since a school of 500 barrels may sink both seine and seine-boat if left without assistance. This, however, rarely occurs, and it generally happens that the school either is small enough to be dipped into the dory and to be taken to the vessel, or that the seine-boat without any assistance is capable of managing them until the vessel is brought alongside.

While the fish are being caught the cook has charge of the vessel; if it happens to be about meal time he attends to the cooking as best he can, but whether the cakes burn or not the vessel must be cared for, and he generally divides his time between the forecastle and the wheel. If he is preparing dinner, and is able to, he continues his cooking, taking charge of the vessel at the same time.

The vessel usually lays to, with the jib to windward, not far from the seine boat; and, perhaps, as the cook sits at the wheel he has a basin of potatoes before him, which he peels while he is eagerly watching every movement of the seine-boat, trying to ascertain whether his mates are successful, and, if so, to what degree.

When the dory has been rowed aboard, the men at once take measures to bring the vessel alongside of the seine-boat. The evolution of shooting alongside of a seine-boat calls into play all the skill of the steersman. The vessel must approach so near that a rope may be thrown to the men in the seine-boat, and in such a manner that she will move slowly enough not to tear the seine as it is pulled along, before the schooner is "bowsed to the windward" and her motion ceases.

The cork-line is then taken over the side of the vessel and made fast by "stoppers" along the rail. This having been done the process of drying up is resumed and the fish are gathered together in a compact body so that they can be dipped out upon the deck. When the fish are to be taken on deck the men are distributed as follows: three or four are employed in hoisting the fish by means of a large dip-net attached to the main and fore staysail halliards, the captain directs the movements of the net, holding its long handle, and, shouting "hoist" when it is about half full of fish, two men standing by the rail empty the dip-net on the deck.

When all the fish have been bailed out the seine is overhauled and salted. In the mean time most of the crew are making preparations to dress the fish. If the school is large, the crew, cook and all, unless it is just at meal time, begin the work as soon as the fish are ready; if the catch of fish is small, and there is a prospect of getting another set that day, a part of the crew take the seine out of the seine-boat to mend it, if necessary, and lay it back in an orderly form so that it may be thrown out without difficulty.

The operation of setting a seine around the school and pursing it up usually occupies from ten to twelve minutes, though it is claimed by some expert fishermen that they have done it in seven minutes. Under

unfavorable circumstances it may be nearly an hour from the time the first end is thrown out until the "pursings" are on the boat. This delay is usually caused by a strong tide, such as is generally found on Georges. The catch of a purse-seine may vary from one barrel to five or six hundred barrels. The seine may be set eight or ten times in the course of a day without getting any considerable quantity, or, perhaps, no fish, the mackerel escaping by diving under the "lead-line"; and then a more fortunate set will secure more fish than can by any possibility be taken care of by the crew of the vessel. Under such circumstances it is customary to set a flag from the main-topmast head or main peak. This is to indicate to vessels which may be in sight that more fish have been caught than can be taken care of, and that the skipper is willing to dispose of some of them. This is called "giving the seine away." Sometimes the fish are given away to be dressed on shares, and at other times they are given away without expectation of return.* An ordinary crew can dress and salt at one time about 100 barrels of small mackerel or 200 barrels of large ones.†

Almost incredible quantities of fish can be taken care of in a short time. Vessels have been known to leave New York on one day and return the next day with 200 to 300 barrels of fresh mackerel, while some Gloucester vessels in the course of a week have caught and salted 500 or 600 barrels, landing two or three cargoes during that time.

It sometimes happens that when a large school of mackerel have been taken in a seine, that the fish press down so hard on the bottom of the net that the fishermen find it difficult, if not impossible, to gather in on the twine sufficiently to "dry the fish up" enough to bring them to the surface. It has been found, however, that by throwing coal ashes into the water along side of the seine the fish are caused to rise to the surface, being frightened by the whitish appearance which the ashes give to the sea. When the mackerel rise the twine can be readily drawn in. The same result is secured in another way by the menhaden

*The schooner Oliver Cromwell, while on a mackerel cruise recently, had a curious incident befall her. Her seine being out, a school of mackerel suddenly turned, and, making for the seine, took it down. A vessel in the neighborhood immediately answered a call for assistance, and swept her seine under that of the Oliver Cromwell. Twenty-three hundred dollars' worth of mackerel were secured, the two vessels dividing the catch, the fish selling on an average at nine cents each. The bunt of the seine belonging to the Oliver Cromwell was badly rent by the sudden rush of the fish, or more would have been secured. This is the second time the seine of the Oliver Cromwell has experienced similar treatment, losing all the fish at the first, on account of the seine giving way and there being no help near.—(New Bedford Mercury, 1875 (?).)

†A much larger quantity could be taken care of were it not for the fact that mackerel, after being kept a certain length of time, grow "soft," and rapidly become unfit for food. This change takes place much sooner when the weather is warm than at other times. The fishermen, however, are generally able to tell pretty accurately how many fish can be dressed and salted before they spoil. When good catches are made for several days in succession the fishermen get no sleep, being constantly employed night and day in taking and curing the fish.

fishermen when they have a large school of menhaden in their seine alongside of the steamer. If the fish hang heavy on the twine one or two quick turns is given with the propeller and the frightened menhaden rise quickly to the surface. This method is called "whirling 'em up."

(*e.*) *Methods of seining by night.*—The practice of fishing for mackerel, purse-seining in the nighttime, which has recently come into quite general use, was first attempted, so far as we can learn, in 1874. The honor of introducing this method of fishing is assigned to a number of the more enterprising captains of the mackerel schooners, and, in consequence, it is difficult to say here who should receive the credit for the innovation. As is well known to all who are familiar with the sea, the water, on dark nights, frequently exhibits a remarkably brilliant phosphorescent display. At such times objects moving in the sea can be distinctly traced by the illumination which they leave behind, and schools of fish rising near the surface can be readily seen. Indeed on some occasions so remarkable is the phosphorescence thrown out from a large school of fish that it frequently seems to light up the surrounding darkness. From this reason, and the fact that the fisherman, by long experience and close observation, can accurately determine the kind of fish which he may see sporting at night, he is thus often enabled to learn the whereabouts of certain species, such for instance, as the mackerel, and their abundance, even when they do not come to the surface during the day. The mackerel is a remarkably capricious fish, and perhaps for many days in succession its presence can not be detected in its favorite haunts while daylight lasts, and the fisherman therefore seeks for it in vain, but as soon as the sun sets and darkness appears over the sea the schools rise to the surface and the fish continue to disport themselves in this manner until near daylight when they again sink out of sight.

For many years after the introduction of purse-seines it was considered impracticable by the fishermen to catch mackerel in the night, but at last some of the more adventurous skippers, having a favorable opportunity for night fishing, and deeming it possible to catch the mackerel, made an attempt and met with even better success than they dared to anticipate. Thereafter they followed up this method of fishing whenever a good chance occurred, but as it usually resulted greatly to their personal success, as well as increased their reputation among their fellow fishermen, on account of the additional amount of fish caught, they were by no means anxious to tell that part of their catch was made in the night, since if they did so, all the other mackerel fishermen would at once come directly into competition with them. As a matter of course, however, the fact of mackerel being seined at night could not long be kept a secret, and the result was that one after another began to adopt this practice until in the fall of 1881 it reached its climax,

nearly every vessel in the fleet engaging to a greater or less extent in night fishing.*

Previous to this time the public at large were not, it seems, aware that such large quantities of mackerel were taken in the night, though it was on record that night fishing had been previously attempted, and with good results.†

The method of seining mackerel in the night is as follows: The vessel being on the fishing-ground, if the night is favorable, she is allowed to sail slowly ahead while a man goes aloft to the foremast-head and keeps a lookout for the fish. If the signs are peculiarly favorable, perhaps two or more men may be aloft for this purpose. These lookouts are the men who have the watch on deck, and, not infrequently, the skipper may be one of them, his ambition to succeed often impelling him to remain up during the entire night, constantly keeping on the alert for fish and watching the movements of surrounding vessels. The remainder of the crew—those having a watch below—are thoroughly prepared and dressed in their oil-clothes ready to jump into the seine-boat at a moment's warning. If the fish are not seen in the first of the night, the men off duty lie down on the cabin or forecastle floors or stretch themselves on the lockers, and endeavor in this way to get what sleep they can, unless, indeed, they may be busy on deck in caring for the fish taken the night or day previous. When a school of fish is seen by the lookout, he at once shouts "I see a school!" If it is the skipper who first descries them, he gives directions to the man at the wheel how to steer in order to approach them. If not, the man who first reports the school

*Mr. A. Howard Clark, writing under date of October 28, 1881, says: "During the past few weeks the mackerel fleet have taken some good hauls during the night, as the fish have been difficult to catch by daylight but have rarely failed to show themselves on dark nights. When the moon shines it is impossible to see them, but when the night is dark or starlight they can be plainly seen from the mast-head, and sometimes from the vessel's deck. Heretofore, in night fishing, the methods have been the same as by day, but recently, owing to the difficulty of seeing the fish from the deck or the boat, the lookout at the foremast-head has given directions to the men while setting the seine. In this method the seine-boat is towed astern of the vessel, and when ready to 'give 'em twine,' the dory is allowed to drift astern with one end of the seine while it is being thrown out from the seine-boat. When ready to go around the school, the order is given from the mast-head, to 'go ahead'; the seine-boat is cast loose from the vessel and the seine brought together in the usual manner. Still another improvement in the methods is likely soon to be adopted in this night seining, and that is in the use of large lanterns to show their position to the men while setting for them. The schooner 'Northern Eagle' tried this new method last Tuesday night and found it to work splendidly. It was probably the first attempt to use lanterns for such a purpose. Two schools of mackerel were secured, one at ten o'clock and the other at midnight, both together yielding 160 barrels. The lantern was the ordinary large signal light used by fishing vessels."

†We hear of one vessel with a catch of 100 barrels in one week, and of several with catches ranging from 30 to 60 barrels. Another vessel made a good haul in a seine, one moonlight night recently, a new feature in this fishery.—(Cape Ann Advertiser, October 19, 1877.)

is asked in which direction it bears from the vessel. He also directs how the course shall be laid in order to approach close to the body of fish. In the mean time the men below, having been hurriedly awakened, rush on deck and quickly take their places in the seine-boat and dory which are towed alongside or astern. If the mackerel "show up" well and can be plainly seen by the men in the boat, the latter is cast off as soon as the vessel approaches close to the school, and the seine is set and pursed up in the same manner as has before been described; though it frequently happens that owing to the darkness of the night, it is sometimes difficult to bring the ends of the net together with such a degree of certainty and success as it is generally done in the daytime. Of late, however, the custom of carrying a light in the dory has been adopted in order that the skipper, who steers the boat, can determine the position of the end of the seine first put out and therefore be enabled to make a circle with a great deal more accuracy than he otherwise could. It often happens that fish can only be seen by the man at the mast-head, and in such cases, the vessel is usually hove to near the mackerel, and the lookout directs the men in the boat how to row in order to surround the school. Another method, we are told, has been occasionally adopted when the chance for its success is promising. If the wind is sufficiently moderate the lookout at the foremast-head may direct the course of the vessel in such a manner that nearly a complete circle may be made round the school of fish. In this case the seine-boat remains fastened to the stern and is towed along by the vessel while the men in her throw out the seine in obedience to the order given by the man at the mast-head. At the proper time she is cast off and proceeds to close up the circle by bringing together the ends of the seine. The dory is cast off and allowed to remain at the end of the seine as usual until the other end is brought around to her. An evolution of this kind, of course, requires the most skillful seamanship for its success, and also remarkable qualities of adaptability in the vessel.*

*Night fishing, says Capt. Joseph Smith, can only be carried on in reasonably moderate weather. The boat is usually towed alongside of the vessel, the painter being fastened to the out-rigger. When a school is seen, the men jump into the boat, each taking his station, and at the proper time the boat is cast off and proceeds to set the seine if the fish "show up" in a promising manner. Sometimes, however, the school of mackerel may sink suddenly after the boat leaves the vessel's side, and, in consequence, the fishermen are not able to set their seine. As a rule the man on the lookout aloft reports the school of fish and indicates the direction in which it is and tells about how far it is distant. After the boat leaves the vessel's side, however, the captain, or seine-master, who steers, takes charge of her, and when the boat approaches near the fish, which may be seen by the phosphorescence in the water, he gives the order to put out the seine as his judgment may direct. On special occasions this method may be somewhat varied, but the usual practice of setting a seine in the night is the one described above. Sometimes a portion of the net is set from the boat while towing astern of the vessel; or, again, even while the boat is towing alongside. In the latter case the towing rope is fastened to the boat some distance aft from the stem, so that she will keep from the schooner's side some ten or fifteen feet. The oarsmen have out their oars

When a school of mackerel has been taken in the seine and the net is *pursed up*, a signal is made by the crew of the seine-boat, who have a lantern, so as to attract the attention of the men on board of the vessel who immediately bring the latter near the seine-boat. The skipper and three or four of the crew then go on board the vessel in the dory and bring the schooner along side the seine-boat, performing this evolution in the same manner as it is done in the daytime. The lantern, which is always carried in the seine-boat, enables the skipper to find her without any trouble. Much vexatious delay and difficulty, however, sometimes occurs in consequence of the light carried by the seine-boat's crew being extinguished. In such case it is not only hard, but sometimes impossible for the men on the vessel to find the seine-boat, since on a dark, windy night she cannot be seen more than a few rods distant.

The practice of using a large lantern to attract the fish nearer to the surface of the water than they usually come, so that they can be more plainly seen, has met with decided success, and there seems strong reason for anticipating considerable improvements in this respect hereafter. In alluding to this matter a writer in the Cape Ann Advertiser, November 4, 1881, says:

"It would not greatly surprise us if the mackerel fleet, next year, were supplied with powerful calcium lights, to be carried at the masthead, and that the fishery will be extensively prosecuted in the night-time. Surely the signs of progression are manifested in almost every branch of the fisheries, and brains are rapidly coming to the front and making themselves manifest. A year ago who would have dreamed of catching mackerel in the night time? Now it is fast becoming a reality."

As may be readily inferred this practice of night fishing is one which calls for the greatest possible amount of endurance and hardihood on the part of the fishermen who engage in it. It frequently happens, when good catches are made for days and nights in succession, that the men get no rest whatever until they are thoroughly worn out by their constant labors and vigils and are scarcely able to refrain from falling asleep even when engaged at their work. Nor is the work on the fishing-ground all they have to do. When a fare is obtained, all sail is made upon the vessel and she is driven as swiftly as possible for the

ready to pull whenever the men aloft gives the order for them to cast off. These methods of setting the seine, however, are only adopted when the fish do not *show* plainly, so that they can be seen by the men on the vessel's deck, or in the boat; it therefore becomes necessary for the man on the masthead to give the requisite orders for throwing out the seine as well as to direct the wheelsman how to steer the vessel until the boat leaves the side.

Captain Smith has never known a vessel to make a complete circle around a school of mackerel while towing the seine-boat from which the net was being thrown out, but thinks it probable that it may have been done.

A lantern is carried both in the seine boat and dory, the one in the former always being kept darkened or out of sight until the seine is set, since a light would so blind the men in the boat that it would be difficult for them to perform successfully the work of setting the net.

home port, where the fish are landed, new supplies taken on board, and again the men go to sea without, in the mean time, having an opportunity of visiting their homes or of securing the rest they so much stand in need of. So sharp is the competition in this fishery, and so eager are the fishermen to "make hay while the sun shines," that is, to improve every opportunity during the short season while the mackerel can be taken, that the only limit to their labors is when nature is no longer able to sustain the extraordinary drafts that are made upon it. The following notes written by Capt. S. J. Martin will serve to give an idea of the continued labor and consequent fatigue which the fishermen endure:

"Our mackerel fishermen have drove business this year. I know a number of cases where vessels came in in the morning with 300 barrels of mackerel [which were landed] and went out [again] the same night. The schooner "Fleetwing" caught 210 barrels of mackerel; came into Gloucester with them all on deck; hired 20 men who had them [the fish] all dressed and salted at two o'clock the following morning. The vessel's crew went home to sleep; went out again the same morning at eight o'clock.

"Schooner "William M. Gaffney" came in here with 450 barrels of mackerel, of which 150 barrels were fresh on deck. The men had not been to sleep for two days and nights, and were nodding while putting the mackerel in the barrels. They got the mackerel all salted at four o'clock in the afternoon. Captain Smith then told the men to go home and rest till morning, but to be down the first thing after breakfast, as he wanted to get the mackerel out and go to sea in the evening. This they did."

The success of the night fishing was quite marked in the fall of 1881, as has been indicated above, and as the following paragraphs will show:

"Several of the [mackerel] fleet have made night hauls recently, some of them securing as high as 200 to 300 barrels at one setting of the seine. The operations are conducted by a lookout stationed at the foremast-head of the vessel, who gives the orders to the boat's crew in charge of the seine, as in the night-time the motions of a school of mackerel cannot be seen from the boat in pursuit of the fish, nor from the deck of the schooner."—(Cape Ann Advertiser, October 21, 1881.)

"Schooner "Henry Friend" took 140 wash barrels [of mackerel] at one haul Sunday night [October 16]."

Schooner "Phantom" went out Sunday morning, and about 11 o'clock p. m. discovered a school of mackerel on Middle Bank, and getting her seine out secured ninety wash barrels. The night was very dark, and lanterns were found necessary to conduct the seining operations and find the way back to the vessel.—(Cape Ann Advertiser, October 28, 1881.)

In regard to the night fishing for mackerel in the fall of 1881, Captain Martin writes as follows:

"Seven-eighths of the mackerel since the 10th of September have

been caught in the night. Catching mackerel in the night is done with great difficulty. Sometimes the vessel goes away from the boat. There were two such cases this fall. Schooner "Everett Pierce's" boat went out and set around a school of mackerel, and the seine was full of fish. At this time a squall of wind came and blew the lantern out, and the two men on board of the vessel lost sight of the boat. The men were in the boat from 11 o'clock at night until 5 o'clock the next morning. They were obliged to cut holes in the seine in order to let the mackerel go out so as to save the net, for if the mackerel died the seine would have been lost. The crew of the "Minnehaha," of Swampscott, had a similar experience the same night. The darker the night the better it is for seining, since the water will 'fire' more. When watching for mackerel one man is on the mast-head. He can see a school from the mast-head when he could not see it from the deck of the vessel. Sometimes the fish may be seen from the deck, but when the men get in the seine-boat they are not able to see them. A man on the mast-head can see them all the time. He gives orders to the men in the boat which way it is best for them to go. Captain Martin, of the schooner "Northern Eagle," saw a school of mackerel one night. They could not see them plainly, so the lantern was held up, when the mackerel could be seen from the boat. They then set their seine and got 150 barrels of mackerel. When the fish saw the light they came nearer the surface. Sometimes when the mackerel are close to the surface it is not necessary to have a man on the mast-head since they may be seen from the deck and seine-boat. It is not very often that the mackerel come to the surface during the fall of the year. Sometimes on a calm night in summer you can hear them rushing, but not often. Catching mackerel in the night is hard work. Say, for instance, you get 200 barrels a night, and perhaps it is the latter part of the night, it will take all day to dress and salt them, head them up, and get them below. Thus if another dark night follows, all of the men are on the lookout for another school. After looking for, perhaps, two hours, some one (most likely the man on the mast-head) gives the alarm, telling those on deck where the fish are. The vessel is then kept in the direction of the school, and as soon as they can be seen from the deck the men jump into the boat, shoving off from the vessel, while the captain stands up with the steering-oar in his hand, looking for the school. Soon he espies the fish, or the man on the mast-head sees them, and tells the men in the boat which way to go. When the captain sees them he sings out: 'I see them, boys! Pull away! Pull hard, the mackerel are going fast.' When the boat is in the right position the captain shouts, 'Give 'em twine,' and away goes the seine, three men heaving it out as fast as they can. When they are nearly around the school they sing out: 'Give them twine.' Sometimes they make a good circle so that the seine-boat and dory will meet, but it is difficult to do this in the night. When the seine comes together they haul in on the purse-line, and when the net

is pursed up and they see the mackerel, signs are made for the vessel, which comes alongside. The lines are hove from the boat and the mackerel are *bailed in* on deck and dressed."

(*f.*) *The mackerel pocket, or spiller.*—In 1877 the schooner "Alice," of Swan's Island, had a bag-net made of haddock ganging-line, into which the fish were transferred when there were too many to be cared for at once. This vessel began the season in the Gulf of Saint Lawrence, but caught only 200 barrels of mackerel there, and later fished on the coast of Maine, where, up to October, she had caught 1,400 barrels.

A development of this idea is the mackerel pocket or spiller, patented in April, 1880, by H. E. Willard, of Portland, Me., an article long needed in the mackerel seine fishery, and which has received from the fishermen the name of "mackerel pocket," or "spiller." It was first used by the patentee in 1878, and Capt. Geo. Merchant, jr., of Gloucester, Mass., invented and put into practical operation an improved "spiller" last year (1880), though it was not until the present summer that the advantage of its use was known to the majority of the mackerel fishermen, who have hastened to adopt it, and now more than thirty of the vessels sailing from this port are each provided with one of the pockets.

The apparatus is a large net-bag, 36 feet long, 15 feet wide, and 30 feet deep; it is made of stout, coarse twine and is attached to the side of the vessel, where it is kept in position, when in use, by wooden poles or "outriggers," which extend out a distance of 15 feet from the schooner's rail.

When distended in this manner a "spiller" will hold over 200 barrels of mackerel, which can thus be kept alive, as in the well of a smack, until the crew, who have captured them in the great purse-seines, have time to cure their catch. As is well known, it frequently happens that several hundred barrels of mackerel are taken at a single haul. Heretofore, when such a large quantity of fish were caught, but a comparatively small portion of them could be cured by the crew of the vessel to which the seine belonged. The result was that when a large catch was made, a considerable percentage of the fish were generally "given away" to some other vessel, since if only a part of them were removed from the seine to the vessel's deck, the remainder being left in the net until the first lot were cured, the chances were nine to one that the fine twine of which the purse-seines are made would be bitten in many places by the swarming dogfish (*Squalus Americanus*), that *bete noir* of the mackerel fisher. In addition to the injury to the net, the inclosed body of fish were thus allowed to escape and went streaming out through the numerous holes made by the keen teeth of these voracious bloodhounds of the sea, which, in their fierce and ravenous pursuit of the imprisoned mackerel, usually succeeded in robbing the fisherman of a large portion of the fruits of his labors.*

* Captain S. J. Martin writes that in the summer of 1881 the crew of one of the mackerel schooners endeavored to save their seine from the depredations of the dog-

The "spiller" is only made of coarse twine, and though not entirely exempt from the ravages of the dogfish and sharks, is rarely injured by them; and now when a large school of mackerel are caught in a seine the fish are turned into the bag, from which they are "bailed out" on to the schooner's deck only as fast as they can be dressed, and in this way it frequently happens that a full fare may be secured from a single set of the net. * * *

The introduction of this simple net-bag will undoubtedly save to our fishing fleet many thousands of dollars, even in this the first season of its adoption.

The "spiller" invented by Mr. Willard was simply a sheet of netting 540 meshes square, bound around with rope; it is made of five sheets of twine, each 180 meshes deep and 540 meshes long. These sheets are laced together. This net, when in use, is suspended from its four corners to the side of the vessel and the outriggers, mentioned above, and hangs something like a hammock. From its shallowness, however, it was not so well adapted for the purpose for which it was designed as was the deeper bag-shaped net subsequently devised by Captain Merchant, and which has been described above.*

The mackerel pocket is hung to 1¼-inch rope, and on the portion of this which comes next to the vessel are strung egg-shaped wooden floats. These are only for the purpose of securing the edge of the net-bag firmly to the rail of the vessel. The border of the pocket being drawn over the rail, a board is laid on top of it and held in position by wooden pins passing through both board and rail, the net being thus fastened between the two.

To the outer edge of the mackerel pocket, either Williard's or Merchant's, is attached a rope bridle, the ends of which are fastened at a distance of about 9 feet from each outrigger; a thimble is seized into the upper part of this bridle, and when the mackerel have been turned into the pocket the fore and after staysail halliards are bent into this thimble, and the outer edge of the pocket is supported thereby so as to take as much strain as possible off the outriggers, which are only 4 inches in diameter. The outer and upper corners of the "spiller" are supported by ropes which run through single blocks attached to the farther ends of the outriggers. By means of these ropes the outside edge of the pocket may be raised or lowered. When a school of mackerel has been caught in the seine, the pocket is slacked down to the surface of the water, and its outer edge having been fastened to the

fish by hauling the staysail underneath it, thinking that if they could thus prevent the dogfish from seeing the mackerel inclosed in the net the latter would not be harmed. But this did not succeed fully, since the sail was badly bitten and much injured by the dogfish, making this experiment a rather costly one.

*The "mackerel pockets" constructed by Capt. George Merchant, of Gloucester, are 36 feet long, 30 feet deep, from 15 to 18 feet wide across the mouth; two-inch mesh, and knit of 12-21 half-patent twine.

cork-rope of the seine, the fishermen gather in on the twine of the latter, and, by dexterous management, turn the whole body of fish into the bag provided for their reception, and where they can be kept alive, as previously mentioned, until such time as they can be properly cared for. The mackerel having been transferred to the pocket, its outer edge is usually raised slightly above the water. When the vessel is rolling and there are many fish in the pocket there is often considerable strain brought to bear on the outriggers, which, however, being supported by guys or tackles to the standing rigging, rarely break. It may be assumed, perhaps, that the enormous catches of some of the mackerel schooners in the summer of 1881 are due very largely to the use of this implement. Never within the history of the fishing business of New England have so many fish been caught or so much money made by a single vessel in the mackerel season as has been the case in the year of 1881. The schooner "Alice," of Swan's Island, Maine, is reported by the secretary of the Boston Fish Bureau to have taken 4,900 barrels of mackerel, the value of which exceeded $28,000. The schooner "Edward E. Webster," of Gloucester, caught 4,500 barrels of mackerel, stocking more than $26,000. A long list of other large catches might be added in proof of the efficacy of the mackerel pocket, but for obvious reasons they are omitted here.

16.—Taking care of the fish.

The manner of caring for the fish is very similar to that upon the mackerel schooners fishing in the old way with jigs, excepting that a larger quantity is likely to be taken at once, necessitating much more haste in salting or dressing them. When haste is necessary, the process of "plowing" is usually deferred until after the fish have been salted.

Mr. Gordy thus describes the method of dressing on a seining schooner: "The men engaged in dressing are divided into gangs generally of three men each. Each gang has two wooden trays about 3 feet square and 6 or 8 inches deep; these are placed on the tops of barrels; one is called a 'gib-tub' the other a 'splitting-tub.'"*

Except on the seiners, the mackerel when caught are put into barrels, and the splitting is done upon a board laid across the top of the barrel, rather than in a "splitting-tub." One man of each gang splits, the other two gib, or eviscerate, the fish. The tub of the man who splits, of course, contains the fish to be split. With a scoop-net the splitter, or one of the "gibbers," from time to time, fills the splitting-tub from the pile of mackerel lying upon the deck. On the side of the splitting-tray next to the "gibbers" is a board about 6 to 10 inches wide, called a "splitting-board," on which the splitter places the fish as he cuts them open. He takes them in his left hand (on which he has a mitten) round the center of the body, head from him, and with the splitting-knife splits them down the center of the back. As fast as he

*Also called, especially in Gloucester, "gib-keelers" and "splitting-keelers."

splits the fish he tosses them into the tray of the "gibbers." The "gibbers" protect their hands with gloves or mittens. As fast as the "gibbers" remove the viscera, with a peculiar double motion of the thumb and fingers of the right hand, they throw the fish into barrels, which are partially filled with water; these are called "wash-barrels." If the men have time they "plow" the fish before salting them, making a gash in the abdominal cavity nearly to the skin with the peculiar knife, "the plow," provided for the purpose.

Before the fish are salted the dirty water is poured out and clean water is added. About one barrel of salt is used for every four barrels of mackerel. This is the first salting. When the fish have been salted they are placed in unheaded barrels until the weather is unfit for fishing, or the deck is filled with them, when they are carefully headed up and stowed away below.

The speed with which a large deck-load of mackerel can be disposed of by the crew is something marvelous. A good splitter will handle from forty-five to sixty mackerel a minute. In one well-authenticated case a man split sixty-seven mackerel a minute for three consecutive minutes.* A good "gibber" can handle a barrel of large mackerel in from five to seven minutes. A smart crew of fourteen men can dispose of a deck-load of large mackerel in from fifteen to eighteen hours, salting them away properly in the barrels. The smaller the mackerel the longer it takes to dress a barrel of them, the time required to handle a small or a large mackerel being precisely the same.

When the fish are to be iced and carried fresh to market they can be disposed of much more rapidly, it being simply necessary to stow them away in the hold without splitting. They are usually washed before being placed in ice, and occasionally gibbed without splitting, the viscera being drawn through the gill openings.† The most rapid way of caring for the fish is to place them in barrels of ice-water. This is done for the most part in the spring or fall.

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*An expert can split mackerel nearly as fast in the darkest night as at any other time. The sense of touch becomes so acute from long practice that the fisherman can tell (without seeing it) when he grasps a mackerel whether its head is in the right direction or not, and also which side should be laid to the board in order to bring the fish's back in proper position for the knife. The splitter holds the knife with his fingers, letting the thumb slide down along the upper side of the fish, thus guiding unerringly the keen and swiftly moving blade. Whether the fish be large or small it is almost invariably split with the utmost precision, the edge of the knife glancing along on the left side of the vertebra, and scarcely a hair's breadth from it, while the point goes *just* deep enough and no farther. But one must witness the operation of splitting mackerel in order to fully appreciate the skillfulness of the performance.

†Fresh mackerel are never gibbed for the New York market in spring, but a law of Massachusetts compels the fishermen to eviscerate all mackerel taken to Boston. In the first named port the cargoes of fresh fish are sold by commission merchants, while in Boston the captain sells directly to the dealers.

17.—Running for the market.

Those mackerel schooners engaged in market fishing find it desirable to make their passages with the utmost speed, but rapid passages in summer are, of course, much less dangerous than those made in winter by the haddock and halibut vessels. Great expedition is used by all mackerel vessels, since the season is short, and they feel obliged to take advantage of every opportunity. In the case of salted fish, however, there is no such anxiety to sell, and the chief desire of the skipper is to land his fish and to return to the fishing ground with no unnecessary loss of time.

It often happens that mackerel-catchers who are not engaged in the fresh-fish trade take a big haul, 200 barrels or so, when they have but few barrels to put them in and scarcely any salt. In such cases it is of the highest importance to reach home if possible, or at least some large fishing port where barrels and salt can be obtained, and all the sail that can be spread or that the vessel will carry is set.

18.—Landing the cargoes.

The mackerel are hoisted out on the wharf by a horse, the duty of the crew being to hook on the barrels and to roll them to the proper places on the wharf, after they are landed, where the barrels are generally stowed on their heads ready to be opened. In seasons of abundance, and when the men have become exceedingly fatigued from their labors in catching and dressing a fare of mackerel, it is often the case that the skipper will hire a number of longshoremen to take the fish out of the vessel. At such times, too, the shoremen are employed to plow the fish, and also to assist in packing them, since the fishermen find it more profitable to hire men to do this than to remain ashore and do it themselves. For, in the mean time, they may be fortunate enough to catch a fare of two or three hundred barrels of mackerel.

In the days of hook and line fishing, the landing and packing of mackerel was carried on much more leisurely than at the present time. At first it was customary for the men composing a crew to hoist the mackerel out on the wharf by tackles; but within the last fifteen or twenty years it has been found more profitable to employ a horse for this purpose, since the work of discharging can be carried on much more rapidly than before, and with less tax upon the energies of the men. The several processes of unheading the barrels, culling, weighing, and packing the mackerel have been fully described in another chapter and need not be repeated here.

19.—Financial profits of seining.

The following tables, copied from the annual reports of the Boston Fish Bureau, show the large catches and "stocks" by the mackerel fleet in New England waters for the seasons of 1880 and 1881.

1881.	Barrels cured.	Amount of stock.
Schooner Alice, Capt. H. B. Joyce, Swan's Island, Me	3,700	$19,548 75
Schooner Edward E. Webster, Capt. S. Jacobs, Gloucester, Mass	3,969	19,465 00
Schooner Alice C. Fox, Captain Rowe, Portland, Me		13,432 00
Schooner Louis and Rosa	2,769	12,492 00
Schooner Frank Butler	2,036	11,600 00
Schooner Mary Greenwood	1,700	11,035 00
Schooner Kate Florence	2,500	11,000 00
Schooner Addie F. Cole	1,900	10,500 00
Schooner Cora Lee	1,875	10,250 00
Schooner Cora Smith	2,150	10,000 00
Schooner M. O. Curtis	2,000	10,000 00
Schooner Mary Snow	1,352	9,281 00
Schooner F. F. Nickerson	2,350	9,730 00
Schooner Dictator	1,652	9,213 00
Schooner Morning Star	1,527	9,087 00
1881.		
*Schooner Alice, Swan's Island, Me	4,905	28,055 23
†Schooner Edward E. Webster, Gloucester, Mass	4,500	26,570 00
Schooner Isaac Rich, Swan's Island, Me	3,276	15,500 00
Schooner Frank Butler, Boston, Mass	2,600	15,000 00
Schooner Mertie and Delmar, S. Chatham, Mass	3,005	14,138 00
‡Schooner A. E. Herrick, Swan's Island, Me	2,280	13,674 00
Schooner Robert Pettis, Wellfleet, Mass	2,580	12,419 18
Schooner Roger Williams, North Haven, Me	2,450	12,000 00
Schooner R. J. Evans, Harwichport, Mass	3,000	12,000 00
Schooner Louis and Rosa, Boothbay, Me	3,028	11,557 46

When it is taken into consideration that these vessels are employed in fishing barely eight months at the longest, and some of them only four to six months, it will be seen that the business is an exceedingly profitable one for many of the fleet, while the greater portion make fair returns.§

*3,665 barrels pickled, and 1,240 fresh; total, 4,905 barrels.

†1,600 barrels pickled, and 2,900 barrels fresh; total, 4,500 barrels.

‡The Herrick did not sail until July 22.

§Among the "fishing items" in the Cape Ann Advertiser of October 21, 1881, we find the following mention of catches of mackerel made by some of the seiners, which may serve to show the energy and activity with which this fishery is prosecuted: "Schooner 'Moro Castle' sailed from this port on Thursday morning of last week, and returned in the evening of the same day with 140 wash barrels of handsome mackerel. Schooner 'Dreadnaught' sailed from Portland after mackerel the other night, was gone twenty-one hours, and returned with 205 barrels. Schooner 'David A. Osier' sailed from Hull Friday evening, and was at this port next morning with 105 wash barrels of mackerel. Schooner 'Wildfire,' Captain McLain, has landed and sold $3,200 worth of mackerel in the past fortnight, and has enough fish on board to add another thousand dollars to her stock. Schooner 'Fleetwing' took 210 barrels sea-packed mackerel at one haul of the seine off Plymouth on Saturday. Schooner 'Wm. M. Gaffney' took 140 wash barrels at one haul Sunday, and schooner 'Henry Friend' 140 wash barrels at one haul Sunday night. Schooner 'Madawaska Maid' left Gloucester Sunday, turning Eastern Point at 11 o'clock a. m., and arrived at Boston at five o'clock Monday morning, with 225 barrels sea-packed mackerel; in five weeks the 'Madawaska Maid' has landed 1,000 barrels of mackerel. The schooner 'Wm. M. Gaffney' landed 900 barrels of mackerel in twenty-one days."

20.—HISTORY OF THE USE OF PURSE-SEINES.

The earliest record of the use of the purse-seine is the following, obtained from Capt. E. T. Deblois, of Portsmouth, R. I.:

"The first purse-seine that was made, so far as I know, was made by John Tallman the first, and Jonathan Brownell and Christopher Barker, in the year 1826. It was 284 meshes deep and 65 fathoms long. The purse-weight was a 56-pound weight, and the blocks were the common single blocks, and they had to reeve the end of the purse-line through the blocks before they put the purse-weight overboard. The first time the seine was set there were fourteen men to help; they set around what they called a 500 barrel school of menhaden, and while they were pursing the fish rushed against the twine so hard that they twisted and snarled the net around the purse-line and weight to that extent that the men could not gather the seine up or get her into the boat again as they were, and after they had worked six hours, and quarreled over the matter, they decided to tow or warp the seine ashore at high water, and when the tide left the seine they would be able to *unsnarl* it, which they did the next day. It was a number of days before they could muster courage to set her again, and when they did they set around a small school with better success."

There is a general impression among the fishermen of Northern New England that the purse-seine was a development of the "spring-seine," elsewhere referred to, but this would seem to be a mistake, since the spring-seine, which really appears to have been nothing but a large sheet-net with special appliances adapting it for use on board of a vessel, was not used in New England until 1853 or 1854. There is also another tradition to the effect that the purse-seine was invented about the year 1837 by a native of Maine who had for some years been employed as a hand on a Gloucester schooner, and who conceived the idea of capturing mackerel in large numbers, and invented a seine substantially like the one now in use, which, finding the Gloucester fishermen unwilling to enter into experiments, he carried to Rhode Island, where it was used in the vicinity of Seaconnet for seining menhaden. This would appear to be a conglomeration of errors, partly imaginary, partly based upon the circumstances already narrated by Captain Deblois.

Reference has already been made to the claim that the purse-seine was invented in Rhode Island as early as 1814. Another early allusion to this new instrument of capture was given in the following paragraph, taken from the Gloucester Telegraph of Wednesday, July 21, 1839:

"*New Fishing Tackle.*—We noticed, a week or two since, the fact that Capt. Isaiah Baker, of Harwich, had recently commenced fishing with a seine of entirely new construction and with remarkable success. It was stated in the Yarmouth Register that he had cleared about $3,000 in one week, by taking shad. A correspondent writes us from West Harwich that the fortunate captain still continues to make equally

'glorious hauls.' He is now in Provincetown with his seine catching mackerel, and recently took 60 barrels at one 'shoot.' This new mode of fishing bids fair to create an entire revolution in the mackerel and shad fisheries. Our correspondent says that the Vineyard Sound will soon become a great fishing ground. It is well known that all the shad, bass, mackerel, etc., which are found in Block Island Channel early in the spring pass through the sound, and it is now ascertained that with proper seines they may be caught in great abundance. With a purse-seine, when mackerel are schooling or shoaling, the fishermen may run around them and inclose *one hundred barrels.* They will not bite at bobs as in years past, but Cape Cod ingenuity has devised something to out-general them."

The purse-seine was undoubtedly a development and extension of the idea of the drag-seine supplemented by that of the gill-net used at sea in sweeping around schools of fish.

The first seine used north of Cape Cod was that carried by Capt. Nathaniel Adams, of Gloucester, in the schooner "Splendid," in the year 1850. Capt. Nathaniel Watson, of the "Raphael," began using one the same year. According to Mr. Luther Maddox, the earliest experiments were at Chelsea Beach. It is claimed by some that Gorham Babson, of Gloucester, had one in use as early as 1847.

The early seines were about 200 yards in length, 22 fathoms in depth, and of 2½-inch mesh, the bunts being about 250 meshes square. The twine was much heavier than that used in the present seine; the whole net weighed 600 or 700 pounds. The seine in its present form did not come into general use until about 1860.

The rapidity with which this expensive form of apparatus has come to be generally employed in our fisheries seems almost marvelous. At the present time the total number of these nets used in the mackerel fishery is not far from 400, valued at 160,000 dollars; in the menhaden fishery 366, valued at 138,400 dollars. The total value of the purse-seines with the value added of the seine-boats, which really are parts of the same apparatus, cannot be less than 440,000 dollars.

Capt. W. H. Oakes states that in early days a certain kind of net was used in catching menhaden which reached to the bottom in shallow water and which was pursed by means of ropes. Capt. George Blatchford used to go for menhaden in an old pinkie, and used one of these nets.

Captain Oakes is of the opinion that Capt. William Ratcliff, of Rocky Neck, Gloucester, was the first man who caught mackerel in deep water off-shore. He used some kind of a purse-seine, and with it in two hauls caught about 90 barrels of mackerel off Monhegan in 90 fathoms of water. Capt. George Merchant, jr., of Gloucester, writes as follows regarding the early attempts to seine mackerel in deep water. He says: "Previous to 1862 the only mackerel caught in deep water, in seines, were taken with the schools of pogies. From one to ten or twelve

hundred in number were often caught in this way, the seiners supposing that their being with the pogies prevented them from trying to escape, since pogies seldom leave the seine after it is around them, but we never set the seine for them (mackerel) when in deeper water than ten fathoms, our seines not being deeper than that at that time. One day in July, 1862, I lay at anchor near Boon Island, it being calm at the time. While lying there a school of mackerel came up and began to play around at the surface, not far from us. Knowing that the water was twenty-five fathoms deep where the fish were, I did not go after them right away, but after they had been schooling some time I concluded to go out and look at them. I found the water to be as I had expected—twenty-five fathoms deep. I thought, however, that I would try just to see what would come of it, although the men said it would be no use, as the fish would soon disappear, but we threw out our seine and went around them, with as little noise as possible, and commenced to purse up, the men saying that the mackerel would soon go, but they did not go, but continued to school in the seine until the latter was pursed up, and the rings on the boat. Then we thought we had done something never before heard of. We took fifty barrels of large mackerel that time.

"After securing the fish I weighed anchor and ran to Richmond's Island. When I arrived there I found fifteen fishing vessels at anchor. I told them (the skippers and crews) that I had taken fifty barrels of mackerel in deep water, but they would not believe it, saying that if I had it would never be done again. But it set them to thinking, and they soon found that mackerel could be caught in deep water. The fleet of seiners began to increase from that time, and has kept growing until the present, when it amounts to about two hundred sail.* I date the catching of mackerel in deep water from the time and occurrence I have mentioned above. I was in one of the first seven vessels that sailed on seining voyages from Gloucester, Capt. Samuel Blatchford and Capt. Nathaniel Watson being the two first to try the business, and they both gave up seining, as it did not pay them."

Wellfleet, Mass., had 52 mackerel seiners in 1877. Seines were first carried by the Wellfleet vessels about 1857, but their use was soon abandoned. In 1863 to 1865 the "Mary B. Dyer" had a seine, and since that time more or less seines have been in use. In 1873 all the vessels went into this business.

The first purse-seine brought into Central Maine, writes Mr. Earll, was bought by Mr. Amherst Spofford, and taken to Damariscove in 1859, and used with rather indifferent success until 1861; it was 130 fathoms long and 12 fathoms deep; the parties kept it on the island and took it out in small boats whenever fish were seen schooling in the vicinity. It seems that Mr. Spofford did not thoroughly understand setting it and caught but few fish.

* Sailing from Gloucester.

In 1861 he sold it to Messrs. William Gray and Miles Pierce, and it was taken to Cape Newagen, where it was successfully used by carrying it out in a small boat and landing the fish on a dressing stage on shore in the same way. The next year it was put aboard a small schooner, the "Leon," and the fish landed as before in small boats to be dressed, the vessel being only large enough to carry the seine.

In 1863 the seine was put aboard the schooner "Dawning Day," 73 tons O. M., and the fish were dressed aboard. This was really the commencement of deep-water seining in this section, and the vessel did so well as to induce others to go into the business the following year.

The schooner "Niagara" was the first to provide herself with a seine in 1864, and another was bought and owned by two small vessels, the "Wild Rose" and the "Neptune," one carrying the seine and the other salt and barrels for curing the fish. This plan did not work well and was soon abandoned. The schooner "Niagara" did well from the start and has always been high line of the seiners for this section.

Georgetown sent one seiner, the "Coquimbo," in 1865, and a little later the schooner "Sunbeam," Captain McMann, but they met with poor success, and no seiners have been sent since from that port.

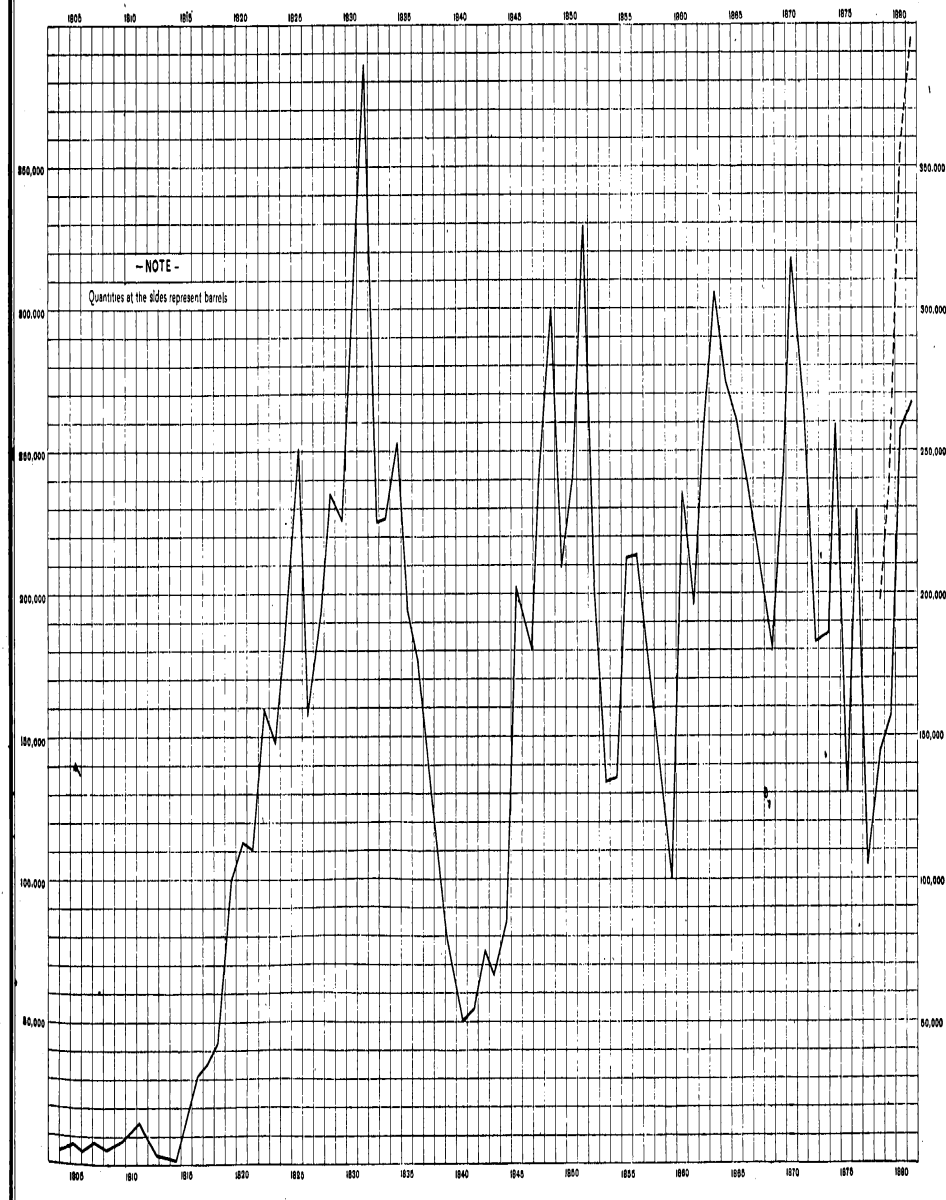
Westport has made two attempts at introducing seining; the first in 1872 by schooner "Jennie Armstrong," Capt. B. F. Jewett, and the second a three-masted schooner of 350 tons, the "Geo. W. Jewett," Capt. A. M. Jewett, carrying two seines and crews in 1875. Both vessels did very poorly and gave up the business after the first season.

21.—THE ATTEMPTED USE OF THE PURSE-SEINE IN NORWEGIAN WATERS.

In 1878 a Gloucester vessel essayed fishing for mackerel with a purse-seine on the coast of Norway. In April the schooner "Notice," Capt. Knud Markurson, departed on this mission, taking a crew of twelve men and the most approved seining apparatus. It was remarked by a writer in the Deutsche Fischerei Zeitung, of July:

"The mackerel fishermen, who have till now been in the habit of plying their trade in open but suitable boats, are, however, greatly agitated at the present moment in consequence of the arrival at Risor, some three weeks ago, of an American fishing smack, direct from Gloucester, in North America, understood to be followed by a whole fishing fleet from New England, to take part in the mackerel fishery outside the Norwegian fishing territorium. As all these American smacks are reported as provided with bag or purse nets, by means of which they are enabled to catch more fish upon one single haul than ten Norwegian boats during a whole day, it is obvious that the Norwegian fishermen will have to discard their old mode of fishing, and to have recourse to the American fishing method, if they do not want to lose all the advantages enjoyed till now. The mackerel fishery has always been of great importance to Norway, some 7,000,000 of these fish being on the aver-

Diagram showing the Catch of Mackerel by Citizens of Massachusetts between the years 1804 and 1881 inclusive.



The unbroken line indicates quantities of pickled mackerel in barrels. The broken line indicates the total quantities of mackerel taken, whether sold in the markets in a fresh condition or salted.

age caught annually, of which number about 70,000 centners, at a value of from 600,000 to 700,000 crowns, are exported. The government is well aware of the danger threatening the public weal, and has consequently taken every possible measure in order to prevent such disastrous results as the loss by the Norwegian fishermen of the mackerel fishery. A most accurate description of the nets used by the Americans has been printed, and, with a great number of nets of this kind, made to order by the net manufactory at Bergen, distributed among the fishing population. Models of the different sorts of the fast-sailing American boats have also been obtained through the Norwegian consul at Gloucester, Massachusetts, direct from the manufacturers of such boats. The well-known industry and activity of the Norwegian fishermen, combined with the efforts of the government, will, no doubt, enable them not only successfully to hold, but to improve, their own prospects as regards the mackerel fishery by the timely adoption of the American methods and arrangements for fishing."*

The venture was, however, not a successful one. On his return home Captain Markurson stated that he had been unable to use the seine advantageously owing to the fact that the mackerel did not in those waters school together in large bodies as they do along the New England shores.

D.—THE MACKEREL HOOK FISHERY.

The mackerel fishery at the time of its highest development, from 1820 to 1870, was carried on almost exclusively by the use of little hooks with heavily weighted shanks, known as "mackerel jigs." For many years there were from 600 to 900 vessels, chiefly from Cape Cod and northward, engaged in this fishery; and in the year 1831 the total amount of mackerel salted in Maine, New Hampshire, and Massachusetts was 450,000 barrels.

As will be seen by an examination of the diagram, showing the yield in the mackerel fishery from 1804 to 1881, elsewhere published in this report, the quantity of fish taken from year to year has been extremely variable, but has at no other time approached the enormous quantity on record for the years 1835 and 1881.

The jig has now been almost entirely superseded by the purse-seine, and this radical change in the method of catching mackerel has caused the desertion, by the mackerel fleet, of the Gulf of Saint Lawrence, and the practical futility—to benefit our fishermen—of the fishery clauses of the Treaty of Washington. All attempts, with a very few exceptions, to use the purse-seine in the Gulf of Saint Lawrence have been failures.

In 1880 the schooner "Alice," of Swan's Island, caught 700 barrels by use of the purse-seine in the gulf, but not 10 per cent. of the other vessels which visited this region, then or within the four or five previous years, paid their expenses.

*Cape Ann Advertiser, August 9, 1878.

The mackerel hook fishery is of the past; and this chapter must be regarded, in large part, as historical. It is by no means impossible, however, in years to come that the old method of fishing, which had many undoubted advantages over that at present employed, will be revived.

22.—FISHING-GROUNDS.

The grounds frequented by the mackerel-hookers, as the fishermen call them, were as follows:

(*a.*) *The Gulf of Saint Lawrence.**—In the early part of the season the favorite fishing-grounds were in the southwestern part of the Gulf of Saint Lawrence, from Cape Gaspé to the North Cape of Prince Edward Island; especially off Point Escuminac, Pigeon-hill ground, or the west shore lying along the coast from Miramichi to Point Miscou, Bank Bradley, Bank Orphau, and Bay of Chaleur. Later in the season, in July, August, and September, the principal fisheries were carried on upon the grounds just mentioned, also around the Magdalen Islands and along the north side of Prince Edward Island. Occasionally, too, in August and September, vessels fished on the south side of Prince Edward Island from Georgetown to East Point. In September and October fishing was carried on at the Magdalens, Prince Edward Island, in the Bay of Saint George, between Cape Saint George and Port Hood, and on the northwest shore of Cape Breton from Port Hood to Cape North. Favorite localities were about Margaree Islands and Cheticamp; also, on the east side of Cape Breton, in Aspee Bay, and about Sydney. About 1858 and 1859 several successful fares were made in the estuary of the Saint Lawrence from Cape Gaspé to Cape Chatte; and about the Seven Islands and Mingan Islands on the coast of Labrador. In the year 1877 a Gloucester schooner obtained 200 barrels of mackerel at Port-au-Port, on the west coast of Newfoundland.† Bird

*Note upon the origin of mackerel fishing in the Gulf of Saint Lawrence.

Mr. Daniel Cameron, of Southport, Me., thinks the first American vessels went to the Bay in 1832. This year 4 went, among others the schooner "Galen," Captain Pate, of Freeport. These schooners averaged 60 to 70 tons, carried about 250 barrels, and filled up in four or five days. The first vessel going to the bay from this section of which we learn was the schooner "Olinda," Capt. Jos. Maddocks, of Southport, in 1837. Captain Atwood states that, in 1834, the New England fleet in the Gulf of Saint Lawrence consisted of six vessels, three of them from Provincetwn. The Cape Ann Advertiser of May 13, 1859, refers to "the custom which has grown up within a few years of going to the Gulf of Saint Lawrence for mackerel, where already the supply is lessening."

†A LUCKY STREAK.—The schooner "William T. Smith," Capt. Henry O. Smith, the last of the baymen, arrived home on Monday, bringing a good fare of mackerel, of which about 200 barrels were caught off Newfoundland, as already mentioned in our columns. These fish are of good size and prime quality, and will command a ready sale. Captain Smith struck a streak of luck when he ventured into untried waters in pursuit of mackerel, and his voyage will prove a profitable one, which is an anomaly in this branch of the fishing industry the present season.—(Cape Ann Advertiser, November 23, 1877.)

Rock, situated east of the Magdalen Islands, has occasionally been a favorite ground, since the mackerel taken there were almost always very large.

(*b.*) *Gulf of Maine.*—From June to November excellent fishing was to be had in various parts of the Gulf of Maine. Early in the season mackerel were taken all the way from Cash's Ledge to the Bay of Fundy; from the middle of June to September the favorite localities were in the vicinity of Monhegan Island, Matinicus Rock, and Mount Desert Rock. From about 1830 to about 1845 some fishing was done in the Bay of Fundy, north of the island of Grand Manan. When the autumnal migration of the mackerel begins the vessels follow them as they proceed southward. Favorite fishing grounds are then off Portland; later, about Boone Island, off Cape Ann, and the waters of Massachusetts Bay, and along the outside of Cape Cod, the latest catches being generally obtained off Chatham and the eastern part of Nantucket Shoals. Fishing here continues sometimes until the latter part of November.*

(*c.*) *George's Bank.*—Mackerel were in some years very abundant on George's Bank, especially on the southern portion from June to September. Later in the season the weather was generally unfavorable for fishing in this region. The mackerel caught here were recognized, as now, to be of very fine quality.

(*d.*) *South coast of New England.*—Of late years a small quantity of extraordinarily fine mackerel have been caught with jigs in the vicinity of Block Island in summer and fall. In previous years the mackerel fishery in this vicinity was chiefly carried on in the spring.

(*e.*) *The coast of the Middle States from Montauk Point to Delaware.*—This fishery was chiefly carried on in May, and in many respects corresponded to the spring mackerel fishery described in another section of this chapter; this is now prosecuted with seines on the same grounds, and the fish are mostly taken to New York for sale, principally in a fresh condition, though formerly they were generally salted.

(*f.*) *The eastern coast of Nova Scotia.*—In this region, although great quantities of mackerel are sometimes taken in pounds, nets, and seines, in the early summer and fall, they are very rarely taken on the hook. About 1854 and 1855 several fares of extremely large mackerel were caught at Sable Island by Cape Cod vessels.

23.—THE FISHERMEN.

The men engaged in the mackerel hook fishery, especially in the period of its culmination, were almost exclusively natives of New England. From 1850 to 1870 the provincial element in the fleet gradually increased. When this fishery was most prosperous not less than 10,000

* In the fall of 1849 one of the writers had the opportunity of seeing a fleet of mackerel schooners fishing off Chatham. The number of vessels in the fleet was variously estimated from 500 to 700 sail—a beautiful and interesting sight.

were employed on board the vessels belonging to the American fleet. The vessels engaged in this fishery carried very large crews; in fact, larger than have ever been carried by other vessels. Not unfrequently a schooner of 80 to 100 tons would carry twenty men, and, in some instances, twenty-four. Among the crew were generally three or four boys, sometimes five, from ten to seventeen years of age. These boys fished from the extreme ends of the vessel; they were frequently very successful, and by the training in this fishery fitted themselves to take responsibilities in the fishing fleet at a much earlier age than otherwise would have been possible. At sixteen or seventeen years of age many of the boys ranked among the first of the crew to which they belonged, and it sometimes happened that the command of a schooner was given to the most enterprising before they were out of their teens.

24.—THE VESSELS.

Prior to 1848 the mackerel fleet was made up exclusively of the old-fashioned square-stern schooners registering from 25 tons to 80 or 90 tons, old measurement, and of pinkies registering from 20 to 60 tons. Newburyport had a large fleet of pinkies, registering, old measurement, from 40 to 60 tons. Most of them carried a flying jib.

From 1848 to 1850 the necessity for swifter vessels was felt, and various experiments, which are described in the chapter on the schooner, were made. From this time on all the vessels added to the fleet were of improved model, approximating, more or less closely, to the modern type of the fishing schooner. These vessels were in those days known as "sharp-shooters." As early as 1855 the character of the fleet had become very much modified, there being a large percentage of modern-built vessels, and the pinkies and square-stern schooners were retained only by conservatives and by the smaller ports, especially those on the coast of Maine. Many of these old vessels had by this time been withdrawn from the mackerel fishery and employed in other branches of the fisheries. As early as 1870 the old square-stern vessels and pinkies had entirely disappeared from the fleet, most of them long before that date.

The mackerel-hookers, when fitted out for fishing, had the decks clear. Upon the starboard side of the vessel were arranged line-cleats. These were in early times small narrow cleats of pine nailed to the inside of the waist, but after the introduction of finer vessels the fishermen became more careful, and substituted a complicated, ladder-like arrangement, consisting of two long horizontal strips, which were crossed by from eight to twelve shorter vertical strips or cleats, with projecting ends, an arrangement of this kind being secured between each pair of the top timbers. On the top of the rail was nailed the bait-board, in which were cut grooves arranged for the reception of a supply of jig bait, which was cut into bits ready for use; these grooves cannot be easily described. Upon the bait-board, or upon the edge of the rail, were fastened so-called "snapper cleats," ingenious contrivances, of elastic

wood or of metal, by which the lines were kept in their places while the men were fishing.

The bait-boxes were fastened on the starboard side; these were wooden troughs holding from one to seven or eight buckets of bait apiece. There were three of these bait-boxes, the largest placed outside of the rail at the foot of the main rigging, one on the quarter near the davit; the third was placed at the fore rigging. The forward and after bait-boxes were usually less than half as large as the one amidship. The bait-mill was placed on deck, on the port side of the vessel, near the main rigging. During the later years of this fishery many of the vessels carried on the deck at the foot of the main rigging on the starboard side a bait-chest divided into two compartments, the smaller one for the clam bait and the larger one for the ground menhaden bait. On such schooners as were not provided with a bait-chest, the ground bait, or chum, was kept in barrels. Two of these barrels were generally kept near the starboard main rigging, so that those who threw out the toll-bait could refill the boxes with as little loss of time as possible.

The hold was left unobstructed by bulkheads; the ballast was usually gravel or pebbles and was not covered by a platform. Some vessels carried part of their ballast in barrels, throwing it overboard when the barrels were needed for fish. The number of barrels carried by a vessel would vary, according to her size, from one hundred to six or seven hundred, part of these being filled with salt and bait. The mackerel-hookers usually carried a single boat (of the yawl pattern) at the stern. Occasionally vessels going to fish on the coast of Labrador, or at the mouth of the Saint Lawrence, or even on the coast of New England, carried a number of dories or other boats, which were used by the men when they fished in the harbors.*

25.—Apparatus and methods of fishing.

(*a.*) *The mackerel jig.*—The mackerel jig is said to have been invented about the year 1815, by Abraham Lurvey, of Pigeon Cove; according to other authority by one Thurlow, of Newburyport.† It is simply a

* In certain localities the mackerel could only be taken to good advantage among the rocks close to the shore; and the men fished from small boats rather than from the side of the vessel.

† According to Captain Merchant, the "mackerel jig" was introduced at Cape Ann about 1815. Mr. Abraham Lurvey, of Pigeon Cove, was one of the first to use them, and was supposed to have invented them. The advantages of this new invention immediately brought it into general use. Before "jigs" were devised, the "gangings" of the mackerel lines would frequently break when the fish was jerked or "slatted" off the hook; when the "jig" is used this rarely occurs. Before the time of the "jig" it was customary to bait the hooks, when mackerel were plenty, with pieces of pork "as big as a four-pence-ha'penny."

According to Captains Daniel Cameron and John Grey, of Southport, Me., Edward Caiss, a fisherman of Hingham, Mass., invented the mackerel jig between the years 1810 and 1814, and by 1829 it had come into general use on the coast of Maine. It was introduced into Maine some time before 1829, but by whom no one knows.—[Earll.]

hook, round the shank of which has been cast a plummet of lead, pewter, or tin, somewhat globular at its upper end and tapering down toward the bend of the hook. At the upper end is a hole through which a fishing line is bent. The weight of a mackerel jig has varied from a quarter of an ounce to three or four ounces at different times during the history of the fishery. At first they were made much heavier than they have been in later years. At present many fishermen, when using jigs, prefer them very small. It has been stated that each fisherman has from seven to twelve fishing cleats in his berth at the rail. On these cleats are fastened an assortment of lines with jigs of various sizes, the heaviest being used when the mackerel are biting fast, or when the wind is blowing fresh; the lightest, when the water is very smooth, or when the mackerel are "picking," or nibbling daintily.

The fishermen always made their jigs in molds of metal or soapstone, this operation being similar to the old-fashioned method of making bullets. In former days these molds were made of iron, but many of the fishermen being dissatisfied with the shape constructed them for their own use of lead. At present the soapstone jig-molds and the lead and pewter constitute a part of the outfit of a vessel.

When jigs were first introduced, however, it was customary for fishermen to cast them for themselves in molds improvised in buckets of sand or ashes, afterwards beating into shape the rough castings, and boring the hole for the line. This custom was prevalent on some vessels as late as 1850. In the later years of this fishery the fishermen became very critical in the matter of jigs, and were not satisfied unless they were elegantly shaped and brilliantly polished. The lines were six or eight fathoms in length, of cotton, being either hawser or shroud laid. Of later years these have always been of cotton. In early days, when the heavier jigs were in vogue, much larger lines were used than at a later period; since 1860 it has been customary to use a kind of snood, called "snapper-line," made of strong linen thread and usually colored blue. The "snapper-lines" are from 15 to 18 inches long, one end being bent to the jig, and the other fastened to the fishing-line with what is called a "water-knot." During the voyage the lines are generally coiled up and hung upon the fishing-cleats on the waist when not in use. As has been stated, each man has from eight to twelve lines, with jigs of different sizes, fastened to the cleats at his berth. A quantity of extra lines and hooks are carried by the vessel.

(*b.*) *The mackerel fly-hook.*—The mackerel fly-hook, formerly very popular and introduced before 1850, has been discontinued since 1860. This is an extra hook on a ganging from 12 to 15 inches long, fastened to the jig-line 8 or 10 inches above the jig. Not being weighted, this hook floats at an angle when the jig is sinking, and by using it two mackerel are sometimes caught at once, one biting at the jig and one on the fly-hook. The fly-hook went out of favor because it was liable to become entangled with the other fishing-gear.

(c.) *The mackerel gaff.*—The mackerel gaff is an iron rod a quarter of an inch in diameter, 3½ feet long, having at one end two recurved sharp points about 2 inches long and separated at the extremities by an interval of one-half to three-quarters of an inch, returning in a line parallel with the direction of the rod. The mackerel gaff is fastened to a wooden handle about 10 or 12 feet long, and was used when the mackerel were schooling thickly alongside of the vessel and were not inclined to take the hook. The gaff was thrust among the fish and rapidly drawn back, often impaling one and sometimes two mackerel at a time. This implement has not been used since the introduction of seines, and but rarely during the last twenty years.

(d.) *The mackerel "bob" or "bobber."*—This is an instrument resembling the mackerel gaff in the manner of its use. In its rude form the bob was a stick of wood, around the end of which three or four cod-hooks, with their barbs filed off, were fastened. The same idea has since been developed in various ways, the most elaborate form being that illustrated in our plate. The bob is fastened to a string and drawn through a school of fish, impaling them in the same manner as the gaff. This instrument was discontinued long before the gaff, and, in fact, has never been so popular. These bobs were used only when the mackerel were schooling in great numbers alongside of the vessel and refusing to bite.

(e.) *Bait and apparatus for its preparation.*—Bait used in the mackerel fishery is of two kinds, (1) that put upon the hooks, and (2) that thrown into the water to attract the fish.

The method of baiting the jigs which has been adopted by mackerel fishermen is somewhat peculiar, and a description of the process may be of interest in this place.

As a rule, when a mackerel schooner first arrives on the fishing ground and is about to begin fishing with hook and line, the jigs which are to be immediately used are baited with small circular pieces of pork rind, two or three of these being put on each hook. Sometimes, however, no one but the skipper uses pork-rind bait, the other members of the crew preferring to wait until some mackerel are caught from which they can procure a supply of bait for their hooks. The favorite way of baiting mackerel hooks is as follows, namely: Several thin strips about a half inch wide and three to five inches long, are cut either from the belly of the mackerel or from the lower portion of the body on either side of the anal fin.* When a sufficient number of these slices have been obtained they are cut into sections, each of which is, approximately, a half inch square. A large number of these pieces are put on the hook, completely filling the bend, after which the baits are scraped with the back of a knife in such a manner as to remove everything but the tough white skin, which, when distended in the water, forms a soft pulpy mass

*Strips for bait cut from near the anal fin are usually preferred, since they cannot so easily be torn from the hook as can the fatter and tenderer strips taken from the abdomen.

about the size of the end of one's forefinger; but this can be contracted into a very small space, and thus afford the eager fish ample opportunity to secure a good hold of the hook while seeking the tempting but yielding morsel upon it. A bait of this kind will last more than an hour without being renewed, even when mackerel are biting sharply. When the fish are "picking" or less inclined to take the hook, a fisherman is often not obliged to bait his jigs more than once in a whole day. Sometimes the fishermen cut out a small circular piece from the throat of the mackerel, which they place on their hook above the scraped bait. This throat piece is quite firm and for awhile prevents the soft skins composing the bait below it from being entangled on the point of the hook and thus preventing the latter from easily catching the biting fish.

In the early days of the mackerel hook fishery the toll bait chiefly used was made of small mackerel, and sometimes of large ones too when small fish could not be obtained. The viscera of the mackerel were also frequently used in the absence of better. From 1835 to 1840 menhaden came into general use, and were subsequently always in high favor. They had, however, been in common use by Gloucester fishermen at the very commencement of the century. They were caught in gill-nets. It was the custom of the Gloucester people to leave home a little after tea, set their nets off Kettle Island, and lie there till about midnight. They would then haul their nets, pick out the fish, and start off to the mackerel grounds.*

There can be no question that the custom of chopping up small mackerel for bait was detrimental to the mackerel fishery in succeeding years, and that the introduction of menhaden was a benefit to the fishery in more ways than one. As a "toll" bait for the mackerel, menhaden is believed to be better than any other fish; the mackerel seem to prefer it; and the presence in its flesh of a quantity of oil renders it especially convenient for the use of fishermen, since in the process of "chumming-up," presently to be described, a small quantity of ground menhaden bait will spread over a large area of water. In the Report of the Commissioner of Fisheries, Part V, pp. 143 to 147, may be found a discussion of the comparative merits of herring and menhaden as a bait for mackerel.

The quantity of menhaden bait carried by a mackerel schooner on a trip of two and a half to three months to the Gulf of Saint Lawrence varies, according to the size of the vessel, from 25 to 40 barrels. In addition to this they were accustomed to carry 5 to 10 barrels of clams. Capt. Sylvanus Smith, of Gloucester, stated to the Halifax Commission that a vessel fitting out for a four months' trip to the Gulf of Saint Lawrence would need to be supplied with 40 barrels of pogie bait, worth

* Mr. Earll writes: "Daniel Cameron, of Southport, states that pogies were first used in Maine about 1844, and by 1846 had come into general use. People of this section claim to have introduced the pogy, *Brevoortia tyrannus*, as mackerel bait, but with whom the practice originated I was unable to learn."

$6 a barrel, making $240, and 10 barrels of clam bait, worth $8 a barrel, making $80.*

Major Low's statement, copied from the trip-book of the schooner Oliver Eldredge, which sailed to the Gulf of Saint Lawrence August 5, 1875, arrived at Gloucester November 2, 1875, having been absent two months and twenty-eight days, obtaining 224 barrels of mess mackerel, worth $1,771.83, shows that she fitted out with 55 barrels of slivered pogies, at $6.50 per barrel, making $337.50, and 7 barrels of clams, at $6, making $42.

In 1867, when almost the entire mackerel fleet fished with hooks, the amount of menhaden bait consumed by Gloucester alone amounted, by the estimate of Mr. Joseph O. Proctor, to 6,500 barrels, and the total consumption by the United States of mackerel bait must have exceeded 25,000 barrels. In addition to this more than 1,000 barrels of clams were used. In 1877 another estimate was made of the quantity consumed by Gloucester. The purse-seiners were then in a large majority. The whole amount consumed by a seining vessel does not exceed 5 or 6 barrels in a season. Gloucester had, in 1877, about 50 "mackerel-hookers," using about 2,400 barrels of slivers, while the seining fleet used about 600 barrels more. The entire amount of menhaden bait consumed by the mackerel fleet of the United States in 1877 did not probably exceed 8,000 to 9,000 barrels of slivers, or 24,000 to 27,000 barrels of round fish.

The menhaden used for bait in the mackerel fisheries was formerly, when a larger quantity was in demand than at present, obtained to a considerable extent from Gloucester vessels fishing expressly for menhaden in the vicinity of Cape Ann and in the Gulf of Maine.

Capt. F. J. Babson, of Gloucester, whose account of the bait fishery of Cape Ann is quoted elsewhere, states that in 1873 there were over 60,000 barrels of round menhaden taken in his district, while in the same year vessels belonging to the Maine Oil and Guano Association sold of bait 2,977 barrels; in 1874, 10,400; in 1877, 10,795. From the bait fisheries about Marblehead and in the vicinity of Provincetown, according to Mr. Lowry, from 1,000 to 2,000 barrels of bait were taken in 1873. At Chatham, from 1872 to 1877, the average catch was about 5,000 barrels. A large portion of all of these fish, however, was sold to the vessels engaged in the George's Bank cod-fishery. Considerable quantities also were obtained about Salem and in the Merrimac River, a portion of which went to the mackerel fishery.

It was the custom of many of the vessels belonging to the spring mackerel fleet to devote a considerable time to obtaining a supply of bait for their own use during the summer fishery. In addition to this quite a number of vessels were fitted out each spring to go to Seaconnet and other places in that vicinity for the purpose of securing cargoes of menhaden slivers to sell to the early fleet going to the Bay of Saint

*Proceedings of the Halifax Commission, 1877, Appendix L, p. 334.

Lawrence. Cape Cod vessels were accustomed to dress their bait in a peculiar manner. They did not sliver them in the ordinary way, but salted them down "round," simply eviscerating them, cutting off the heads and the thin parts of the belly, and making slits in the sides.

These vessels obtained their bait from the pound fishermen at various points on the coast of southern New England, especially in the vicinity of Seaconnet and Rhode Island; and also from the various fishing gangs connected with the oil and guano factories.

In addition to the vessels which thus obtained supplies of bait for their own use, there was a fleet of bait vessels which annually proceeded to the same localities in the spring to obtain bait for sale to the vessels of the mackerel fleet not otherwise supplied. The number of baiters was five or six.

The price of menhaden for bait varied with their abundance. In Gloucester, in 1873, according to Captain Babson, 60,000 barrels of round fish made 20,000 barrels of slivers, worth $4 a barrel to the producer. At Marblehead the price in 1876 averaged $1 for fresh and $6 for salt bait; at Chatham, $1.50 fresh; at Nantucket, 50 to 75 cents; and at Martha's Vineyard, 50 cents. In Narragansett Bay bait sold in 1871 for $1 to $1.50 per barrel, fresh. The regular price from 1867 to 1877 at the mouth of the Merrimac River was $1 per barrel; probably 1,000 barrels of slivered fish were prepared in 1876, which sold for $5 a barrel. Boston and Gloucester vessels were accustomed to anchor at the mouth of the river and wait there for supplies of bait. At one time in 1877 there were probably 25 schooners waiting.

The process of slivering and salting menhaden was described in the report on the menhaden fisheries in Part V.

The manner of preparing the slivered menhaden or other fish for toll bait is very simple, and is essentially the same as that employed in early days, when it was the custom to grind up small mackerel for bait. Captain Atwood remarked in his testimony before the fishery commission at Halifax: "We now use menhaden for bait, but when I first went fishing we did not do so; our practice then was to grind up small mackerel for the purpose. Any quantity of these mackerel were at that time to be had for the cost, and plenty are to be met there now. These fish were of no account then, and so we ground them up for bait. And when we could not obtain them we ground up what you call gurry, the inwards of fish with the gills attached. American fishermen, when they fish with hooks, use menhaden bait almost exclusively. The superiority of this over any other is proved by the fact that when they can't get menhaden they won't take any other. At first mackerel fishermen were afraid of this bait; it was a very bony fish, and they even thought that if it was cut up for bait the mackerel would get sick of it owing to the number of bones. There is a species of fish belonging to this family found on our coast which is exceedingly fat; we call them blue-backed

herrings;* and some prefer this fish for bait, as it is not so bony as menhaden, but when the mackerel got to be worth having, about everybody adopted menhaden for bait; it is the cheapest bait."†

To prepare menhaden for use in the mackerel fishery, the slivers are ground up into a mush which is called "ground bait." The slivers are passed through a bait-mill, which is a machine somewhat resembling a farmer's feed-cutter. The fish are thrown into the hopper, and, by the agency of a roller operated by a crank at the side of the mill, are passed through a complicated array of sharp knives arranged upon the sides of the mill, and in spiral rows upon the roller. The bait is usually ground at night by the watch on deck. As a rule the bait is run through the mill twice in order to make it fine enough. When the vessel has no bait-mill, which at present is rarely the case, the fish are cut up with a hatchet or scalded with boiling water in a tub. Bait-mills were first introduced about the year 1822. Prior to the introduction of the bait-mill all the bait was cut up at night with the hatchet, by the watch, upon a chopping-block, which was a large flat-topped piece of wood resembling a butcher's meat-block. The veterans of this fishery relate with great glee how they used to be kept awake all night by the pounding of the bait-cutter over their heads, and contrast the present usages with those of former days. When there was leisure in the day-time, three or four men would work at the block together, each chopping with his own hatchet. In this way a constant supply was kept. Bait which had been ground was packed in barrels full of pickle, and covered up.

The earlier bait-mills were very rude affairs, the teeth being common nails driven into the barrel and into the sides of the mill and broken off, leaving jagged ends which tore the bait into pieces. Later these were filed down to a point, while at the present time the teeth are arrow-shaped, made of steel, and are attached to the wood by means of shanks made especially for the purpose. Bait-mills are now manufactured by various mechanics at the different ports, those made by Adolph Voss, of Gloucester, being considered among the best. The cost of a good bait-mill is from $8 to $15.

According to Maj. D. W. Low, the first bait-mill was made in 1820, of nails driven in lines across two wooden cylinders and then sharpened. The first one made for grinding or cutting with knives was made in 1822 by Gorham Burnham, and they were driven into cylinders in the same manner. In 1823 he commenced putting in the knives in spiral form, which form has continued in use ever since. He has made and sold in one year $1,600 worth at $10 each, besides making anchors and other work.

The first bait-mill taken to southern Maine was bought in Gloucester

*The *Clupea æstivalis*.

†N. E. Atwood, Proceedings of the Halifax Commission, Appendix L, p. 42, September 19, 1877.

in 1827 by Mr. John Cameron, of Southport, for use on the schooner Echo.*

The manner in which the labor of grinding bait was distributed among the different members of the crew after bait-mills came into general use varied upon different vessels. Sometimes each man had his "bait day," upon which, in addition to his regular labor of fishing, he was expected to grind bait for the use of the vessel.

When fish were abundant the quantity used might be as great as five or six barrels a day. The bait-cutter was expected to have a supply of bait ready, and when there was promise of good fishing the next day would grind what he thought would be needed for the next day's fishing during his watch at night. When he was not forehanded and the fish were abundant he suffered considerable loss, since he was obliged to work at grinding the bait while the others were fishing, and thus failed to obtain his share of the fish.

On some vessels, in order to obviate this difficulty, it was customary for each man to grind a barrel in his turn, the boys doing their share of the work by cutting the clam bait. The order of their succession was determined by their position at the vessel's rail, the man farthest forward taking the first turn. On other vessels, if a man was not on deck in the morning to help hoist the sails, the penalty for his absence was the grinding of a barrel of bait, a task which required about an hour and a half for its performance.

When the bait has been ground it is placed in barrels or in the bait chests. The ground bait is an oily mass of yellowish color, resembling in consistency sausage meat. Before it is used water is added to it, and it is then reduced to the consistency of porridge. It now becomes a yellowish slushy liquid with an oily smell, and in this condition occupies about twice to three times the space that it did before water was added. In this condition it is sometimes called "chum" or "stosh."

(*f.*) *Mode of fishing.*—The present method employed by mackerel schooners of fishing with hook and line while the schooner lies adrift was first practiced in Massachusetts at the very beginning of the present century, and the use of toll bait began about the same time. According to Capt. Epes W. Merchant, the first man to introduce this method of fishing in Massachusetts Bay was John Story, of Rockport, about the year 1804.

The method of "tolling" or "chumming up" the fish by the use of this ground bait resembles the process of calling up a flock of fowls by scattering corn over a large piece of ground. The oily bait is thrown over the side of the vessel, and as the latter drifts along and the bait spreads the fish are attracted by the floating particles most remote from the vessel, and swim up toward the source of supply.

The use of toll bait originated with the shore fishermen, who crushed

*Statement of Daniel Cameron and Capt. John Gray, of Southport, Me., obtained by R. E. Earll.

the oily menhaden under foot with their heavy fishing boots, washing the pulpy mass of flesh and the oil with buckets of water out through the scuppers of the vessel. Another statement, and perhaps the most correct one, is that at first the fishermen made toll bait by boiling a cod-fish or haddock until it was nearly cooked, when it was taken by the tail and beaten over the sides of the boat or vessel, causing the fibers of the fish to separate in small pieces, which, considering their whiteness, made a very attractive bait. This practice was still in vogue among the boat fishermen of Maine as late as 1849 and 1850.

The process of throwing toll bait, of late in practice, may now be described. Several buckets of the ground bait are put into the boxes, the positions of which have already been described, and to it several buckets of water are added, the mass being thus reduced to a proper consistency by stirring it up with the bait-heavers, which are scoop-shaped contrivances made of tin on the ends of wooden handles 2 or 3 feet in length. The vessel is "hove to" under mainsail and foresail, or sometimes under mainsail, making a square drift to leeward. One man—generally the skipper—stands forward of the main rigging with the bait-heaver and throws out the bait, something in the manner of a man sowing seed broadcast, by a sweeping motion of his right arm, scattering it over a space of 15 or 20 feet along the side of the vessel. The oily particles slowly sink and spread out under the influence of the whirling eddies caused by the receding vessel. As the vessel drifts away and one scattering of bait is on the point of disappearing from sight, another lot is thrown, and so a succession of waves of bait is left in the wake of the vessel. In the mean time the man who is throwing the bait puts out two lines and thus ascertains whether the mackerel have been attracted to the sides. As soon as the fish begin to bite, the man sings out, "Here they are!" or "Here they gnaw!" and the crew rush to their places and begin fishing.

When the fish appear, they are sometimes in small numbers and bite daintily, but often they come in immense schools and bite as fast as the hooks touch the water.*

* "*Jigging mackerel.*"—"Jigging mackerel" is a method peculiar to mackerel-catchers that superseded the old way called "trailing," or taking them while the vessel was under headway. The manner of jigging is peculiarly interesting to new beholders. The vessel is kept comparatively motionless; a large quantity of poor mackerel chopped into mince-meat is thrown upon the water, which brings them to the surface. So much of this has been done that it has, in a great measure, destroyed their appetites, and sharp-pointed hooks of a sufficient length to reach the fish have been resorted to.

A line of the color of the water, called the jig line, attached to a lead of a finger's length, say one-half inch in diameter, diminished at the end towards the hook which is solid in the lead called a "jig lead." Bait of such as is thrown overboard is put on the hook and thrown also among the "floating bait," or more properly the floating fish. Thus prepared, the fisherman has little else to do but to draw in the line and snap off the fish in a tub prepared for that purpose a little faster than can be easily imagined by the land fisherman. From 50 to 80 barrels have often been taken on a good "fishing day" in this way by a crew of 6 or 8 hands; oftentimes several boys comprise a portion of the company.—(Barnstable Patriot, Nov. 15, 1836.)

On these occasions the deck of the vessel presents a scene of great activity and excitement.

Let us try to depict a scene in the Gulf of Saint Lawrence. We are on the deck of a clipper schooner from Gloucester, standing along with the four lower sails and the main gaff-topsail set, a fresh breeze blowing from the southwest; the sky is overcast, and the sea comparatively smooth; within the plane of vision are the white sails of some 250 schooners, most of which are hove to, a few tearing along under press of sail seeking new positions; here and there among the fleet is a vessel with a flag set at her main peak or at her main topmast head; this is to indicate that she has completed her fare and is homeward bound. Some of these are lying to, and are still fishing, while others have all sail set, and are heading for the Strait of Canso on their homeward way. A few miles to the northeast looms up the rugged shore of the Magdalen Islands, its high outline here and there broken by long stretches of sandy beach; a train of great white gannets crosses our bow, five or six of them rapidly flying close to the water; suddenly the leader disappears beneath the water, and his companions rise up for a moment and then "plug down" head foremost after the fish which they see. The movement is perceived by other gannets, and they flock in from all directions and share the feast. As we speed along two or three of these birds, which have filled themselves to repletion, are swimming in our course, unable to rise, and, in order to escape, they disgorge their stomach-loads of fish and flap away just before the vessel reaches them. We now approach the fleet, and pass by the leeward vessels which are hove to, the starboard rails of which are lined with men excitedly plying their lines. Our skipper stands on the quarter with his glass to his eye, trying to determine which portion of the fleet is meeting with the best success. He selects a berth near the middle of the fleet, and thither he directs the course of the vessel by word to the steersman. We thread our way in a zigzag course among the drifting vessels, sometimes escaping by a few inches only the thrust of a jib-boom, and again almost snapping off the main-boom of some other vessel. At length we approach the selected position and heave to, coming up sharply to the wind with the mainsail hard aback. The skipper takes his position at the main rigging and begins throwing bait, at the same time putting out his lines for trial. After the vessel is hove to, the men are lounging about the deck, yet in expectant attitudes. At a little distance from the rail stands a row of barrels, one opposite the berth of each man. These are called "strike" barrels. The lines, with the jigs attached, are coiled upon the cleats or lie upon the rails, each man having examined his own and prepared it for immediate use. At last the skipper is seen to rapidly haul in his line, pulling a glittering mackerel over the rail, and, by the peculiar motion known to the fishermen as "slatting off," the fish is jerked over his right shoulder into the barrel, while the drumming of the mackerel against the bottom of

the barrel announces to the men that the fish have struck. The men rush to their positions, and a scene of great activity and excitement begins. The fish are now within four or five fathoms of the side of the vessel, but they soon come much nearer; looking over the rail we see their mottled backs as they swim to and fro alongside the vessel. The lines are shortened up as the mackerel rise, and now the time required for throwing over the jig and jerking it back with a mackerel fast to it is only a few seconds. The men throw out their lines, pull them in, and, without glancing at the fish, dexterously "slat" them into the barrels, the jigs being torn out of their mouths by the same motion which casts the line back into the water; two twists of the wrist are sufficient to accomplish this feat. The mackerel are large—"No. 1's"—and in fifteen or twenty minutes the best fishermen have their barrels full. When a man's barrel is filled he springs from the rail, rolls it back towards the center of the deck, and puts an empty barrel in its place. The fish may continue actively biting for ten minutes or for several hours, but usually the sharp biting is over very soon, and the mackerel begin to "pick." Now the work is less exciting, though much more exacting upon the skill of the fishermen. When the fish are "picking," a high-line fisherman will catch quantities, and the greenhorn will catch none, and even among the most skillful fishermen there is a great difference in their success at this time.

It should be stated that all the time mackerel have been biting, four men have been actively employed in throwing bait over the side, at the same time attending to their lines like the remainder of the crew. The cook heaves bait in the position farthest forward, and one of the boys in the position farthest aft, while amidships the skipper and one of the most experienced of the crew are similarly engaged.*

When the fish begin to "pick," the skipper reconnoiters for a better position, and finding that other vessels are having good fishing, orders the crew to coil in their lines and to make sail; away we go in search of another "spurt of mackerel."

The excitement among the crew, when the mackerel are biting fast, can hardly be described. When the fishing begins, the drumming of the mackerel in the empty barrels is inexpressibly cheering to the fishermen, especially if they have been unsuccessfully hunting for fish on previous days, and adds to their excitement. This sound ceases as the barrels begin to fill up, the resonance of the wood being deadened by the accumulation of fish; it is, however, from time to time repeated, as empty barrels are substituted for those which have been filled. Every man is striving to the top of his bent to catch as many mackerel as possible while the "spurt" continues, and, if possible, to catch a larger

* On the mackerel "hookers" the cook stood to fish just aft of the forerigging. The large schooners sometimes had a boy forward of the forerigging, but this was not the rule by any means. Each man or boy had a certain number of inches measured on the rail and assigned him as his berth. The length of a berth at the rail varied from 2½ to 3 feet.

share than any of his comrades. The emulation to be "high-line" for the day and for the season is extreme. The number of barrels caught by each man is carefully noted, for upon his relative success depends his proportion of the proceeds of the voyage and his reputation as a fisherman. In a single day a high-line fisherman has caught from 10 to 15 barrels, and since each barrel contains from 150 to 200 mackerel, the rapidity of the men's movements throughout the day may be estimated. In seven or eight hours' fishing he has probably lifted over the side 2,000 to 3,000 fish, to say nothing of throwing over his jig and bringing it back empty almost as many times more. Such cases as this are exceptional, since mackerel rarely continue biting long enough to allow such a number to be taken. At the same time, when a much smaller number is caught, the activity of the fishermen is something to be wondered at.*

The confusion and excitement is increased by the frequent snarling of the lines and the attempts to straighten them out again. As has been stated, each expert fisherman has ten or twelve lines in his berth, and changes from one to the other according to the rapidity with which the fish are biting, or the strength of the wind. Much experience and skill are necessary to enable the fishermen to make these changes understandingly. Little is said while the fishing is going on; the men lean far over the rail in strange attitudes of expectancy with one or two lines in each hand, the hands moving up and down and constantly hauling in and throwing out one of the lines at a time. When it is necessary to haul in one of the lines, the others are allowed to drop upon the rail.

We have described one phase of the life of a mackerel fisherman, but experiences like this may occur only a few times during a season. Mackerel vessels are constantly under sail, cruising hither and thither over great areas of water on the lookout for fish, heaving to and trying more frequently without than with success, except in extraordinary seasons. At night they are hove to, or, when mackerel are scarce, are making long passages from one ground to another. Information as to the location of the schools of mackerel is passed from vessel to vessel. As they meet, the vessels almost invariably speak each other and compare notes upon the position and abundance of fish.

When a vessel is seeking fish and heaves to for the purpose of tolling them up, she will continue in this position, as a rule, for about an hour, sometimes longer, when there is any prospect of success. Sometimes the mackerel, however abundant, will not rise to bait; they are very capricious; at other times in the same day they will be exceedingly voracious. One of the common tactics of the mackerel fishermen was that of running round a school; when the fish could be seen, the vessel would make a complete circle, surrounding them at the same

* LARGE CATCH OF MACKEREL.—Schooner "Bloomer," of Hingham, with a crew of 10 men, caught on Thursday last, between 10 a. m. and 2 p. m., 5,700 mackerel with the hook and line.—(Barnstable Patriot, May 28, 1861.)

time with the line of toll bait. The effect of this maneuver was to keep the fish from moving away by placing the bait in such a manner that whichever course they took the fish must invariably meet with and be attracted by it to the vessel's side. It frequently happened, however, that the schooling fish took no notice whatever of the toll-bait, either because they were not hungry, or were engaged in feeding upon some form of crustacea, of which they are exceedingly fond.

The practice of "lee-bowing," the method of which, so far as the management of the vessel is concerned, has been described in another place, was simply to "heave to" to the leeward of another vessel which was lying to and had a school of fish alongside, and, while so doing, to throw a quantity of bait overboard; this bait passing under the bottom of the first vessel would attract the fish, which would then follow the course of the new bait, passing to leeward under the first vessel and appearing alongside and close to the vessel which was executing the maneuver of lee-bowing. The success of this maneuver is sometimes thwarted by the crew of the first vessel throwing over such a quantity of bait that the bait thrown by the second vessel is not noticed by the fish. In this act it is frequently the custom to use a considerable quantity of chopped clams, these being considered better to "hold" the fish alongside than the menhaden bait. The clam bait is also used on other occasions to "hold" the fish, or induce them to bite more rapidly when they are supposed to be tired of the ordinary bait.

A maneuver sometimes executed by the mackerel schooner is called "springing up." This is done when the mackerel are so close to the shore that the vessel cannot lie to and drift for them. It is accomplished by bringing the vessel to anchor and then putting a "spring" on the cable, the latter, which is a stout rope, being taken to the port-quarter, and the cable veered out so that the vessel lies with her port side to the wind. The fishing is then carried on on the starboard side, in the same manner as with vessels lying to.

In former years, when an extensive mackerel fishery was prosecuted in the vicinity of the Seven Islands and at the mouth of the Saint Lawrence River, much jig fishing was carried on by small boats sent out from the vessels. Each of the boats carried a small quantity of ground bait, which was used in the same manner as on the vessels. This method of fishing has also been practiced to some extent on the coast of Maine even as late as 1879.

Vessels occasionally returned home from the Gulf of Saint Lawrence to land their catch, leaving a portion of their crew to fish from small boats until their return.*

The above description of jigging mackerel has been written with

*Schooner "B. D. Haskins" lately arrived from Bay Saint Lawrence with mackerel; left five of her crew to continue the fishery in dories until her return on her second trip.—(Cape Ann Advertiser, August 17, 1860.) Instances of this kind were rare.—Authors.

special reference to the fishery in the Gulf of Saint Lawrence, since it was here that the jig fishing was most extensively prosecuted; the methods are the same, however, as those practiced on the New England coast.

26.—CARE OF THE FISH.

(*a.*) *Cleaning and salting.*—The manner of caring for the fish is essentially the same as that described in the preceding chapter, except that (the quantity of fish taken being much smaller, there was, of course, much more time for handling them) greater care was taken, and the fish were uniformly of better quality. Many of the Gloucester mackerel-hookers were accustomed to divide their crew into dressing gangs of two each instead of three, as at the present time on the seining vessels, one of these men splitting and the other gibbing. It was the duty of the splitter to get the barrels, fill them with water, and, when he had split more fish than the gibber could take care of, to aid the latter in his work.*

On the seining vessel, as we have seen, the mackerel are, in most cases, heaped on the deck; on the mackerel-hookers, the fish were already in barrels, and the order of proceeding was slightly different. The splitting-board was placed on the head of one of the "strike" barrels; the fish were taken out of the barrels, split, and thrown into the gib-tub, where they were handled in the ordinary manner. The process of gibbing having been completed, the fish were "plowed" and put into the second barrel, which was filled with clean water. From this barrel they were changed into the barrel in which they were salted. The process of salting is as follows: A barrel of mackerel is emptied out on deck; a "gib-keeler" is filled with salt; one of the men now throws the mackerel into the "gib-keeler," while the other man "rubs" them in the salt by taking one in each hand; the back of one is then placed to the flesh of the other, and they are thrown into the barrel with the flesh side down. They are thus salted and packed away into barrels in successive layers, each (with the exception of the bottom tier) with the flesh side down.† A barrel of large mackerel can be salted in from five to ten minutes.

In order to cure mackerel successfully very fine salt must be used, and every part of the fish must be touched or it will spoil.‡ Careless

* The most general custom, perhaps, on the Gloucester vessels was to have two men in a gang, though this was varied a good deal on different schooners. Some crews preferred dress gangs of three men each, while others sometimes had four men working together, one of them "passing up" the mackerel to the splitter.

† The early method of packing them flesh up has been abandoned.

‡ This is the case when the mackerel are "rubbed," Liverpool salt being almost wholly used, since Cadiz salt, owing to its coarseness, has a tendency to tear or "ruck up" the flesh of the fish and give them a ragged appearance. Many of the Cape Cod fishermen, however, preferred to use Cadiz salt, believing it to be better for curing the fish than Liverpool. Their manner of applying it was quite different from that which has been described. Each man salted his own catch. Placing a wash-

salters sometimes leave "thumb-marks" where their thumbs touch the fish during the process of salting, preventing the access of the salt. These do not keep well.

It was customary on the "hookers" to let the mackerel remain on deck for several days after being salted, the length of time varying to a considerable extent, as it depended very much on the amount of fish taken. When the mackerel were well struck, or after they had been salted from two to five or six days, the barrels were "topped up" with fish, to make up for the shrinkage from the first salting, after which they were carefully headed up and stowed in the hold. If the men kept their catch separate, each one cut a private mark on the head of the barrel containing his fish. As a rule, the mackerel were "stowed down" whenever 40 or 50 barrels had accumulated on deck, but when fish were abundant and took the hook freely for several days in succession it often happened that more than a hundred barrels of fish would be caught before any were put below.

Capt. Epes W. Merchant, of Gloucester, informs us that the practice of salting mackerel was inaugurated at Gloucester in 1818. Scituate fishermen had begun this practice somewhat earlier. The methods of salting have not materially changed since that time. Previous to 1850 the vessels engaged in mackerel fishing were generally accustomed to carry butts, in which the fish were salted.

Capt. Chester Marr tells us that in the early days the mackerel fishermen made a practice of salting the mackerel in hogsheads, which were placed in the hold, standing on end, with stone ballast stowed in the "spaces" between them. When a vessel was loaded she would hold about 10 butts, or about 50 "wash-barrels." These butts were used until about 1850.

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barrel of mackerel at his left hand, an empty barrel in front of him, and with a bucket or basket of salt at his right, the fisherman rapidly transferred the fresh fish into the proper barrel, placing each flesh up, and scattering over it with the right hand a sufficient quantity of salt. An expert can thus take care of many more fish than any one unacquainted with the method would believe possible, though, it is safe to say, mackerel can be handled more expeditiously by the process of rubbing, and for this reason the Cape Cod style of salting has never come into favor at Cape Ann and on the coast of Maine.

* The largest of the mackerel schooners had sufficient capacity for stowing 20 or 25 butts, besides a number of barrels alongside of them in the wings on each side of the hold.

When salting mackerel in these casks, the salters worked in the hold. A gib tub was filled with salt and set on top of the butts near the hatchway, and one man threw down the mackerel from the deck into the salt box (or gib tub) while two others standing alongside of the butts did the salting—one "rubbing" the fish and the other packing them away in the proper place. When the cask was full a large stone was placed on top of the fish to keep them beneath the brine so that they would not get rusty. Each man usually had a hogshead of his own for the reception of his fish; that is, if each of the crew kept his catch separate. At that time, however, it was quite generally the custom to "go on shares." This term, as then understood, differed radically from what is now meant by the same expression, and may be described as fol-

(*b.*) *Mackerel plows.*—The mackerel plows, to which frequent allusion has been made, are also known to the fishermen by several other names, such as rimmers, reamers, fatters, and fatting-knives, in the same and in different localities. The original object of using these instruments may be said to have been "a trick in the trade," although the fact of their being employed at the present time is so well known that no one considers it any longer a secret, neither has it been for many years. The quality of mackerel is determined not only by their size, but also by the richness or fatness which they acquire as the season advances, and the opportunities for obtaining food are better than during the spring. In the spring when they approach the coasts of the Middle States and Southern New England they are in a poor and lean condition and remain in such a state until after they have deposited their spawn. After the spawning-season is over the schools then seek their favorite feeding-grounds and the fish soon begin to exhibit much improvement in their condition. During the month of June this improvement is first noticeable, and by the last of August, and sometimes even at an earlier date, the mackerel have arrived at their finest condition and remain so until they leave the coast in the fall. As the fish fatten, the belly, or that portion which covers the abdominal cavity, increases in thickness, and the quality of the mackerel can be more easily and certainly determined by noticing this particular portion of it than in any other manner. The mackerel are invariably split along the back from the snout to the tail in such a manner that they will lay open and flat after the viscera has been removed. It is a fact well known to persons familiar with this fish that when they are in a fat condition the sides of the abdominal cavity will crack open along the entire length when the fish are opened for the purpose of removing the viscera. The depth of these cracks or "breaks" show the relative fatness of the fish. As these cracks occur about half way from the backbone to the center of the abdominal cavity, it will be readily seen that by using an implement for making the crack a little above or nearer to the backbone than where it would naturally be and where the belly is considerably thicker,

ows: The crew were shipped as much upon their merits of good seamanship and steady habits as for their skill as fishermen. Each man was provided with a "strike tub"—a half hogshead—and for the first few days' fishing the skipper would note the catch of each of the men, and from this comparison would decide what share every one should receive. Thus some half dozen, perhaps, in a crew of 12 or 14 men would be assigned a full share. Though there might be some difference in the relative catch of these men it was thought fair to consider a capable and reliable man a full sharesman, though he caught somewhat less fish than another who might not be so well experienced in other matters. The remainder of the men were allowed three-fourths or one-half of a share, as the case might be, their expertness in catching fish and other qualifications always being taken into account in settling their relative standing. Thus, if a vessel had a crew of twelve men, six of whom were full sharesmen, four three-quarter sharesmen, and two half sharesmen, there would be ten full shares, and a sharesman would receive one-tenth of the crew's half of the proceeds of the voyage, while those having a smaller "lay" would be paid accordingly.

it will give the fish the appearance of being much fatter than it really is. As previously stated, the depth of the "break" is the test of the fatness of the fish, and is the guide by which the inspectors cull them into the different grades for market, provided always that they are of suitable size. Stringent laws have in past years been enacted in most of the New England States to regulate the method of inspecting mackerel, and the use of any artificial means to fatten them was for many years strictly prohibited. The introduction of the mackerel plow, like that of many other inventions, was the direct result of a need long felt by fishermen. Previous to its adoption it was the custom for the fishermen to attempt to improve the looks of their fish by increasing the natural break with their thumb-nails drawn along its entire length. This method was called "rubbing the mackerel." Later a few began to use the back of the point of their bait-knives or splitting-knives for this purpose, by degrees venturing to place the cut a little higher than where it naturally belonged. The use of knives led to the introduction of plows, which soon came into general use, though the fishermen at first felt some hesitation about revealing the fact that their fish had been plowed.*

A comparatively poor mackerel would not open sufficiently in a natural way to pass for a No. 2, but the fishermen give them an inviting appearance to the buyer by the use of the plow, which they handle with remarkable dexterity, running the blade longitudinally along each side of the abdominal cavity with great rapidity, laying the sides of the fish open in such a manner that it may pass for a No. 2, and, perhaps, if it is of large size, a fairly fat fish may be culled as a No. 1 mackerel. It is but fair to say here that, since the general adoption of the mackerel plow as a means of "fattening" the fish, the subject is so well understood by the dealers that they demand a finer looking fish than formerly, and the consumer, therefore, actually gets as good an article as before, and one that is much more attractive. This is especially the case when the size of the mackerel is not sufficient to pass for the best quality, or No. 1. A fish whose length is 13 inches and "of

* From a circular addressed to the masters and crews of mackerel vessels by Hon. James Barry, inspector-general of pickled fish for Massachusetts, dated May 2, 1832, we quote the following in relation to the use of the mackerel plow: "It is a mischievous error that fishermen have fallen into by salting their fish too slack, as has been often the case; and another by using the plow, which has given to the fish a false appearance, and has been a source of mortification to the fishermen, and they have in a great many instances found fault with the inspectors when the fault belonged to themselves in not taking care of the fish which it was their duty to do, and which in many cases has been a ruinous business to purchasers. By a law of the commonwealth the inspector is required to throw into an inferior quality all mackerel which have been plowed, cut, or mutilated for the purpose of deception. It can be of no advantage to the fishermen, and I trust will never again be done."

Capt. N. E. Atwood says that some of the fishermen made mackerel plows with "the ends tipped with pewter and fine teeth on the edges so as to make the crease look rough, as though it was broken naturally; others had a knife in the end which cut them [the mackerel] smoothly."

suitable fatness" is required for a No. 1, but it is easy to see that a fish of fine quality, though not exceeding 12 or 12½ inches, is just as good for food, notwithstanding the fact that it must pass for a lower grade and be sold for a much less price. For the past few years a very large portion of the mackerel caught on our coast have been "undersized," that is, not long enough to pass for the best quality, according to the inspection laws of New England; nevertheless they are in all respects quite as good as the larger and rarer grades.

As previously stated, the fishermen no longer make a secret of using the plow, and during the summer season, when the wharves on the eastern coast are filled with mackerel, the operators may be seen in the open air busily rimming the fish almost as fast as they can pick them up and throw them into another barrel. There are many styles of this type of knife, their patterns and designs being as varied as the fancies of those who make them. They are, with but few exceptions, made by the fishermen; some of them are exceedingly plain and rough, while others are artistically and elaborately decorated, often with imaginary uncouth figures or with fancifully carved leaves, wreaths, &c.

There are several knives of this character deposited in the fisheries collection of the United States National Museum, and among them is one *factory-made* rimmer, with a polished walnut handle and a curved iron shank about one-quarter inch in diameter; into the forward end of the shank is fitted a small cutting blade about 1½ inches in length, tapering to a point at the heel, and with a square-cut forward end. There are also other styles made by the fishermen, some having steel and others having copper blades, and one specimen made of wood, in the form of a human leg, the extreme end terminating in a thick-set flat foot, in the bottom of which is inserted or driven a silver three-cent piece, ground to a sharp edge, to be used as the knife or plow.

27.—Homeward passage and disposition of the fish.

When one of the vessels in the fleet has obtained a fare of fish, or the skipper decides to go home, sometimes with a partial fare, the flag is usually set at the maintop-mast or on the main peak. This custom was not so common on our coast as in the Gulf of Saint Lawrence. The fish being salted, the homeward passage was usually performed in a leisurely manner, unless indeed the return was made during the fishing season, and the skipper expected to make another trip, in which case the utmost expedition was used, and rapid passages were made. For several years it has been a common practice for vessels fishing in the Gulf of Saint Lawrence to land their fish at the Strait of Canso, or sometimes at Prince Edward Island, sending the fish home by steamer or freight vessels. This was only done when the vessel had obtained a large fare, and there was a prospect of another successful trip for fish that season. By this means vessels sometimes filled up three or four

times in the course of the summer, obtaining, in some instances, as many as 1,100 to 1,200 barrels.*

28.—Financial profits of the mackerel hook fishery.

Old-fashioned vessels were employed as seiners for a number of years from Gloucester, it then being thought by many of the fishermen that swift sailers were not so necessary for this branch of the fisheries as for some others. In this respect, as in many other things, there has been a radical change.

The expense of fitting out with seine, boat, &c., deterred many of the owners from sending their vessels seining, and the more conservative clung to the old method of jigging until the failure of mackerel in the Gulf of Saint Lawrence compelled them to adopt the seine or abandon the business.

As a matter of course such large stocks and enormous profits were not obtained by the seiners years ago as they have made for the past two years, 1880 and '81. Nevertheless many of them did well. But a vessel's "fit out" for jigging cost comparatively little, and with a much smaller stock more clear money would be left than if she went seining. This, together with the fact that more or less risk is attached to seining, such, for instance, as losing the apparatus altogether, having the net torn, the

*The influence exerted upon the settlements in the Strait of Canso in the period between 1850 and 1870, by the trade thus derived from the mackerel fleet, was very remarkable. In many of the coves, on either side of the strait, small villages sprang up, and large store-houses and wharves were built where the American vessels could secure storage for their fish until they could be shipped, and also at the same time obtain supplies of salt, bait, provisions, &c., which they required for the prosecution of their voyages. This, of course, brought a great deal of money to the people of Canso, and many of the merchants who were not slow to take advantage of the circumstances became quite wealthy. Those were lively times in the strait, and it was not an unusual thing to see ten or twenty sail of mackerel schooners lying at Port Hawkesbury or at McNair's or some of the other coves discharging their cargoes and taking on board outfits for another trip. This afforded much employment to local residents and remunerative returns. Most of the people who owned wood lands devoted their time in winter to cutting and preparing for use a lot of fuel which they could readily dispose of the following summer to the American fishermen at good prices; and whoever was fortunate enough to have a small stream or brook running through his land near the coves, usually derived quite a revenue from the American fishermen by charging five or ten cents per barrel for the water which they were obliged to fill there.

Of late years, however, since the general introduction of the purse-seine in the mackerel fisheries, and the consequent failure of our fishing fleets to resort to the Gulf of Saint Lawrence during the mackerel season, a great change has taken place in the prosperity of the settlements at Canso. So much so, indeed, that many of the wharves and store-houses have been allowed to fall into decay and become nearly worthless from disuse. Most of the coves which were formerly the scene of busy life and activity during the mackerel season, now have a comparatively deserted and forlorn appearance. Many of the merchants have moved away to Halifax and other business centers of the provinces, while those who remain find their business much less remunerative than it was at the time when the Strait of Canso was frequented by a large fleet of American mackerel schooners, which were engaged in fishing in the Gulf of Saint Lawrence.

boat stove, &c., served to deter the timid ones from engaging in it until compelled to.

Rapid advances in the knowledge of using the purse-seine have been made within the past few years, which no doubt has had a strong influence in changing the hook fishery into seining. For a number of years it was believed that mackerel could not be taken except in shoal water where the seine would reach bottom, and as a result of this but comparatively little could be done. More recently the practice of seining in the night; tolling the fish alongside of the vessel and then surrounding them, &c., have added much to the profits of the fishermen.

The large net profits which were sometimes made by the mackerel hook fishermen previous to 1870 bore no mean comparison to the money cleared by the seiners of the present day, though, of course, the latter frequently get higher stocks. This, as mentioned above, is due to the difference of the cost of fitting out of a vessel for hooking and for seining, the expense for the latter often being twice or three times as much as it would be for line fishing. The following account of some of the large mackerel stocks made by vessels engaged in fishing with hook and line we copy from the "Fishermen's Memorial":

"The largest stock made in the Bay of Saint Lawrence mackerel fishery was that of schooner "Colonel Ellsworth," Capt. George Robinson, in 1865. She was absent about five months, her net stock amounting to $13,728.* The high-liner's share was $558; cook's, $582.

"Schooner "Gen. Grant," Captain Coas, in 1864, stocked, in two trips to the Bay of Saint Lawrence, $11,254.94, clear of all expenses.† The high line made $502.24; cook's share, $638.17.

"Schooner "Nor' Wester" the same year stocked $9,721.74, net, in one Bay trip; the high liner making $308.60, and the cook $486.61.

"Schooner "Gen. Sherman," in a three months' trip to the bay in 1864 packed 612 barrels of mackerel, her net stock amounting to $9,696. High-liner's share, $575.06.

"Schooner "Kit Carson," in 1865, brought in 591 barrels of mackerel, having been absent about ten weeks. Her net stock amounted to $6,542. High-liner's share, $260.

"Schooner "James G. Tarr," in 1866, stocked $5,824 in a nine weeks' trip to the bay. Cook's share, $331.76.

"Schooner "Seddie C. Pyle," in 1871, packed 1,070 barrels of mackerel caught off this shore,‡ in addition to 18,000 southern mackerel sold fresh in New York, in the spring. Her net stock for the year was $10,561.66. High-liner's share, $491.38; cook's share, $708.52.

"Schooner "Eureka," in six months' mackereling off this shore in 1868, packed 935 barrels, her stock amounting to $10,748.33. High-liner's share, $440.82; cook's share, $473.70."§

* Her gross stock—the amount her fish sold for—was doubtless about $16,000.

† Her gross stock would be between $13,000 and $14,000.

‡ New England coast.

§ Fishermen's Memorial and Record Book, pp. 86 and 87.

29.—Itinerary of a mackerel voyage to the Gulf of Saint Lawrence.

(By Maj. D. W. Low.)

We go to Essex, a neighboring town on Cape Ann, six miles from Gloucester, or to the ship-yards of Gloucester, where we see on the stocks, ready for launching, a schooner of 60 or 70 tons, built in that thorough and staunch manner which makes the American fishing schooner celebrated for her sailing and seaworthy qualities required in the hazardous business she was built for.

We next find the schooner alongside of the wharf in Gloucester, where she is got ready, or "fitted," for a voyage to the Gulf of Saint Lawrence, called a "bay trip." Fifty-five barrels of porgies and seven barrels of clams, with fifty hogsheads of salt in 115 barrels, and sixteen barrels of water are stowed by her crew in her hold, on top of which are stowed 335 barrels more with their heads taken out and put inside, both head and barrel being numbered. After the provisions, lines, hooks, &c., are on board the flag is hoisted and she is ready for sea, having cost to that time $7,700 for the vessel and $2,075 for her outfits. Had she been fitted for seining her outfits would have cost $750 more, making her total cost with outfits $10,525.

Leaving Gloucester August 5, 1875, we proceed to the Gulf of Saint Lawrence with seventeen hands, shipped "by the berth," according to their experience as fishermen, the best fishermen getting the best berths, which are nearest to and on each side of the master. The master's berth is forward of the main rigging on the starboard side, nearly in the center of the vessel. Formerly the berths to fish, with exception of the master's and cook's, were sold at auction on board the vessel after she had started, as high as $50 or even more being paid for first choice; the amount of the bids, called "berth money," was equally divided among the sharesmen, they paying the amount of the excess of their bid over the average share. The cook fishes forward so as to be handy to his cooking. After each man's berth is decided upon, each one prepares the cleats for his lines on the bulwarks under the rail at his berth. "Jigs" are run in the "jig molds," and the lines, eight to twelve to each man, are neatly put upon the cleats ready for service. After passing through the Gut of Canso (stopping there for a little wood), the vessel is ready for fishing. Lashed on the "port" side of the schooner, opposite the skipper, stands the "bait-mill," at which each of the crew, excepting the master and cook, take turns, commencing with the youngest, in grinding bait. The slivers of porgies are ground up fine, and clams are chopped with a long handled chopper, which are mixed with the porgie bait and some of it put into a box called the "bait-box" which is hung outside of the bulwarks, to the right of the master's berth, and water is added to it. After the vessel is "hove to" and she commences

to drift to leeward, the master, with a "bait-heaver," throws the bait from the bait-box into the water fore and aft the vessel to attract and draw the mackerel alongside. Some of the crew are below and others looking on, or perhaps put out a line with the skipper's to try for them. Soon the peculiar tapping of a mackerel's tail is heard on the bottom of a barrel, which, with the cry of "here they are," from the skipper, brings every man to his berth, and for a time the "strike barrels" standing a little in the rear and at the right of the fisherman, in which the mackerel are slat from the hooks, resound with the lively occupants. The best fishermen fishing with four and sometimes six lines each. The "spurt," however, is soon over, and after "picking" one once in a while the master orders "take in your lines," after which we haul in our mainsail, hoist the jib, and go on. The mackerel are then dressed, generally by gangs of three, comprising a "splitter," one to pass up the mackerel to him, and the "gibber"; the mackerel, after being split, are thrown into a "keeler," which is a shoal square box, about two by three feet square, which are put on board in nests of three; the "gibber," with mittens on to prevent getting his hands sore from the bones, opens the mackerel, takes out the gills and entrails (which are thrown overboard after dressing the catch), and throws the mackerel into a barrel partly filled with water to soak the blood from them, which is called a "wash barrel"; after soaking, they are thrown into a keeler of salt, a few at a time, rubbed all over in the salt, and packed in a "sea barrel," one barrel of salt (3½ bushels) being used in packing four sea barrels; after the barrel is filled and the fish allowed to shrink it is filled up (sometimes there is not time enough to allow it to shrink before heading up). The head of the barrel is put in reversed, on which the private mark of the catcher is cut in to identify it when landed, after which the barrels of mackerel are stowed in the hold. Frequently, when mackerel are scarce and time hangs heavy, industrious ones will "mess" their mackerel by scraping the blood from the backbone and cutting off the heads and tails, losing by the operation thirteen pounds on a hundred, but making the mackerel bring more in the market for the labor.

During our voyage we sometimes tried for mackerel with others of the fleet one or two miles from shore, and being "hove to" together, and occasionally picking a mackerel which, as it glistened in the sun coming over the rail, no doubt led those on shore to suppose we were getting a good catch of fish, when fifteen wash barrels would cover the whole catch for the fleet in several hours' fishing. The latter part of October finds us on the way home, at Georgetown, Prince Edward Island, where we put in for a harbor, paying one dollar for harbor dues, and on 2d of November arrived at Gloucester, having been absent two months and twenty-eight days, and caught 250 sea barrels of mackerel.

The mackerel are hoisted out with a horse, the crew paying for it in preference to hoisting them out by hand, as formerly. After being landed each man's lot is stood upon the head together, with the marked

head up. One of the crew unheads them, another pitches the mackerel as wanted into a "culling-crib," which is made about three feet wide and four feet long, with slat bottom, at each end of which stands an experienced and careful "culler," who tosses the mackerel according to their grade into "culling tubs," which hold a half barrel each; two of the crew then place the tubs when full on the platform of a beam scale where the "weigher" weighs them off, crying out "barrel of one's," or whatever the weight or grade requires; two of the crew empty them into the "packing cribs," while the master places the account of it under the name of the catcher, and the packer with a piece of red chalk marks the head of the barrel or whatever package is used with the grade of the mackerel. Half a bushel of salt to the barrel is used in packing, after which the cooper takes them, and after putting in the head it is rolled out on the wharf by a laborer and there bored and pickled off by the "pickler." After being pickled off and bunged, they are stood upon their head and branded with the deputy inspector's name and grade of the fish; the trip is sold by the owner with the master, he acting for himself and crew; the voyage is then made up in the ordinary manner. When the mackerel are delivered to the packer the vessel and crew are done with them as producers.

E.—THE MACKEREL GILL-NET FISHERY.

30.—Implements, methods, and results of mackerel dragging.

Considerable quantities of mackerel are sometimes caught in gill-nets at various points along the New England coast from Vineyard Sound to Eastport. For the most part, however, they are taken west of Mount Desert. This fishery is carried on in two ways: The gill-nets may be anchored and left out over night, as is the custom about Provincetown, or they may be set from a boat or vessel. The latter method is called "dragging"; the vessels are called "draggers," or "drag-boats," and the fishermen "mackerel draggers."

The mackerel gill-nets are 20 to 30 fathoms long, 2½ fathoms deep, with a mesh varying from 2½ to 3 inches. In Provincetown harbor they are set in the following manner:

About the middle of November the fishermen of Provincetown Bay begin to put out nets for the large mackerel on its return. On one occasion Captain Atwood had twelve nets out, five miles from land. On the last night of November he had taken nothing, but on visiting the nets the next day, he found they had sunk to the bottom filled with mackerel. He, however, succeeded in getting up eight, and the nets as they came to the surface looked like a sheet of silver. Three thousand three hundred and sixty mackerel were taken from these eight nets by nightfall. The next day the remaining nets were dragged in and 1,700 more taken, making 5,000 fish netted at a single catch. On an-

other occasion a catch lasted three nights, when he alone caught mackerel enough of the best quality to make sixteen barrels when packed.*

In Gloucester harbor and at other points on the coast of Massachusetts and Maine they are set in shallow water, one or both ends being anchored and their position marked by buoys on each end of the gang. When set thus in protected harbors they are ordinarily placed across the direction of the tide, usually in a cove or bight of the harbor where the mackerel are known to occur, and where they are out of the track of vessels.

The most extensive "drag-net fishery" is carried on by the vessels of Portland and Friendship, Me. The method employed by these fishermen six years ago was somewhat as follows: The vessels are small schooners of 15 to 25 tons. They usually run out from the harbor near the close of the day, timing their departure so that they will be upon the fishing grounds about sunset, except when it is necessary to go a long distance out to sea, in which case, of course, the time of starting is earlier. Reaching a locality where mackerel are supposed to be abundant the vessel is hove to, and a gang of 10 to 20 nets is paid out. The nets are fastened together at top and bottom, and the outer end is marked by a buoy, other buoys being distributed along the gang at intervals, the junction between each pair of nets being generally marked by a keg or spar. To the last net is fastened a rope called a "net swing," corresponding to the "fleeth-rope" used by the herring fishermen of Europe. This is a rope of three inches in circumference and 60 to 70 fathoms long. It is paid out to its full length and made fast at the bow of the vessel. The foresail is then lowered down and furled, and the vessel lies head to the wind, drifting to leeward and dragging the nets as she goes. If the wind is moderate the whole mainsail is kept up, but if the breeze is fresh, or what is called a mackerel breeze, it is reefed. Under favorable circumstances the nets are allowed to remain out all night, but the fishermen in the two dories row constantly along the nets back and forth noticing the movements of the fish, and especially looking out for the approach of dogfish. When a school of dogfish approaches the nets after any number of mackerel have been gilled it is at once necessary to take them in less the dogfish should devour the mackerel, chew innumerable holes in the twine, and roll themselves up in it until it is so twisted and tangled that it takes the labor of days to get it in proper condition for setting again. If the fishermen are not annoyed by dogfish the nets are allowed to remain down, as has been stated, all night long, and the men in the dories constantly pick out the fish, frequently carrying their catch back to the vessel. When the dogfish attack the nets they haul them in with the utmost expedition and bundle them as hurriedly as possible into the bottom of the dory, and after they have lifted them to the deck of the vessel take out the fish from among the meshes.

* Captain Atwood, Proc. Bos. Soc. Nat., x, 1865-'66.

It is part of the duty of the men in the dories to keep a vigilant lookout for approaching vessels. The gang of nets may be more than half a mile in length, and the keel of a large vessel passing over it would be almost certain to cut it in two. When it is still weather they row toward any vessel which they may see coming and ask the men on watch to steer clear of the nets; otherwise they are obliged to stand by the nets and repair the damages as best they may. Sometimes the approaching vessels are induced to stear clear of the nets by the dorymen, who hold up a lantern for that purpose. The mackerel caught in this manner are always carried fresh to the shore, and are intended chiefly for the supply of the markets of the large cities. They are packed in barrels, and may or may not be gibbed through the gills before reaching shore. A vessel setting a long string of nets may catch as much as fifty barrels of mackerel in a night, but ordinarily not more than five or ten barrels, frequently less. The barrels are carried on deck, and the fish are put in them as soon as they are removed from the nets. When the weather is warm the barrels are filled with ice-water. Besides the mackerel caught, considerable quantities of shad and alewives are taken in these nets. On an excursion made by one of the writers from Portland in 1873, besides six barrels of mackerel, there were caught with a small string of nets about forty fine shad, averaging two pounds each, and three or four hundred of that species of alewives known to the Portland fishermen by the names of "kyack," "cat-thresher," "saw-belly," or "blue-back," probably identical with the glut-herring, *Clupea aestivalis*, of the Chesapeake basin, the summer alewive occasionally taken in New England rivers. On this occasion the mackerel were feeding extensively on various entomostraca, with which the water was filled, and which imparted to it a vivid phosphorescence all night long. The presence of these animals, and of others more minute, causes the water and the nets to "fire" in such a manner as often to render them so visible to the fish that they successfully avoid contact with the twine.

The mackerel caught at Provincetown in gill-nets are brought in by the boats, and shipped by the fishermen to Boston in vessels devoted specially to this business, the owners of which receive a percentage upon the amount of their sales.

The crew of a Maine mackerel-dragger consists generally of two to four men, the vessels being usually owned by the fishermen.

The custom of dragging for mackerel, though practiced for centuries in Europe,* appears to have been first used in this country at Province-

*For convenience of comparison the following description of drift-net fishing for mackerel on the coast of England is quoted from Yarrell's British Fishes:

"The most common mode of fishing for mackerel, and the way in which the greatest numbers are taken, is by drift-nets. The drift-net is 20 feet deep by 120 feet long; well corked at the top, but without lead at the bottom. They are made of small fine twine, which is tanned of a reddish-brown color to preserve it from the action of the salt water, and it is thereby rendered much more durable.

"The size of the mesh is about 2¼ inches, or rather larger. Twelve, fifteen, and

town about the year 1841, where it is still prosecuted to a considerable extent in addition to the stationary gill-net fishery which has been mentioned.* At first small open boats were used, such as the one described and figured in the fishery census report under the name of "Provincetown drag-boat." About 1845 Provincetown fishermen with their boats and nets essayed dragging for mackerel in the vicinity of Monhegan, Me., and by their example this practice was introduced into Maine, and since that time it has been carried on at various points on the coast.

sometimes eighteen of these nets are attached lengthways by tying along a thick rope, called the drift-rope, and the ends of each net to each other. When arranged for depositing in the sea, a large buoy attached to the end of the drift-rope is thrown overboard, the vessel is put before the wind, and, as she sails along, the rope with the nets thus attached is passed over the stern into the water till the whole of the nets are thus thrown out. The nets thus deposited hang suspended in the water perpendicularly, 20 feet deep from the drift-rope and extending from three-quarters of a mile to a mile, or even a mile and a half, depending on the number of nets belonging to the party or company engaged in fishing together. When the whole of the nets are thus handed out, the drift-rope is shifted from the stern to the bow of the vessel, and she rides by it as at anchor. The benefit gained by the boats hanging at the end of the drift-rope is that the net is kept strained in a straight line, which, without this pull upon it, would not be the case. The nets are 'shot' in the evening, and sometimes hauled once during the night; at others, allowed to remain in the water all night. The fish roving in the dark through the water hang in the meshes of the nets, which are large enough to admit them beyond the gill-covers and pectoral-fins, but not large enough to allow the thickest part of the body to pass through. In the morning early preparations are made for hauling the nets. A capstan on the deck is manned, about which two turns of drift-rope are taken; one man stands forward to untie the upper edge of each net from the drift-rope, which is called casting off the lashings; others haul the net in with the fish caught, to which one side of the vessel is devoted; the other side is occupied with the drift-rope, which is wound in by the men at the capstan."—(The History of British Fishes, first edition, 1836, vol. 1, pp. 126, 127.)

*Capt. N. E. Atwood, at Provincetown, writes as follows in regard to the introduction of the method of dragging for mackerel at Cape Cod: "As early as I can recollect most of the mackerel taken along our coast were caught with hook and line. A few gill-nets were set at moorings in our harbor and along the Truro shore during the first part of the mackerel season or as soon as the fish came in. The mackerel which were then taken in nets were sent to Boston market and sold fresh, sometimes bringing good prices. As the mackerel would not bite at the hook when they first struck in we would often get two weeks fishing before a sufficient quantity of mackerel were caught on the hook to glut the market. Boston market being at that time small and no ice used in packing, only a few fresh fish could be sold there at any one time.

"In 1841 I went to Monomoy Bay (Chatham) to fish for shad; we went out in the bay and put out our gill-nets and drifted with them all night, if the weather would permit that mode of fishing, which we then and have always since called 'dragging.' On my return home to engage in the mackerel net fishery, very few had been caught in nets in our harbor, but large schools of mackerel had been passing in by Race Point and Wood End, and were going up the bay. I took my mackerel nets in the boat and and went out in the bay towards Plymouth, some two or three miles, and put them out and drifted all night; next morning I found I had got a good catch. This occurrence took place about the 15th of June, 1841.

"It did not take the other fishermen long to get into this new way of fishing, and since that time this method of drag-fishing has been adopted along the coast of Maine and elsewhere."

In 1873, 12 or 15 vessels from 15 to 25 tons were employed at Portland; at present the number at this port is 18, and quite a fleet of the mackerel-draggers also belongs to the vicinity of Friendship, Me.*

Along the southern coast of Nova Scotia, and about the vicinity of the Straits of Canso, there is an extensive gill-net fishery for mackerel carried on with stationary nets, and, in a smaller degree, a similar fishery is prosecuted in some parts of the Gulf of Saint Lawrence.† This fishery on the Nova Scotia coast is prosecuted when the mackerel are traversing the coast line in the spring and fall.

"During the mackerel fishing season," remarks Mr. J. Matthew Jones, "the people along shore appear to live in a state of much excitement, expecting every hour the 'runs' to come into their bays. The traveler who may desire a horse and wagon to get on from place to place will find hard work to prevail upon the people to hire one out to him with a driver. Lookouts are kept on some elevated spot so that the schools may be seen some distance off in order to give time for the fishermen to get off in their boats with the net." As at Provincetown, these nets are anchored only at one end, the other end being left free to swing with the current. They are sometimes set as far as ten or twelve miles from the shore, in water 20 to 50 fathoms in depth, care being taken to put them as nearly as possible in those localities which are known to lie in the "track" of the mackerel.

The mackerel gill-nets are usually set with their upper lines close to the surface; sometimes, however, as much as 2 or 3 fathoms below. The position of the net in the water is regulated by the length of the buoy-ropes and the weight of the sinkers. As a rule, especially on the coast of Nova Scotia, they are, however, set close to the surface.

In this region also there has been for many years an extensive seine fishery for mackerel corresponding to that which is elsewhere referred to as having been formerly carried on, two hundred and fifty years ago, on the shores of Cape Cod Bay. The principal points for the seine fishery are at Margaret's Bay, west of Halifax, and at Chedabucto Bay, at the eastern part of Nova Scotia.

Perley, writing in 1852, remarked: "In those harbors of Nova Scotia which are within the Straits of Canso mackerel have of late years been taken in seines capable of inclosing and securing 800 barrels, and in these seines 400 and even 600 barrels have been taken in a single sweep."‡

In the same locality Perley refers to the use of the drift-nets, undoubtedly meaning the set gill-net just described, remarking, however,

*Friendship has 12 vessels, Cushing 5, Waldoboro' 2, and Booth Bay and Bremen 1 each; the total from Maine, including those from Portland, being 39; the tonnage is 559.47; number of men, 133.

†Schooner "Yankee Lass," of Boston, arrived home last week from a season's mackereling trip around the Seven Islands of Saint Lawrence River, with 300 barrels, all large No. 1 mackerel, taken in [gill] nets.—(Cape Ann Advertiser, September 30, 1881.)

‡Fisheries of New Brunswick, 1852, pp. 13–16.

that this mode of fishing is probably not so well understood on the coast of Nova Scotia as in England. He however quotes from Yarrell an account of drift-net fishing in England, which is altogether different from that used in Nova Scotia and corresponds precisely with the drag-net fishing also described in the beginning of this chapter.

It is worthy of mention that mackerel as well as herring, on the coast of Europe at the present time, are almost exclusively caught by the use of the drag-net, the only other method in use being the equally old-fashioned one of "drailing," which was abandoned by our fishermen sixty-five years ago.* The antiquated method of drailing was, however, kept up by the fishermen of the Gulf of Saint Lawrence until 1860, or perhaps even to the present time, for the purpose of obtaining mackerel for bait to be used in the cod fisheries.

F.—THE SPRING SOUTHERN MACKEREL FISHERY.

The spring mackerel fishery is in reality a branch of the mackerel seine fishery, and the methods employed in it are identical with those described in the previous section of this chapter. In this place it is necessary only to add a history of this fishery, a description of the grounds frequented by the southern fleet, and a few statistical notes.

31.—Fishing-grounds.

The fishing grounds frequented by the southern mackerel fleet lie between Cape Hatteras and the South Shoals of Nantucket. The fishing season is in the months of April and May. The first vessels go south about the middle of March or soon after; but until 1878 no mackerel were ever taken before the 1st of April.†

32.—Early catches of mackerel, 1878 to 1881.

The earliest catches of the three past years are shown in the following notes:

EARLY CATCHES OF MACKEREL IN 1878.

March 30.—Schooner "Lilian," of Noank, Conn., Captain Latham, off Chincoteague.

April 16.—Schooner "Sarah M. Jacobs," of Gloucester, Capt. Solomon Jacobs, caught her first mackerel in latitude 36° 10′ N., longitude 74° 45′ W.

April 18.—Schooner "Alice," of Swan's Island, Me., Capt. Hanson B. Joyce, master, caught her first mackerel 25 miles southeast from Cape May.

April 25.—Schooner "John Somes," of Swan's Island, Me., Capt. J. S. Staples, master, caught her first mackerel 50 miles southeast from Cape May.

*Though drailing was abandoned so long ago by the professional mackerel fishermen of New England, we are, nevertheless, told by Capt. Joseph Smith, of Gloucester, that this method of fishing is still practiced by the Block Island boat fishermen.

†Schooners "Edward E. Webster," "Nellie N. Rowe," and "Ivanhoe" sailed for the south on Saturday (March 11) in pursuit of mackerel, the "Webster" getting the start by sailing at 4 o'clock a. m., and the others following at 4 o'clock p. m. This is the earliest start ever made in the mackerel fishery. Last year the "Edward E. Webster" sailed March 15, which was unusually early, and obtained a fare within a week thereafter.—(Cape Ann Advertiser, March 17, 1882.)

EARLY CATCHES OF MACKEREL IN 1879.

April 12.—Schooner "Sarah M. Jacobs," of Gloucester, caught first mackerel in latitude 36° 35′ N., longitude 74° 50 W.

April 13.—Schooner "Augusta E. Herrick," of Swan's Island, Me., Capt. William Herrick, caught first mackerel (130 barrels) in latitude 37° 37′ N., longitude 74° 23′ W.

April 13.—A few fish taken by schooner "S. G. Wonson," of Gloucester, 75 miles south-southeast from Cape Henlopen.

April 14.—Schooner "Charles Haskell," of Gloucester, caught first mackerel in latitude 38° 08′ N., longitude 73° 57′ W.

April 19.—Schooner "Alice," of Swan's Island, Me., caught first mackerel (140 barrels) in latitude 37° 50′ N., longitude 74° 03′ W.

EARLY CATCHES OF MACKEREL IN 1880.

April 1.—Schooner "Edward E. Webster," of Gloucester, Capt. Solomon Jacobs, caught the first mackerel of the season in latitude 35° 30′ N., longitude 74° 15′ W.

EARLY CATCHES OF MACKEREL IN 1881.

March 20.—Schooner "Edward E. Webster," of Gloucester, caught the first fish of the season, and the earliest on record, in latitude 37° 10′ N., longitude 74° 05′ W. A second trip was caught by the same vessel on April 18 in latitude 38° 38′ N., longitude 74° 00′ W.

May 16.—The schooner "Alice," of Swan's Island, caught 30,000 mackerel off Block Island.

33.—THE VESSELS.

The southern mackerel fishery is participated in by 30 or 40 of the Gloucester mackerel schooners and a number of vessels from Cape Cod and Maine. The total number of vessels engaged in this fishery in 1879–'80 was 64, of which 23 were from Maine ports and the remainder from Massachusetts. These are among the swiftest and best of the fleet, and are provided with the fullest amount of canvas for making a quick passage to and from the fishing-grounds. Nearly all of them have ice-houses arranged in the manner already described.

34.—APPARATUS AND METHODS OF FISHING.

The apparatus is in every respect identical with that used in the summer fishery; the vessels, however, carry, as has been stated, a much smaller number of barrels than when engaged exclusively in salting the fish. The manner of fishing is the same as that already described, except that the fish being much scarcer and their movements less regular than in summer on the more northern fishing grounds, a greater amount of vigilance and perseverance is required on the part of the fishermen. This is the season of the migration of the mackerel, and it is necessary that the fishermen should understand how to follow the schools of fish as they make their way northward, even if they are out of sight for days at a time. They cruise sometimes for weeks off the capes of the Delaware and Chesapeake, sometimes venturing farther south to the latitude of Cape Lookout, though they rarely find mackerel south of the

mouth of the Chesapeake. Sometimes weeks elapse before they find the fish. After the schools have made their appearance they follow them, and when they are not visible, usually allow five to fifteen miles a day for their northern progress, trying to keep among them as they make their way northward. When among the fish it is a common practice of the vessels to heave to and "jog" all night long in a northerly direction, to keep pace with the movements of the fish.

As soon as the first fare of fish is obtained, even if only a small one, the vessels make their way to New York with all possible speed; the earliest fish command much higher prices than those brought in later in the season. After mackerel become more plenty the vessels seldom go to market with less than 75 or 100 barrels, and it is not unusual for 250 to 300 barrels, the results of one day's catch, to be taken in. The successful vessels often run into New York two or three times a week, especially when the fish are most abundant off Sandy Hook.* This method of fishing and marketing the fish is kept up until the schools have reached the shoals of Nantucket, and the spawning season in that locality begins. At the close of the spawning season, when the fish again rise to the surface, or when the other schools are found on George's Banks and in the Gulf of Maine, the vessels resort to the ordinary method of salting their fish, only a few continuing the practice through the summer of carrying their fish fresh into the markets of New York and Boston. Occasionally cargoes of fresh mackerel are taken in the spring and summer into Philadelphia, and also, later in the season, to Portland.

The spring mackerel fishery, as just described, is of comparatively recent origin, not dating back much before 1870. Twenty to thirty years ago New York was supplied with fresh mackerel chiefly by Connecticut smacks, which caught the fish with hook and line and carried them to New York alive in wells. A peculiarity of this smack fishery was that the men fished with lines fastened to poles, as anglers fish for trout. The object of having poles was to enable the fishermen to drop the captured fish alive, and without injury, into the smack's well.

Vessels belonging north of Cape Cod at that time rarely if ever sold their fish fresh, although they often went as far south as the capes of Delaware. Their fares were salted and carried to Boston or other ports in the ordinary manner.

The southern mackerel fishery was undoubtedly first prosecuted by vessels from Cape Ann; at least we have been unable to obtain relia-

* Dispatches received here yesterday announce the arrival of schooner "J. J. Clark" at New York on Monday, with 150 barrels fresh mackerel, which sold at from 6 to 18 cents apiece according to size, and later of the arrival at the same port of the schooners "Seth Stockbridge," "A. M. Terry," "Smuggler," and "T. M. Cromwell," each with 200 barrels; "Moses Adams," 300; "Maud and Effie," 250; "Golden Hind," 75; "Fleetwing," 65; "H. A. Duncan," 20; and "James A. Stetson," 50 barrels, which were sold at from 8 to 12 cents apiece.—(Cape Ann Bulletin, April 17, 1878.)

ble accounts of any fishermen from other ports engaging in this fishery at an earlier date.

"Capt. John Parsons, of Rockport," writes Mr. A. Howard Clark, says "that he was one of the first to go south after mackerel from that port. He went in 1817 in the schooner 'Defiance' of 35 tons. They went as far south as Cape May, and caught 60 barrels of mackerel, all of which were taken by drailing. They had outriggers for towing their lines, and the lead sinkers weighed from 4 to 6 pounds."

An item in the Cape Ann Advertiser of May 20, 1859, remarks:

"The practice of going south for mackerel has almost died out of late years, and this year there are but three or four vessels in the business. Some of the vessels which go in quest of bait take mackereling apparatus with them."

"The practice of going south for mackerel in spring," writes Mr. Earll, "was first begun in Maine by a Georgetown vessel, the 'Queen of the West,' Capt. Francis Lowe, in May, 1851. She was gone but a short time (four to six weeks), and returned with a full fare, after which she proceeded to the bay. The next year the schooner 'Arcola,' Capt. Warren Low, of Georgetown, joined the 'Queen of the West' on her southern spring trip, and in 1853 three went. Booth Bay sent none south until 1867, when the 'Cynosure' went, and Southport sent her first vessel south in 1868. In 1879 five or six went from this section. Vessels from Massachusetts, as stated above, had engaged in this fishery at even an earlier date."

G.—THE EARLY METHODS OF THE MACKEREL FISHERY (1620 to 1820).

35.—Catching mackerel with drag-seines.

The method chiefly practiced by the colonists of New England for the capture of mackerel was that of drag-seining, and we find as early as 1626 a record of the establishment, by Isaac Allerton, of a fishing station at Hull, where mackerel were seined by moonlight. There can be little doubt that the practice of fishing with baited hooks was also early introduced, and that in the seventeenth and eighteenth centuries groups of boats might have been seen, as at the present day, clustered together in the harbors, or near the outer shores, their crews busily engaged in hauling in the tinkers, and, occasionally, larger mackerel, which during the summer season found their way into these protected waters. It is not known when the custom of drailing for mackerel was first introduced, but it was, beyond question, the common method at the close of the last and the beginning of the present century.

In July, 1677, the records of the Plymouth colony show that the Cape Cod fishery was let seven years, at £30 per annum, to seine mackerel and bass, to certain individuals who are named. They were restricted

to take in the Plymouth colonists with them; and if none offer, to admit strangers.

The profits of the hire which accrued to the colony were sometimes distributed to the schools. (Mass. Hist. Collections, iii, 220.)

A writer in the Historical Society's collections gives the following description of these fisheries (vol. iv, 2d series, p. 232): "The aborginal name of this fish (the mackerel) is Wawunnebeseag, a plural term signifying fatness—a very descriptive and appropriate name. The mode of taking these fish is while the vessel is under quick way and the helm secured, when all are engaged at the long veered lines, of which it is said that one man will attend three, and it may be more. The first manner of taking mackerel was by seining by moonlight. This perhaps was first practiced by Mr. Isaac Allerton and his fishing company at Hull as early as 1626. After half a century the mode of fishing was changed to that of drailing with long lines while the vessel was under easy way; and this mode has been changed within these last twenty years (1811–1831). The mode of fishing generally practiced now is to invite the fish around the vessel while lying to by throwing out great quantities of fish cut in small pieces, and to take them with short lines held in the hand and drawn in with a single motion of the arm. By this method it is thought that thrice as many fish may be taken in a given time as by any other method. They are a capricious and sportive fish. In cloudy and even wet weather they take the hook with most avidity. They are very partial to the color of red; hence a rag of that hue is sometimes a bait. A small strip of their own flesh taken from near the tail is used with most success."

Seining mackerel with drag seines is still practiced extensively in the British provinces. That the practice was in vogue in Massachusetts less than fifty years ago is shown by the following item:

"Last week twenty barrels of mackerel were seined at one haul at Sandy Point by Captain Baker. His seine is 500 yards long. A few weeks ago he inclosed a multitude of fishes, principally menhaden shad. It is estimated that their number was 200,000."—(Gloucester Telegraph, June 30, 1838.)

In his history of Scituate, pp. 25–27, Samuel Deane writes: "In early times the shores of our bays were skirted with forest trees quite near to the water's edge. In the month of June, when all nature is in bloom, the volatile farina of the forest trees then floats in the air, and occasionally settles on the smooth surface of the seas. Then it is that this playful fish, attracted by this phenomenon, leaps and bounds above the surface of the water. So again, at a later season, in July and August, winged insects, carried away by the southwest winds, settle and rest on the bosom of the ocean, a welcome herald, it is said, to the mackerel-catcher. Such are the habits of many fishes; and hence the use of the fly as a bait by the angler of the trout streams."

Douglas, in 1747, says: "Mackerel, split, salted, and barreled for the

negroes in the Sugar Islands, are caught either by hook, seines, or meshes. Those by hook are the best, those by seines are worst, because in bulk they are bruised. Mackerel will not take the hook unless it have a motion of two or three knots; if quicker they will take the hook, but their jaw being tender gives way, and the mackerel is lost. There are two seasons of mackerel, spring and autumn; the autumn mackerel are the best; those of the spring appear about the middle of May, very lean, and vanish in two or three weeks."

36.—DRAILING FOR MACKEREL.

Captain Atwood writes: "In my boyhood, when I caught my first mackerel, nobody thought of jigging them. We then took them in the same way as bluefish are caught. My first experience in mackerel fishing took place when I was a little boy, about 1815. I went out with two old men. One of them fished in the stern of the boat, and when it did not sail fast enough the other and myself—I was eight years old at the time—had to row, in order, by the more rapid motion of the boat, to induce the fish to bite. They would not bite unless the line was towed. Two great long poles were run out, one just forward, in such a manner that our vessel had the appearance of a long-armed spider. The poles were straight, and one line was fastened at one part, and another line on the end of the pole, in order to have them separated. This style of fishing continued until about the time when I began to go to sea, about 1820. Jigging for mackerel then commenced, bait being thrown overboard, and the fish being thus attracted alongside of the vessel, and this soon came into general use."

Capt. James Turner, of Isle au Haut, Me., who assures us that as late as 1815 the fishermen drailed for mackerel, gives the following account of this method of fishing:

"While drailing, the sails were trimmed in such a manner that, when the helm was partly down, the vessel would 'jog' along slowly, making a little leeward drift, so that the lines would trend off at a slight angle from the weather side. Each man had one line, the end of which was attached to the end of a pole that was fastened to the vessel's rail, projecting out about 8 feet at right angles with the side of the vessel. The fisherman held in his hand a hauling-line which was attached to the middle of the one fastened to the pole, so that he might know when a fish took the hook and be able to haul it in."

"About a pound of sheet lead was wound around the line a foot above the hook. When the vessel was engaged in fishing, the man standing forward threw over a small amount of fine bait (which had previously been chopped with hatchets) occasionally, scattering it along in order to attract the fish, and keep them near the vessel."

The following paragraphs are quoted from an essay in the Fishermen's Memorial and Record Book:

"Trailing was one of the means used to catch mackerel in the olden

time, and one of our old fishermen informs us that when a lad he distinctly remembers of being out in Boston Bay, one day, in a boat with his father, when he saw a vessel which looked very strangely to his young eyes, and, boy-like, he asked his father what sort of craft it was.

"'That's a trailer, my boy, and we'll speak with him,'" was the reply.

"They sailed quite near, and they observed that the vessel had outriggers of long poles on each side, commencing forward at about seventeen feet, and tapering off to five feet aft. At the ends lines were fastened, about twenty fathoms long, with a sinker of four pounds, and hook below. To each of these lines was attached a bridle, reaching to the side of the vessel, where the fishermen stood to feel the bites. This particular vessel was from Hingham, and had been out four weeks without receiving even a bite, and the skipper said he was going to give it up and go home."

"The present mode of catching mackerel by drifting and tolling with bait did not come into general use until after 1812. The gear for catching, previous to that, was a white hempen bob-line, as it was called, and the style of fishing was termed 'bobbing' mackerel. These lines were some seven fathoms in length, with a leaden sinker two inches long, and shaped like a thin pea-pod. At one end was a ganging about a foot long, for the hook. Every few minutes off would go the hook, and extra hooks were always in readiness to replace those lost. This mode continued until the year 1816, when Abraham Lurvey, of Pigeon Cove, discovered a method of running lead around the hooks, and which were afterward called jigs. This he kept secret for many months. The hooks then in use were nearly as large as the haddock hooks of to-day. The small lines and fly-lines did not come into use until about 1823. About this time the gaff was introduced, and was abandoned after being used some ten years."*

It seems scarcely necessary to discuss more in detail the methods used during the first two centuries of the mackerel fishery of North America. In a following chapter an effort will be made to present a chronological history of the fishery from its inception to the present time.

* The mackerel gaff was used to some extent, by the hook and line fishermen, as late as 1865, and possibly even since that time.

III.—LEGISLATION FOR THE PROTECTION OF MACKEREL.

H.—LAWS, PETITIONS, AND PROTESTS.

37.—LEGISLATION IN THE SEVENTEENTH AND EIGHTEENTH CENTURIES.

At an early day in the history of the United States a failure of the mackerel fishery was apprehended. The following notices of legislation, copies of laws, and newspaper extracts will serve to give an idea of the state of public opinion at different periods from 1660 to the present time:

1660.—*Early regulation of the mackerel fishery.*—The commissioners of the United Colonies recommended to the several general courts to regulate the mackerel fishery; conceiving *that* fish to be the most staple commodity of the country. Few, who have not investigated the subject, have at the present day an adequate conception of the importance of this branch of productive industry.—(Freeman's Hist. of Cape Cod, Boston, 1862, vol. i, p. 239.)

1670.—*Prohibition of early mackerel fishing by laws of Plymouth Colony.*—Wheras wee haue formerly seen Great Inconvenience of taking mackerell att vnseasonable times wherby there encrease is greatly deminished and that it hath bine proposed to the Court of the Massachusetts that some course might be taken for preventing the same and that they have lately drawne vp an order about the same this Court doth enacte and order that henceforth noe makerell shalbe caught except for spending while fresh before the first of July Annually on penaltie of the losse of the same the one halfe to the Informer and the other halfe to the vse of the Collonie; and this order to take place from the 20th of this Instant June.—(Plymouth Colony Records, vol. xi, 1623–1682. Laws, p. 228.)

1684.—*Prohibition of mackerel seining.*—In 1680, Cornet Robert Stetson, of Scituate, and Nathaniel Thomas, of Marshfield, hired the Cape fishery for bass and mackerel. In 1684, the court enacted a law "prohibiting the seining of mackerel in any part of the colony"; and the same year leased the Cape fishery for bass and mackerel to Mr. William Clark for seven years, at £30 per annum.

Subsequently to 1700, it is certain that the mackerel were very abundant in Massachusetts Bay. It was not uncommon for a vessel to take a thousand barrels in a season. The packing, as it is called, was chiefly done at Boston and Plymouth.—(Deane's History of Scituate, Mass.)

1692.—*Repeal of prohibitory laws in Massachusetts.*—And be it further

enacted and declared, That the clause in the act, entituled "An Act for the Regulating and Encouragement of Fishery", that henceforth no mackeril shall be caught (except for spending whilst fresh), before the first of July annually, be and hereby is fully repealed and made void, anything therein to the contrary notwithstanding. [Passed February 8, 1692–'3.]—(Acts and Resolves of the Province of Massachusetts Bay, vol. 1, 1692–1714, p. 102.)

1692.

AN ACT for the regulating and encouragement of fishery.

Upon consideration of great damage and scandal, that hath happened upon the account of pickled fish, although afterwards dried and hardly discoverable, to the great loss of many, and also an ill reputation on this province, and the fishery of it,—

Be it therefore enacted by the Governor, Council and Representatives, convened in General Court or Assembly, and it is enacted by the authority of the same,

[SECT. 1.] That no person or persons whatsoever, after the publication hereof, shall save or salt any sort of fish (that is intended to be dried) in cask or fattes, or any other way than what hath formerly and honestly been practised for the making of dry fish, on penalty of forfeiting all such fish so salted and pickled, whether it be green or drye; the one moiety thereof to the use of the poor of the town where the offence is committed, and the other moiety to the person that shall sue for the same.

And it is further enacted by the authority aforesaid,

[SECT. 2.] That henceforth no mackrel shall be caught (except for spending whilst fresh) before the first of July annually; and no person or persons whatsoever, after the publication hereof, shall at any time or place within this province take, kill, or hale ashore any mackrel, with any sort[s] of nets or sa'ens whatsoever, on penalty of forfeiting all such mackrel so taken or haled ashore, and also all such nets or sa'ens which were so imployed; the one-half thereof to their majesties towards the support of this their government, and the other half to him or them that shall inform and sue for the same. And all justices are hereby impowered, and required to grant their warrants for the seizing of the same and the aforesaid forfeitures, or the receiving of the like value in currant money of this province. [Passed November 26, 1692.]

[Acts and Resolves of the Province of Massachusetts Bay. Vol. I, 1692–1714, p. 71. Province Laws, 1692–3. Chap. XXXII.]

1702.—*Re-enactment of prohibitory laws.*

AN ACT for the reviving and re-enacting a clause in the act intituled "An act for the regulating and encouragement of fishery" that hath been for some time repealed by the General Assembly.

Whereas, in the second paragraph of the said act it is enacted "that henceforth no mackerel shall be caught (except for spending whilst fresh)

before the first of July annually"; and whereas the said clause, by an act afterwards made and passed by the general assembly [1692–3 Feb. 8.], was repealed and made void, which said repeal and the unseasonable catching of mack[a]rel thereupon hath been experienced to be very prejudicial to this province,—Be it therefore enacted by His Excellency the Governour, Council and Representatives [convened] in General Court or Assembly, and it is enacted by the authority of the same, That the said clause above-recited shall be and is hereby revived and re-enacted, and that henceforth no person or persons whatsoever shall presume to catch or cause to be caught any mack[a]rel, (except for spending whilst fresh,) before the first of July annually, on penalty of forfeiting all the mack[a]rel so caught contrary to the true intent and meaning of this act, and twenty shillings per barrel over and above for each barrel of the same; the one-half of the said forfeiture to be to her majesty for and towards the support of this her government, and the other half to him or them that shall inform and sue for the same in any of her majesty's courts of record within this province. [Passed November 11, 1702; signed by the Governor and published November 21, 1702.]—(Acts and Resolves of the Province of Massachusetts Bay, vol. i, 1692–1714, p. 507.)

38.—Protests against gigging and seining in the present century.

1838–9.—*Protests against gigging.*—The Boston Journal protests strongly against the barbarous method of taking mackerel called "gigging,"* and urges that it is not only liable to censure on the score of humanity, but it is also *impolitic*, and that if this destructive method of fishing is generally continued a few years longer it will break up the fishery. We have for a year or two past entertained a similar opinion, and probably the complaints now so frequently made by the fishermen that, though mackerel are plenty, they "will not bite," is owing to the custom of "gigging." There is hardly anything which possesses life that has so little instinct as not to become very shy under such barbarous inflictions. It is obvious that all which are hooked in this manner are not taken on board; the gig frequently tears out, and thousands, millions of these fish are lacerated by these large hooks and afterwards die in the water.—(Newburyport Herald, Gloucester Telegraph, Sept. 23, 1838.)

The following protest appeared in the Gloucester Telegraph, Wednesday, August 7, 1839, it being a quotation from the Salem Register:

"All the mackerel men who arrive report the scarcity of this fish, and at the same time I notice an improvement in taking them with nets at Cape Cod and other places. If this speculation is allowed to go on without being checked or regulated by the government, will not these fish be as scarce on the coast as penguins are, which were so plenty before

* The method of capture called "gigging" here is undoubtedly gaffing, since a fish-gaff is even yet called a "gig" by some of our fishermen.

the Revolutionary war that our fishermen could take them with their gaffs? But during the war some mercenary and cruel individuals used to visit the islands on the eastern shore where were the haunts of these birds for breeding, and take them for the sake of the fat, which they procured, and then let the birds go. This proceeding finally destroyed the whole race. It is many years since I have seen or heard one except on the coast of Cape Horn. In 1692 the General Court passed an act prohibiting the taking of mackerel before the first day of July annually, under penalty of forfeiting the fish so taken. In 1702 this act was revived with additional penalties—besides forfeiting the fish and apparatus for taking, 20 shillings per barrel, and none to be taken with seines or nets.

"A FISHERMAN.

"MARBLEHEAD, *August* 3, 1839."

1859.—*Protests against the use of seines.*—A petition is now before the Committee on Fisheries, in the House, to abolish the catching of mackerel in seines on our coast. As mackerel can now be caught only in this way, and many of our people are interested in this business, it becomes highly important that any such stupid petition should be prostrated at once. Mr. Gifford has asked for a delay in the petition, and Mr. Atwood has written to show the nature of the business upon our coast. One thing is certain, if we do not take the mackerel in seines or nets we shall get none at all.—(Provincetown Banner, February, 1859.)

1870–1882.—*Protest against the purse-seine.*—Since the general adoption of the purse-seine no year has passed without a considerable amount of friction between fishermen using this engine of wholesale destruction in the capture of mackerel and menhaden and those engaged in fishing with other forms of apparatus. Petitions to Congress and State legislatures have been made from both sides, and in some instances laws have been passed by State legislatures prohibiting the use of menhaden seines within certain specified tracts of water, such as the Chesapeake Bay. These laws, while especially antagonistic to menhaden fishing, were aimed chiefly at the purse-seine as a means of capture, and would doubtless have been equally prohibitory of mackerel fishing with purse-seines had this been attempted within the limits. In 1878 a delegation of fishermen from Portland, Me., and Gloucester, Mass., visited Washington for the purpose of securing the passage of a law prohibiting the use of purse-seines in the mackerel fishery. In 1882 the clamors of shore fishermen, especially on the coast of New Jersey, led to the appointment of a committee of the United States Senate, which at the time of printing this report is engaged in taking testimony regarding the effect of the purse-seine upon the menhaden fishery, and incidentally upon other fisheries of the coast. The labors of this committee will probably result in the recommendation of some form of legislation which will apply, in part at least, to the mackerel fishery.

In the summer of 1882 a serious commotion was caused among the

mackerel fishermen by the announcement of the intention of a number of menhaden fishermen to employ their steamers and nets in the mackerel fishery. It was the impression among these men that the mackerel were to be used for the manufacture of oil and guano, but this has been denied by Capt. David T. Church and other representative men, who, reasonably enough, state that they could not afford to use so valuable a fish for this purpose, and who claim that they have an undoubted right to use their steamers in the capture of mackerel for sale fresh in the markets and for pickling.

As a matter of record we reproduce the following paragraphs from an editorial in the Cape Ann Advertiser, July 14, 1882:

"It is not a difficult matter to anticipate the result if this class of steamers engage in this branch of the fisheries. There is no reason to doubt their ability to catch almost or quite as many mackerel as they have formerly caught menhaden. Several of them are large, capable of carrying 2,800 barrels of fish in bulk. These carry a double gang of men, and apparatus to correspond. During moderate weather, when mackerel generally school the best, and sailing vessels find it difficult to move, these steamers can play around the fleet of schooners, catch almost every fish that shows itself, and carry them away to be used, not for food fish as they were intended, but for oil and guano, to enrich a few men at the expense of many."

"If the steamers were to engage in the mackerel fishery, selling their catch for food, and were obliged to spend the requisite time for dressing them, which would debar them from an overcatch and carrying them to market, thus placing them on somewhat equal footing with the other fishermen, there could be no reasonable objection to their employment; but it certainly seems, in view of this startling innovation, that some decided action should be taken by 'the powers that be' to prevent the catch of mackerel for the purpose of manufacturing oil and guano. They are altogether too valuable for such a purpose, and the risk of breaking up the schools and driving them almost entirely from our waters, as has been the case with menhaden, is altogether too great.

"Unless some action is taken, and taken at once, and stringent laws enacted, we may confidently look forward to the destruction in a few years of one of the important industries of New England and the permanent and serious injury of large communities which now derive a considerable part of their support from the mackerel fishery."

IV.—STATISTICS OF THE MACKEREL FISHERY IN 1880.

[By R. Edward Earll.]

I.—TABLES SHOWING NUMBER OF MEN, NUMBER AND VALUE OF VESSELS, AND VALUE OF PRODUCT.

39.—Table showing the number of vessels and men employed in the mackerel fishery.

Ports.	Total.					Vessels engaged in the mackerel fishery only.					Vessels engaged in the mackerel and other fisheries.				
	Vessels.	Tonnage.	Value.	Value of gear and outfit.	Men.	Vessels.	Tonnage.	Value.	Value of gear and outfit.	Men.	Vessels.	Tonnage.	Value.	Value of gear and outfit.	Men.
Grand total	468	23,551.64	$1,027,910	$1,094,450	5,043	235	15,469.49	$675,195	$699,900	3,134	233	8,082.15	$352,715	$394,550	1,909
MAINE.															
Eastport	*1	52.49	2,000	2,900	13	1	52.49	2,000	2,900	13					
Hancock	1	18.11	150	1,100	4						1	18.11	150	1,100	4
Tremont	2	41.79	130	2,200	14						2	41.79	130	2,200	14
Cranberry Island	4	178.43	8,200	8,000	45						4	178.43	8,200	8,000	45
Bluehill	1	10.50	250	650	3	1	10.50	250	650	3					
Brooklin	3	115.82	4,100	4,250	25	1	67.66	3,000	2,900	14	2	48.16	1,100	1,350	11
Deer Isle	18	454.01	12,485	19,150	105	5	262.61	8,900	12,000	54	13	191.40	3,585	7,150	51
Sedgwick	1	57.95	3,000	2,500	13	1	57.95	3,000	2,500	13					
Bucksport	1	11.43	600	800	4						1	11.43	600	800	4
Swan's Island	14	664.40	23,500	30,500	137	10	508.49	22,350	27,700	126	4	65.91	1,150	2,800	11
Isle au Haut	3	52.84	1,300	2,100	15						3	52.84	1,300	2,100	15
Belfast	3	66.73	1,000	2,300	17						3	66.73	1,000	2,300	17
Lincolnville	1	20.48	375	700	4						1	20.48	375	700	4
Camden	3	161.54	4,000	8,500	41	3	161.54	4,000	8,500	41					
North Haven	14	451.99	17,600	22,800	107	6	338.18	13,500	18,000	72	8	113.81	4,100	4,800	35
Vinal Haven	5	52.22	1,250	3,000	16						5	52.22	1,250	3,000	16
Rockland	1	30.84	6,000	2,000	11	1	30.84	6,000	2,000	11					
Saint George	3	95.45	4,150	4,800	26	1	41.58	2,000	2,200	11	2	53.87	2,150	2,400	15
Cushing	5	64.55	1,400	5,000	15	1	9.06	450	1,100	2	4	55.49	950	3,900	13
Friendship	13	217.62	7,825	17,000	41	1	14.16	1,500	2,500	2	12	203.46	6,125	14,500	39
Matinicus Island	4	90.61	3,650	5,150	26	1	43.96	1,600	2,000	10	3	46.68	2,250	3,150	16
Waldoboro'	2	29.59	350	2,100	5	1	12.84	200	1,050	2	1	16.75	150	1,050	3
Bremen	1	16.73	300	1,100	4						1	16.73	300	1,100	4
Bristol	6	86.25	2,950	5,850	25						6	86.25	2,950	5,850	25
Boothbay	13	773.89	29,000	37,000	171	8	515.38	21,000	26,000	113	5	258.51	8,000	11,000	58
Southport	5	305.13	13,500	18,400	68	1	60.91	1,500	2,900	13	4	244.22	12,000	10,500	55

Wiscasset	1	53.59	$800	$2,800	12					1	53.59	$800	$2,800	12
Portland	46	1,940.56	83,000	98,100	434	18	1,105.98	$45,000	$55,500	229	28	834.58	38,000	42,800	205
Kennebunkport	1	6.88	250	800	2						1	6.88	250	600	2
Total	176	6,122.45	233,715	306,150	1,403	61	3,384.13	136,850	170,400	729	115	2,738.32	96,865	135,750	674
NEW HAMPSHIRE.															
Portsmouth	11	567.53	29,300	25,700	113	3	292.09	15,500	10,500	47	8	275.44	13,800	15,200	66
MASSACHUSETTS.															
Newburyport	11	554.53	24,170	30,500	123	6	351.96	11,650	18,000	70	5	202.57	12,500	12,500	53
Essex	2	156.91	9,500	6,000	30	2	156.91	9,500	6,000	30					
Rockport	10	487.17	27,000	26,900	116	3	191.26	10,000	8,700	40	7	295.91	17,000	18,200	76
Gloucester	113	6,707.79	318,745	310,900	1,394	60	4,000.32	183,345	190,300	810	53	2,707.47	135,400	120,600	584
Salem	2	141.29	5,200	6,000	26	2	141.29	5,200	6,000	26					
Marblehead	3	107.13	8,300	7,800	31						3	107.13	8,300	7,800	31
Swampscott	12	559.85	30,400	31,200	142						12	559.85	30,400	31,200	142
Boston	25	1,612.28	50,700	73,400	336	17	1,267.77	41,350	54,400	245	8	344.51	9,350	19,000	91
Hingham	2	140.53	5,400	6,400	28	2	140.53	5,400	6,400	28					
Cohasset	6	443.56	22,000	19,200	86	6	443.56	22,000	19,200	86					
Duxbury	4	157.27	5,700	10,000	36						4	157.27	5,700	10,000	36
Wellfleet	34	2,569.55	109,450	102,900	470	34	2,569.55	109,450	102,900	470					
Truro	1	65.40	2,200	3,100	14	1	65.40	2,200	3,100	14					
Provincetown	5	343.19	13,600	15,000	74	5	343.19	13,600	15,000	74					
Orleans	2	150.80	7,000	6,200	29	2	150.80	7,000	6,200	29					
Chatham	6	421.77	22,900	18,400	89	5	376.83	19,800	16,000	79	1	44.94	3,100	2,400	10
Harwick	19	1,101.51	50,250	43,300	244	12	878.80	43,500	37,200	191	7	222.73	6,750	6,100	53
Dennis	18	735.24	30,500	31,200	185	12	547.42	24,850	22,800	132	6	207.82	5,650	8,400	53
Barnstable	3	142.56	5,400	6,400	26						3	142.56	5,400	6,400	26
Fair Haven	1	55.63	2,500	1,000	12						1	55.63	2,500	1,000	12
Total	279	16,673.98	750,895	755,800	3,493	169	11,625.59	508,845	512,200	2,334	110	5,048.39	242,050	248,600	1,109
CONNECTICUT.															
New London	2	187.68	14,000	6,800	34	2	187.68	14,000	6,800	34					

*This vessel, though owned at Eastport, is chartered and run by Portland capitalists, and therefore more properly belongs to the Portland fleet.

40.—TABLE SHOWING THE MACKEREL FISHING FLEET OF THE UNITED STATES, CLASSIFIED BY STATES, ACCORDING TO FISHING GROUNDS.[1]

State.	Total.			Cape Hatteras to Gulf of Maine, inclusive.			Cape Hatteras to Gulf of Saint Lawrence, inclusive.			Block Island.			Gulf of Maine.			Gulf of Maine and Gulf of Saint Lawrence.			Gulf of Saint Lawrence.		
	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.
Maine	176	6,122.45	1,403	20	1,288.70	264	3	215.67	41	.....	.....	.....	146	4,197.09	1,005	5	282.96	66	2	138.03	27
New Hampshire	11	567.53	113	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	567.53	113	.....	.....	.....	.....	.....	.....
Massachusetts	279	16,673.98	3,493	38	2,513.02	538	3	178.43	41	12	201.82	59	186	11,195.60	2,356	24	1,580.79	308	16	1,004.52	201
Connecticut	2	187.68	34	.....	.....	..	.....	.....	.....	.....	.....	.....	.....	.....	..	2	187.68	34	.....	.....	.....
Total	468	23,551.64	5,043	58	3,801.72	792	6	394.10	82	12	201.82	59	343	15,960.22	3,474	31	2,051.23	408	18	1,142.55	228

[1] The figures for Massachusetts represent the condition of the fleet for 1879; the fleets for the other States are shown for 1880. During the last-named year not over 25 American vessels visited the Gulf of Saint Lawrence, some of these remaining only a few weeks.

41.—TABLE SHOWING THE MACKEREL FISHING FLEET OF THE UNITED STATES, CLASSIFIED BY STATES, ACCORDING TO KIND OF APPARATUS USED

State.	Total.			Vessels using line.			Vessels using net.			Vessels using line and purse-seine.			Vessels using purse-seine.		
	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.
Maine	176	6,122.45	1,403	51	773.63	205	40	562.41	137	.....	.....	.....	85	4,786.41	1,061
New Hampshire	11	567.53	113	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	567.53	113
Massachusetts	279	16,673.98	3,493	30	960.06	211	4	78.61	28	5	257.64	52	240	15,437.67	3,202
Connecticut	2	187.68	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	187.68	34
Total	468	23,551.64	5,043	81	1,673.69	416	44	641.02	165	5	257.64	52	338	20,979.29	4,410

42.—THE PRODUCTS OF THE NORTH AMERICAN MACKEREL FISHERY FOR 1880. (With tables.)

From the earliest settlement of the country the mackerel fisheries have been extensively prosecuted by a large number of people living along the New England coast as well as by many of the inhabitants of the British Provinces. The catch has varied greatly from time to time, and seasons of extreme plenty have often been followed by those of remarkable scarcity. Various theories have been advanced to account for this fluctuation. Many have been inclined to attribute it to overfishing or to the apparatus employed in the fishery, while others claim that the movements of the fish are affected by natural causes, such as temperature, currents, the presence or absence of food, and the like, over which man has little or no control. Whatever the causes that influence the movements of the fish, the fact of great variation in the abundance of the species from time to time remains.

In 1804, according to the returns of the various fish inspectors, 8,079 barrels of mackerel were packed in Massachusetts, while in 1814, only 1,349 barrels were put up. In 1831 the quantity was increased to 383,658, this being the largest amount ever inspected in the State. A period of scarcity followed, and between 1839 and 1845 the inspection returns show an average of only 67,674 barrels annually. About 1860 the fish were again abundant, and for eight years the quantity packed averaged 246,877 barrels. This period of plenty was in turn followed by one of scarcity, which culminated in 1877, at which time only 105,017 barrels were inspected, and the fishery was practically a failure, resulting in great loss both to fishermen and capitalists. Fortunately this condition of affairs is at an end, and the fishery is again in a prosperous condition; the catch of the New England fishermen at present, if we include the fish sold fresh, being larger than at any time since the origin of the fishery.

In 1880 the New England mackerel fishermen met with marked success, though those of the British Provinces were not so fortunate. By the middle of March a number of the Maine and Massachusetts vessels sailed for the South to engage in the spring fishery, and by the 20th of the following month the last of the fleet, which consisted of 64 sail, averaging 65.66 tons each, were under way. The season opened with a haul of 25,000 mackerel taken off the Virginia capes on the 2d of April. These were carried to New York where they met with a ready sale at good figures. From that time mackerel were taken frequently, the fleet working northward with the fish as the season advanced, reaching Long Island about the last of April, and Cape Cod a few weeks later. The season was not a very satisfactory one for the Southern fleet, as the catch was small, and the fish were of poor quality, a majority of the vessels engaged making comparatively light stocks, while many of them scarcely paid expenses. As the summer approached, the fishing improved greatly, the fish increasing both in number and quality, and the Southern fleet

was joined by a large number of vessels from the various fishing ports. Later, as the vessels arrived from their trips to the codfish banks, many were fitted out to engage in the mackerel fishery, and by the 1st of August the fishing was at its height, the fleet numbering 468 sail, averaging a trifle over 50 tons apiece. Of this number 343 were provided with purse-seines for engaging in the off-shore fisheries, while 125 fished with hook or net chiefly on the in-shore grounds. The value of this fleet, including the fishing gear and the outfits, reached $2,122,360, and 5,043 men were employed. A little later in the season about 25 of the vessels proceeded to the Gulf of Saint Lawrence in the hope of meeting with better success; but few fish were seen, and the venture resulted disastrously to a large majority of them, many failing to pay expenses, while a few returned without having caught a fish. These vessels on their return at once joined the home fleet, and meeting with good success, most of them were enabled to make good the loss which they had previously sustained.

About the 1st of July an unprecedentedly large body of mackerel entered the Gulf of Maine, many of them visiting the shore-waters, entering the various harbors and coves, where they remained for some weeks. During their stay in these in-shore waters thousands of men and boys engaged in their capture from small boats, and in many localities a majority of the male population participated in the fishery to a greater or less extent. The pound-nets along the southern coast of New England were peculiarly successful, while large quantities were taken in the traps and weirs between Cape Cod and Penobscot Bay. Probably not less than 10,000 people along various portions of the coast of Maine were engaged in mackerel hooking during some portion of the season, though many of them fished chiefly for pleasure, while others caught only limited quantities for home supply. About 3,500 followed the business regularly for some time, many of them realizing considerable profit from the work. In Massachusetts a similar condition of affairs existed, and thousands of persons engaged in the fishery from small boats to a greater or less extent, fully 2,000 fishing extensively for profit.

Most of the fish taken by both the vessel and boat fishermen were of uniform size and of excellent quality. Few extremely large ones were secured, while there was also a notable absence of "tinkers." Over two-thirds of the catch were branded as "twos," many of them going as "extras." During the season, which lasted till the 1st of December, nearly 132,000,000 pounds of mackerel were taken. Of this quantity the Massachusetts fishermen caught 95,000,000 pounds, and those of Maine secured 31,000,000 pounds, the bulk of the remainder being taken by the citizens of New Hampshire and Connecticut. Over 75 per cent. of the entire catch was salted, about 22,000,000 pounds were sold fresh for food, nearly 5,000,000 pounds were used for canning, and the rest were sold for bait or for fertilizing purposes. The value of the catch, as placed upon the market, was $2,606,534. The following table shows in detail the extent and value of the fishery for the United States during the year:

Table showing, by States, the quantity of mackerel taken by the New England fishermen in 1880, and the value of the same in the condition in which they were placed upon the market.

State.	Total.		Disposition of catch.				
	Pounds of round mackerel taken.	Value of mackerel as sold.	Pounds used for pickling.	Pounds used for canning.	Pounds used fresh for food.	Pounds used fresh for bait.	Pounds used fresh for fertilizer.
Total	131, 939, 255	$2, 606, 534	103, 142, 400	4, 957, 455	22, 239, 400	1, 100, 000	500, 000
Maine	31, 694, 455	659, 304	27, 342, 000	1, 252, 455	3, 000, 000	100, 000	.....
New Hampshire	2, 573, 000	48, 181	2, 379, 600	.....	193, 400	.....	.....
Massachusetts	95, 528, 900	3, 858, 342*	72, 153, 900	3, 705, 000*	18, 170, 000	1, 000, 000	500, 000
Rhode Island	89, 000	1, 669	.....	.....	89, 000	.....	.....
Connecticut	1, 303, 900	24, 976	1, 266, 900	.....	37, 000	.....	.....
New York	750, 000	14, 062	.....	(?)	750, 000	.....	.....

* Including both the fresh and salt mackerel used for canning.

As already intimated, there was a great falling off in the Provincial mackerel fisheries during the year, the bulk of the catch, which amounted to over 70,000,000 pounds, according to the Canadian Fishery Report,† being taken by the shore fishermen of Nova Scotia and Prince Edward Island. Of the entire quantity 233,669 barrels were pickled. In the Canadian report the average price of the salt mackerel is given as $9.25 per barrel, but as the fish were much inferior in quality to the American catch, these figures are evidently incorrect. Statistics show that 105,730 barrels of the above, equal to nearly one-half of the catch, were marketed in the United States (and it is fair to presume that these were of average quality), where they were ordinarily sold at lower figures than the fish taken by the New England fleet. If we suppose the Canadian fish to be equal to those taken on our own shores (a supposition which is hardly warranted), the value of the catch, as given by the Canadian authorities, must still be reduced by $818,662, as the average price of the New England fish during the season was only $5.75 per barrel.

The following table shows in detail the extent of the catch for the several Provinces:

†Supplement No. 2 | to the Eleventh Annual Report of the | Minister of Marine and Fisheries | for the year 1880. ═══ Fisheries Statements | for the year | 1880.——— Ottawa: | Printed by MacLean, Roger & Co., Wellington street. | 1881.

Table showing the quantity and value of the mackerel taken in the Dominion of Canada in 1880, as shown by the Canadian Fishery Report.

Provinces.	Grand total.			Pickled mackerel.			Canned mackerel.			Page of Canadian Report from which the figures are taken.
	Pounds fresh mackerel required.	Value of prepared products according to Canadian Fishery Report.	Value of prepared products at New England prices.	Number of barrels put up.	Average price per barrel.	Value.	Number of cans put up.	Average price per can.	Value.	
Total	70,271,260	$2,178,966	$1,355,441	233,669	$9.253	$2,162,258	*13,707	$0.147 –	$16,708	.....
Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	292
Quebec	1,505,100	40,878	28,848	5,017	8.15	40,878	.....	.....	.....	pp. 53, 76, 100, 118.
Nova Scotia	37,990,080	1,270,368	731,184	126,432	10.00	1,264,320	40,320	.15	6,048	165
New Brunswick	5,994,640	206,464	119,906	19,650	10.00	196,500	66,427	.15	9,964	215
Prince Edward Island	24,781,440	661,256	475,503	82,570	8.00	660,560	6,960	.10	696	249
British Columbia	.....	.....	.....	.....	.....	.....	.....	.....	.....	269

*In estimating the pounds of fresh mackerel required and the value of prepared products at New England prices, the cans shown here are regarded as 1-pound cans.

In the tables from which the above summary has been compiled, no allowance seems to have been made for local consumption. A rough estimate of the amount used in this way would be 18,000,000 pounds, making a total catch for the Provinces of about 88,000,000 pounds, worth, at prices current in the United States, not far from $1,620,000.

Mackerel are not abundant in the waters of the Newfoundland coast, and few are taken by the fishermen. The returns for the year ending July 31, 1881, show that only 181 barrels were exported. This quantity, which equals 54,300 pounds of fresh fish, doubtless represents the bulk of the mackerel taken, as few are consumed locally. Allowing an equal quantity for local consumption, we have only about 110,000 pounds, valued at $1,650, taken by the islanders.

By combining the catch of the New England, Canadian, and Newfoundland fishermen, we have the total product of the mackerel fishery for the western Atlantic in 1880. This is found to be about 220,000,000 pounds of round mackerel, valued at $4,228,000. This value represents the fish as they are first placed upon the market. If the value to the consumer is desired, the figures must be nearly doubled, to include the transportation charges and the profits of the various middlemen who handle them.

V.—THE MACKEREL-CANNING INDUSTRY.

By R. Edward Earll.

J.—THE ORIGIN AND DEVELOPMENT OF THE MACKEREL-CANNING INDUSTRY.

43.—The methods and statistics of canning.

The first experiments in the canning of fish on the American continent were conducted at Halifax, Nova Scotia, by Mr. Charles Mitchell, a native of Aberdeen, Scotland, who came to America in 1840 to engage in this work. During his stay in Halifax he was engaged in the canning of salmon and meats of various kinds. Later he removed to the United States and continued the work, putting up lobsters, salmon, and such other fish as were thought desirable. It was in this way that the value of the mackerel as a canned fish came to be known to our people. Prior to 1850 a few were canned in Boston and small quantities were put up at the lobster canneries in the State of Maine. From that date the business has been continued on the Maine coast, though for many years it was very limited, as the qualities of the mackerel when prepared in this way were not at first fully appreciated. The trade, however, has increased slowly from year to year, until canned mackerel are now handled by the principal dealers of all of the larger cities throughout the entire country.

Prior to 1872 the only canned mackerel seen in our markets were fresh fish prepared in hermetically sealed cans by means of the ordinary pro-

cess. At this time it was found that there was a growing prejudice against salt mackerel, owing to the size and quality of the packages in which they were placed upon the market. The smallest packages known to the trade were kits holding from 15 to 25 pounds each. These contained more fish than the average family cared to purchase at a time; and after a package was once opened, unless it was properly cared for, the brine was apt to leak out, leaving the fish exposed to the air, thus causing them to rust and otherwise deteriorate.

In the fall of 1872 Mr. Edward Pharo, of Philadelphia, obtained a patent covering the packing of salt mackerel in small hermetically sealed packages.* For some time the business was very limited, but later

*We are indebted to Mr. A. Howard Clark for the following letter of specifications regarding Mr. Pharo's patent:

IMPROVEMENT IN PUTTING UP SALT MACKEREL AND SIMILAR FISH.—(Letters Patent No. 132,316, October 15, 1872.)

* * * Heretofore salt mackerel have been put up in wooden barrels, kegs, and kits. The form or kind of vessel was made necessary by the fact that it was difficult or practically out of the question to make a square water-tight box. Hence, also, the size of the package was limited; that is, no package smaller than the kit—which holds, say, about 25 pounds of fish—could be conveniently employed. The result was that many families were deprived of purchasing from first hands, as even the smallest-sized package—a kit—is much too large for many persons to buy. Another objection was on the part of dealers who, not selling in bulk, were obliged to open the packages and handle the mackerel, a necessity particularly disagreeable to country dealers, who keep stocks of silk and dry goods which are soiled by a contact with brine. The odor, too, arising from an open barrel of salt mackerel is held in extreme repugnance by many people. To obviate these several objections I have devised a method whereby salt mackerel can be put up in any sized packages, so as to come within the reach of persons of limited incomes, which will enable the dealer to keep on hand a stock whence no offensive odor arises, and which can be disposed of without breaking packages. My invention, then, consists in putting up salt mackerel in hermetically sealed packages, preferably in metallic boxes. The boxes are made of any size and shape, though I prefer to make them cubical in form, and of dimensions to hold, say, five, ten, or fifteen pounds of mackerel. When metal is employed in the construction of the boxes, I design using a wash or varnish to protect the same from the action of the pickle. When metal is not used, but instead some material which may not be acted upon by the brine, this wash may be dispensed with. Although metal is deemed the most suitable material for the boxes, India rubber or some other substance may be advantageously employed.

Besides those already enumerated, another advantage of this method of putting up salt mackerel is that the purchaser pays only for what he gets. Thus a quarter barrel of mackerel is supposed to run fifty pounds, and a purchaser, in buying a package of that size, imagines that he gets that quantity. Frequently, however, the packages run short; a quarter barrel, for instance, of "repacked" containing generally only about thirty-five pounds. When, however, he buys by the pound, as he must do in this case, he pays, as already remarked, only for what he gets. Still another advantage of this method is that, as I design using only the best quality of fish, the interest of the purchaser is consulted, which is not always the case now, as the packer, not having a due regard for reputation, puts up an inferior quality of goods, and does not give full weight.

What I claim as my invention, and desire to secure by letters patent, is the herein-described method of putting up salt mackerel, namely, in a hermetically sealed box

EDW. A. PHARO.

the fish dealers of the principal cities began to realize the importance of this method for increasing the demand for salt mackerel, though, as far as we can learn, the fact that a patent had been issued has from the first been entirely ignored. In the spring of 1879 Henry Mayo & Co., of Boston, engaged extensively in mackerel canning, utilizing the ordinary salt fish, which were put up in tin cans holding from five to ten pounds each. A little later a number of the principal fish dealers of Boston and Gloucester turned their attention to the business, which soon came to be very extensive. The quantity put up in 1880 was double that for 1879, and the products for 1881 were considerably in excess of those of 1880. The present season, according to Mr. W. A. Wilcox, there is a notable falling off in the business, and the quantity canned will be quite small; the decrease being largely due to the loss occasioned by the rusting of the cans. If this difficulty can be overcome the trade seems destined to develop enormously, as the size of the package, and the convenience of handling and keeping the fish have brought them into favor among the consumers.

In the spring of 1880 parties interested in the preparation of sardines at Eastport secured a limited quantity of small mackerel, which they canned and placed upon the market as "broiled mackerel." The cans used were like those employed for the large herring which are known by the trade names of "brook-trout" and "sea-trout," and the methods of preparation were very similar. The mackerel were found in every way superior to the herring, and the demand for them has been constantly increasing to the present time.

The advantages of mackerel canning are many. Perhaps the greatest point in favor of the industry is the fact that it gives an outlet for the small mackerel, which, for canning purposes, are found superior to the larger ones. The small fish known as "tinkers" are very abundant along the New England shores, great quantities of them being taken by the fishermen, who, on account of their small size, which renders them undesirable for salting, have heretofore experienced great difficulty in finding a market for them, and have frequently been obliged to throw them away. Limited quantities are sold fresh in the larger markets, but boat fishermen living at a distance are unable to avail themselves of the opportunities offered, owing to a lack of suitable means of transportation; while the vessel fishermen find it difficult to dispose of small fish when larger ones chance to be abundant, and the price paid for tinkers is always exceedingly low. The canning of mackerel, then, is peculiarly important, in that it renders valuable for purposes of food immense quantities of otherwise worthless products. The boat fishermen are greatly benefited by the development of the industry, as with a demand for the small fish they find remunerative employment in fishing at a time when there is little else to occupy their attention.

COOKED MACKEREL.—Prior to 1879, when salt mackerel were first put up in tin packages, nearly all of the canned mackerel were packed by

parties engaged in lobster-canning, the same apparatus being used for the work. The factories are open for the canning of lobsters about the 1st of April, from which date to the 1st of July a large force is kept constantly busy. About this time the lobsters begin "shedding" in such numbers as to seriously interfere with the business, and the factories are often obliged to discontinue the work till late in the fall. Fortunately, however, the mackerel usually make their appearance on the coast at this season, and many of the factory-men turn their attention to packing them, thus furnishing employment to their hands during the summer months. The canneries for this work are located on the coast of Maine, and, with the exception of the recently developed canning interest in Boston, Maine has practically a monopoly of the business for the United States, though limited quantities are put up by the lobster canners of the British Provinces. As has been said, the fish usually arrive early in July, gradually nearing the shore, until, in a few weeks, they are abundant in many of the coves and harbors of the New England coast. For several weeks during the height of the season the majority of the male population of the smaller fishing ports are engaged in hooking mackerel, a considerable revenue being derived from this work. This is especially the case in the vicinity of the canneries, where a good market is usually found for the catch. The fishing continues till early in October, when the mackerel leave for warmer waters.

In the canning of lobsters it is necessary that each factory should be provided with smacks or small vessels for gathering its supply. These usually visit the different fishing stations within a radius of 20 to 30 miles of their respective factories, gathering the lobsters from the fishermen, who would find it difficult to run them to market in their small boats. These vessels are often used in the same way for securing a supply of mackerel for the canneries. As a rule, they are ordinary sloops or schooners, but the factory at Castine is provided with a small steamer, by means of which it is enabled to cover a much larger territory, bringing the fish to the factories in excellent condition.

The catch varies greatly with the season; some years large quantities of mackerel are taken, while again the fish are scarce, and but few are secured. The price paid along the different portions of the coast is quite uniform, the fishermen usually receiving 1 to 1½ cents per pound for the fish as they come from the water, though in some localities the fish are dressed by the fishermen, and in this condition bring about two cents per pound.

To obtain the best results it is necessary that the mackerel should be canned as soon as possible after they are caught. On reaching the factory the heads, tails, and entrails are removed, after which the fish are thoroughly washed and placed in strong brine, in which they are allowed to remain long enough to give them a salty flavor. They are then packed in cans which are at once carefully sealed. These are immersed in boiling water, where they remain till their contents are thor-

oughly cooked. They are next "vented," and after cooling are sent to the paint-room, where they are dipped in thin paint or varnish, which serves to protect them from rust. When dry they are covered with attractive paper labels and packed in cases for shipment. The cans used are similar to those employed for packing fruit, being made of tin and having a cylindrical form. Two sizes are used by most of the canners. The smaller, for which there is a large demand, is 4½ inches in height by 3 inches in diameter, and holds about 1 pound of fish; the other is 4½ inches high by 3½ inches in diameter, and contains about 1½ pounds, though it is ordinarily known as a 2-pound can. A larger size, holding 3 pounds, is sometimes employed. The loss in dressing varies from 25 to 35 per cent., according to the size and condition of the fish, while the labor of cleaning and canning costs from 18 to 22 cents per dozen cans. Fifteen to twenty-five persons constitute an average working force for a cannery. One-half of these are women and children, who receive from 50 to 75 cents per day for their services; the remainder are tinsmiths and laborers, whose compensation ranges from $1 to $3 per day, according to agreement.

The price of canned mackerel is largely dependent upon the quantity packed during a given season. In 1880 the price at the factory was $1.25 per dozen for the 1-pound cans, while the 2-pounds sold for $1.85. In 1881 it is said to have been reduced to $1 for 1-pounds, and $1.50 for twos.

Until 1880, as already stated, the canning of fresh mackerel was confined almost exclusively to the lobster canneries on the coast of Maine. At this time, however, a number of Boston dealers engaged extensively in the work, and, according to Mr. Wilcox, 750,000 pounds of fresh mackerel were used for canning, the product of the canneries amounting to 480,000 1-pound and 24,000 2-pound cans, valued at $53,700. During the same season the Maine canners purchased 1,252,455 pounds of mackerel, from which 814,668 cans of the various brands were put up, their value at wholesale prices being $96,749. In other portions of the country a limited quantity of mackerel, estimated at 60,000 cans, valued at $6,500, were packed. In 1881 the Boston business had, as we are informed by Mr. Wilcox, increased enormously, and during the summer 1,764,000 cans were put up. The quantity for Maine was increased to about 1,000,000 cans, and that for other places doubtless reached 100,000, making a total of 2,864,000 cans. In 1879 the quantity for the entire country did not exceed 900,000 1-pound cans.

SALT MACKEREL.—The canned salt mackerel, as has been remarked, are put up from the ordinary pickled fish. Different brands are used for this purpose. Some packers select large fish of the best quality, though a majority use standard No. 2's. In preparing them for the cans, they are carefully washed and scraped so as to give them a neat and attractive appearance. Frequently the heads and tails are removed, and, if of large size, the mackerel are cut in halves to facilitate packing. When

the can contains the proper weight of fish it is filled with strong brine and carefully sealed; after which it is labeled and packed for shipment.

No uniform standard of shape or size has been adopted in the manufacture of cans for this trade, those used being either square, oblong, or cylindrical, as the packer may think most desirable. Those oftenest seen in the markets are cylinders, 4 to 5 inches high, and 6 to 8 inches in diameter, holding from 5 to 6 pounds. Other and larger sizes, holding from 10 to 15 pounds, are frequently seen.

During the season of 1880 the wholesale price averaged $5.50 per dozen for 5-pound cans. The cans usually bear the brand of the deputy inspector under whose supervision they are packed, this being in accordance with the Massachusetts inspection law.

The business has from the first been confined largely to Boston and Gloucester. Mr. A. Howard Clark informs us that 100,000 5-pound cans were put up in the latter city in 1879, and Mr. Wilcox gives 72,000 cans as the quantity packed by the dealers of the former place. In 1880, according to the same authorities, Boston parties packed 144,000 cans, and the Gloucester firms put up about 135,000. The quantity for the entire county, including those packed in New York and other places, is estimated at 360,000 cans, valued at over $150,000.

BROILED MACKEREL.—At the sardine canneries two methods have been adopted for the preparation of mackerel. The first originated with Mr. Julius Wolff, of the Eagle Preserved Fish Company. By it the fish are treated in a manner exactly similar to that employed for certain brands of sardines. They are carefully cleaned and dried, after which they are fried in oil and packed in cans with vinegar and spices. The second method, which is now extensively adopted, originated with Mr. Henry Sellmann of the Americann Sardine Company. In June of 1880 Mr. Sellmann, fearing that the increased number of canneries at Eastport, Me., would result in a scarcity of herring, decided to erect one at Camden near the mouth of the Penobscot River, where small herring were reported to be abundant. Failing to secure a sufficient quantity of herring, he turned his attention to the canning of mackerel, buying all that were offered by the local fishermen and sending daily to Boston for an additional supply.

In preparing the fish, the heads, tails, and viscera are removed, after which the bodies are thoroughly cleansed and immersed in strong brine for a few minutes. When they have absorbed a sufficient quantity of salt they are again washed, spread upon wire trays, and placed in a tight box, where they are steamed for several minutes. The trays containing the fish are next placed in a large oven, to be thoroughly baked or broiled. On removal they are packed in oval tin boxes, holding about three pounds each, and covered with mustard, or with a dressing consisting of tomato-sauce seasoned with spices. The cans are then sealed and placed in a hot-water bath. When sufficiently cooked they are taken out and "vented." They are then allowed to cool, after which

they are neatly labeled as "fresh-broiled mackerel," and packed in wooden cases for shipment. Mackerel prepared in this way are, on account of their delicate flavor, far superior to any of the brands of herring, and from the first the demand has been greater than the supply. Owing to the favor with which the goods were received Mr. Sellmann soon found it desirable to locate a factory at some point where a large and constant supply of fish could be depended upon. Accordingly, in the spring of 1881 he associated with himself other capitalists, and built a cannery at Gloucester, Mass., where considerable quantities of mackerel have been packed. Up to the close of the season no other factories were built for the preparation of broiled mackerel, but it is thought that in 1882 a good many persons will devote their attention to this industry. In 1880 Mr. Sellmann packed 50,784 cans, valued at $16,400, and in 1881 the combined product of the Camden and Gloucester establishments was about 200,000 cans.

VI.—METHODS OF PACKING, AND INSPECTION LAWS.

By A. Howard Clark.

K.—METHODS OF PACKING AND INSPECTION LAWS.

44. Methods of packing mackerel.

The bulk of the catch of mackerel by the American fleet is cured in pickle, being split, and salted in barrels. Some of the salt mackerel are afterwards smoked, but this method of curing is practiced only in two or three places, and here only to a very limited extent, though in parts of Europe a large business is done in the smoked product. The European way of preparing mackerel for salting is much inferior to the American method. The fish are cut open with a knife along the belly, instead of being split down the back. The gills and entrails are taken out, and the fish are then packed, belly up, in barrels. This is a very poor way of handling mackerel, for they are not soaked, and the blood remaining in them makes them dark-colored and liable to spoil in a short time.

In previous sections of this report the manner of handling mackerel on board of the fishing-vessels has been fully described. Until about the beginning of the present century the labor of splitting and salting could be done on shore, since the fish were sufficiently abundant near the land so that boats or vessels made but short trips, disposing of their fares each day in a fresh condition. With the growth of the industry it has been found necessary to follow the fish further from land, and with the larger class of vessels employed it has for some years been more convenient and profitable to make longer trips than formerly. It has, therefore, become customary to perform much of the work of preserving the fish on board the vessels instead of on shore. After being captured, the

mackerel are immediately split, salted in barrels, with sufficient pickle to insure their preservation at least until the vessel shall arrive home, and the barrels are stowed in the hold. When a fare is secured the vessel returns to port to "pack out." The barrels of fish are at once landed on the wharf, when they are culled into grades as defined by law, and, after being properly weighed, are put up in various sized packages and distributed over the country. In most of the New England States there are laws that require each package to be branded by an authorized inspector, who must thus certify that it contains the designated kind, grade, and weight of fish, and that they are properly preserved. The same fish are sometimes repacked in the Western and Southern States and resold under brands different from those required by the laws of New England.

The manner of handling mackerel, though differing in some of the minor details, is essentially the same for all of the New England ports. The method described in this chapter is that pursued at Gloucester where great quantities of mackerel are annually packed.

The barrels of fish are hoisted by horse-power from the vessel's hold to the wharf, and are set on end until all are ready for packing. They are next unheaded and the mackerel emptied, one or more barrels at a time, into the culling-crib,* around which stand three or more "cullers," who separate the fish into several grades, throwing them into weighing-tubs holding about 100 pounds each. After being weighed the fish are thrown into the packing-crib, and are ready to be put into barrels or smaller packages. The first two tiers in the bottom of a barrel are placed flesh up, and the successive layers back up. Over each layer is sprinkled a few handfuls of salt, using about a half bushel, or 35 pounds, to each barrel. The law requires that a barrel shall contain 200 pounds of mackerel exclusive of the weight of the pickle, and that half, quarter, and eighth barrels shall contain proportionate quantities. Smaller packages of any size may be put up, provided the weight is properly branded thereon. The cooper now heads up the barrel and rolls it along the wharf in the proper row for each grade. It is next taken by the pickler, who bores a hole in the side and pours in some brine. For this purpose he places in the hole the pickle-tub, which is an ordinary water-bucket, with a copper nozzle in the bottom, thus making a very good funnel. The pickle is usually the same as taken from the barrel of mackerel as it comes from the vessel, being poured from the barrel into a pickle tub or butt and then dipped by the pickler. It may be strengthened by the addition of fresh salt, and is considered of the proper strength when it will float a mackerel of ordinary fatness. The barrel having been filled with pickle, the hole is plugged up, and it is then turned on end ready for branding. It is often allowed to remain for several days on its side or on end, in order to allow the fish to settle, and is then refilled with pickle. A lack of sufficient pickle is determined

*A culling-crib may be of any size, but is usually a wooden box 5 feet long, 3 feet wide, and 8 inches deep, with slat bottom, and is set on legs 2½ or 3 feet high.

by the sound produced by striking the barrel with a stick or cooper's hammer.

The labor of packing or putting the fish in barrels is generally done by boys from ten to eighteen years of age, who receive about 5 cents per barrel for this work, and often make good days wages as they become very expert. Captain Collins mentions one instance of a Gloucester boy, twelve years old, who packed 49½ barrels in one day, and on another occasion 143 barrels in less than four days.

The entire work of culling, weighing, packing, and pickling must be under the personal supervision of an inspector, who puts his official brand on the head of each package. This brand must state the kind and grade of fish in the package, the name of the inspector, the name of the town and State where packed, and the date of packing. In Massachusetts the year when they are put up is considered sufficient, but in Maine and New Hampshire the month must also be given. After being kept all winter, or even for a less time, the mackerel may become rusty or the pickle may leak out, so that they may require repacking and reinspection. Illegal branding by an inspector is punished by fine and removal from office.

There is very little difference in the inspection laws of the several States defining the grades of mackerel. In Massachusetts there are five qualities, called numbers one, two, three large, three, and four. New Hampshire has the same grades. Maine laws define a grade called number three small; that is, the same as number four of the other States. The first grade, or *number one*, must be mackerel of the best quality, not mutilated, free from rust, taint, or damage, and measuring not less than 13 inches from the extremity of the head to the crotch or fork of the tail. *Number two* are those of the next best quality, free from rust, taint, or damage, and measuring not less than 11 inches in length. Those that remain after the above selections, if free from taint or damage, and measuring not less than 13 inches in length, are *number three large*. The next inferior quality, free from taint or damage, and not less than 10 inches in length, are *number three*. All other mackerel free from taint or damage are called *number four*. Rhode Island laws declare that "every cask of pickled codfish and mackerel offered for sale, or for exportation from the State, shall also be branded No. 1, No. 2, or No. 3, to denote the quality of such fish."

Besides the regular grades required by law, dealers are accustomed to make other qualities, designated *extra ones*, *extra twos*, and *mess mackerel*. The first named are superior both in size and fatness, and are sold at a great advance over ordinary number one fish. Extra two mackerel are better than ordinary two, and are in all respects equal to ordinary number one fish, except in the length; these also bring an advanced price. Mess mackerel are made from any grade, but principally from numbers two and one fish, free from the heads and tails, and with the blood scraped off.

The size and material of packages for pickled mackerel are regulated by law. The Massachusetts statutes require that pickled fish be put up in tierces containing each 300 pounds; in barrels, 200 pounds; half-barrels, 100 pounds, or in packages containing a less quantity, upon which the weight of the fish therein is legibly branded. Large quantities of mackerel are put up in a sort of firkin, called a kid or kit, which holds about 25 pounds, or an eighth of a barrel. Quarter-barrels are also used to a considerable extent, and for the last two or three years packers have used tin cans containing about 5 pounds of fish each.

All packages, except those containing less than 25 pounds weight, must be made of sound, well-seasoned wood, and be well hooped. The staves may be of either white or red oak, spruce, pine, or chestnut, and must be 28 inches long. The heads may be of either above kinds of wood, planed, and when of pine must be free from sap or knots. They must measure seventeen inches between the chimes. Each tierce, barrel, and half-barrel must be well hooped with at least twelve hoops, three on each chime and the same number on each bilge. The barrels must contain not less than 28 nor more than 29 gallons; the half-barrels not less than 15 gallons, and the tierces not less than 45 nor more than 46 gallons each. Each cask must be made in a workmanlike manner, and be branded on its side, near the bung, with the name of the maker. All casks not properly made may be rejected by the inspector. New Hampshire laws require rift timber for staves. In Maine poplar staves are also allowed.

Barrels for packing fish are manufactured in various parts of New England, but most of them are made in Maine, Bangor being the headquarters for this industry. They are sent to the fishing ports either put together ready for use or in shooks that are made into barrels at the cooper-shops in Gloucester and other places. The demand for barrels at the fishing ports sometimes exceeds the supply, so that their value is greatly enhanced. In 1881, during the height of the season, they frequently sold at over a dollar apiece, but the usual price for some years past has been from forty to sixty cents. Old barrels that have served one or more trips on the vessels for holding salt or fish are often repaired and sold at cheaper rates.

While Trapani, Cadiz, and Liverpool salt are used in salting mackerel, Liverpool salt is more generally preferred, as it keeps the fish in better condition. The salt is taken from home by the mackerel vessels. It is carried in barrels that are stowed in the hold until occasion comes to use it, when it is emptied and the barrels are used for mackerel.

The quantity of salt required to prepare a barrel of mackerel ready for branding is about 108 pounds. On the vessel it is customary to use one and one-sixth bushels of salt for stowing down each barrel of fish, or 3½ bushels for three barrels. On shore one-half bushel is used for each packed barrel, and as there is a shrinkage of one-tenth in packing, we find the total quantity of salt required to produce a barrel of packed

mackerel is 108 pounds, or three pounds over a bushel and a half of salt. The entire shrinkage on mackerel from the fresh to the packed state is 33 per cent.

The cost of packing mackerel varies with the price of barrels, salt, and labor. During the war it was very high, and it continued so until about 1876, when it was reduced to about $1.75 per barrel. In 1880 it varied from $1.30 to $1.50, and in 1881, owing to a large demand for barrels for the increased catch of fish, packing advanced to $2 during the height of the season, and averaged about $1.75. This cost of packing includes all the expense incurred in preparing the fish for market after they have been received from the vessel in sea-packed barrels.

The packer is generally a deputy inspector, who is also part owner of the fish to be packed and inspected. He therefore realizes a profit both in the packing and in the sale of the mackerel. In some cases, however, the packer is not at all interested as an owner, but is hired as a deputy inspector to prepare the fish for market. With a gang of men he goes to the wharf where the mackerel have been landed from the vessel, and being provided by the owners of the fish with barrels, salt, pickle, and culling and weighing apparatus, he performs the work, and charges from 50 cents to $1 for assorting, weighing, packing, coopering, and branding. He may also make a profit on the labor in addition to his lawful inspection fee.

The inspection fee, exclusive of the labor and cooperage, is 9 cents per barrel in Massachusetts and New Hampshire, of which amount the personal inspecting officer is entitled to 8 cents and the general inspector to 1 cent. In Maine, where there is no general inspector, the fee is 7 cents per barrel. This fee is to be paid by the owner of the fish or the person hiring the inspector, and may be recovered of a purchaser.

In settling with the crew of a mackerel vessel under the old methods of capture, the share of each man depended on his individual catch of fish. At the present day, when seining is the almost universal mode of capture, it is impossible to follow the old way of determining the shares, what the men receive depending on the total catch. One man may receive a half or quarter share because of his inexperience, while another may receive a share and a half for his unusual activity or some other reason. The extra half share, however, would be paid by the owners of the vessel as a premium for the best work.

Barrels and salt for use on the vessel are provided by the vessel-owners, who also furnish the apparatus of capture and the provisions for a trip. Stock charges or the expense of bait, if it be used, harbor dues, and some other items are paid one-half by the owner and one-half by the crew. Several other items, called the crew's expenses, as the wages of a cook, the milk and water used on the trip, the cost of hoisting the mackerel from the vessel to the wharf, towing, and extra labor for scraping and tarring are paid entirely by the crew.

When the mackerel are packed and sold, the fishermen are entitled to

one-half of the net proceeds of sale, and the vessel-owners to the other half. The difference between the gross and net proceeds is the cost of packing, including the barrel and the stock charges. Thus, a trip of mackerel may be sold for $5,000. The stock charges may be $300 and the cost of packing $600. The net proceeds would be $5,000, minus $900, or $4,100. One half the net proceeds, or $2,050, is the owner's share, and the other half the crew's share. From the crew's half must be deducted the crew's expenses, which may be $150, thus leaving $1,900 to be divided among the men.

Prior to 1872 a settlement with the vessel's crew for a trip was not made until the mackerel were inspected and sold, which might be several months after the trip was completed. As a general rule, the vessel-owner packed and purchased the catch very soon after it was landed, and then, having settled with the crew, he waited for a favorable time to put the fish on the market. The crew have, perhaps, a legal right to take their half of the fish, after deducting stock and packing charges, and may sell that half whenever they please, but in practice the owner of the vessel usually sells the fish for the crew or buys them outright. The captain of the vessel may act as agent for the owner in selling mackerel away from home.

Since 1872, and especially during the past two or three years, many trips have been sold "out of pickle" immediately after being landed. The crew at once receive their share of money, and may proceed on another trip, and the fish may not be packed and put upon the market for several weeks, or even months. In selling out of pickle a barrel of mackerel is reckoned at 200 pounds of fish as they come from the sea-packed barrel, without being drained of pickle or the salt washed off, though the fishermen sometimes complain that there is a pretty thorough draining and washing before the fish are weighed. The price paid the fisherman is so much per 200 pounds of fish, exclusive of the barrel, which is furnished by the purchaser.

Mackerel bought from the vessel out of pickle are sometimes re-sold before being properly culled and inspected according to the letter of the law. The practice of selling out of pickle is often an accommodation to the fishermen, as it does not require them to wait for weeks or months for their money. It is also often a source of considerable profit to the purchaser, who, by careful culling, may realize a far greater proportion of good grades of fish than was estimated in buying them without being assorted.

A considerable source of profit to the dealers is the practice of buying inspected barrels of mackerel and then re-packing them, perhaps making a few more barrels of the better grades, or packing them as mess mackerel by cutting off the heads and tails and scraping off the blood. There is a loss of about 25 per cent. in weight from ordinary to mess mackerel, but usually a more than proportionate increase in the value of the fish.

There has been considerable discussion as to the relative merits of mackerel taken with the purse-seine and those caught with the hook, and interesting experiments were made a few years ago to test the keeping power of the two kinds. An experienced fish-dealer of Boston states to Capt. J. W. Collins that he very carefully salted and pickled a half-barrel of each kind, using the same quantity of salt on each. He headed the half-barrels up and set them away about the 1st of October, and when he opened them about the 1st of the following March he found a marked difference between them. The flesh of the hooked mackerel was firm and in fine condition, while the flesh of the seined fish was short and mealy, retaining little or no firmness. He thinks the same difference will hold good in most cases. The same gentleman also made very careful experiments as to the comparative merits of fresh and salt water for pickling mackerel. He salted and pickled two half-barrels, using fresh water for one and salt for the other. He put them up in the fall and opened them the following July, when he found a marked difference in them. Those filled with salt-water pickle were in excellent condition, while the others had a dirty scum on the pickle, and the flesh was dark and somewhat slimy; the skin had a whitish, discolored appearance, and the fish were thought unfit to eat. He says that in 1879 fresh water was extensively used in making pickle for fish, and thinks that when the fish are kept for any length of time they are unfit for food; hence the sale or market for pickled fish is injured.

Concerning the relative quality of hooked and seined mackerel, it appears certain, from the statements of many men of large experience, that the former are superior, and the reason is a simple one, namely, only a small quantity out of the entire school of fish is captured, and these are carefully handled, while in seining the entire school of perhaps several hundred barrels is caught and the fish are necessarily allowed to remain for a considerable time without care, so that many of them may become soft and greatly inferior in quality to fresh mackerel. With proper care the seined mackerel may no doubt be as good as the others.

There is a great difference in mackerel taken at different seasons of the year. Those caught in the early spring are very lean and shrink when pickled. As the season advances they grow fatter, and in the fall are at their best; so that the large fish taken in September and October grow heavier rather than lighter in pickle.

The care taken of mackerel in the early years of the fishery may be judged from the following instructions to the masters and crews of Massachusetts mackerel vessels, which appeared in the Gloucester Telegraph May 26, 1832. It is dated Boston, May 2, 1832, and signed James Barry, inspector-general of pickled fish:

"The mackerel fishery has already become a very important item in the catalogue of the staples of our State; and, if we may judge from its rapid progress in past years, is destined to become one of its greatest sources of wealth. Your attention is requested to the following facts and re-

marks: Mackerel should be split as soon as possible, and, after the blood has been soaked out of them, immediately salted with such salt as is suitable for the pupose; my own opinion is in favor of Liverpool or Cape Cod salt. It is necessary that it should dissolve as soon as possible. Eastport salt, so called, must not be used; it will not save the fish; it has proved destructive to fish and to meat. I have instructed my deputies not to pack mackerel struck with that kind of salt. Mackerel should be well salted in the first instance; it is a mischievous error that fishermen have fallen into by salting their fish too slack, as has often been the case; and another by using the plough, which has given to the fish a false appearance, and has been a source of mortification to the fishermen; and they have in a great many instances found fault with the inspectors when the fault belonged to themselves in not taking that care of the fish which it was their duty to do, and which in many cases has been a ruinous business to purchasers. By a law of this commonwealth the inspector is required to throw into an inferior quality all mackerel which have been plowed, cut, or mutilated for the purpose of deception. It can be of no advantage to the fishermen, and I trust will never again be done. I have strictly forbidden any deputy inspector from packing any mackerel with the gills or entrails in them. They must be cleansed by the fishermen before they are offered for packing; otherwise they will be rejected. You must be aware how much better a fare of mackerel are, and how much more salable, when they are brought into market clean and well struck.

"My hope is that you will take this subject into your serious consideration and remedy the evils which have existed, and which I think you will do if you wish to insure the sale of your fish and have a due regard for your own interest. Those of you who are acquainted with me will do me the credit of seeking the welfare of the fishermen, which is so nearly connected with that of the inspector.

"Wishing you success in your business and prosperity in your homes, I remain, your friend and humble servant,

"JAMES BARRY."

The following item appeared in the Boston Atlas July 15, 1845:

"For the last twenty years scarcely a year has passed but there has something new taken place in the mackerel fishery which had a bearing on the inspection laws. The mackerel are fatter or poorer, larger or smaller, plenty or scarce, some one of which are different from the previous year, and thus it is impossible to make a law to meet all these changes in every particular. Whenever a change takes place its first operation is generally in favor of one or the other, until an alteration in the law takes place or interest dictates a remedy. Such has been the case the present season in relation to the South No. 3.

"Heretofore all mackerel taken south of Nantucket have been denominated Block Island, and considered to be of inferior quality; so much

so that it became necessary to designate them from the North No. 3's by the word 'South.' Now it is the reverse.

"This year the fishermen found more of the middling-size mackerel at the south and in the latitude of Block Island than formerly, and, as the law did not oblige the inspector to cull these mackerel and make two numbers, the fishermen insisted upon their being packed and branded according to the letter of the law under the brand South No. 3.

"As soon as those mackerel came into market and the true condition of the fish became known the prices began to recede. Upon learning this fact, it was immediately recommended to the fishermen and inspectors to cull their mackerel and make two qualities of South No. 3, which was, I believe, generally adopted. Thus we shall have four qualities of No. 3's, when, in fact, we ought to have but two, viz, large and small. I have thought proper to make this statement to inform the consumers and dealers in fish against any error they might be led into, supposing that all the mackerel packed in 1845 branded South are all large fish.

"E. H. LITTLE,
"*Inspector-General of Fish.*

"JULY 14, 1845."

Capt. N. E. Atwood, of Provincetown, Mass., gives the following account of the past and present methods employed for curing mackerel by salting and pickling:

"Some sixty years ago the method of catching mackerel with jig came into general use, so that in 1826 a large fleet of vessels were engaged in this branch of the fishery, fishing off the coast of Massachusetts and of Maine through the summer and autumn. Before the jig was introduced the quantity of mackerel taken was comparatively small; they were mostly caught by trailing while the vessel or boat was sailing through the waters, only a few being captured in nets. When the jig came into use the way of fishing on board of mackerel vessels was by hauling down the jib and laying the other sails in such a way that the vessel would drift squarely to leeward. Bait chopped fine was thrown overboard in very small quantities, so as to keep a small string of bait going from the vessel all the time, and the school of mackerel, meeting this bait, would follow it up to the vessel and bite at the jigs, so that the fishermen would not have to wait for a bite while the fish was inclined to take the hook. In this way a number of barrels of fish could be taken in a short time, and a crew of ten men could catch in an hour or two from ten to twenty barrels, sometimes more and many times much less, or very few. As soon as the fish ceased biting, the crew engaged in dressing them, making three gangs of two or three men each, one man to split the fish and two to gib. The splitter as he splits them throws them into a gib-tub; the gibbers take each an empty barrel and put in it two buckets of water; they then commence to gib, taking up a single fish and opening it suddenly with a jerk, which causes them to break lengthwise along the lower end of their ribs if they are fat,

thus making a crease on each side, but if they are poor they will not break. He then takes out the entrails and gills and throws the fish into a barrel flesh down, and open; if one or more should be put in shut up the blood would not soak out. When the barrel is about level full he fills it with water, and it is then left for the blood to soak out of the fish. The gibber then fills another barrel in the same way, and so on until all the fish are dressed. After washing the decks, the next thing is to shift the fish into clean water, as that in which they have been soaking has become very bloody. Taking an empty barrel and putting in it two buckets of clean water, the fish are taken out one by one, and if any of the entrails or gills have been left in by the gibber, it is removed, so that the fish is thoroughly cleaned. At the same time that the fish are examined and cleaned the rimmer is used, plowing deeper the creases in them, which makes them look fatter, so that when the inspector culls them and puts them up ready for market they may have a larger proportions of No. 1's and and No. 2's. The rimmers are of various kinds and shapes; some are made wholly of wood; others have the end tipped with pewter and fine teeth on the edge, so as to make the crease look rough, as though it was broken naturally; others have a knife in the end, which cuts them smoothly. There are other kinds of rimmers and other ways of rimming too numerous to mention, but the object is to make them look fatter than they really are, and thereby gain in number of fat fish or in better quality, as this crease is an indication of their fatness. After the mackerel have been in the second water a short time they are ready for salting. They are salted in tight barrels, so as to hold the pickle, which keeps them from rusting, using salt enough to preserve them well until the end of the voyage.

"When the vessel arrives at port the fish are taken out of the barrels and assorted or culled by an authorized inspector, agreeably to the Massachusetts inspection law. The inspector puts them up with his name on the barrels, and then he becomes responsible for their condition and quality. The above is the whole process of curing mackerel, and if so cured, and the barrels kept tight and full of pickle, they will keep in good condition a long time.

"While jigging was the principal way of catching mackerel they were taken in such a way and in such quantities that they could be dressed before they became soft; but since seining has come into general use the quality of mackerel is much inferior to what they were before.

"The seining vessel may be on the fishing-ground and cruise for weeks and not get a single fish, for they may keep down and not show themselves on the top of the water. Then a day may come when mackerel will come up and large schools of them may be seen in every direction. The seiner then throws his seine around a school, and if he is fortunate enough to inclose them, he hauls in the purse-lines, gathers in the net so as to bring the fish into a compact body, and then commences to bail them out on deck with his scoop-nets. In this way large

quantities of fish are caught in a single haul, sometimes hundreds of barrels. Having such a large quantity, and handling them so much, the men cannot dress them before they get soft. When they are dressed and salted they are headed up in barrels and brought into port, and when opened for culling and inspection they are found to be ragged and soft, and do not compare in quality with the jig mackerel of former years.

"One more fishery I will mention; that is, when the mackerel are passing off the coast late in autumn. A large number of gill-nets are then set in our bay and kept there night and day. The fishermen visit them daily, as often as the weather will permit, and take out the fish that may have been caught during the night. The weather is often windy and rugged, so that they cannot go to their nets for several days. The fish are injured by remaining in the nets any considerable length of time after they are caught. Mackerel taken at this season of the year are not of the best quality, for, even if they are taken out of the nets as soon as may be, on the following morning after they have run in, and dressed at once and put in water to soak, the water is cold, and as the blood is already chilled, it will not soak out of the flesh of the fish, so that they will be dark colored. When the water becomes cold the mackerel lose their fat fast, so that those that are caught here as they are passing off late in November and early in December, many of them have little or no fat in them, however large the creases may be that have been made by the fisherman's rimmer to indicate their fatness. They are inferior fish, and often fail to give satisfaction to the parties who buy them."

45.—Inspection laws.

Statutes regulating the method of packing pickled fish are in force in many of the States, but the only ones governing the manner of preparing salt mackerel are those of Maine, New Hampshire, Massachusetts, and Rhode Island. Nearly the entire catch of the mackerel fleet of the United States, with the exception of fish sold fresh, is packed in Massachusetts and Maine, and thence shipped throughout the country. As there is no national law governing the proper preservation and requiring uniform grades of mackerel, it often happens that fish packed according to law in New England are repacked in other States and sold under false or misleading brands, much to the injury of the original packer.

In some of the States outside of New England, as in Pennsylvania, there have been laws requiring fish that have been legally inspected in other States, but repacked in that State, to be reinspected. The Pennsylvania law was repealed in 1874. The laws of Ohio require the inspection of all pickled fish except shad, mackerel, and herring. In New York there is a law on the statute-book which declares that pickled fish intended for foreign exportation must be inspected, but this law is entirely inoperative. The laws of Michigan permit the inspection of

fish when desired by packers. Fish-inspection laws are in force in New Jersey, Virginia, North Carolina, and Michigan, and also in the city of Chicago and some other large cities, but they do not concern the mackerel trade, except that the sale of damaged fish is generally forbidden.

We give in the appendix to this report, first, the existing laws of Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut; second, some of the repealed laws of Maine, Massachusetts, Connecticut, and Pennsylvania; and, third, the laws now in force in the Dominion of Canada, as also the old law of the Province of Nova Scotia.

In early colonial days it became necessary to enact laws for the proper regulation of the trade in fish, and to prevent deceit in packing them. Accordingly, as early as 1651 we find that the general court of elections held at Boston ordered that in every town within its jurisdiction officers should be appointed whose duty it was to see that the barrels of fish be properly packed, containing only one kind of fish, and those well cured. Each town was to make choice of a proper person as inspector, and within one week after the choice he was to be presented before a magistrate by the constable and take the requisite oath for the performance of his duty. Refusal to take the oath incurred a penalty of forty shillings, and another choice was made. The oath was a strong one, and required the officer to swear by the living God that he would well and truly pack all beef, pork, and other things when required; that he would pack none but good and sound goods; that he would set his mark upon every cask thus packed; and that he would discharge his duties according to his best judgment and conscience. The size of casks and barrels in which fish, beef, pork, &c., were packed were regulated by law, and according to an act passed by the general court of the Province of Massachusetts in 1692 these casks must be of London assize; puncheons, 84 gallons; hogsheads, 63 gallons; tierces, 42 gallons; barrels, 31½ gallons; and must be made of sound, well-seasoned timber, and free from sap.

If any person should illegally shift any fish that had been properly packed and branded, he must pay double damages to persons wronged thereby, and must be set in the pillory not exceeding one hour. Equally severe penalties were imposed upon violators of other sections of the inspection laws. If the master of a vessel receive provisions aboard of his vessel not properly branded, he must forfeit double the value of all such provisions, and the owner of the provisions must forfeit the same.

From time to time during the history of the States various inspection laws have been passed, but since there is so much sameness to them it seems unnecessary to reproduce them all.

In some of the States the appointment of inspectors has been left to the towns, while in other States they have been appointed directly by the governor. Some States have passed no general laws covering the inspection of fish, but all such regulations have been left to the cities and towns. But throughout New England, the center of the fishing

industry, the question has been regulated by State enactments, and the appointments of the chief officers have been made by the governor, who has, however, left the appointment of deputies to the chief inspector.

Massachusetts has found it prudent to have an inspector-general, who supervises and is responsible for the numerous deputy inspectors in the seaport towns. Maine had such an inspector-general down to 1875, but the office was then abolished, and inspectors appointed in the fishing ports are now responsible to the State alone.

As early as 1816 there was an inspector-general of fish appointed in New Hampshire, whose duties were the same as of similar officers in other States.

The existing laws of Maine were passed January 25, 1871, and amended by acts passed February 24, 1871, and February 10, 1875, and provide that the governor "shall appoint, in places where pickled fish are cured or packed for exportation, one or more persons skilled in the quality of the same, to be inspectors of fish, who shall hold their office for a term of five years, unless sooner removed by the governor and council." Each inspector must be sworn and give bonds to the treasury of the city, town, or plantation where he is appointed for the faithful performance of his official duties. Inspectors must make yearly returns to the secretary of state, showing the quantities and kinds of fish inspected. Their fees are paid by the original owners of the fish.

The law regulates the grades of mackerel under three numbers, and requires that other pickled fish as well as mackerel shall be packed in proper barrels, and no more salt put with the fish than is necessary for their preservation. No pickled fish in casks can be exported from the State, or sold within the State, except such as have been inspected according to law in this State or under the inspection laws of other States. Although, according to the requirements of the law, each inspector is expected to make annual returns to the secretary of state showing the quantities of fish inspected during the year, no such returns can be found for the years 1821 to 1864, and for 1879, and only imperfect ones for some other years.

The present laws of New Hampshire were passed in 1878, and are very similar to those of Maine and Massachusetts. An inspector is appointed by the governor, and he may appoint deputy inspectors, for whom he shall be responsible. The inspector is under bond to the State treasurer for the faithful discharge of his duties, and the deputies under bond to the inspector.

The law requires that all fish pickled in barrels for exportation, and all smoked herring or alewives, shall be inspected and the barrels and boxes properly branded. It regulates the size of casks and the material from which they may be manufactured.

The inspector is required to make returns to the governor annually of all fish inspected by him or his deputies during the year. The inspection fees are paid by the owner or person employing the inspecting

officer, and these fees are divided between the general inspector and his deputies.

Pickled fish and smoked fish intended for consumption within the State, and fish packed in kegs of less than 10 gallons, require no inspection, but they must be properly cured and packed, under the same penalty as inspected fish.

The existing inspection laws of Massachusetts provide for the appointment by the governor of an inspector-general of fish, who shall hold office for five years, and who shall be sworn and give bonds to the treasurer of the commonwealth in the penal sum of $10,000, and who shall have no interest, directly or indirectly, in the cure or packing of pickled fish. The inspector-general appoints deputies in the various seaport towns, and takes bonds from them with sufficient sureties. He is responsible for their official conduct, and may remove them from office at his pleasure. The deputies are, in most cases, members of firms that are engaged in packing fish, and receive fees for inspection that are divided with the inspector-general.

The fees of the office of the inspector-general will be seen in the following extract from the Cape Ann Advertiser of April 16, 1875:

"General William Cogswell, inspector general of fish, has submitted a statement to the joint standing committee on fisheries of all the fees he has received from the office for the past eight years. The total receipts of that period have been $23,365.06; total expenses, $4,400; net receipts, $18,965.06. During the eight years he has made some twenty-eight different seizures of packages of mackerel, valued at $5,781.75, from which he received, after paying expenses, $1,446.44, instead of $5,781.75, which he might have insisted on had he carried out the strict letter of the law, or an average of about $160 a year. Average net salary per year, about $2,550."

As these fees are paid entirely by dealers in fish, the office of inspector-general is of no expense to the State.

It is provided further that "under the supervision of the inspector-general and his deputies, respectively, all kinds of split pickled fish and fish for barreling, except herring, and all codfish tongues and sounds, halibut fins and napes, and sword-fish, whenever said articles are intended for exportation, shall be struck with salt or pickle in the first instance, and preserved sweet and free from rust, taint, or damage; and when the same are found in good order and of good quality, they shall be packed either in tierces containing each 300 pounds," &c.

Smoked herring and alewives are also to be inspected, and the size of the boxes for smoked fish, as well as size and material for barrels used for packing pickled fish, are clearly defined.

Fish are divided in various grades, and only one kind allowed to be packed in the same package. Of mackerel there are five grades, determined by their length and quality. Other fish are divided generally into two qualities, and so branded.

There has been considerable opposition to the office of inspector-general, and strong efforts have been made by fish-dealers to abolish the office. In Maine there has been no inspector-general since 1875, and it is claimed by many that there is greater satisfaction among purchasers than formerly. The question has been discussed in the Massachusetts legislature at various times, and has always resulted in the retention of the office as one that is important to the security of purchasers.

Since there is no national law covering the inspection of fish or the protection of the packers, it is claimed by the dealers in Massachusetts that mackerel are adulterated oustide the State, so that those inspected in the State reach the consumer in a poorer grade. A remedy suggested is to pack mackerel as they do other merchandise, by any weight or style of packages, and brand honestly on each head the grade, the weight, and the owner's name, and do it in such manner as to prevent repacking without destroying the trade-mark. "Buyers will demand original packages if all such names as cover fish that correspond to the mark on each head, and packages that have been tampered with will be rejected. There seems to be but one objection to this plan, namely, a large buyer inland might find it necessary to repack for better preservation, necessitating the breaking of the original seal. But this, we apprehend, is not serious." There have been other plans suggested as substitutes for the existing laws, but the legislature has decided that the present regulations are just and proper.

The laws of Rhode Island provide for the election in each town of one or more packers of fish, who "shall see that the same have been properly pickled and properly repacked in casks, in good shipping order, with good salt sufficient in each cask to preserve such fish from damage to any foreign port." The packers give bond to the town treasurer for the faithful performance of their duties.

Every kind of pickled fish must be sorted, and one kind only be put into one cask. The casks must be "well seasoned, and bound with twelve hoops; those for menhaden and herring of the capacity to hold 28 gallons, and those for other fish of the capacity, if a barrel, to hold 200 pounds, and if a half-barrel, to hold 100 pounds weight of fish; each cask to be full, and the fish sound and well cured."

The law provides for three grades of pickled codfish and mackerel, and imposes fines upon packers who neglect to obey the law, as well as upon any person who shifts fish from a cask after the same has been branded by the packers.

Laws for the inspection of pickled fish in Connecticut relate to pickled shad, and provide that they shall be "well cleansed, and pickled in strong brine, and shall remain in such brine at least fifteen days before they shall be put up for market, and shall be put in barrels or half-barrels, the barrels containing 200 pounds each and the half-barrels 100 pounds each of fish." Three denominations of shad are defined, the size being determined by the number required to fill a barrel.

Inspectors are appointed by the superior court in the several counties, and receive a fee of 20 cents per barrel for packing, heading, flagging, pickling, and branding. "Any inspector of fish who shall inspect or brand any package of shad *imported into this State* shall forfeit $5 to the State."

In the several provinces now comprising the Dominion of Canada laws have from time to time been enacted requiring all pickled and smoked fish to be properly salted, packed, and inspected before they were offered for sale. In the year 1867 the Dominion of Canada was created by the union of Upper and Lower Canada, Nova Scotia, and New Brunswick. In 1873 Prince Edward Island became a part of the confederation; so that the Dominion of Canada now includes all the provinces where fisheries are carried on, with the exception of Newfoundland, which still retains its individuality as a separate province of Great Britain. General fish-inspection laws, extending throughout the Dominion, were enacted by the Dominion Parliament in 1873, but were repealed in 1874, when more complete statutes were enacted, which, with slight amendments passed in 1876, 1880, and 1881, now regulate the manner of preparing pickled and smoked fish for exportation or for sale within the Dominion.

We give in the appendix the fish-inspection law as enacted in 1874, together with subsequent amendments; also the old law of Nova Scotia, as found in the revised statutes of that province, published in 1851.

The principal object of fish-inspection laws is to prevent fraudulent pickling. There has been a great deal of discussion concerning the benefit of these laws; some packers contend that they are hardships, while others claim that without some legislative regulations much more fraud would result and the trade in salt mackerel be reduced to a very low state. The law is a protection to both buyer and seller. It guarantees to the former a definite quality of fish, and protects the trade of the latter in that it prevents a great amount of dishonest underselling and assures to the seller a definite knowledge of the merchandise sold by his neighbor. The principal kinds of fraud in packing mackerel are short weight and wrong grades. The first kind of fraud is practiced by the addition of more salt than is necessary for the proper preservation of the fish, and a corresponding subtraction in the quantity of mackerel, thus keeping the same total weight in the barrel. According to law a barrel of fish, means 200 pounds of fish, and not that weight of fish and salt. The second kind of fraud, or that of packing wrong grades, is more generally practiced, and the least liable to detection by ordinary customers. A No. 1 mackerel is plainly defined as the best quality of fish, at least 13 inches in length. A packer's notion of best quality may be as varied as the number of his customers, for, while the requisite length of 13 inches is given, there may be great difference in the degree of fatness, so that the No. 1 mackerel packed by one firm may

be far inferior to those packed under the same number by other firms. In other grades of mackerel the same fraud is practiced, No. 3 appearing as No. 2, and No. 4 packed as No. 3. But a small part of the fraud in packing is done within the precincts of States that have inspection laws. Most of the fraud is in repacking in Western or Southern States barrels of fish that have been inspected in New England. A large quantity of fish are bought of New England packers and are by dealers West and South repacked, and the same frauds again practiced that governed the original packing of the fish. Thus mackerel that are in reality No. 3 are first fraudulently packed as No. 2 and later as No. 1. A small short weight of fish and extra quantity of salt is increased until ten barrels of fish become twelve or thirteen. Especially is this short weight liable to be practiced where whole barrels of fish are repacked in small packages containing 25 or 50 pounds, and as in most of the States outside of New England there is no law regulating the grade of mackerel and quantity required in a barrel, the dishonesty is not illegal, and can be carried on with an impunity only limited by the patience of the customer.

A chief cause or occasion for fraud is, perhaps, the fact that the inspectors in States where inspection laws are in force are themselves the owners and packers of the fish. In Massachusetts only the inspector-general is forbidden to be interested, directly, or indirectly in the packing of the inspected fish. Nearly all the deputies, or the men who really do the culling, weighing, and branding, are the owners and sellers of the very fish they inspect. There is little protection against fraud, therefore, save in the honesty of the man, and as the moral standard varies with different men, so does the degree or extent of fraud. A strictly honorable inspector would scorn to take advantage of his authority and under the cloak of his commission cheat his customers. Some inspectors, however, have an elastic conscience that will stretch to the point beyond which there is liability of detection either by a superior officer or by a customer. Such men can make old fish appear new by scraping off some of the rust, or can from one legal grade of fish make two superior grades.

In Maine there is no inspector-general of fish, so that each inspector is responsible alone to the county or city authorities to whom he is under bonds for the faithful discharge of his official duties. For several years prior to 1875 Maine had an inspector-general, but in the year named the office was abolished as unnecessary, and inspectors became personally responsible for their acts. A loud cry was made in Massachusetts in 1874 and 1875 concerning the abolishment of the office of inspector-general of fish, and numerous articles appeared in the papers of the day discussing both sides of this question, and including the general subject of fraudulent packing. We quote several of these newspaper discussions to show the general spirit of the discussion. The following article appeared in the Portland (Me.) Advertiser April 4, 1874:

"*To the Editor of the Advertiser:*

"In your issue of March 31 I noticed an article headed 'Fish Inspectors,' from which readers not familiar with the business would receive a decidedly wrong impression, as they would infer that the inspectors of fish are in favor of abolishing the present law by which they are governed. But such is not the case. The whole difficulty seems to rest with one or two fish buyers; they are anxious to have the law repealed, and those acquainted with the fish business can easily understand the motives by which they are prompted. The fishing interest of Portland is of vital importance, and should be protected, and every honorable influence brought to bear to encourage fishermen living east of Portland to bring their fish here to market; but if the views of some of the fish buyers should be carried out, it is evident that not only vessels from the east would pass this port, but vessels that are owned and pack their fish here would be obliged to seek another market.

"All the regular deputy inspectors of fish in this city have presented a petition to the governor praying that the present manner of conducting the business under a general inspector may be continued, and the present incumbent, who has served so faithfully and impartially, may be reappointed for the usual term of five years, believing that it is the best and most judicious course to pursue both for the buyer and inspector.

"The old system, as it is termed, has been tried, and it failed to give satisfaction. Under the present law a general inspector is appointed to take the entire charge, and he appoints his deputies, who are required to give bonds for the faithful performance of their duties. Massachusetts has the same law, and we hear no complaint.

"You state that 'by the old system deputy inspectors were appointed who were, generally speaking, connected with the fish business, and on them the responsibility rested, and at that time Portland fish stood very high.' Under the present law *all* the deputies are directly interested in the fish business, and they know that if these fish are not put up according to law the responsibility rests upon them. Upon whom else can they throw the responsibility? They inspect the fish and brand them, and have given bonds as the law requires. You 'would not imply there is deterioration in Portland fish, but yet the deputies have been inclined to be careless.' So it seems that, although the deputies have been careless, yet the fish is up to the standard! Then what reason is there for complaint? I am inclined to believe that the writer of the article was either misinformed, or else he wished to abuse the public mind with the impression that the general inspector had an exorbitant salary, and that this office entails an expense upon the merchants. The compensation of the general inspector last year was about three hundred dollars, and it is all paid by his deputies, who are assessed one cent per barrel for all the fish they inspect. So far as regards the quality of the fish, there is a law which definitely states what is required to constitute the different grades of fish, so that the inspector has his instructions from the law, and there

is no motive for the deputy to pack in any other way than the law directs, for he has nothing to gain, but everything to lose, providing the fish are returned to him.

"We hope the law will remain as it is, and that the governor will be pleased to reappoint for a general inspector Mr. D. L. Fernald, of Camden, who is soon to become a resident of this city.

"INSPECTOR."

An editorial in the Cape Ann Advertiser of November 28, 1874, says:

"The Boston Herald of Monday has a lengthy article on mackerel packing, in which it argues that the recent depression of the mackerel market is owing to the fraud practiced in selling short-weight packages and the making of No. 1 mackerel out of 3's, and it is charged that large spring herring have been split along the back and sold out West for mackerel, giving a large profit to those engaged in the nefarious business.

"The appointment of an inspector-general of fish purely on political grounds, without his having knowledge of the practical duties of the office, is denounced, as the office is one which requires the services of a practical man, who should devote his whole time to the work. A well-deserved compliment is given those engaged in the fish-packing business in Massachusetts, saying that nearly all the old and reliable fish houses are as exact and careful in putting up fish now as ever; but the principal part of the fraud in weight and quality of fish is perpetrated outside of Massachusotts, and the packages marked with counterfeit Massachusetts inspectors' brands. Instances of fraud are quoted, and the Herald concludes by asserting that 'good inspection laws rigidly enforced, and a practical inspector-general, who will attend to his duties, devoting his whole time thereto, are the only means by which our mackeral trade can be sustained and extended to the gigantic proportions to which good management and honest dealing will surely bring it in the end.'

"We venture the assertion that the dealers in mackerel who wish a really good article and send orders directly to this city have but little, if any, cause for complaint in the matter of fraud in packing. Gloucester fish-packers, as a whole, have an enviable reputation in this particular; but they cannot hinder dishonorable dealers in other cities from repacking and selling short-weight packages or lean fish for fat ones, short fish for long, or herring for mackerel. Neither can they prohibit the counterfeiting of their brands or any other trickery which unprincipled dealers in States where there is no inspection law may perpetrate after receiving their stock from headquarters. All they can do is to continue packing and selling the best qualities of fish, and it will not be long ere the entire catch of this port will find its way into the hands of those who can and will appreciate fair and honest dealing. There is little fear but this fraud in mackerel-packing, will soon regulate itself, and honest dealers will reap the reward of well-doing."

The following communication, signed W. S., appears in the same paper as the preceding, under date of February 12, 1875:

"There seems to be a hitch in mackerel—an honest, clever fish—but by the haste of somebody to overreach somebody else they fail to reach the cook South and West under an accurate denomination, and this curtails their consumption. If adulteration was chargeable to Massachusetts inspectors, a capable, efficient, and honest general inspector could remedy the evil, but we apprehend that the bulk—we will not say all, lest our communication be worthless—of the adulteration is beyond the precincts of our State.

"It appears to the writer that there are two ways to improve the mackerel trade, both within easy reach of the merchants engaged in fish commerce. First, install a general inspector familiar with fish by a practical education; and next, to go for his duty as unerringly as a bullet would, and call for the cooper and a pair of scales, and confine his business to the said cooper and the said scales. If criticism is demanded, let it be with a note that makes one deputy less. But it is remarked, 'This is all very well for Massachusetts; we have no control beyond the limits of the State, where the chief mischief lies.' This we admit, and it is a feature that can't be remedied except by national legislation.

"A remedy we offer, that avoids necessity for State or national laws, general and deputy inspectors, as follows: Pack mackerel as they do other merchandise, by any weight or style packages, and brand honestly on each head as follows—the grade, the weight, and the owner's name, and do it in such manner as to prevent repacking without destroying the trade-mark. Buyers will demand original packages of all such names as cover fish that correspond to the mark on each head, and packages that have been tampered with will be rejected. There seems to be but one objection to this plan, namely, a large buyer inland might find it necessary to repack for better preservation, necessitating the breaking of the original seal. But this we apprehend is not serious. As at present conducted, we learn from our most intelligent and reliable fish merchants that the office of a general inspector is of no sort of benefit to the fish interest, and ought to be done away with, or place in the office some one who will execute the laws of the Commonwealth without fear or favor."

On the same date as the preceding article we find the following editorial:

"A petition is in circulation in this city, and has received a large number of signatures, for the repeal of the law providing for an inspector-general of fish. The petition sets forth that 'said officer is no benefit or advantage to the fishing interests of Massachusetts, and that the fees as at present paid to said inspector-general is a tax upon the business from which the fish-producers and dealers receive no benefit.'

"Once was the time when a deputy fish-inspector's brand on mackerel had some significance, and the buyer could rely upon it in the purchase

and selling of fish, without even opening the package. That time has gone by now, as the brands are counterfeited by dealers South and West, the fish oftentimes repacked, and poorer qualities substituted in brands branded the best. This has become a serious detriment to the business, and now there is really no further need of an inspector-general of fish. Of late years the office has become a sinecure, from the fact that it has become mixed up in politics, and given to men who know nothing of the business, and whose principal duty is to receive their fee on the number of barrels of mackerel inspected by their several deputies.

"There is need of some protection to the many well-disposed, honest men engaged in the mackerel and pickled-fish business along the seacoast. As a class they are strictly honest, and take great pains to put up their fish in the best possible manner, making a conscientious cull, which will bear strict investigation, giving a full equivalent for the price received, and securing the confidence of the consumer in all cases where they are fortunate enough to get the original package. Very many of the first-class dealers, West and South, who have a business reputation which they value far above the few dollars which they might make in selling inferior articles, send direct to Gloucester for their goods, and in this way they get what they pay for and secure their own trade from imposition as far as may be. But it is very difficult to counterbalance the other class who make it a business to defraud. Something must be done to remedy this evil, and when the fishing inspectorship is abolished, then we hope the fishing dealers will counsel together and take immediate and active measures for self-protection. Have a law which will make it comparatively easy to convict a guilty party of fraud in brands or quality. Our correspondent, 'W. S.,' in another column, offers some practical ideas on this subject which are worthy of attention."

A correspondent writes to the Cape Ann Advertiser as follows, under date of Portland, Me., February 15, 1875:

"I was highly gratified to read in your last issue of a movement on foot to abolish the office of general inspector of pickled fish. The strongest argument used in its favor last winter in our legislature was that our old mother, Massachusetts, had such a law and it worked well, and no one complained. Statutes, hundreds of years old, were produced to establish this fact, but all of no avail. We accomplished our purpose in defeating it, and the bill to abolish the office was passed almost unanimously. It now only awaits the governor's signature, and then there will be abolished a nuisance we have been obliged to suffer for thirteen years. The office expired by limitation in this State last May, and through the efforts of parties opposed to the office the governor and council were persuaded not to make an appointment, thereby giving an opportunity to appeal to the legislature. We have suffered no detriment in not having a general inspector, but have got along much better by allowing the deputies to act on their own responsibility. As a proof

of this assertion, I will state that I purchased 23,000 barrels of mackerel, and having shipped them, the only deduction called for was $12. I assure you we feel relieved of this burden, and our friends in New York and Philadelphia are not the least afraid to trade here now, notwithstanding we have no general inspector."

An editorial in the same paper on March 5, 1875, says:

"The hearing on the petition for the abolishment of the office of general inspector of fish came before the senate committee on Friday last. Messrs. J. O. Proctor, of this city, Charles Ropes, of Salem, Franklin Snow, and others, of Boston, were present, and opposed the petition, arguing that without a general inspector there would not be any redress for buyers of pickled fish in case of fraud.

"Mr. George Steele, of this city, was presentto defend the petition, and give any information to the committee why it should be abolished. He argued that there was not the least necessity of such an office. Each packer of fish should be made directly responsible for his own brand, and should not be held accountable for pickled fish after they have been sold and left his premises. This would afford great protection to those in the packing business. As the law now operates, it holds out inducements for unprincipled dealers to tamper with the brands, or take out mackerel and report them short weight, more especially if the price decreased after purchasing. If a packer was disposed to cheat, he could not follow it up any great length of time, as no one would purchase of him at full market rates; consequently his brand would always be at a discount, and no man having even the pretense of honor about him, could afford to be thus classed among business men, and trickery would very soon find its level. He advocated a trade-mark which should protect its owner everywhere in the United States, the same as patent-medicine and other trade-marks protect their owners, and make it a crime for any one to counterfeit or interfere with for improper purposes. He cited instances where such trade-marks were in themselves very valuable, as the articles they covered could always be relied upon. The paying out of $3,000 to a general inspector of fish, who did not know enough of the business to cull a trip of mackerel, he considered entirely wrong. The office was not needed. Let inspectors be appointed by the selectmen of towns or mayors of cities, to be held responsible to the State authorities if need be, and all fees arising therefrom be paid into the treasuries of said towns and cities. This would be just and satisfactory. Mr. Steele met all the objections of his opponents in an able manner, and another hearing was ordered for Thursday next, when it is hoped that the entire number, or at least a majority of those who signed the petition, will attend, and by their presence and voice add testimony toward the abolishment of an office which is nothing more or less than a sinecure.

"The State of Maine has passed a law providing for the appointment by the governor of inspectors of fish in those places where pickled fish

are cured or packed for exportation, to hold office five years. These inspectors are to make annual returns to the secretary of state."

In the Advertiser of March 12, 1875, is the following letter written to Mr. George Steele, of Gloucester, by Mr. E. G. Willard, and dated Portland, Me., March 1, 1875:

"DEAR SIR: I noticed the hearing you had Friday before the committee, in the Boston Advertiser, and was astonished to see the parties' names who were present in opposition. We had no opposition from a purchaser of fish in Maine; the opposition came from the late general inspector and a part of his deputies, who were not disposed to cull the fish according to the law of the State. With these parties we had much trouble and expensive law suits, in which we beat them; thus showing that the decision of the general inspector amounted to nothing.

"I have been in the business of purchasing pickled fish, as well as dry, the last twenty years. The past ten years I have purchased one-half of the pickled fish packed in the State.

"We had no general inspector till I had been in the business seven years. During this time we had no trouble about the cull, nor did we have any until after we got a general inspector, when trouble commenced, and grew worse and worse, till it culminated two years ago, when our business stopped altogether; no one would buy here, the cull was so poor.

"The office terminated in this State last May, and we were determined not to have another appointed if we could prevent it. The governor and council gave us a hearing, and they concluded not to make an appointment; and we went on last season without a general inspector, and had no trouble. There was a much greater catch last year than the year before—45,000 barrels against 32,000—and parties that withdrew from the market two years ago, returned last year, and have been buying in our market since, and some 28,000 barrels were sold last week. A general inspector is a general nuisance, and no honest inspector wants a guardian.

"My ownership in fishing-vessels is large. I have an interest in twenty-three vessels. The best argument to use is, let the parties opposed show any good the office is to any one; what benefit any one receives from it. Our law was a copy from yours, and a decision of the general inspector amounts to nothing; either party aggrieved can appeal to the courts, and the opinion of the general inspector amounts to no more than that of any other man, as we proved in the cases we had here. Our mackerel here are nearly all packed in barrels. Several parties here repack in halves, quarters, and kits; Dana & Co., largely for the West. Our deputies gave no bonds last year, but will now get their commissions from the governor, and give bonds to the mayor and aldermen, or selectmen of towns, rated according to their business. In fact, we get right back where we were thirteen years ago. Our committee was unanimous at the first meeting, and the change was put right through and is now a

law; and I will guarantee that there will never be a general inspector in this State again."

The question of abolishing the office of inspector-general of fish came before the legislature of Massachusetts in April, 1875, and that office was continued. A communication in the Advertiser of June 4, 1875, in discussing the wants of Gloucester in the regulation of the trade in pickled fish, says:

"What Gloucester really wants is a closer relation between producer and customer, or, in other words, we want to sell our products directly to the man who supplies the customer. We are entitled to the profit on our goods that our advantage as producer gives us, without having to divide that profit with any middle-men. We want to bring the customer here. Now, if we are going to do a regular distributing business as well as producing, we must do it on business principles. We must have a regular standard quality of our goods to quote to the trade; a standard that is known and established by law, so that when your customer at a distance buys your goods without seeing them, he must know what he is buying; and further, there must be some one in position when any question shall arise on the quality of the goods, as between buyer and seller, who must settle the dispute and whose decision must be binding on both parties. This position must be filled by a person of large practical experience and sound judgment; and though you call him inspector-general or not, you can confine and limit his powers and duties to this one special duty, making him simply referee, with no power to harass or to confiscate. The interest of yourself, as well as your customers, demands such protection, which must neccessarily be mutual. We want an inspector-general just that much and no more.

"Outside of this State there is practically no inspection law touching our goods. So, to more rigidly enforce the law as it stands is to enforce it against ourselves and in favor of outsiders. Any law that says to the man who packs mackerel in Gloucester, you shall put those fish only in such sized packages as are mentioned and no others, no matter if you do brand the exact weight and quality on each package, or whether your customer desires that size or another, is unnecessarily stringent and despotic; especially so when anywhere outside the State the customer can be accommodated with the same goods in just such packages as he wants. That portion of the law should be abolished. We should have the unquestioned right to put our fish in just such packages as our customers want, provided the quality and the quantity is branded on the package, as on all other kinds of provisions.

"To resume: We must not abolish the law; it is the protection our customers have a right to ask. We must not abolish the office of inspector-general, for we need him to enforce the law in good faith as well as our customers.

"Let the law be plain and simple. Let the inspector-general be only referee for the buyer and seller, and let any man put up his fish in just

such packages as he chooses, with the quality and quantity branded on each package. Won't this come nearer what we want than 'no law' or too much law?"

A seizure of Gloucester pickled mackerel occurred in Boston in the fall of 1875. The Advertiser of September 17, 1875, in discussing this seizure, says:

"Washing off the salt which may adhere to recent packed small mackerel, and the draining of the pickle therefrom, would, as we are informed by practical inspectors, cause the confiscation of nearly if not every barrel examined, that is, if the very letter of the law requiring 200 pounds of fish was executed. Some might not fall short but a few ounces, others as many pounds; still, whatever the shrinkage, however small, the mackerel, under the present law, could be confiscated, and thereby come into the hands of the official. * * *

"It is full time that this law was removed from the statute books. So long as it is there and administered, it will prove, in the hands of unprincipled men, a drawback upon any place engaged in the fisheries. It affords a weapon which can be used against fish packers at any time by parties who may wish to do them an injury. Not only does the inspector-general and his allies have a chance to seize mackerel, but purchasers anywhere and everywhere, in case of a sudden decline in prices, have only to write to those of whom they purchased:

"'Your mackerel are short weight; make me so much allowance on a barrel, or back they will come to you.' What protection has the fish dealer at headquarters, under such a law? None at all. Fish with his brand upon the barrels may come back at any time unless he will consent to settle any trumped-up claims. There would not be the least objection, if mackerel were examined on the wharves at the time of packing or shipping. That is the time to make such examination, if any. But this getting them away first is perfectly ridiculous, and altogether too one-sided to be long borne.

"Let each packer have his own brand or trade-mark. Allow them to put up such sized packages as their customers require, branding the weight in a conspicuous place, so that it cannot easily be erased. Then each man would stand or fall on his own merits. If there are any washing off the salt and draining the pickle—not because the purchaser had made complaint or had any suspicion that he was to be defrauded; but the law gives the officials liberty to seize, open, confiscate! And the latter put money in their pockets. We are not sorry that this case has occurred, for it needed something of the kind to wake up our people. They begin to see this blue law now in a light which never before dawned upon them. They begin to realize that at the instance of any jealous fish dealers out of the city—and there are such—their frauds in the business, they would soon be discovered and honest dealers benefitted, as the trade would soon learn of them and give their brands the preference. Then again, let all sales be made from the wharf or store-

house, the packages to be weighed by a sworn weigher before they are shipped, and after that to be at the risk of the buyer. Some such system as the above will have to be agreed upon ere the business can be considered a really safe one, and the sooner those engaged confer together and resolve to have the matter presented before the legislature, with a view for the abolishment of the law, the better it will be for all interested. Mackerel can be seized and tampered with until their reputation is affected, and Gloucester lose the prestige which she is gaining so rapidly. Will our business men stand that? Can they suffer it? We opine not, and they will say so most emphatically ere long."

In the spring of 1879 some amendments were made to the Massachusetts inspection laws. One of these amendments permits the packing of pickled fish in small packages of any size which are properly branded. Another amendment repealed the section that required the word "foreign" to be stamped on barrels of dutiable imported pickled fish.

The Boston Commercial Bulletin in February, 1879, discussed the reasons for abolishing the office of inspector-general, and said, "that the whole system of inspection of mackerel at the present time is a perfect farce, and rather than have it carried on as it is, it would be better for the trade and the public to have the office of inspector-general abolished, and the system done away with. In that case the packers would do their own branding; and buyers, in making their purchases, would place faith in the truthfulness of the brand only according to the reputation of the packers."

VII. STATISTICS OF THE INSPECTION OF MACKEREL FROM 1804 TO 1880.

[By A. Howard Clark.]

L.—STATISTICS OF MAINE, MASSACHUSETTS, AND NEW HAMPSHIRE, AND TOTAL STATISTICS.

46.—Statistics of Massachusetts.

The inspection of pickled mackerel in Massachusetts is exhibited in three statements. The first statement shows in detail the number of barrels packed in each inspection port of the State during each year from 1804 to 1881; and for the years from 1804 to 1878, was compiled by Mr. Alexander Starbuck from the official returns deposited by the inspector-generals in the office of the secretary of state of Massachusetts. The statistics for the years 1879, 1880, and 1881 are from official documents, signed by the inspector-general. From a review of this statement we find that in the earlier years of the mackerel fishery nearly forty fishing ports were engaged in packing mackerel, but during recent years the business has been concentrated to a dozen or fifteen places, the

ports of Gloucester and Boston packing by far the greater part of all the pickled mackerel put up in the State.

The second statement shows the total number of barrels of each grade of mackerel packed in Massachusetts during each year from 1804 to 1881, and also the total value of each year's inspection since the year 1830. The quantities of mackerel in this table are from the preceding table. It shows substantially the total quantity of pickled mackerel sold for exportation from the State as well as for consumption within the State; though perhaps 5 per cent. of the total number of barrels packed escapes inspection.

From a review of this statement we see that there has been a very great fluctuation in the extent of the mackerel business. The smallest number of barrels was packed in 1814, and the largest number in 1831. The year 1851 was a prosperous one, and also the year 1870. During the past four or five years an extensive business in fresh mackerel has been developed, so that in 1881 about 125,000 barrels were sold in a fresh condition. If this quantity be added to the amount inspected, it shows a total catch by Massachusetts vessels nearly equal to that of the year 1831.

The third statement shows the number of barrels of mackerel reinspected in Massachusetts during the years 1850 to 1853, 1859 to 1876, 1878 to 1881. It represents barrels of mackerel that are repacked in smaller packages, and may include fish already accounted for under the head of "inspected," while a very small fraction may consist of imported fish repacked. These statistics are compiled from the official documents, signed by the inspector-generals.

MACKEREL INSPECTION IN MASSACHUSETTS.

STATEMENT I.—*Showing by ports the number of barrels of each quality of pickled mackerel inspected in Massachusetts from 1804 to 1881.*

[Half and quarter barrels and smaller packages reduced to barrels.]

Port of inspection.	1804.				1805.				1806.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	1,631½	6,226	.....	7,857½	1,737	2,518½	4,228	8,533½	2,563½	2,756	2,907	8,226½
Newburyport	3	17	.....	20	300	700	600	1,600	120	.....	.....	120
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport[a]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	92	.....	.....	92	66	61	.....	127	67½	100	2	169½
Marblehead	81	.....	.....	81	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	374½	2,570	.....	2,944½	553½	691	885	2,129½	1,218½	1,305½	1,224	3,748
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	216½	2,064	.....	2,280½	556	767	1,424	2,747	670½	562	658	1,890½
Cohasset	377½	696	.....	1,073½	307½	266½	628	1,202	357	529½	313	1,199½
Scituate	537	879	.....	1,416	2½	21	614	637½	128	244	591	963
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yarmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Truro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Provincetown	.....	.....	.....	.....	1½	12	77	90½	.....	15	119	134
Chatham	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dennis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	2
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[a] Rockport was a part of Gloucester until 1840.

STATEMENT I.—*Mackerel inspection in Massachusetts.—Continued.*

Port of inspection.	1807.				1808.				1809.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	2,353½	2,462	4,489½	9,305	1,305½	2,413½	3,910½	7,629½	2,274½	3,078	3,472½	8,825
Newburyport	.....	76	.....	76	10	13	.....	23	150	510	.....	660
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	.....	.....	.....	.....	177	61	.....	238	28	17	3	48
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	7	40	.....	47	17	21	73	111	.....	.....	1	1
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	903	881	1,809	3,593	276½	841	1,442½	2,562	931½	1,465	1,261½	3,658
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	731½	726½	1,168	2,626	491	509	1,238	2,238	388	534½	1,486	2,408½
Cohasset	400	401½	769½	1,571	139½	381½	756	1,277	699	321	492	1,512
Scituate	238½	201	614	1,053½	162	222½	89	533½	66	192	149	407
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yarmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Truro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Provincetown	72½	132	127	332½	30½	246½	212	489	14	38½	80	132½
Chatham	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dennis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	4	.....	4	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	2	2	.....	58	.....	58	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1810.				1811.				1812.			
	1.	1.	2.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	2,540½	4,770	5,242	12,552½	1,366½	6,023	10,009½	17,401	1,000½	2,154½	2,726	5,881
Newburyport	57			57	28	12		40	94	73		167
Ipswich												
Rockport												
Gloucester							6	6				
Manchester												
Beverly												
Salem	45	28	1	74	15	28	15	58				
Marblehead	147	144½	33	330½	1	42	10	53	36½	40½	24	101
Medford												
Charleston												
Boston	1,099½	2,936½	2,227	6,263	557½	4,016½	6,158½	10,733½	213½	877½	1,098	2,189
Dorchester and Roxbury												
Quincy												
Weymouth									22½	17	112	151½
Hingham	687	771	1,375	2,833	221½	960	2,138½	3,320	182½	279	768	1,229½
Cohasset	291½	585	712	1,588½	183½	745½	1,512	2,439	126½	548	573	1,247½
Scituate	46½	126	82	256½					81	204½	39	324½
Duxbury												
Plymouth												
Sandwich												
Barnstable												
Yarmouth												
Brewster												
Wellfleet												
Truro												
Provincetown	165	169	206	540	237	221	168½	626½	244	115	112	471
Chatham												
Harwich												
Dennis												
Falmouth												
Nantucket												
Edgartown												
Fairhaven												
New Bedford												
Dartmouth												
Westport					19			19				
Somerset					106			106				
Swanses												
Other towns												

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1813.				1814.				1815.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	906½	1,231	1,625	3,756½	89	546½	703½	1,339	3,225½	5,456½	7,377½	16,059½
Newburyport	179	35	.....	214	50	248	63	361	251	222	255	728
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	.....	.....	.....	.....	.....	.....	.....	.....	72	.....	.....	72
Gloucester	4	23	64	91	.....	.....	.....	.....	.....	.....	.....	.....
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	.....	1	22	23	2½	20	21	43½	.....	4	5	9
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	422	624	867	1,913	32	199½	323½	555	1,602½	3,647	5,408	10,658
Boston	.....	.....	.....	.....	.....	.....	.....	.....	31	172	.....	203
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	129	180	208½	517½
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	1,034½	739½	1,370	3,144
Hingham	131	182	153	466	.....	.....	.....	.....	105½	273	80	458½
Cohasset	72	176½	202	450½	.....	.....	.....	.....	.....	.....	.....	.....
Scituate	38½	66½	17	122	.....	1	2	3	.....	.....	.....	.....
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yarmouth	.....	.....	.....	.....	.....	9	15½	24½	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	.....	.....	.....	.....	.....	19	212½	231½	.....	.....	7	7
Truro	.....	.....	.....	.....	4½	50	66	120½	.....	19	43½	62½
Provincetown	8	123	300	431	.....	.....	.....	.....	.....	.....	.....	.....
Chatham	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dennis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	46	.....	.....	46	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection	1816.				1817.				1818.			
	1.	2.	3.	Total.	1.	1.	3.	Total.	1.	2.	3.	Total.
Total	8,694½	9,264½	13,010	30,979	10,406½	5,267½	21,688	37,362	14,410	11,162½	20,775½	46,348
Newburyports	983	952½	335	2,270½	1,234½	742	739½	2,716	2,388	1,555½	2,540	6,481½
Ipswich									15	2	1	18
Rockport												
Gloucester	11	9	103	123	62	34	19	115	33	54	67	154
Manchester												
Beverly												
Salem					65	15	206	286				
Marblehead	46	50	47	143	64	65	2	131	233½	186	103	522½
Medford												
Charlestown												
Boston	4,741	6,309	8,285	19,335	6,421½	3,469	14,347	24,237½	7,777½	6,350	11,587½	26,215
Dorchester and Roxbury												
Quincy												
Weymouth	189½	287½	502	979	312½	104½	1,017	1,434	379	214½	617	1,210½
Hingham	2,264	1,204½	3,084½	6,553	1,525	455	3,193	5,173	1,945½	1,214	2,817	5,976½
Cohasset	459½	357	566	1,382½	488½	289	1,031	1,808½	736½	524½	1,267½	2,528½
Scituate									282	242	895	1,419
Duxbury												
Plymouth					30	31	110	171	96	92	229	417
Sandwich												
Barnstable												
Yarmouth												
Brewster												
Wellfleet												
Truro												
Provincetown	½	95	107½	203	14½	18	52	84½	53	46½	49	148½
Chatham												
Harwich												
Dennis												
Falmouth												
Nantucket												
Edgartown												
Fairhaven							16	16			20	20
New Bedford					136	37	840½	1,013½	7		105½	112½
Dartmouth					33	8	115	156	112	44½	477	633½
Westport												
Somerset									125			125
Swansea									229	137		366
Other towns												

a Newburyport in 1818 and 1821 included Newbury.

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1819.				1820.				1821.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	19,614	36,521½	43,975½	100,111	12,455	34,811½	68,374½	115,641	7,400½	32,103½	71,505½	111,009½
Newburyports	1,995	4,966½	8,176½	15,138	999	3,302½	6,940	11,241½	550½	2,911	8,655½	12,117
Ipswich	312	104	108	524	40	60	695	795	1	1	3	5
Rockport												
Gloucester	82	69	109	210	5	97	115	217	385½	714	1,697	2,176½
Manchester												
Beverly												
Salem	118	67	183	368	258½	616½	855	1,730	428	1,890	2,279½	4,597½
Marblehead	588	870	854	2,322	96½	238½	639½	974½	153	834	554	1,021
Medford												
Charlestown												
Boston	12,121½	21,974½	23,515	57,611	8,372½	23,801½	40,755	72,929	4,112½	16,208	42,957½	66,278
Dorchester and Roxabury												
Quincy					37	128	137½	302½	5	28	1	34
Weymouth	335½	512	977	1,824½	278½	512	1,127	1,917½	16	103	94½	213½
Hingham	2,098	4,102	4,477	10,677	1,218½	3,036	8,598	12,852½	1,019½	3,297½	5,833	10,150
Cohasset	435	675½	855½	1,966	257½	363	1,532	2,152½	178	1,701½	2,129	4,008½
Scituate	612½	1,762	2,369½	4,744	445½	1,440½	2,697½	4,583½	295½	1,929	4,342½	6,567
Duxbury	89½	20½	49	109	35½	146	93	274½				
Plymouth	275	326	569	1,170	272½	473½	1,916	2,662	98	499	1,035	1,632
Sandwich												
Barnstable												
Yarmouth												
Brewster												
Wellfleet												
Truro												
Provincetown	106	202	201	509	1	11	165	177		1	20	21
Chatham	14	4	27	45	23	63	76	162	20	313	784	1,116
Harwich												
Dennis												
Falmouth												
Nantucket												
Edgartown												
Fairhaven		2	5	7								
New Bedford	58½	141	456	655½	25	53	199	277	13	95	224	332
Dartmouth	463½	723½	1,044	2,231	89½	469½	1,434	2,993	26	168½	536	730½
Westport									160			160
Somerset												
Swanzea												
Other towns												

* Newburyport in 1818 and 1821 included Newbury.

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1822.				1823.				1824.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	20,035	66,681½	73,578	160,294½	19,804	62,047½	63,154½	145,006	45,246½	75,221	71,183	191,650½
Newburyport	1,606	6,683	7,877	16,166	1,829	5,154½	6,814	13,797½	4,201	6,842	6,436½	17,479½
Ipswich	30	75	45	150	122½	202	61	385½	223	208	94½	525½
Rockport												
Gloucester	571	1,361	872	2,804	869	1,296½	1,425	3,590½	1,654½	3,013	1,635½	6,303
Manchester												
Beverly												
Salem	411½	1,846	1,515	3,772½	255½	1,276½	1,164½	2,696½	1,085½	3,116½	1,252½	5,454½
Marblehead	593½	1,522	1,445½	3,561	256½	806	687	1,749½	310	1,675½	477½	1,963
Medford												
Charlestown												
Boston	12,690	39,784	43,206½	95,680½	12,943	36,845½	34,615	84,403½	27,033½	39,136	34,887	101,056½
Dorchester and Roxbury												
Quincy												
Weymouth	37	298	306	641	11½	122	244	377½	12	49	39	100
Hingham	2,019½	6,545½	8,271	16,836	1,860½	6,832½	6,417	15,110	5,113½	8,403	10,138½	23,655
Cohasset	661	2,631½	4,099	7,391½	464	4,111½	4,788	9,363½	2,288	6,417½	8,053½	16,759
Scituate	796	2,802	3,484½	7,082½	665½	3,333½	1,231½	8,230½	1,889½	4,083½	4,627½	10,600½
Duxbury	41½	313½	389	744	27	119	24	170				
Plymouth	311	1,161	708	2,180	342	1,331	1,414	3,087	999½	1,650	1,256	3,905½
Sandwich												
Barnstable												
Yarmouth	60	379½	124	557½	34	83	187	304	17	98½	167½	283
Brewster												
Wellfleet												
Truro												
Provincetown	½	7	143½	151	13	65	314	392	355½	596	1,726½	2,678
Chatham			269	269	1½	55	232½	289				
Harwich												
Dennis												
Falmouth												
Nantucket												
Edgartown												
Fairhaven												
New Bedford	94	478	64	636	44½	156	304	504½	19	143½	235	397½
Dartmouth	112½	750½	709	1,572	23	222	232	477	45	385	156	586
Westport												
Somerset												
Swansea		50	50	100	42	36		78		4		4
Other towns												

STATEMENT I—*Mackerel inspection in Massachusetts*—Continued.

Part of inspection.	1825.				1826.				1827.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	29,640	109,840	114,904½	254,384½	43,499	80,584	34,857½	158,740½	81,357½	69,335	39,612	190,304½
Newburyport	4,179	11,403	8,256½	23,838½	5,170½	10,082½	3,857	19,110	9,667½	9,242½	3,901	22,831
Ipswich	224	378	287	889	18½	46	47	111½	46½	105½	87	241
Rockport												
Gloucester	1,287	4,013½	3,159	9,359½	4,446	5,614½	1,608	11,668½	9,157½	5,842	1,258½	16,258
Manchester												
Beverly												
Salem	605	4,625	5,870½	11,460½	1,512½	3,536½	2,004½	7,050½	2,104	3,041	1,642½	6,787½
Marblehead	223½	1,264	1,203½	2,711	238½	871½	612	1,722	726½	772½	257½	1,756½
Medford												
Charlestown												
Boston	15,381½	62,542½	61,595	139,519	19,551	38,215½	17,935½	75,702	32,698½	32,122	19,476	87,296½
Dorchester and Roxbury												
Quincy												
Weymouth	6	89½	194	289½	20	158	48	226	70	139	37	255
Hingham	5,045	10,205	14,808½	30,058½	7,469½	6,633½	2,533½	16,636½	12,226½	7,337	6,007½	25,628
Cohasset	1,510	6,283	9,727	17,520	1,996½	4,913½	2,075½	8,985½	3,804	3,584½	2,647	10,035½
Scituate	743	4,668	5,485	11,096	1,407	4,629½	1,802	7,838½	4,509	3,893½	2,339½	10,747
Duxbury	36½	539½	626	1,204					6	27	6	39
Plymouth	166	1,058	1,826	3,050	135½	432	381	949½	589½	711½	632	1,933
Sandwich												
Barnstable												
Yarmouth					12	24	12	48				
Brewster	4	15½	18	37½								
Wellfleet					1,201½	2,194	523	3,918½	1,764	1,628	469½	3,861½
Truro												
Provincetown	160	1,231	1,080½	2,471½	319	999½	1,034½	2,353	821	747½	696	2,264½
Chatham												
Harwich												
Dennis												
Falmouth												
Nantucket												
Edgartown												
Fairhaven												
New Bedford	3	179½	534	716½	1	176½	364	541½	35	87½	154	276½
Dartmouth	6½	26	132	164½					17	49	1	67
Westport												
Somerset												
Swansea												
Other towns												

STATEMENT I—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1828.				1829.				1830.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	63,235½	110,668½	63,422½	237,324½	54,194	77,068	94,695	225,977	47,868½	104,580½	156,025½	308,475½
Newburyport	6,679½	13,518½	6,193½	26,391½	4,842½	8,202	8,378½	21,423	3,437	11,707	11,052½	26,196½
Ipswich	203½	234½	131	569	18	31	16	65	34	83	47	164
Rockport												
Gloucester	9,720½	17,165½	7,317½	34,203½	10,873½	13,257	13,453	37,583½	7,761½	16,856½	28,995½	51,613½
Manchester												
Beverly												
Salem	696½	1,840½	1,436½	3,973½	457	1,066½	1,057	2,610½	1,169	2,430½	3,536½	7,136
Marblehead	647	860½	406½	1,914	306½	359½	568	1,214	199½	359	520½	1,079
Medford					261	454	1,117	1,822	436	1,085½	1,977½	3,499
Charlestown									381½	767½	915	2,064
Boston	25,593	43,203½	25,789½	94,586	22,531½	30,922	32,801½	86,255	19,823½	39,975	53,376½	113,175
Dorchester and Roxbury												
Quincy												
Weymouth	52½	203½	64	320	7	51	90	148	14	30	40	84
Hingham	9,786½	13,581½	10,282½	33,650½	6,897	8,809½	18,311½	34,018	5,383	10,570½	27,565½	43,519
Cohasset	2,954½	6,480½	5,157	14,592	2,348	4,146½	8,465	14,961½	2,438	5,431½	11,352	19,221½
Scituate	3,556½	7,200	4,355	15,111½	2,857	4,794	4,819	12,470	3,003	4,589½	6,626½	14,219
Duxbury									83½	572	1,414	2,068½
Plymouth	422½	1,076½	795	2,294	504½	954	1,735	3,193½	359	1,406½	3,754	5,519½
Sandwich												
Barnstable	445½	811	381½	1,638	618	1,237	2,473½	4,328½	481½	969½	2,242½	3,693½
Yarmouth												
Brewster												
Wellfleet	2,026	3,852	588	6,466	1,237½	2,236	516	3,989½	2,052½	4,795½	1,971½	8,819½
Truro												
Provincetown	449½	571	474	1,494½	360½	331½	767	1,455	670	2,228½	2,064½	4,963
Chatham									32	121	295	448
Harwich												
Dennis												
Falmouth												
Nantucket												
Edgartown												
Fairhaven												
New Bedford	2	67½	51	120½	15	181½	137	333½	73½	274	143	490½
Dartmouth					23½	83		106½	36½	318	116	470½
Westport												
Somerset												
Swanses												
Other towns												

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1831.					1832.					1833.				
	1.	2.	3.	Total.	Kegs.	1.	2.	3.	Total.	Kegs.	1.	2.	3.	Total.	Kegs, 1 & 2.
Total	70,198	171,186	142,164½	383,548½	14,382	23,879	97,219½	96,553½	222,452	12,540	54,559½	98,927½	69,445½	222,932½	13,449
Newburyport	6,102½	17,698½	12,382½	36,423½	5,654	3,815½	9,709	7,640	21,164½	1,894	5,981½	9,975	4,479½	20,436	1,159
Ipswich	114½	291½	447	853	.....	76½	406½	492	975	.....	121½	273	373	767½	10
Rockport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	11,297	29,030	29,428½	69,755½	5,971	6,039	16,855½	16,826	39,720½	3,811	11,239	19,002½	15,283½	45,525	3,838
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	22½	91	53	166½	.....	86½	278	175½	520	.....	.....	.....	.....	.....	.....
Salem	1,128½	2,951½	3,081½	7,161½	.....	518½	1,799	1,468	3,785½	.....	683½	1,075	556	2,314½	.....
Marblehead	512	1,088½	720½	2,301	.....	98½	177½	202	478	.....	142	204	65	411	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	2,563	6,847½	2,818	12,228½	1,297	857	5,370	3,848½	10,075½	1,729	2,271½	4,246	1,734	8,251½	1,927
Boston	27,098½	60,745	41,121	128,964½	1,460	9,987	33,228	27,523½	70,738½	4,954	16,402	27,664½	13,869½	57,956	5,701
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	690	1,764½	1,631	4,085½	738
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	433	751½	402½	1,587	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	9,083½	18,803½	24,652	52,539	.....	2,363½	8,328	15,436½	26,128	112	4,569	10,009	13,392	27,970	448
Cohasset	2,582	7,138½	9,622	19,342½	.....	705	3,642½	6,323½	10,671	.....	1,817½	4,364½	5,088½	11,270½	.....
Scituate	3,087½	7,064½	5,492	15,644	.....	1,230	3,879½	4,398	9,507½	.....	2,118½	4,379	3,432	9,929½	.....
Duxbury	436½	1,972½	2,056	4,465	.....	135	608	915½	1,658½	.....	170	432½	250	852½	.....
Plymouth	583½	1,361½	1,273	3,218	.....	257½	1,187	1,205½	2,650	.....	422	1,216½	921	2,559½	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	567½	2,313	2,442	5,322½	.....	131½	1,210	1,150½	2,492	.....	836½	2,190½	976½	4,003½	.....
Yarmouth	227	1,246	1,059	2,532	.....	140½	839½	1,546	2,526	.....	686½	1,272½	802	2,760	80
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	2,637	6,861	2,890	11,988	.....	1,088½	5,665	4,704	11,457½	.....	3,429	6,569	2,612½	12,610½	98
Truro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15	15	.....
Provincetown	1,715½	4,065	1,807	7,587½	.....	932	2,868	1,620½	5,620½	.....	2,821	2,919	2,288	8,508	.....
Chatham	102½	213½	90	406	.....	75	476½	331	a 882½	.....	.....	.....	.....	.....	.....
Harwich	120	554½	214½	889	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dennis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	74½	222	205	501½	.....	149½	102	9	260½	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	88	481	237	806	.....	87	371	154	582	.....	77	497	85	659	.....
Dartmouth	129	248	478	855	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	26½	99	139	264½	.....	.....	.....	.....	.....	.....

a Includes Dennis.

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1834.					1835.					1836.				
	1.	2.	3.	Total.	½ and ¼ barrels.	1.	2.	3.	Total.	½ and ¼ barrels.	1.	2.	3.	Total.	½ and ¼ barrels.
Total	80,433½	93,553½	78,892½	252,879½	15,705	45,605	57,271½	91,924	194,800½	10,443	53,665½	60,558	60,187	174,410½	10,541
Newburyport	11,289½	9,639	6,849	27,777½	602	4,635½	6,453	11,244½	22,333	345	8,694	7,680½	6,134½	22,509	602
Ipswich	280	304	210	714	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	23,551	23,933½	13,834½	61,319	3,861	14,697	15,570½	18,271½	48,539	2,354	17,346	14,904½	11,548	43,798½	2,388
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	1,440	1,064½	787	3,291½	90	498½	962	651½	2,112	.....	1,407	717	366½	2,490½	3
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59	118	66	243	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	2,311	3,139½	2,117½	7,568	949	852½	1,161½	1,878	3,892	8	341	202	289	832	.....
Boston	18,395	25,280	22,456	66,131	7,867	10,214½	15,149½	24,037½	49,401½	6,409	10,431½	14,911	14,610½	39,953	6,251
Dorchester and Roxbury	1,522	2,416	1,325½	5,263½	960	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	147	200	350	697	99	100	138	509	747	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	5,198½	6,075	10,503½	21,777	595	3,150½	2,950	9,510	15,610½	265	2,857½	4,257½	6,771½	13,886½	316
Cohasset	2,165	3,725	5,799½	11,689½	400	1,217	2,280½	5,978	9,475½	107	1,333½	3,726½	6,622½	11,682½	16
Scituate	2,123½	2,408	1,655	6,186½	185	1,392	2,091	2,510	5,993	533	929	1,418½	1,447½	3,795	955
Duxbury	400½	746	614	1,760½	.....	493	412	748	1,653	.....	376	592	172	1,140	.....
Plymouth	691½	1,166	810	2,667½	6	276	689	1,725½	2,690½	218	207½	452	817	1,476½	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	942	1,857½	1,939	4,738½	.....	1,159	1,432½	1,997½	4,589	4	475	1,481	2,157½	4,113½	.....
Yarmouth	791½	867	1,091½	2,750	.....	411½	670	1,053	2,134½	.....	283½	774½	1,388	2,446	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	4,211	4,585½	3,263½	12,060	.....	2,932½	3,536½	2,830½	9,299½	.....	3,670½	5,374	2,588	11,632½	.....
Truro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	65½	66½	.....
Provincetown	3,956	4,822½	4,560½	13,339	1	3,176½	3,251	7,919½	14,347	.....	5,224½	3,834	5,071	14,129½	.....
Chatham	.....	.....	.....	.....	.....	208	301½	737	1,246½	.....	2	7	32	41	.....
Harwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	19	4	30	.....
Dennis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	86	36	143	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	100	78	53	231	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	1,068½	1,324½	726½	3,149½	.....	91	145	270	506	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1837.					1838.				1839.			
	1	2	3	Total.	½ and ¼ barrels.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	24,573	61,027	52,557½	138,157½	13,467	37,983½	28,588	44,184	110,740½	22,217½	22,037½	30,013½	74,268½
Newburyport	5,088	5,726	4,471	15,285	211	5,709½	2,995½	4,361½	13,070½	4,333½	1,660½	2,592½	8,586½
Ipswich	20	33	12	65	.....	2½	13	9½	25	.....	.....	.....	.....
Rockport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester	9,162½	16,198	7,163½	32,524	3,152	11,582½	7,154½	5,606½	24,343	5,273½	3,467½	2,684	11,424½
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	26	68	13	107	.....	35	63	32	130	.....	.....	½	½
Salem	459½	473	225	1,157½	120	747½	309	273	1,329½	96½	104½	44	245
Marblehead	86½	188	177	451½	.....	76½	40½	52	169	.....	2	.....	2
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	61½	242½	46	350	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	2,758½	10,852½	9,233	22,864	8,380	5,176½	4,309½	8,127½	15,613½	2,790½	2,710½	3,119½	8,629½
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	2,034½	5,571	9,077½	16,683	239	3,069½	2,216½	6,187½	11,473	2,476½	2,609½	4,633½	9,718½
Cohasset	607	3,989½	8,301	12,897½	412	2,961½	1,732½	6,665	10,459½	1,180½	1,616	4,823½	7,620½
Scituate	622½	1,595	1,756	4,003½	792	781½	502	1,090	2,373½	289	424½	1,058½	1,771½
Duxbury	46	252½	320½	619	1	109½	159	80½	349	38½	53½	175½	267½
Plymouth	186½	589½	708½	1,486	.....	341½	303½	472½	1,117½	63½	191½	357½	613
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3½	33	36½
Barnstable	627	2,714	2,136½	5,479½	22	1,000	1,365	1,534	3,899	1,035	1,419½	2,235½	4,690
Yarmouth	270	1,403½	1,917	3,590½	.....	471	538	639	1,668	394	509	517½	1,420½
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	1,695	5,573½	1,776	9,044½	118	3,315	3,606½	3,618	10,541½	2,045½	2,968½	2,741	7,755½
Truro	70	522½	549½	1,142	10	677½	799½	1,646½	3,123½	706	1,315½	1,320½	3,342
Provincetown	622½	4,729	4,287½	9,639	.....	2,194½	1,798	4,747	8,739½	630½	1,736½	2,599	4,966
Chatham	28	69	54	151	.....	225½	126½	103	453	184½	260	158	602½
Harwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	8	2	20
Dennis	40½	166	85	291½	.....	392½	553½	913½	1,859½	669	968½	916½	2,556
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	59	71	196	326	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1840.				1841.				1842.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	19,351½	11,049	20,091	50,491½	23,747	10,649	21,141	55,537	29,363	22,496	23,684	75,543
Newburyport	2,903	1,109½	1,797	5,809½	2,975	1,535	2,717	7,227	3,330	1,508	2,254	7,092
Ipswich												
Rockport a									630	249	194	1,073
Gloucester	5,467	1,757½	954	8,198½	5,071	1,868	1,931	8,870	7,701	4,863	2,766	15,385
Manchester												
Beverly	2	2½		4½	10	6	5	21	1	2	1	4
Salem	46	2		48	80	29	75	184				
Marblehead												
Medford												
Charlestown												
Boston	2,986½	1,649½	3,087	7,723	2,917	1,406	1,386	5,709	2,192	2,023	1,449	5,664
Dorchester and Roxbury												
Quincy												
Weymouth												
Hingham	2,222	1,163½	3,743½	7,129	2,502	758	2,901	6,248	3,507	2,630	3,351	9,488
Cohasset	824	1,092½	3,103	5,019½	1,312	723	2,326	4,361	1,469	1,717	2,868	6,054
Scituate	237	112	561½	910½	371	237	452	1,060	258	561	491	1,310
Duxbury												
Plymouth	172	96½	61½	330	296	127	166	589	96	75	493	664
Sandwich			10	10								
Barnstable	367	469½	1,137	1,913½	738	276	829	1,843	780	740	1,306	2,826
Yarmouth	493	441½	444	1,378½	427	169	60	656	845	677	815	2,337
Brewster												
Wellfleet	983½	1,069	1,860	3,912½	2,368	1,242	2,862	6,472	2,441	2,786	2,782	8,009
Truro	1,018	696	1,074½	2,788½	2,440	951	3,461	6,852	2,563	1,266	2,250	6,079
Provincetown	584½	792½	709½	2,086½	916	830	940	2,686	2,011	1,489	992	4,492
Chatham	115½	27½	7	150	16	5	63	84	214	223	122	659
Harwich	3	22	45	70								
Dennis	907½	605½	1,496½	3,009½	1,218	489	967	2,674	1,325	1,582	1,550	4,457
Falmouth												
Nantucket												
Edgartown												
Fairhaven												
New Bedford												
Dartmouth												
Westport												
Somerset												
Swansea												
Other towns												

a Rockport prior to 1840 was a part of Gloucester.

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1843.				1844.				1845.			
	1.	2.	3.	Total.	1.	2.	3.	b Total.	1.	2.	3.	c Total.
Total	32,759	13,088	18,604	64,451	28,843½	22,515	35,023	86,381½	23,033½	83,623½	85,596½	202,302½
Newburyport	2,771	1,187	1,403	5,361	28,842½	1,327	2,837	7,006½	2,814	2,754½	5,493	11,061½
Ipswich												
Rockport	675	227	365	1,267	831½	492	610	1,933½	1,211	3,704½	3,919½	8,834½
Gloucester	10,489	2,987	2,852	16 328	6,147	4,757	6,057½	16,961½	6,824½	22,795½	19,091½	48,711½
Manchester												
Beverly	9	2	.....	11	2	12	7	21	14	21	19	54
Salem										52	45	97
Marblehead									28½	253½	326½	608½
Medford												
Charlestown												
Boston	5,078	2,149	2,119	9,346	7,003	5,142	3,606	15,756	6,779½	15,587½	12,762½	35,129½
Dorchester and Roxbury												
Quincy												
Weymouth												
Hingham	2,314	1,017	2,597	5,928	2,629	1,788	4,943½	9,370½	2,055½	8,634	6,548½	17,288
Cohasset	2,306	1,116	3,039	6,461	1,775½	1,817½	4,286½	7,854½	1,684½	6,290½	9,609½	17,584½
Scituate	322	127	100	549	140½	228½	283	652	77½	590½	811	1,488½
Duxbury	13	9	25	47	.....	.....	.....	.....	14	42	32	85
Plymouth	153	87	176	416	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich												
Barnstable	665	246	510	1,421	658½	526	1,090	2,274½	398	1,978½	1,415½	3,792½
Yarmouth	1,040	399	957	2,396	533	545	1,333	2,411	290½	2,009½	2,701½	5,001½
Brewster												
Wellfleet	3,043	1,343	1,220	5,606	2,459	3,089	4,123	9,671	2,430½	9,394½	8,074	19,899½
Truro	1,542	721	1,112	3,375	1,785	828½	2,070	4,683½	1,600½	6,847½	7,300½	15,748½
Provincetown	1,131	901	1,085	3,117	1,077½	955½	1,841	3,874	980½	4,397½	4,765½	10,143½
Chatham	263	99	82	449	138	109	151½	398½	40	520	412	972
Harwich												
Dennis	940	471	962	2,373	816½	888	1,804	3,508½	843½	2,691½	2,269	5,804
Falmouth												
Nantucket												
Edgartown												
Fairhaven												
New Bedford												
Dartmouth												
Westport												
Somerset												
Swanses												
Other towns												

b The original return is figured 28,843, No. 1; 22,515, No. 2; 34,823, No. 3.

c The original return gives 28,033, No. 1; 83,623, No. 2; 85,596, No. 3.

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1846.				1847.				1848.			
	1.	2.	3.	a Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	44,430½	70,005	65,076	179,511½	104,150½	76,006½	71,760½	251,917½	113,093½	79,979½	107,058½	300,130½
Newburyport	2,787	7,657	8,370½	18,814½	5,161½	8,937½	9,254	23,353½	2,289½	7,049½	16,955½	26,294½
Ipswich												
Rockport	1,960	2,907	1,519	6,386	2,726	2,397½	1,657½	6,781	3,445½	2,936½	1,389½	7,750½
Gloucester	9,837½	18,400½	14,563	42,901½	14,597½	15,310½	11,493½	41,401½	15,565½	17,301½	20,632½	53,500½
Manchester	174½	275½	127	577	563½	449	65	1,097½				
Beverly					332	330	84	746	399	313½	81½	794
Salem	91	336	117	544	350½	150	7	507½	80	102	19	201
Marblehead	105	162	108½	375½	166½	162½	95½	424½	267½	218½	73	558½
Medford												
Charlestown												
Boston	6,404½	7,111½	6,146½	19,662½	17,640½	14,107½	7,557½	b39,312	14,414½	10,829½	11,870	37,113½
Dorchester and Roxbury												
Quincy												
Weymouth												
Hingham	4,097	6,371½	7,246	17,714½	7,698	5,675	6,538½	19,911½	8,258½	4,026½	7,565½	19,850½
Cohasset	2,036½	4,424½	5,833½	12,294½	5,747½	4,567½	7,053½	17,368½	9,211½	4,710½	9,045½	22,967½
Scituate	333½	880½	458½	1,673	179	370½	212	767½	435½	592	523½	1,551½
Duxbury												
Plymouth	75	92	97	264	307	245	110	662	352	468	83	903
Sandwich												
Barnstable	1,086½	861½	1,680	3,627½	4,620½	1,557½	1,861½	8,039½	2,553½	1,058½	1,022	4,634
Yarmouth	992½	871½	1,117	2,981	1,973½	1,020½	1,551½	4,545½	3,842½	2,512½	3,975	10,329½
Brewster												
Wellfleet	4,307½	8,550½	6,901	19,758½	11,645½	6,203½	9,404½	27,253½	12,611	5,728½	9,879½	28,219½
Truro	3,955½	3,522½	4,550½	11,328½	6,962	3,217½	5,440	15,619½	9,360½	3,697½	6,221½	19,279½
Provincetown	4,145½	4,888½	3,710½	12,750	12,345½	6,329½	5,187	23,861½	14,919½	7,734½	8,395	31,049½
Chatham	631½	711	443	1,785½	1,644	1,024	511½	3,179½	2,844½	2,206½	1,218	6,268½
Harwich	475	493½	491½	1,460	2,110½	949½	118½	3,178½	4,862½	3,208½	1,651½	9,722
Dennis	1,535½	1,478	1,650½	4,663½	7,353	2,985½	3,559	13,897½	6,403½	4,124½	6,066½	16,593½
Falmouth									157½	164½	83½	406½
Nantucket									270	280	60	610
Edgartown									430½	604	231½	1,266
Fairhaven												
New Bedford									129	112½	36	77½
Dartmouth												
Westport												
Somerset												
Swansea												
Other towns												

a The original return is footed 42,806½, No. 1; 69,380½, No. 2; 64,877, No. 3. b Includes some reinspected fish.

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1849.				1850.					1851.				
	1.	2.	3.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	81,404	81,962	45,584	208,950	88,401	44,909	87,604	21,658	242,572	90,765½	102,467½	135,597½	414½	329,244½
Newburyport	4,148	5,818	6,914	16,880	8,580	5,014	8,840	495	22,929	6,467½	5,879½	8,655½	.....	21,202½
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	1,459	2,105	822	4,386	2,058	738	357	763	3,916	1,349½	2,737½	5,121	32	9,240½
Gloucester	14,636	19,822	11,121	45,579	22,488	8,839	14,141	4,525	49,993	37,130½	18,524½	25,639½	282½	81,627½
Manchester	27	178	82	287	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	60	97	30	187	551	295	520	166	1,542	629	632	619	.....	1,880
Salem	33	82	.....	115	55	79	34	6	174	42	80	1	.....	123
Marblehead	50	45	9	104	51	16	.....	41	108	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	4,100	6,327	4,014	14,441	9,007	5,442	6,895	2,512	23,856	10,904	14,164	15,666½	3	40,737½
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	4,177	4,631	4,566	13,424	4,997	1,699	6,914	926	14,536	3,937½	7,702	12,205	19	23,863½
Cohasset	3,227	5,207	6,859	15,293	3,806	2,290	7,495	1,755	15,346	3,193½	5,822½	13,695½	.....	22,712½
Scituate	392	577	442	1,411	534	291	1,306	.....	2,131	97½	914½	707	1½	1,720½
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	76	213	277	566	35	26	2	7	70	79½	222	302	.....	603½
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	2,035	2,066	2,111	6,212	2,309	1,441	1,648	667	6,065	1,499½	2,539½	2,110½	12	6,162
Yarmouth	1,497	1,821	2,524	5,832	1,935	1,320	2,341	225	5,821	1,076½	3,300½	3,160	.....	7,537
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	5,504	7,726	5,319	18,549	5,969	2,684	7,343	1,619	17,615	4,053½	14,234½	15,184½	.....	33,477½
Truro	3,335	4,666	3,801	11,802	2,314	1,127	4,300	829	8,570	2,538½	3,046½	4,604½	8½	10,287½
Provincetown	7,980	9,256	7,010	23,246	9,938	4,774	9,222	3,931	27,865	7,481½	7,774	5,223½	9½	20,488½
Chatham	1,627	1,351	867	3,845	2,740	1,169	1,228	627	5,764	1,483½	3,083	4,015½	40½	9,222½
Harwich	5,039	5,401	4,165	14,605	5,007	3,369	5,426	1,037	14,839	5,448½	6,641½	9,735½	.....	21,825½
Dennis	2,629	4,181	4,275	11,085	5,716	3,960	9,305	1,354	20,335	2,271½	4,453½	8,491	4	16,220
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	106	106	218	430	6	14	73	.....	93	.....	.....	.....	.....	.....
Edgartown	153	188	25	366	261	305	150	140	856	76	115	120	2	313
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	24	48	73	145	84	17	4	83	88	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1852.					1853.					1854.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	84,030	67,071	44,806	2,210	198,120	49,015	24,584	39,897	19,843	133,340	30,595	46,242	55,133	3,378	135,849
Newburyport	6,333	1,985	3,295	192	11,806	3,513	1,625	4,558	695	10,393	1,449	2,458	4,078	84	8,070
Ipswich															
Rockport	2,621	2,717	526	78	5,345	1,855	1,197	661	808	4,523	950	1,235	1,053	39	3,278
Gloucester	23,017	16,638	7,529	826	48,012	20,428	6,134	7,461	3,867	37,891	11,289	18,317	11,037	678	41,322
Manchester															
Beverly	149	168	48	.....	366	388	288	136	360	1,120	28	61	51	.....	138
Salem	2	9	3	.....	14	.....									
Marblehead															
Medford															
Charlestown															
Boston	18,074	13,026	8,499	291	39,891	11,391	6,975	8,940	6,021	33,328	7,910	9,401	10,312	975	28,599
Dorchester and Roxbury															
Quincy															
Weymouth															
Hingham	3,434	5,244	4,386	68	13,133	1,629	1,102	3,070	1,071	6,873	1,271	1,330	2,625	99	5,327
Cohasett	3,479	3,325	4,701	100	11,616	1,195	953	3,958	1,495	7,603	807	1,761	4,848	174	7,591
Scituate	264	270	148	34	717	.....									
Duxbury															
Plymouth	25	26	16	.....	67	.....									
Sandwich															
Barnstable	1,440	1,082	677	.....	3,199	777	450	728	528	2,483	106	172	202	1	482
Yarmouth	1,155	1,499	580	.....	3,235	402	236	285	145	1,050	99	300	556	12	966
Brewster															
Wellfleet	4,993	4,244	1,869	262	11,367	2,669	2,198	2,468	1,386	8,723	2,463	4,193	5,186	524	13,017
Truro	1,424	821	295	.....	2,540	85	50	142	21	298	202	15	33	.....	250
Provincetown	9,243	5,618	3,276	125	18,264	630	537	566	551	2,286	1,300	2,706	4,095	255	8,357
Chatham	1,477	1,713	2,559	30	5,780	552	335	537	613	2,038	402	475	1,417	70	2,365
Harwich	4,413	4,648	3,312	96	12,471	1,803	1,266	3,321	1,077	7,468	1,247	2,440	5,062	216	8,965
Dennis	3,083	4,022	3,080	104	10,290	1,693	1,293	3,079	1,195	7,260	1,041	1,371	4,003	247	6,664
Falmouth															
Nantucket															
Edgartown															
Fairhaven															
New Bedford															
Dartmouth															
Westport															
Somerset															
Swansea															
Other towns															

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1855.					1856.					1857.a				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	29,302½	91,122½	90,193½	1,338½	211,956½	88,333½	76,819½	47,981½	178	214,312½	84,519½	45,218½	38,257½	711	168,705½
Newburyport	1,517½	5,915½	5,803½	4	13,239½	5,802½	3,927½	2,399½	1	12,130½	.....	.....	.....	.....	.....
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	896	2,530½	2,314½	.....	5,740½	1,985½	3,224½	1,303½	.....	6,513½	.....	.....	.....	.....	.....
Gloucester	14,716½	41,542½	16,532½	341½	73,134½	44,930½	16,296½	6,849½	17½	68,093½	.....	.....	.....	.....	.....
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	84	274	106	2	466	42½	110	102	.....	254½	.....	.....	.....	.....	.....
Salem	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	6,147	14,822½	22,643½	368½	43,987½	17,335	21,886½	14,845½	73	54,140½	.....	.....	.....	.....	.....
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	420½	3,026½	4,939½	64	8,450½	1,882½	3,591½	3,541½	.....	9,014½	.....	.....	.....	.....	.....
Cohasset	438	2,723½	5,798½	58	9,018½	2,053½	1,863½	4,036½	.....	7,954	.....	.....	.....	.....	.....
Scituate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	35	54	15	.....	104	.....	.....	.....	.....	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	138	217	224½	.....	579½	159½	194½	78	15	447	.....	.....	.....	.....	.....
Yarmouth	95½	418	586½	2	1,102½	194½	174½	30½	.....	399	.....	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	1,919	7,602½	11,008	308	20,837½	5,429½	9,733½	5,391	41	20,595½	.....	.....	.....	.....	.....
Truro	354	1,584	3,576	17	5,511	536	1,196	607	.....	2,339	.....	.....	.....	.....	.....
Provincetown	537	2,427½	3,264½	37	6,265½	2,948½	3,767½	2,781½	30½	9,528½	.....	.....	.....	.....	.....
Chatham	236½	735½	2,184½	.....	3,155½	860½	2,167½	1,384½	.....	4,412½	.....	.....	.....	.....	.....
Harwich	1,077½	4,080½	6,545½	82½	11,736½	3,971½	4,893½	2,256½	.....	10,020½	.....	.....	.....	.....	.....
Dennis	723½	3,243½	4,660	104	8,731½	2,066½	3,939½	2,360½	.....	8,365½	.....	.....	.....	.....	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swanzea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

a The returns for 1857 do not give ports of inspection.

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1858.					1859.					1860.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	75,347	21,929	32,332	1,992	131,602	61,330	12,060	22,207	4,118	99,715	58,826	122,837	50,678	3,441	235,685
Newburyport	5,169	1,453	2,431	354	9,080	4,219	1,033	1,536	63	6,851	3,582	1,753	1,382	85	6,805
Ipswich															
Rockport	2,645	754	730	21	4,152	1,083	376	643	301	3,004	1,608	3,096	820	37	5,561
Gloucester	39,948	6,777	9,502	260	56,488	41,254	5,947	9,764	2,698	59,664	37,407	42,658	17,108	816	97,992
Manchester															
Beverly						35	6	6	1	48	177	55	4		237
Salem															
Marblehead															
Medford															
Charlestown															
Boston	17,176	7,512	9,392	1,467	35,547	1,100	483	1,109	230	2,923	5,055	20,219	5,749	1,102	32,127
Dorchester and Roxbury															
Quincy															
Weymouth															
Hingham	939	616	1,441	94	3,007	1,524	571	1,477	17	3,590	712	7,478	3,367	216	11,773
Cohasset	1,271	479	1,375	93	3,128	1,127	185	921	9	2,244	1,271	6,030	4,504	144	11,980
Scituate															
Duxbury															
Plymouth						31	1	1		33	12	93	14		119
Sandwich															
Barnstable															
Yarmouth	204	105	78		388	171	82	38		291	154	352	126		633
Brewster															
Wellfleet	2,430	1,449	1,461	1	5,335	3,844	1,391	2,272	245	7,752	2,297	17,509	6,916	627	27,350
Truro	544	313	650	137	1,644	622	95	400	2	1,119	113	131	42		286
Provincetown	3,361	853	1,722	47	5,985	2,739	863	2,658	216	5,877	2,612	12,017	4,465	255	19,330
Chatham	310	238	454	2	1,004	214	69	190	25	508	725	2,413	1,264	10	4,513
Harwich	906	842	1,966	24	3,717	1,907	528	699	92	a2,196	1,911	5,337	2,590	32	a9,880
Dennis	440	539	1,128	5	2,112	853	424	1,103	220	2,607	1,183	3,687	2,064	120	7,094
Falmouth															
Nantucket															
Edgartown															
Fairhaven															
New Bedford															
Dartmouth															
Westport															
Somerset															
Swansea															
Other towns															

a Harwich and Harwichport.

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1861.					1862.					1863.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	70,877½	100,286½	22,466	633½	194,223½	81,962½	78,388½	100,011	502½	260,864½	67,985½	136,075½	102,601½	280	306,942½
Newburyport	1,733	4,159½	1,251½	2½	7,166½	1,222½	2,892½	3,197½	65	7,377½	1,505½	2,826½	2,643½	6	6,982½
Ipswich															
Rockport	2,603½	2,746½	219½	15	4,989½	2,171½	1,947½	1,960	12	6,100	920½	3,470½	1,280	.....	5,671
Gloucester	37,985½	45,533½	6,707½	279½	90,515½	53,569½	33,115½	29,364½	186½	116,235½	54,855½	71,930½	26,921½	132	153,839½
Manchester															
Beverly	211½	50½	2½	.....	264½	52	150	69	.....	280	.....	.....	.....	.....	.....
Salem															
Marblehead															
Medford															
Charlestown															
Boston	5,602½	11,314½	2,405½	149	19,471½	5,646½	9,776½	14,026½	70½	29,524	3,248½	13,793½	13,471½	16	30,530½
Dorchester and Roxbury															
Quincy															
Weymouth															
Hingham	1,754½	5,568½	1,866	39	9,225½	1,841½	4,164½	5,393½	7	11,396½	680½	5,873½	7,780½	10½	14,344½
Cohasset	2,148	3,975½	3,135½	13½	9,272½	1,865½	2,508½	7,671½	9	11,454½	518½	4,335½	10,971½	26	15,852½
Scituate															
Duxbury															
Plymouth	7½	12½	18	.....	28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich															
Barnstable															
Yarmouth	114½	187	106	.....	407½	44	138½	252½	.....	435½	.....	.....	.....	.....	.....
Brewster															
Wellfleet	4,062½	8,915	1,116½	34	14,118½	4,630½	7,111½	14,599½	90	26,431½	1,675	10,885½	14,522½	.....	27,083
Truro	87½	117½	15	.....	220	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Provincetown	5,670½	8,450½	2,365	100½	16,586	4,383½	7,214½	11,104½	51½	22,753½	2,437½	10,477½	12,354½	67	25,336½
Chatham	1,502½	1,672½	275½	6½	3,457½	1,616	1,995½	2,841½	4½	6,455½	626½	3,364½	2,455½	.....	6,946
Harwich	4,862½	4,216½	1,834½	4	10,917½	2,638½	4,041½	4,600½	55	11,342	750½	4,513	4,394½	.....	9,666½
Dennis	3,076	3,359½	1,170	.....	7,605½	2,220½	3,325½	5,522½	10	11,077½	757½	4,560½	5,306½	22½	10,637½
Falmouth															
Nantucket															
Edgartown															
Fairhaven															
New Bedford															
Dartmouth															
Westport															
Somerset															
Swansea															
Other towns															

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1864.					1865.					1866.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	63,383½	137,746½	33,212½	14½	274,357½	153,723½	63,562½	39,206½	244½	256,796½	150,222½	30,319⅛	44,784½	269½	231,696⅞
Newburyport	2,620½	4,319½	867½	.....	7,807½	4,755½	2,467½	1,121½	.....	8,344½	4,914⅞	955⅞	1,596½	2	7,468
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	1,894½	2,485½	592½	.....	4,970½	3,912½	1,587½	246½	.....	5,746½	5,065	1,732½	730½	.....	7,562½
Gloucester	68,061½	73,001½	13,866½	8½	154,936⅝	99,174½	28,378½	13,995½	23	141,572½	86,245	13,630½	12,978	2½	112,856½
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	72½	124½	20	.....	217½	94½	21	1	.....	116½	.....	.....	.....	.....	.....
Salem	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	7,268½	11,927½	4,158½	1½	23,356½	17,080½	12,635½	6,670½	12½	36,399	28,197⅞	9,901½	7,986½	47	46,132⅛
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	1,765½	4,500½	1,863	.....	8,129½	2,169½	1,671	1,860½	½	5,701½	1,744½	1,438½	2,223½	.....	5,411
Cohasset	2,270½	3,632½	2,816½	1	8,722½	3,454½	1,863½	3,726½	4	9,028½	2,854½	1,066½	3,505½	5½	7,434½
Scituate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yarmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	7,207½	16,720½	2,847	.....	26,774½	7,923½	5,522	4,053½	.....	17,536½	7,120½	3,267½	5,426	20½	15,834½
Truro	.....	.....	.....	.....	.....	7½	6½	2½	.....	15½	.....	.....	.....	.....	.....
Provincetown	4,847½	10,215½	2,736½	.....	17,822½	6,503½	5,756½	4,949½	188½	17,403½	6,366½	2,845½	5,533½	146½	14,894½
Chatham	2,496½	3,485½	1,063½	3½	7,048½	2,697	914½	514½	4½	4,131½	1,812½	166½	954½	13½	2,946½
Harwich	2,903½	3,674½	1,133	.....	7,711½	3,470½	1,341½	1,061	.....	5,893½	3,106½	696½	1,885	12½	5,702½
Dennis	1,975½	3,659½	1,223	.....	6,858½	1,929½	1,157½	916	6	4,009½	1,716½	324½	1,336½	12½	3,391
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	558½	240	96	.....	894½	868½	202½	419	4	1,493½
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	307½	89	171	1½	568½
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1867.					1868.					1869.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	122,808⅞	46,038⅝	41,048¼	418⅜	210,314⅛	93,091¼	42,262⅞	44,077½	625⅜	180,056¼	72,924½	92,019⅜	65,717⅛	3,549⅜	234,210⅜
Newburyport	3,283⅜	1,629⅜	2,548⅜	11	7,469⅜	2,580⅜	533½	2,082½	.....	5,196¼	1,216½	1,953½	3,008¼	39	6,216⅜
Ipswich															
Rockport	4,313⅜	1,702½	464	.....	6,479⅜	3,147½	1,462⅜	651	.....	5,260⅜	1,942⅜	2,168	1,899½	12	5,902⅜
Gloucester	78,062⅜	17,328⅜	8,507⅜	20½	103,917⅞	50,652⅛	14,203⅜	10,495½	160	75,517⅞	37,153⅜	36,585⅜	18,495⅜	882½	93,126⅛
Manchester															
Beverly	9	⅜	.....	.....	9⅜	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	.....	.....	.....	.....	.....	2,285½	382⅜	193½	.....	2,861	1,050½	1,083⅜	229⅜	04	2,369⅜
Marblehead															
Medford															
Charlestown															
Boston	8,437⅞	5,212	4,777½	14	18,440⅛	14,117½	7,284⅜	8,700⅜	186½	30,288⅜	10,457⅜	13,156½	9,742⅜	779⅜	34,135½
Dorchester and Roxbury															
Quincy															
Weymouth															
Hingham	2,245⅜	1,350½	2,200⅜	⅛	5,797	1,393⅜	2,290⅜	2,342⅜	17⅜	5,914¾	1,340⅜	3,011⅜	2,116⅜	56⅜	6,523⅜
Cohasset	3,093⅜	2,360⅜	4,265⅜	38⅜	9,757⅜	1,553⅜	1,274⅜	2,162⅜	.....	4,990⅜	2,115⅜	4,003⅜	3,371⅜	141	9,631⅜
Scituate															
Duxbury															
Plymouth															
Sandwich															
Barnstable															
Yarmouth			22	.....	22										
Brewster															
Wellfleet	8,067⅛	8,617½	6,840⅜	.....	23,545⅜	4,124⅜	3,602⅜	3,608	20⅜	11,355⅜	5,543⅜	11,266⅜	10,380⅜	685	27,875⅜
Truro															
Provincetown	7,582⅜	4,952⅜	4,579⅜	278	17,392⅛	6,352⅜	7,074⅛	7,295⅜	134½	20,856⅜	5,377½	9,536⅜	8,574½	509⅜	23,998⅜
Chatham	1,425	159⅜	724½	13	2,313⅜	1,115⅜	465⅜	850	5⅜	2,435½	884	1,294½	1,305	168⅜	3,652½
Harwich	2,808	1,097½	2,594⅜	29⅜	6,530⅜	2,940⅜	1,553⅜	2,600	24⅜	7,118⅜	2,952½	3,463½	3,333	165⅜	9,853⅜
Dennis	1,866½	1,234½	2,357⅜	1	5,129⅜	1,821½	1,393⅜	1,973½	29⅜	5,218⅜	2,116⅜	2,912½	2,633	111½	7,773⅜
Falmouth															
Nantucket	1,445½	391⅛	1,043⅜	12½	2,892⅜	992⅛	733½	979½	47	2,752⅛	746½	1,499	656½	53⅜	2,955½
Edgartown															
Fairhaven															
New Bedford															
Dartmouth	179	14	122½	.....	315½	82⅜	43⅜	112⅜	.....	238⅜	26⅜	75⅜	50	.....	152⅜
Westport															
Somerset															
Swansea															
Other towns															

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1870.					1871.					1872.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	66,046 1/16	169,422	63,010	33	318,531	105,187 2/3	85,807 2/3	68,222 1/2	38	259,416	71,806 2/3	54,370 5/6	55,603	115	181,856 1/2
Newburyport	2,084 3/8	3,057	2,254 3/8		7,395	1,158	2,241 1/2	1,746		6,146 2/3	1,775 1/2	1,570 1/2	674		3,821 1/2
Ipswich															
Rockport	2,187	6,437	1,175		9,800	4,426	2,066	448		6,940	1,617	1,307	751		3,675
Gloucester	32,089 7/16	82,935	14,564 1/16	5	129,595 1/2	43,444 2/3	36,880 1/6	20,952	30	101,307	31,012 1/2	20,402 3/4	12,950	29	67,395 1/2
Manchester															
Beverly	7	26			33										
Salem	1,416	2,202	822		4,443	2,102	1,507	1,253		4,912	1,589	733	946		3 269
Marblehead															
Medford															
Charlestown															
Boston	9,034	22,442	11,267	12	42,786	14,459	15,223	13,353		43,016	13,101	11,130 1/2	11,157	59	35,454 1/2
Dorchester and Roxbury															
Quincy															
Weymouth															
Hingham	749	4,303 1/2	2,058		7,200 1/2	769	805	713		2,288	414	506 1/2	730 1/2		1,651
Cohasset	1,421	5,774	3,569		10,765	2,182 1/2	1,366 1/2	1,968		5,516 1/2	1,218 1/2	1,404	2,392 1/2		5,015
Scituate															
Duxbury															
Plymouth															
Sandwich															
Barnstable						123	174	178		475	116	131	215		462
Yarmouth															
Brewster															
Wellfleet	5,932 3/8	26,059 1/2	9,361		41,351 1/8	11,443	11,525 1/2	9,867		32,871 1/2	6,377	6,903 1/2	10,459 1/2		23,740
Truro															
Provincetown	3,678 1/2	15,813	6,330 3/8	7	25,829 1/8	10,305 1/2	7,525 1/2	7,598 1/2	5	25,434 1/2	5,258 1/2	4,401	6,962 1/2	2	16,719 1/2
Chatham	2,064	8,758	2,925		8,147	2,514 1/2	1,160 1/2	2,523		6,207 1/2	1,368	833	1,241 1/2		3,443
Harwich	3,397 1/2	9,477 1/2	4,826		17,842 1/2	4,120 1/2	2,282 1/2	5,531 1/2	3	11,936 1/2	3,053 1/2	2,794 1/2	4,661 1/2	25 1/2	10,516 1/2
Dennis	1,156	4,559	2,744 1/2	1	8,461 1/2	2,128 1/2	1,911 1/2	1,868		5,907 1/2	1,660 1/2	2,203	1,916 1/2		5,816
Falmouth															
Nantucket	752 1/2	2,078 1/2	1,480 1/2		4,312 1/2										
Edgartown															
Fairhaven															
New Bedford															
Dartmouth	133 1/2	405 1/2	207 1/2	8 1/2	754 1/2	282 1/2	118	330 1/2		731	158 1/2	257 1/2	605		1,001 1/2
Westport															
Somerset															
Swansey															
Other Towns															

STATEMENT I.—*Mackerel inspection in Massachusetts.*—Continued.

Port of inspection.	1873.					1874.					1875.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	83,661	63,888	37,705	376	185,746	112,971	71,342	73,966	.....	258,379	39,106	19,270	73,424	4,261	130,062
Newburyport	1,549	1,180	538	.....	3,273	2,234	2,278	545	.....	5,058	777	899	525	.....	2,202
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	1,442	1,255	387	.....	3,084	2,016	1,320	789	.....	4,126	306	430	756	49	1,542
Gloucester	49,247	24,253	9,554	373	83,459	60,852	31,757	25,702	.....	118,313	16,172	7,065	21,763	4,039	51,040
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	2,003	979	816	.....	3,798	1,645	809	252	.....	2,707	461	231	348	36	1,077
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charleston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	9,422	9,720	7,199	.....	26,411	13,909	10,674	11,921	.....	36,505	5,673	4,732	15,855	110	25,579
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	543	376	280	.....	1,200	506	500	445	.....	1,457	.....	.....	.....	.....	.....
Cohasset	1,060	1,333	1,810	.....	4,144	2,267	1,339	2,851	.....	6,457	361	256	3,648	2	4,268
Scituate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	4	32	.....	38
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	113	250	119	.....	483	235	177	438	.....	850	237	46	1,570	.....	1,853
Yarmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	7,282	10,587	6,128	.....	23,977	12,074	10,953	11,804	.....	34,832	3,550	2,637	12,218	.....	18,406
Truro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Provincetown	5,669	3,973	4,280	.....	15,925	8,400	6,147	7,472	.....	22,019	2,150	1,914	6,104	.....	10,168
Chatham	986	1,226	1,229	.....	3,445	1,891	806	1,846	.....	4,544	262	124	1,415	4	1,805
Harwich	3,367	4,749	4,052	2	12,167	6,034	3,207	7,560	.....	16,802	1,937	823	8,210	20	10,340
Dennis	965	1,947	1,270	.....	4,187	902	1,268	2,525	.....	4,696	246	106	1,173	.....	1,526
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	5	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	51	.....	134	.....	185	.....	.....	7	.....	7	19	.....	.....	.....	19
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

STATEMENT I.—*Mackerel inspection in Massachusetts*—Continued.

Port of inspection.	1876.					1877.					1878.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	30,8[illegible]	96,772⅛	93,481⅛	4,818¼	225,942⅝	18,015¾	37,286⅜	37,700⅞	12,094⅜	105,097⅞	14,094⅞	48,170⅝	70,175⅜	11,785¼	144,226⅛
Newburyport	1,0[illegible]	1,497⅞	1,515⅜	26	3,981⅝	516⅝	768⅝	157⅜	23	1,465⅜	471⅞	744⅞	228⅛	24½	1,469
Ipswich															
Rockport	76[illegible]	2,665⅜	2,083	156	5,810	124	599⅝	459	265⅛	1,447⅞	116⅝	259⅛	421⅜	178	975⅜
Gloucester	14,06[illegible]	45,312⅜	33,109⅛	2,916⅜	95,421⅜	9,842⅛	19,518⅜	14,963⅗	4,710⅝	49,044⅛	7,132⅞	22,088¼	23,381⅜	3,119⅛	55,741⅝
Manchester															
Beverly															
Salem															
Marblehead															
Medford															
Charlestown															
Boston	4,802⅖	12,890⅛	18,175¾	455	36,323⅛	3,379⅛	6,441⅛	9,617⅞	3,742⅜	23,182	3,105	10,369	18,637⅛	4,550	36,661⅛
Dorchester and Roxbury															
Quincy															
Weymouth															
Hingham															
Cohasset	520⅞	2,142⅛	4,147⅕	177½	6,986⅞	230½	783⅘	1,832½	49	2,895⅗	266½	948½	2,461	153	3,828⅔
Scituate															
Duxbury															
Plymouth		8½	20		28½										
Sandwich															
Barnstable	389¾	399½	900⅝	34½	1,723⅞	350⅞	109	75	25	568⅞	22¾	47	132½	13⅝	215
Yarmouth															
Brewster															
Wellfleet	3,461⅛	16,625¼	17,703¼	490	38,280⅝	1,033¼	3,138	4,321⅛	827	9,320⅝	1,282⅛	6,493¼	11,221½	1,206	20,203⅜
Truro															
Provincetown	2,426⅓	7,787⅓	6,293	414⅝	16,931⅓	1,128⅝	2,715⅝	1,826⅛	1,777⅓	7,447⅞	498⅛	2,189	3,555	786⅝	6,962⅝
Chatham	700⅝	1,855	1,928½	.....	4,483⅝	206¼	640	891	226	1,963¼	492½	1,334½	1,785⅛	149	3,931⅓
Harwich	2,230⅝	4,913⅜	6,744⅛	45	13,933⅜	677⅜	1,768⅛	2,122	370⅝	5,938⅛	507⅓	2,410	5,841	739	9,497⅓
Dennis	454	736½	861½	104	2,175⅓	516⅝	805⅓	455¾	68¾	1,875⅝	230⅜	1,102⅝	2,511	866¾	4,710⅜
Falmouth															
Nantucket															
Edgartown															
Fairhaven															
New Bedford															
Dartmouth															
Westport															
Somerset															
Swansea															
Other towns															

STATEMENT I.—*Mackerel inspection in Massachusetts—Continued.*

Port of inspection.	1879.					1880.					1881.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	9,027½	91,113½	54,806½	352½	155,297½	20,453½	104,434½	99,554½	19,516½	243,958½	15,598½	139,586	98,861½	2,127½	256,173½
Newburyport	58	1,004½	528½	.....	1,591	153½	445	136½	.....	734½	.....	.....	.....	.....	.....
Ipswich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport	3½	141½	27	.....	172½	62	498½	219	239	958½	9½	237½	44	.....	291
Gloucester	2,737½	33,983½	11,574	347½	48,643	11,247½	55,348	38,833½	8,418½	116,847½	8,456½	70,300½	32,496½	1,950½	113,203½
Manchester	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Beverly	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Salem	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marblehead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charlestown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	3,342½	29,742	20,779½	.....	53,863½	4,496½	21,464½	23,436½	4,567½	53,967½	5,597½	43,105½	28,427	129	77,199½
Dorchester and Roxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Weymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hingham	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cohasset	124	3,289½	1,567½	.....	4,981	431½	3,201½	2,877½	127	6,637½	103½	3,682½	4,161½	3	8,010½
Scituate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Duxbury	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sandwich	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Barnstable	242½	80½	28½	.....	351½	44½	350½	439½	.....	833½	.....	.....	.....	.....	.....
Yarmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewster	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellfleet	426½	10,070	6,445½	5	16,947	1,460½	9,420½	13,795½	4,703	29,379½	740½	13,810	16,647½	28	31,226
Truro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Provincetown	350½	2,468	1,741½	.....	4,550½	552½	2,060½	2,556½	192½	5,362½	122½	2,627½	3,476½	17	6,252½
Chatham	312½	2,548	2,863	.....	5,723½	435½	2,561½	3,855	421	7,252½	234	3,251	5,615	.....	9,100
Harwich	1,183½	5,225	5,921	.....	12,330½	1,131½	4,160½	10,513	431	16,245	335½	2,561½	7,993	.....	10,889½
Dennis	244	2,551	3,330	.....	6,125	437	1,973½	2,890	417½	5,718½	.....	.....	.....	.....	.....
Falmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nantucket	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edgartown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dartmouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Somerset	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swansea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other towns	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

MACKEREL INSPECTION IN MASSACHUSETTS.

STATEMENT II.—*Showing the total number of barrels of each quality of pickled mackerel inspected in Massachusetts from* 1804 *to* 1880, *and the total value of each year's inspection from* 1830 *to* 1880.

Year.	Barrels of mackerel inspected.					Total value.
	1.	2.	3.	4.	Total.	
1804	1,631½	6,226			7,857½	
1805	1,767	2,518½	4,228		8,573½	
1806	2,563½	2,756	2,907		8,226½	
1807	2,353½	2,462	4,489½		9,305	
1808	1,305½	2,413½	3,910½		7,629½	
1809	2,274½	3,078	3,472½		8,825	
1810	2,540½	4,770	5,242		12,552½	
1811	1,368½	6,023	10,009½		17,401	
1812	1,000½	2,154½	2,726		5,881	
1813	900½	1,231	1,625		3,756½	
1814	89	546½	703½		1,339	
1815	3,225½	5,456½	7,377½		16,059½	
1816	8,604½	9,264½	13,010		30,969	
1817	10,406½	5,267½	21,688		37,362	
1818	14,410	11,162½	20,775½		46,348	
1819	19,614	36,521½	43,975½		100,111	
1820	12,455	34,811½	68,374½		115,641	
1821	7,400¼	32,103¼	71,505½		111,009½	
1822	20,035	66,681½	73,578		160,294½	
1823	19,804	62,047½	63,154½		145,006	
1824	45,246½	75,221	71,183		191,650½	
1825	29,640	109,840	114,904½		254,384½	
1826	43,499	80,584	34,657½		158,740½	
1827	81,357½	69,335	39,612		190,304½	
1828	63,235½	110,666½	63,422½		237,324½	
1829	54,184	77,098	94,695		225,977	
1830	47,868½	104,569½	156,025½		308,463½	$1,119,470
1831	70,198	171,186	142,164½		383,548½	1,589,930
1832	28,679	97,219½	96,553½		222,452	797,705
1833	54,559½	98,927½	69,445½		222,932½	976,935
1834	80,433½	93,553½	78,893½		252,879½	1,165,842
1835	45,605	57,271½	91,924		194,800½	1,030,560
1836	53,665½	60,558	60,187		174,410½	1,268,388
1837	24,573	61,027	52,557½		138,157½	803,653
1838	37,968½	28,588	44,184		110,740½	925,002
1839	22,217½	22,037½	30,013½		74,268½	719,204
1840	19,351½	11,049	20,091		50,491½	473,345
1841	23,747	10,649	21,141		55,537	518,300
1842	29,363	22,496	23,684		75,543	493,979
1843	32,759	13,088	18,604		64,451	549,419
1844	28,843½	22,515	35,023		86,381½	634,502
1845	28,083½	88,623½	85,596½		202,302½	1,883,669
1846	44,430⅞	70,005	65,076		179,511⅞	1,094,585
1847	104,150⅜	76,006½	71,760⅜		251,917⅜	2,259,958
1848	113,093¾	79,979⅜	107,058¼		300,130⅜	1,858,500
1849	61,404	81,962	65,584		208,950	1,560,126
1850	88,401	44,909	87,604	21,658	242,572	1,777,517
1851	90,765½	102,467¼	135,507¼	414½	329,244⅜	2,249,511
1852	84,030⅜	67,071½	44,808⅜	2,210	198,120	1,491,923
1853	49,015¾	24,584	39,897	10,843⅞	133,340¼	1,207,075
1854	30,595⅜	46,242½	55,133⅜	3,378⅜	135,349⅜	1,313,535
1855	29,302½	91,122⅜	90,193½	1,338⅜	211,956⅜	2,129,084
1856	89,333⅜	76,819⅜	47,981¾	178	214,312⅜	2,064,581
1857	84,519⅜	45,218½	38,257½	711	168,705⅜	2,162,738
1858	75,347⅜	21,929⅜	32,332½	1,992½	131,602⅞	1,729,546
1859	61,330	12,060½	22,207½	4,118⅜	99,715⅜	1,255,073
1860	58,828½	122,837	50,578¼	3,441¾	235,685¾	2,251,007
1861	70,877½	100,286⅜	22,486	633¾	194,283⅜	1,116,851
1862	81,902¾	78,388⅜	100,011	562¾	260,864½	1,597,416
1863	97,985½	136,075⅞	102,601¾	280	306,942⅞	2,878,777
1864	103,383¼	137,746¾	33,212½	14½	274,357½	5,935,525
1865	153,723½	63,562½	39,266⅜	244½	256,796½	4,729,840
1866	150,322⅜	36,319⅛	44,784⅜	260½	231,690⅞	4,324,790
1867	122,808⅞	46,038⅝	41,048½	418¼	210,314⅛	2,961,933
1868	93,091⅛	42,262⅞	44,077½	625½	180,056⅛	2,522,151
1869	72,024½	92,019½	65,717½	3,549½	234,210⅞	3,248,315
1870	66,040⅛	189,422⅜	63,019½	33½	318,521⅜	3,744,197
1871	105,187⅜	85,867⅜	68,322⅛	38½	259,416⅜	2,233,055
1872	71,866⅞	54,370⅞	55,603⅛	115½	181,956⅛	1,948,416
1873	83,687⅛	63,888⅞	37,795⅜	370⅜	185,748½	2,799,083
1874	112,971⅛	71,442½	73,966⅛		258,379⅛	2,657,616
1875	33,106⅜	19,270⅞	73,424⅝	4,261,⅞	130,062⅞	1,310,140
1876	30,869⅜	96,772⅛	93,481⅛	4,818¼	225,942⅛	1,650,306

MACKEREL INSPECTION IN MASSACHUSETTS.—Coutinued.

STATEMENT II.—*Showing the total number of barrels inspected, &c*—Continued.

Year.	Barrels of mackerel inspected.					Total value.
	1.	2.	3.	4.	Total.	
1877	18,015½	37,286⅔	37,700⅚	12,094⅔	105,097⅚	$1,137,516
1878	14,094⅞	48,170⅜	70,176⅛	11,785⅜	a144,226⅛	1,034,144
1879	9,023⅜	91,113⅞	54,806½	352½	*155,297⅛	892,957
1880	20,453⅛	104,434⅞	99,554⅜	19,516½	243,958⅜	1,474,152
1881	15,598⅛	139,586	98,861½	2,127⅜	256,173⅛	1,601,081

a The reports of the Boston fish bureau give the number of barrels packed in Massachusetts in 1878, 144,205 barrels; in 1879, 156,125 barrels; in 1880, 255,986 barrels; in 1881, 269,495 barrels. These figures for 1880 and 1881 are probably nearer than the inspection returns to the actual product of the fishery, since some 5 per cent. of the catch escapes inspection.

MACKEREL REINSPECTION IN MASSACHUSETTS.

STATEMENT III.—*Showing the number of barrels of each quality of pickled mackerel reinspected in each port of Massachusetts from 1850 to 1881.*

Year.	Boston.					Gloucester.					Newburyport.					Grand total.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
1850	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11,143	8,356	2,069	40	21,608
1851	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,722	6,192	1,553	.....	13,467
1852	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,420	7,048	3,304	.....	19,772
1853	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,173	3,562	2,927	.....	11,662
1854	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1855	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1856	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1857	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1858	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1859	14,681 7/8	7,242 3/16	10,083 1/8	2,705 1/8	34,712 3/8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14,681 7/8	7,242 3/16	10,083 1/8	2,705 1/8	34,712 3/8
1860	6,652 3/8	3,332 1/8	5,985 1/8	1,053 1/8	17,023 3/8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,652 3/8	3,332 1/8	5,985 1/8	1,053 1/8	17,023 3/8
1861	5,996	5,997 1/2	3,143 1/2	205 1/2	15,253 1/2	.....	444 1/2	.....	.....	444 1/2	41 1/2	.....	.....	.....	41 1/2	6,062 1/2	6,419 1/2	3,143 1/2	205 1/2	a15,831
1862	7,119 1/8	5,839 1/8	3,392 1/8	36 1/8	16,390	287 1/2	119	.....	.....	406 1/2	.....	.....	.....	.....	.....	7,414	5,958 1/8	3,392 1/8	36 1/8	b16,803 1/2
1863	9,507 3/8	7,333 1/8	5,580 5/16	11	22,432	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9,507 3/8	7,333 1/8	5,580 5/16	11	22,432
1864	12,451 1/2	11,726 11/16	7,597 1/2	5	31,720 3/16	483 1/2	.....	.....	.....	483 1/2	110 1/2	17 1/2	.....	.....	112 1/2	13,045 1/2	11,728 3/16	7,597 1/2	5	32,316 1/8
1865	22,660 1/2	18,857 1/2	7,529 1/2	14 1/2	49,056	1,235 1/2	401 1/2	204 1/2	.....	1,841 1/2	376 1/2	44 1/2	.....	.....	420 1/2	24,272 1/2	19,304	7,727 1/2	14 1/2	51,318 1/2
1866	13,623 1/2	4,867	4,305 1/2	.....	22,796 1/2	444	103 1/2	165	.....	732 1/2	379	15 1/2	.....	.....	394 1/2	14,653 1/2	4,986 1/2	4,490 1/2	.....	c24,131 1/2
1867	48,436 1/2	11,043 1/2	6,711 1/2	18	66,210 1/2	169 1/2	2 1/2	.....	.....	170 1/2	401 1/2	18 1/2	.....	.....	419 1/2	49,007 1/2	11,063 1/2	6,711 1/2	18	66,800 1/2
1868	14,019 1/2	3,021 1/2	2,121 1/2	4	19,767 1/2	.....	.....	.....	.....	.....	307 1/2	5 1/2	.....	.....	312 1/2	14,327 1/2	3,026 1/2	2,121 1/2	4	20,079 1/2
1869	9,512 1/2	9,650 1/2	6,713 1/2	20	25,895 1/2	250	.....	.....	.....	250	294 1/2	3 1/2	.....	.....	298 1/2	9,996 1/2	9,653 1/2	6,713 1/2	20	26,393 1/2
1870	8,915 1/2	17,305 1/2	7,130 1/2	.....	33,350	182 1/2	204 1/2	19 1/2	.....	406 1/2	157 1/2	17 1/2	.....	.....	175 1/2	9,255 1/2	17,526 1/2	7,149 1/2	.....	33,931 1/2
1871	10,501 1/2	12,442 1/2	6,461 1/2	.....	29,405 1/2	423 1/2	581 1/2	221 1/2	.....	1,226 1/2	125 1/2	25 1/2	10 1/2	.....	160 1/2	11,050 1/2	13,046 1/2	6,692 1/2	.....	30,790 1/2
1872	14,364 1/2	16,244 1/2	15,443 1/2	.....	46,052 1/2	618 1/2	618 1/2	265 1/2	.....	1,501 1/2	119 1/2	8 1/2	1	.....	128 1/2	15,736 1/2	17,189 1/2	15,733 1/2	.....	d48,680 1/2
1873	12,163 1/2	14,340 1/2	9,291 1/2	.....	35,824 1/2	665 1/2	466 1/2	300 1/2	.....	1,422 1/2	84 1/2	7 1/2	.....	.....	91 1/2	12,903 1/2	14,813 1/2	9,591 1/2	.....	37,338 1/2
1874	18,276 1/2	14,570 1/2	10,417 1/2	.....	43,604 1/2	1,559	319 1/2	125 1/2	.....	2,003 1/2	51 1/2	11 1/2	.....	.....	63 1/2	19,887 1/2	15,211 1/2	10,573 1/2	.....	e45,671 1/2
1875	13,930 1/2	16,007 1/2	12,848 1/2	74	42,860 1/2	484 1/2	206 1/2	264 1/2	.....	956 1/2	28 1/2	.....	.....	.....	28 1/2	14,443 1/2	16,214 1/2	13,112 1/2	74	43,845 1/2
1876	9,816 1/2	12,850 1/2	10,972 1/2	349 1/2	33,971 1/2	1,384 1/2	1,100 1/2	863 1/2	.....	3,358 1/2	.....	.....	.....	.....	.....	11,211 1/2	13,933 1/2	11,835 1/2	349 1/2	37,329 1/2
1877	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1878	3,744 1/2	6,851 1/2	7,834 1/2	1,999 1/2	20,459 1/2	533 1/2	945 1/2	928 1/2	15	2,422	.....	.....	.....	.....	.....	4,278	7,796 1/2	8,762 1/2	2,014 1/2	22,881 1/2
1879	3,810 1/2	9,185	7,400 1/2	.....	20,396 1/2	371	1,333 1/2	474 1/2	.....	2,179	.....	.....	.....	.....	.....	4,181 1/2	10,518 1/2	7,875 1/2	.....	22,575 1/2
1880	5,651 1/2	11,711 1/2	9,322 1/2	.....	26,691	332 1/2	873 1/2	202 1/2	44	1,452 1/2	.....	.....	.....	.....	.....	5,980	12,584 1/2	9,525	44	28,143 1/2
1881	5,060 1/2	7,855 1/2	8,158	100	21,103 1/2	353	1,694 1/2	779 1/2	.....	2,827 1/2	.....	.....	.....	.....	.....	5,413 1/2	9,560 1/2	8,937 1/2	100	24,020 1/2

a Includes 25 barrels No. 1, and 37½ barrels No. 2, reinspected at Wellfleet.
b Includes 7 barrels No. 1, reinspected at Cohasset.
c Includes 7½ barrels No. 1, and 1 barrel No. 2, reinspected at Beverly.
d Includes 635 barrels No. 1, 318½ barrels No. 2, and 4 barrels No. 3, reinspected at Provincetown.
e Includes ½ barrel No. 3 reinspected at Salem.

47.—STATISTICS OF MAINE.

The mackerel inspection of the State of Maine is exhibited in two statements, showing the total number of barrels of pickeled mackerel packed within the State for a series of years.

The first statement shows in detail the number of barrels of each grade of mackerel inspected in the several inspection ports of the State during the years 1804 to 1820, and from 1864 to 1878, and was compiled by Mr. Starbuck from the original returns of the inspectors, deposited in the office of the secretary of state. Until the year 1820 Maine was a district of Massachusetts, but since that year has been a separate State. For the years from 1820 to 1864 the original returns could not be found, and it is probable that the returns of many years between 1864 and 1878 exhibit not more than 50 per cent. of the actual number of barrels of mackerel packed in the State.

The second statement shows the total number of barrels of each grade of mackerel packed in the State during a series of years, and is compiled from the following sources: 1804 to 1820, from the official inspection returns; 1825, 1834, 1836 to 1838, and 1851, from Sabine's report on the American fisheries; 1864 to 1878, from the official inspection returns; 1879 to 1881, from the annual reports of the Boston fish bureau.

A review of the statement indicates that the mackerel industry of the State was more extensively prosecuted in 1881 than during any previous year.

MACKEREL INSPECTION IN MAINE.

STATEMENT I.—*Showing by ports the number of barrels of each quality of pickled mackerel inspected in Maine from 1804 to 1820, and from 1864 to 1878.*

[Half barrels and smaller packages reduced to barrels.]

Port of inspection.	1804.				1805.				1806.				1807.				1808.				1809.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	19	203	.....	222	212	158	33	403	130	116½	.....	246½	406½	424	769	1,599½	43	66	.....	109	14	22½	4	40½
Eastport	16	167	.....	183	203	158	33	394	97	12	.....	109	7	22	.....	29	.....	.....	.....	.....	.....	7	.....	7
Lubec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frankfort	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cranberry Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mount Desert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swan's Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deer Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Castine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bucksport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bangor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belfast	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Haven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vinalhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matinicus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Booth Bay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgetown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bath	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phippsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harpswell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	3	36	.....	39	9	.....	.....	9	33	104½	.....	137½	399½	402	769	1,570½	43	66	.....	109	14	15½	4	33½

STATEMENT I.—*Mackerel inspection in Maine*—Continued.

Port of inspection.	1810.				1811.				1812.				1813.				1814.				1815.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	72	320	44	436	100	186	203	489	134	497	248½	879½	46½	14½	15	76	.....	.....	10	10	75	72	24	171
Eastport	25	224	.....	249	2	33	37	72	56	214	73	343	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lubec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frankfort	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cranberry Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mount Desert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swan's Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deer Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Castine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orland	.....	.....	.....	.....	.....	.....	.....	.....	3	4	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	42½	.....	.....	42½
Bucksport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....
Bangor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belfast	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Haven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3½	18	17	38½
Vinalhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matinicus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Booth Bay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgetown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	5
Bath	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phippsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harpswell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	47	156	44	247	98	153	166	417	75	279	175½	529½	44½	14½	15	74	.....	.....	10	10	24	54	7	85

STATEMENT I.—*Mackerel inspection in Maine*—Continued.

Port of inspection.	1816.				1817.				1818.				1819.				1820.			
	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.
Total	274	53	2	329	300	230	90	620	381	170	311	862	999	2,557	1,766	5,322	165½	788½	4,037	4,991
Eastport	.....	.....	.....	.....	.....	.....	.....	.....	1½	.....	57	58½	57	38	45	140	.....	.....	.....	.....
Lubec	.....	.....	.....	.....	3	14	6	23	28	10½	105	143½	17	61	177	255	43½	42	.....	85½
Frankfort	.....	.....	.....	.....	59	10	.....	69	2	10	1	13	29	10	33	72	.....	.....	.....	.....
Cranberry Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	66	29	10	105	.....	.....	.....	.....
Mount Desert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swan's Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	111	20	5	136	.....	.....	.....	.....
Deer Isle	.....	.....	.....	.....	.....	.....	.....	.....	175	13	.....	188	.....	.....	.....	.....	73½	102½	273	449
Castine	46	6	.....	52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bucksport	72	4	.....	76	36	6	.....	42	108½	46	62	216½	199	183	116½	498½	3	40	167	210
Brewer	.....	.....	.....	.....	17	1	.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bangor	8	.....	.....	8	19	2	.....	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampden	.....	.....	.....	.....	14	.....	.....	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belfast	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	101	104	70	275	21	38	162	221
Camden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Haven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vinalhaven	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	2	3	.....	5	.....	.....	.....	.....	5	10	.....	15
Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matinicus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Booth Bay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Westport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgetown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bath	.....	.....	.....	.....	.....	1½	.....	1½	.....	.....	.....	.....	21	20	13	54	13	26	219	258
Phippsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harpswell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	148	43	2	193	152	105½	84	401½	64	87½	86	237½	398	2,092	1,296½	3,786½	6½	530	3,216	3,752½

STATEMENT I.—*Mackerel inspection in Maine—Continued.*

Port of inspection.	1864.					1865.					1866.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	14,677½	30,171½	4,881½	67½	49,797½	34,705½	13,868	5,635½	6	54,215½	31,711	6,141½	6,756½	18½	44,627½
Eastport	92½	351½	21	.....	465	120½	20	5	.....	145½	148	43	1	.....	192
Lubec	6	23	2	.....	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frankfort	.....	.....	.....	.....	.....	400	.....	.....	.....	400	.....	.....	.....	.....	.....
Cranberry Isle	41	154	4	.....	199	.....	.....	.....	.....	.....	6½	.....	.....	.....	6½
Mount Desert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swan's Island	100	115	.....	.....	215	343	13	3	.....	359	332	4½	.....	.....	336½
Deer Isle	2,756½	4,784	2,761	.....	10,303½	4,467½	1,649½	2,915	.....	9,032	5,621	1,221½	2,547½	.....	a9,390
Castine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orland	110	237	.....	.....	347	99½	.....	.....	.....	99½	377½	61	105	.....	543½
Bucksport	.....	.....	.....	.....	.....	661	89	9	.....	759	24	10	.....	.....	34
Brewer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bangor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belfast	659	677½	277	11	1,624½	253	50	70	.....	373	.....	.....	.....	.....	.....
Camden	218½	307½	24½	.....	545½	1,233	999	218	.....	2,450	1,993½	660	662	.....	3,315½
North Haven	539½	699½	16½	.....	1,256	385	181	126	.....	692	849½	257	156½	.....	1,263
Vinalhaven	12	32	.....	.....	44	218	29	.....	.....	247	100	5	6	.....	111
South Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matinicus	37	183½	19	.....	239½	4½	.....	.....	.....	4½	.....	.....	.....	.....	.....
Booth Bay	248½	876	23	7	1,154½	2,793½	1,006	196½	6	4,001½	3,202½	460½	486½	.....	4,149½
Southport	1,740½	3,782½	84	.....	5,606½	2,129½	1,262½	271	.....	3,662½	824½	127	163½	.....	1,114
Westport	.....	.....	.....	.....	.....	260½	112½	4	.....	377½	88	6	4	.....	98
Georgetown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bath	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phippsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harpswell	.....	.....	.....	.....	.....	662	413	100	.....	1,175	306½	143	202	.....	651½
Portland	8,119½	17,948	1,659½	49½	27,766½	20,676½	8,043½	1,716½	.....	30,436½	17,737½	3,142½	2,423½	18½	23,322½

a Includes 171 barrels inspected at Sedgwick.

STATEMENT I.—*Mackerel inspection in Maine*—Continued.

Port of inspection.	1867.					1868.					1869.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	21,060⅝	8,043	4,320⅝	250⅝	33,675¾	17,946⅞	6,363	4,464¼	.....	28,774⅛	13,614⅜	12,410⅞	10,201⅛	939½	37,166¼
Eastport	24	28	.....	.....	52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lubec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frankfort	.....	.....	.....	.....	.....	260	128	83	.....	471	.....	.....	.....	.....	.....
Cranberry Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mount Desert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swan's Island	74½	.....	.....	.....	74½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deer Isle	2,816	1,508	1,059	41	5,424	1,818½	695½	206½	.....	2,220½	1,844½	1,110½	391	108½	3,463½
Castine	352	108	142	.....	602	145	35	20	.....	200	.....	.....	.....	.....	.....
Orland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buckesport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewner	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bangor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belfast	206½	125	64	13	408½	230½	96½	52	.....	378½	104	92	46	.....	242
Camden	1,063½	548½	100	.....	1,711	916	632	39	.....	1,587	163½	297½	81½	24½	566½
North Haven	528	222	201	.....	951	610½	214½	206½	.....	1,031½	.....	.....	.....	.....	.....
Vinalhaven	35	47	4	.....	86	105	112	4	.....	221	.....	.....	.....	.....	.....
South Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	0½	3½	.....	15
Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matinicus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Booth Bay	1,981½	649½	281½	35	2,947½	2,468⅝	780¼	384	.....	3,638⅝	1,677⅞	1,030⅞	1,355	56	4,979⅝
Southport	1,178½	178½	226½	46½	1,630	821¼	129¾	366¼	.....	1,316¾	405⅞	439½	151	10	1,090⅜
Westport	60	.....	.....	.....	60	55	.....	.....	.....	55	.....	.....	.....	.....	.....
Georgetown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bath	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phippsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harpswell	346	157½	61	26	590½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	12,396⅝	4,381	2,181⅛	89½	19,048¼	11,016⅛	3,534¼	3,023	.....	17,573⅜	9,126⅝	8,762½	8,173⅝	741	26,803¾

STATEMENT 1.—*Mackerel inspection in Maine—Continued.*

Port of inspection.	1870.					1871.					1872.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	13,135 3/10	32,613 3/10	6,555 1/2	.....	52,304 1/10	22,391 1/2	18,417 1/2	6,733 1/2	.....	48,603 2/5	10,013 1/2	6,162 1/2	5,626	371	22,172
Eastport	60 1/2	223	30	.....	313 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lubec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Frankfort	.....	.....	.....	.....	.....	250	200	50	.....	500	.....	.....	.....	.....	.....
Cranberry Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mount Desert	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swan's Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deer Isle	1,078 1/2	2,414 1/2	1,093 2/10	.....	4,587 1/10	1,482 1/2	1,264	118	.....	2,864 1/2	.....	.....	.....	.....	.....
Castine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bucksport	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brewer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bangor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hampden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belfast	172 1/2	154	11	.....	337 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camden	275 1/2	1,701 1/2	513	.....	2,490	1,101	1,055 1/2	650 1/2	.....	2,807	463 1/2	454	174 1/2	.....	1,092
North Haven	80 1/2	470	18 1/2	.....	569	110 2/10	125	17	.....	252 2/10	275 2/10	74	2	.....	351 1/2
Vinalhaven	1 1/2	27 1/2	4 1/2	.....	33 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Thomaston	4 7/10	14	3	.....	21 7/10	39 1/2	17 1/2	.....	.....	56 1/2	.....	.....	.....	.....	.....
Thomaston	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Matinicus	57 5/10	155 1/2	3	.....	216 1/10	678 1/2	151	.....	.....	829 1/2	119 1/2	27 1/2	17 1/2	.....	164 1/2
Booth Bay	1,337 2/10	3,299 1/2	471 1/2	.....	5,108 1/2	2,719 1/2	1,864	668	.....	5,251 1/2	1,070	570	528	.....	2,168
Southport	230	496 1/2	20	.....	735 1/2	864 1/2	966 1/2	215	.....	2,046	899	576	920	113	2,617
Westport	8	59	.....	.....	67	49	102 1/2	12	.....	163 1/2	.....	.....	.....	.....	.....
Georgetown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35	7 1/2	2	1	45 1/2
Bath	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phippsburg	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harpswell	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	3	.....	.....	5
Portland	9,827 1/2	23,587 2/10	4,378 5/10	.....	37,804 2/10	16,096 7/10	12,671 1/2	5,063 1/2	.....	33,831 1/2	7,149	4,450 1/10	3,973	257	15,829 1/2

STATEMENT I.—*Mackerel inspection in Maine*—Continued.

Port of inspection.	1873.					1874.					1875.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	12,769⅝	6,845 1/20	2,579	.....	22,193 3/20	25,193¾	14,326	4,222	.....	43,741¾	2,221	1,433¾	5,848	.....	9,502¾
Eastport															
Lubec															
Frankfort															
Cranberry Isle															
Mount Desert															
Swan's Island															
Deer Island	1,456	219	135	.....	1,810	1,738	25	12	.....	1,775					
Castine															
Orland															
Bucksport															
Brewer															
Bangor															
Hampden															
Belfast															
Camden	469¾	240	100½	.....	809¾	1,006	524½	188	.....	1,718½					
North Haven	226 7/20	175	.....	.....	401 7/20	150	.....	.....	.....	150	70	10	.....	.....	80
Vinalhaven															
South Thomaston															
Thomaston															
Matinicus	137½	10½	.....	.....	148						84	6½	.....	.....	90½
Booth Bay	170				170	2,840½	1,361½	199½	.....	4,401½					
Southport	567	336	213¼	.....	1,116¼	1,162½	730	970	.....	2,862½					
Westport															
Georgetown	151 1/20	40 1/20	1	.....	193¾	800	283	162	.....	1,245					
Bath															
Phippsburg															
Harpswell															
Portland	9,581 7/20	5,823¾	2,129	.....	17,544 1/20	17,496¾	11,302	2,700½	.....	31,589½	2,067	1,417	a5,848	.....	9,332

a3,201 barrels of these are No. 3 small, same as No. 4 in Massachusetts.

STATEMENT I.—*Mackerel inspection in Maine—Continued.*

Port of inspection.	1876.					1877.					1878.				
	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.	1.	2.	3.	4.	Total.
Total	1,905½	9,293½	11,230½	.....	22,429½	2,792½	9,941½	9,423½	.....	22,157½	1,478½	5,874	16,082½	.....	23,434½
Eastport															
Lubec															
Frankfort															
Cranberry Isle	a48½	117½	689½	.....	255½	4	20	c26	.....	50					
Mount Desert															
Swan's Island															
Deer Isle	144	644	260	.....	1,048										
Castine															
Orland															
Bucksport															
Brewer															
Bangor															
Hampden															
Belfast															
Camden	195	1,076	1,180	.....	2,451										
North Haven						10	150	d1,015	.....	1,175					
Vinalhaven											26	55	167	.....	248
South Thomaston															
Thomaston															
Matinicus															
Booth Bay						533½	1,068	e1,536½	.....	3,138	150	1,125	3,729	.....	5,004
Southport						83½	320½	f159	.....	562½	24½	120	574	.....	727½
Westport															
Georgetown															
Bath															
Phippsburg												21	7	.....	28
Harpswell															
Portland	1,518	7,456	g9,701	.....	18,675	2,162	8,383	h6,687	.....	17,232	1,278½	4,544	i11,605½	.....	17,427½

a 264 barrels No. 3, large; 8,775½ barrels No. 3, 2,366 barrels No. 3, small.
b 6 barrels "extra."
c 1 barrel No. 3, small.
d 762 barrels N. 3, large; 2,946½ barrels No. 3, middle; 243 barrels No. 3, small.
e 24 barrels No. 3, small.
f 1,000 barrels No. 3, small.
g 3,035 barrels No. 3, small.
h 108 barrels No. 3, small.
i 21 barrels No. 3, large; 3,570½ barrels No. 3, small.

MACKEREL INSPECTION IN MAINE.

STATEMENT II.—*Showing the total number of barrels of each quality of pickled mackerel inspected in Maine from* 1804 *to* 1820, *and from* 1864 *to* 1881.

Year.	Barrels of mackerel inspected.				
	1.	2.	3.	4.	Total.
1804	19	203			222
1805	212	158	33		403
1806	130	116½			246½
1807	406½	424	769		1,599½
1808	43	66			109
1809	14	22½	4		40½
1810	72	380	44		496
1811	100	186	203		489
1812	134	497	248½		879½
1813	46½	14½	15		76
1814			10		10
1815	75	72	24		171
1816	274	53	2		329
1817	300	230	90		620
1818	381	170	311		862
1819	999	2,557	1,766		5,322
1820	165½	788½	4,037		4,991
1835					33,065
1834					40,661
1836					25,228
1837					22,462
1838					24,312
1851					31,472
1864	14,677½	30,171½	4,881½	67½	49,797½
1865	34,705½	13,868	5,635½	6	54,215½
1866	31,711	6,141½	6,756½	18½	44,627½
1867	21,060½	8,043	4,320½	250½	33,675½
1868	17,946½	6,363	4,464½		28,774½
1869	13,614⅔	12,410⅞	10,201⅓	939½	37,166½
1870	13,135⅞	32,613⅔	6,555½		52,304⅞
1871	23,391½	18,417½	6,793½		48,603½
1872	10,013½	6,162½	5,626	371	22,173
1873	12,769½	6,845½	2,579		22,193⅓
1874	25,193½	14,326	4,222		43,741½
1875	2,221	1,433½	5,848		9,502½
1876	1,905½	9,203½	11,230½		22,429½
1877	5,792½	9,941½	9,423½		22,157½
1878	1,478½	5,874	16,082⅞		*a* 23,434½
1879					*b* 58,249
1880					*b* 80,338
1881					*b* 116,762

a The returns of the Boston Fish Bureau give the inspection this year 48,263 barrels.
b From returns of the Boston Fish Bureau. The State inspection returns for 1879 could not be found. For 1880 the returns by the inspectors to the secretary of state give the number of barrels at 72,714⅞, which is believed to be inaccurate.

48.—STATISTICS OF NEW HAMPSHIRE.

The statistics of mackerel inspection in New Hampshire are in a single statement which shows the total number of barrels of mackerel packed in Portsmouth, the only inspection port of the State, during the years 1830 to 1852, 1861 to 1881. These facts are compiled from the following sources: 1830 to 1852, from Sabine's Report on the American Fisheries; 1861 to 1877, from original returns of inspectors copied by Mr. Starbuck; 18 9 to 1881, from official documents signed by the secretary of state of New Hampshire. In a foot-note is given the number of barrels packed in the State during the years ending December 31, 1878 to 1881, as reported to the Boston Fish Bureau.

Statement showing the total number of barrels of pickled mackerel inspected in New Hampshire from 1830 to 1852, and from 1861 to 1881.a

Year.	Barrels.	Year.	Barrels.	Year.	Barrels.
1830	20,300	1845	1,075	1867	572
1831	21,450	1846	1,369	1868	.....
1832	21,700	1847	2,008	1869	157
1833	19,375	1848	2,400	1870	3,700
1834	18,200	1849	2,867	1871	2,071
1835	15,300	1850	3,125	1872	1,878
1836	9,450	1851	3,073	1873	2,398
1837	5,225	1852	2,140	1874	5,519
1838	3,420			1875	3,415
1839	700	1861	97	1876	5,351
1840	630	1862	15	1877	643
1841	1,100	1863	65	1878	*b* 2,252
1842	1,050	1864	300	1879	*b* 3,435½
1843	1,175	1865	45	1880	*b* 5,967
1844	1,240	1866	200	1881	*b* 5,385

a The inspection year ends on May 1, from 1869 to 1877, and on June 1 in subsequent years.
b The annual report of the Boston Fish Bureau gives the number of barrels packed in New Hampshire in years ending December 31, 1878, 4,000 barrels; 1879, 6,225 barrels; 1880, 7,350 barrels; 1881, 5,400 barrels.

49.—STATISTICS OF THE UNITED STATES.—TOTALS.

The mackerel industry of the United States, as far as pickled mackerel is concerned, is exhibited in a series of statements which show the total number of barrels packed in the United States, and the imports of mackerel from the Dominion of Canada. Several statements gathered from Canadian sources are also included to show the mackerel industry of the United States as compared with that of Canada.

Statements I to III show the number of vessels employed by the New England States in the Bay of Saint Lawrence and American coast fisheries, and the total catch of salt mackerel by these fleets during the years 1879, 1880, and 1881.

Statement IV shows the quantity and value of pickled mackerel produced by the fisheries of the United States for the years 1831, 1834 to 1838, 1851, 1864 to 1881. From this statement it appears that more mackerel were packed in the year 1881 than in any year, with the exception of 1831, in the history of this fishery. If to the quantity of mackerel salted there be added the quantity sold in a fresh condition, which was from 150,000 to 175,000 barrels, the total catch of mackerel by the American fleet in 1881 represents not less than 150,000,000 pounds of round fish, a larger amount by 30,000,000 pounds than was ever before taken in a single year.

Statement V shows the total quantity and value of pickled mackerel produced by the fisheries of the United States as compared with the production of Canadian fisheries during the years 1873 to 1880, from which it appears that during this period the United States have produced 1,809,333 barrels, valued at $16,083,453, and the Canadian fisheries have produced 1,320,217 barrels, valued at $12,717,576, making the total for both countries 3,129,550 barrels, valued at $28,801,029. Of the American production not over 260,000 barrels, valued at about

$2,500,000 were taken by American vessels in the Bay of Saint Lawrence.

Statement VI shows the number of barrels of pickled mackerel received at Boston from United States and foreign ports during each month of the years 1878 to 1881, also the total receipts during the year 1877. From this statement it appears that the mackerel industry of Boston is increasing in importance, especially in the receipts of American mackerel.

Statement VII shows the price per barrel of the several grades of mackerel during the first week of September in each year from 1830 to 1881. These values may perhaps be generally taken as the average value for the year, though in some years, as in 1881, the price rapidly increased later in the year, when a large part of the product was placed upon the market.

Statement VIII shows the number of barrels of pickled mackerel imported from the British North American provinces during the years 1821 to 1841, and from 1850 to 1881, also the value of each year's importation from 1850 to 1881.

Besides the quantity of mackerel imported in 1872 from these provinces there were 1,504 barrels, valued at $11,214, received from England, Scotland, British West Indies, France, and Portuguese possessions, making the total importation 79,235 barrels, valued at $449,625. In the year 1873, 1,191 barrels mackerel, valued at $4,679, were received from the Danish West Indies and England, making the total importation for that year 90,889 barrels, valued at $610,457. The entire importation of pickled mackerel for the years subsequent to 1873 has been from the British North American provinces.

The quantities of dutiable mackerel imported since June 30, 1873, and included in the tabulated statement, are as follows: 1874, 190 barrels, $1,550; 1875, 59 barrels, $553; 1876, 7 barrels, $48; 1877, 14 barrels, $148; 1878, 6 barrels, $67; 1879, 2 barrels, $14; 1880, none specified; 1881, 9 barrels, $97; total, 287 barrels, $2,477. The quantities of pickled mackerel imported from the provinces free of duty under the treaty of Washington since June 30, 1873, are as follows: 1874, 89,503 barrels, $800,920; 1875, 77,479 barrels, $584,283; 1876, 76,531 barrels, $695,412; 1877, 43,066 barrels, $372,260; 1878, 102,148 barrels, $907,246; 1879, 101,420 barrels, $649,721; 1880, 112,468 barrels, $493,059; 1881, 120,288 barrels, $614,729; total, 722,903 barrels, $5,117,630.

Statement IX shows the quantity and value of pickled mackerel imported into the United States from the British provinces during the years 1856 to 1872, being the time of the operation of the reciprocity treaty, and from the close of that treaty to the beginning of the treaty of Washington. The statement also shows what would have been the duty on these imports during the period of reciprocity. These statistics are compiled from sheets published by W. R. Clark, and believed to be copied from United States custom-house returns.

Statement X shows the quantity and value of foreign pickled mackerel entered for consumption in the United States during the years ended June 30, 1872 to 1881. Comparing this Statement with statement VIII, it appears that the total imports from the Dominion of Canada, from 1872 to 1881, amount to 890,619 barrels, valued at $6,164,295, and the total consumption of Canadian mackerel during the same period amounts to 836,218 barrels, valued at $5,900,649. This shows that nearly the entire importation of foreign mackerel is consumed in this country; and such would naturally be the case since the imports are the best qualities of Canadian mackerel that are too fat for export to the West Indies or other foreign countries.

Statements XI to XV, inclusive, show the production of mackerel by the fisheries of the Dominion of Canada, and the exports of mackerel from that country during a series of years. They are compiled from the annual reports of the department of marine and fisheries of the Dominion of Canada, the documents and proceedings of the Halifax Commission, and a report by United States Consul-General Jackson, of Halifax, on the fisheries of Canada, and their value to the United States, printed in commercial reports of the Department of State for January, 1881.

The first three of these statements show the total value of pickled and fresh mackerel, the value of mackerel exported to all countries, and the value of mackerel exported to the United States during the period from 1873 to 1879. From these statements we see that the production is valued at $10,654,528, and the exports amount to $5,481,493, of which the United States receives nearly three-fourths, or $4,090,139 worth. Of the entire production only $115,918 worth of fresh or canned mackerel is included, of which $26,018 worth was exported to the United States, as follows: 1873, none specified; 1874, from Nova Scotia, 26,390 pounds fresh, $2,689; 1875, from Nova Scotia, 1,008 pounds fresh, $126; 1876, from Nova Scotia, 22,760 pounds fresh, $4,632; 1877, from Nova Scotia, 8,976 pounds preserved, $1,051; from New Brunswick, 703 pounds fresh, $62; 1878, from Nova Scotia, 54,200 pounds fresh, $1,266, 4,365 pounds preserved, $4,287; from New Brunswick, 87,883 pounds fresh, $5,099, 9,448 pounds preserved, $693; from Quebec, 10,738 pounds fresh, $654; 1879, from Nova Scotia, 39,700 pounds fresh, $2,632, 266 pounds preserved, $818; from New Brunswick, 52,786 pounds fresh, $2,009; total value, $26,018.

The total yield of fish and fish products, by the fisheries of Canada, from 1873 to 1879, as given in official documents, was valued at $82,094,962, of this amount $40,802,322 worth was exported to all countries, including $11,695,530 worth exported to the United States.

Statement XIV shows the quantity and value of mackerel produced by the Canadian fisheries from 1869 to 1880, including those of Prince Edward Island since its entry into the Dominion in 1873.

Statement XV shows the quantity and value of pickled mackerel exported from the Dominion of Canada to the United States from 1873 to 1879, also from Prince Edward Island from 1857 to 1873, and from

Newfoundland from 1853 to 1876. From this statement it appears that the total exports of pickled mackerel to the United States amounts to 528,272 barrels, valued at $4,068,925. Comparing this quantity and value with the imports into the United States during the same period as given in Statement VIII, by the United States Bureau of Statistics, we find the imports amount to 580,123 barrels, valued at $4,618,000. Part of the discrepancy between those two statements may be accounted for from the fact that the United States returns are for the fiscal years ended June 30, while the Canadian returns may be for the calendar years.

NEW ENGLAND MACKEREL FLEET, 1879.

STATEMENT I.—*Showing the number of vessels and their catch of salt mackerel in the Bay of Saint Lawrence and American shore mackerel fisheries for the season of* 1879, *as reported to the Boston Fish Bureau.*

[Compiled from annual report for 1879.]

	Vessels.			Barrels of mackerel.		
	Bay.	Shore.	Total.	Bay.	Shore.	Total.
MASSACHUSETTS.						
Newburyport	6	2	8	721	870	1,591
Rockport*	.....	8	8	.....	.....	.....
Gloucester	26	85	111	7,125	47,085	54,210
Boston†	4	35	39	1,310	48,103	49,413
Cohasset	.....	6	6	.....	4,900	4,900
Wellfleet	.....	22	22	.....	17,200	17,200
Provincetown	.....	5	5	.....	4,354	4,354
Chatham	.....	7	7	.....	5,688	5,688
Harwich	.....	11	11	.....	10,938	10,938
Dennis	1	10	11	240	7,290	7,530
Hyannis	.....	2	2	.....	301	301
Total	37	193	230	9,396	146,729	156,125
NEW HAMPSHIRE.						
Portsmouth	.....	9	9	.....	6,225	6,225
MAINE.						
Deer Isle*	.....	3	3	.....	.....	.....
Camden	.....	3	3	.....	1,020	1,020
North Haven‡	.....	6	6	.....	1,278	1,278
Booth Bay	.....	9	9	.....	3,951	3,951
Portland	5	60	65	1,400	50,600	52,000
Total	5	81	86	1,400	56,849	58,249
Total for New England	42	283	325	10,796	209,803	220,599

*Vessels packed out away from home.
†Numerous vessels packed out in addition to home fleet.
‡Vessels mostly packed out away from home.

NEW ENGLAND MACKEREL FLEET, 1880.

STATEMENT II.—Showing the number of vessels and their catch of salt mackerel in the Bay of Saint Lawrence, the New England shore, and the Southern mackerel fisheries for the season of 1880, as reported to the Boston Fish Bureau.

[Compiled from annual report for 1880.]

	Vessels.				Total number of crews.	Barrels of mackerel.				Remarks.
	Bay.	New England shore.	South.	Total.		Bay.	New England shore.	South.	Total.	
MASSACHUSETTS.										
Newburyport	4	5	3	12	110	.....	738	.....	738	3,885 barrels packed at other ports.
Rockport	1	5	1	7	96	50	706	.....	756	6,269 barrels packed at other ports.
Gloucester	15	61	34	110	1,650	2,189	124,477	2,954	129,620	Includes other than home fleet.
Boston	5	31	.....	36	530	2,158	51,844	.....	54,002	Several vessels packed in addition to home fleet.
Cohasset	1	.....	6	7	100	390	5,856	600	6,846	
Wellfleet	6	5	20	31	450	30	28,707	500	29,237	
Provincetown	.....	4	3	7	105	.....	4,863	205	5,068	
Chatham	.....	1	5	6	87	.....	6,230	1,000	7,230	
Harwich	.....	5	6	11	180	.....	12,838	1,000	13,838	
Dennis	.....	7	3	10	160	.....	7,691	460	8,151	
Hyannis	.....	2	.....	2	30	.....	500	.....	500	
Total	32	126	81	239	3,498	4,817	244,450	6,719	255,986	
MAINE.										
Swan's Isle	2	2	6	10	145	.....	.....	.....	.....	All packed from home.
Deer Isle	.....	2	2	4	56	.....	.....	.....	.....	All packed from home.
Camden	.....	3	.....	3	39	.....	1,421	.....	1,421	
North Haven	.....	1	5	6	90	.....	.....	1,400	1,400	Vessels partly packed away from home.
Booth Bay	.....	12	4	16	235	.....	3,300	700	4,000	Many of them packed away from home.
Southport	.....	5	.....	5	70	.....	3,100	.....	3,100	Part packed from home.
Sedgwick	.....	.....	1	1	15	.....	.....	.....	.....	1,240 barrels packed away from home.
Portland	.....	50	.....	50	730	2,464	73,933	.....	76,417	Many vessels in addition to home fleet included.
Total	2	75	18	95	1,380	2,464	81,754	2,100	86,338	
NEW HAMPSHIRE.										
Portsmouth	.....	4	4	8	110	.....	6,750	600	7,350	
Total for New England*	34	205	103	342	4,988	7,301	332,954	9,419	349,647	Inspected barrels.

*The New England shore fleet mentioned above are only the vessels that fish nowhere else; to which may be added the Southern and North Bay fleets after they returned from their unsuccessful cruise in those waters, making the total shore fleet 342 sail.

[In the annual report for 1881 some corrections are made in the returns of 1880; shore fleet, 201, Southern fleet, 92; total fleet, 327; total crews, 4,778.]

NEW ENGLAND MACKEREL FLEETS, 1881.

STATEMENT III.—*Showing the number of vessels and their catch of salt mackerel in the Bay of Saint Lawrence, the New England shore, and the Southern mackerel fisheries for the season of 1881, as reported to the Boston Fish Bureau.*

[Compiled from annual report for 1881.]

	Vessels.					Barrels of mackerel.				
	Bay.	New England shore.	South.	Total.	Total num. ber of crews.	Bay.	New England shore.	South.	Total.	Remarks.
MASSACHUSETTS.										
Newburyport	1		3	4	50					*
Rockport		6		6	65		290		290	† Total catch 3,590 barrels.
Gloucester	1	59	46	106	1,548	40	120,597	9,000	129,637	‡
Boston	1	15	5	21	296	290	63,768	5,611	69,669	†
Cohasset		7		7	100		8,013		8,013	
Wellfleet		33	3	36	508		30,977	500	31,477	5 sail packed at Boston.
Provincetown		8		8	120		6,175		6,175	3 sail packed at Boston.
Chatham							170		170	Weir caught.
South Chatham		1	4	5	75		8,940	1,470	10,410	
Harwich			9	9	146		4,388	5,500	9,888	6,100 barrels landed at Booth Bay additional.
Dennisport			3	3	45		2,646	900	3,546	
Fairhaven		1		1	13		220		220	1,536 barrels were caught.
Total	3	130	73	206	2,975	330	246,184	22,981	269,495	
MAINE.										
Swan's Isle		10	2	12	180			1,700	1,700	
Deer Isle		1	1	2	28		2,280	223	2,503	‡ Southern catch landed at New York and Philadelphia.
Camden		3		3	39					
Northhaven		5	5	10	120		500		500	‡
Booth Bay		4	9	13	185		14,259	800	15,059	‡
Southport		8		8	120		5,000		5,000	† 6,100 barrels of those landed by Harwich sail.
Sedgwick		1		1	15					‡
Portland		35		35	490	140	91,860		92,000	‡
Total		67	17	84	1,177	140	113,899	2,723	116,762	
NEW HAMPSHIRE.										
Portsmouth		5	3	8	106		3,700	1,700	5,400	‡
Total for New England	3	202	93	298	4,258	470	363,783	27,404	391,657	Inspected barrels.

*None packed at home port. †Numerous vessels from other ports included. ‡Part of the catch landed at Boston and Portland. Amount given packed at home ports.

NOTE.—The New England shore fleet mentioned above are only the vessels that fished nowhere else, to which may be added the Southern and North Bay fleets, after they returned from their unsuccessful cruise in those waters, making the total shore fleet two hundred and ninety-eight sail.

MACKEREL FISHERY OF THE UNITED STATES.

STATEMENT IV.—*Showing the number of barrels and value of pickled mackerel produced by fisheries of the United States for the years* 1831, 1834 *to* 1838, 1851, 1864 *to* 1881.*

Years.	Massachusetts.	Maine.	New Hampshire.	Total quantity and value.	
	Barrels.	*Barrels.*	*Barrels.*	*Barrels.*	*Value.*
1831	283, 548½	44, 951⅓	21, 450	449, 950	$1, 862, 703
1834	252, 879⅔	40, 661	18, 200	311, 740⅔	1, 437, 123
1836	174, 410	25, 228	9, 450	209, 088	1, 520, 069
1837	138, 157½	22, 462	5, 225	165, 844⅔	965, 214
1838	110, 740¼	24, 312	3, 420	138, 472¼	1, 156, 243
1851	329, 244½	31, 472	3, 073	363, 789½	2, 484, 670
1864	274, 357¼	49, 797½	300	324, 454¾	7, 001, 098
1865	256, 796½	54, 215⅔	45	311, 056⅞	5, 729, 851
1866	231, 696⅒	44, 627⅓	200	276, 523⅓⅒	5, 161, 261
1867	210, 314⅒	33, 675⅒	572	244, 561⅒	3, 174, 130
1868	180, 056⅛	28, 774½	.....	208, 830⅞	2, 924, 987
1869	234, 210⅞	37, 166¼	157	271, 534½	3, 762, 985
1870	318, 521⅜	52, 304⅒	3, 700	374, 525⅞⅒	4, 400, 563
1871	259, 416⅜	48, 603⅗	2, 071	310, 091⅝	2, 668, 851
1872	181, 956⅗	22, 173	1, 878	206, 007⅒	2, 205, 761
1873	185, 748½	22, 193⅛	2, 398	210, 350⅗⅒	3, 167, 948
1874	258, 379⅛	43, 741¾	5, 519	307, 640⅛	3, 163, 701
1875	130, 062⅞	9, 502¾	3, 415	142, 980¾⅝	1, 439, 315
1876	225, 942⅝	22, 429¾	5, 351	253, 722⅞⅝	1, 853, 103
1877	105, 097⅒	22, 157¾	643	127, 898⅝⅒	1, 384, 223
1878	144, 205	48, 263	4, 000	196, 468	1, 408, 675
1879	156, 125	58, 249	6, 225	220, 599	1, 208, 444
1880	255, 086	86, 338	7, 350	349, 674	2, 398, 004
1881	269, 495	116, 762	5, 400	391, 657	2, 447, 556

*The figures for the years 1834 to 1838 and 1851 are from Sabine's Report on the American Fisheries; for the years 1864 to 1877 from the State inspection returns; for the years 1878 to 1881 from the annual reports of the Boston Fish Bureau.

MACKEREL FISHERY OF THE UNITED STATES AND OF THE DOMINION OF CANADA.

STATEMENT V.—*Showing the number of barrels and value of pickled mackerel produced by the fisheries of the United States from* 1873 *to* 1881, *and by the fisheries of the Dominion of Canada from* 1873 *to* 1880.

Year.	United States.		Dominion of Canada.		Total.	
	Barrels.	Value.	Barrels.	Value.	Barrels.	Value.
1873						
1874	210, 350⅗⅒	$3, 167, 948	159, 530	$1, 615, 552	369, 880⅗⅒	$4, 783, 500
1875	307, 640⅛	3, 163, 701	161, 096	1, 559, 551	468, 730⅛	4, 723, 252
1876	142, 980¾⅝	1, 439, 315	123, 654½	1, 236, 545	266, 634¼⅛	2, 675, 860
1877	253, 722⅝⅞	1, 853, 103	104, 356	992, 794	358, 078⅝⅞	2, 845, 897
1878	127, 898⅗⅒	1, 384, 223	163, 916	1, 639, 160	291, 814⅗⅒	3, 023, 383
1879	196, 468	1, 408, 675	183, 919	1, 766, 226	380, 387	3, 174, 901
1880	220, 599	1, 208, 444	190, 076½	1, 745, 490	410, 675½	3, 013, 934
1881	349, 674	2, 398, 044	233, 669	2, 162, 258	583, 343	4, 560, 302
	391, 657	2, 447, 556	.....	.....	.....	.....
Total 1873 to 1881	2, 200, 990⅔⅝	18, 531, 009	.....	.....	.....	.....
Total 1873 to 1880	1, 869, 333⅔⅝	16, 083, 453	1, 320, 217	12, 717, 575	3, 129, 550⅔⅝	28, 801, 020

MACKEREL INDUSTRY OF BOSTON, MASS.

STATEMENT VI.—*Showing the number of barrels of pickled mackerel received in Boston from home and foreign ports, from* 1877 *to* 1881, *as reported to the Boston Fish Bureau.*

[Compiled from annual reports of Boston Fish Bureau.]

	1877.		1878.		1879.		1880.		1881.	
	Home ports.	Foreign ports.	Home ports.	Foreign ports.	Home ports.	Foreign ports.	Home ports.	Foreign ports.	Home ports.	Foreign ports.
January	.....	.....	272	480	611	1,484	117	3,576	211	1,179
February	.....	.....	371	1,132	1,417	1,490	700	3,947	1,202	2,065
March	.....	.....	842	1,555	3,868	4,577	831	2,012	3,252	7,269
April	.....	.....	740	50	1,606	1,878	184	138	464	4,482
May	.....	.....	3,077*	2,160*	1,183	05	945*	178	2,161	1,725
June	.....	.....	2,299	5,037	2,843	779	1,679	6,283	3,269	2,866
July	.....	.....	774	5,341	1,505	6,450	4,166	8,222	10,943	5,766
August	.....	.....	5,472	21,495	5,158	12,290	10,158	14,891	12,678	3,931
September	.....	.....	4,533	12,109	5,035	13,878	9,412	19,713	20,868	12,902
October	.....	.....	7,025	15,092	4,934	25,600	4,934	30,033	10,391	11,550
November	.....	.....	5,039	9,383	2,425	12,180	2,425	11,532	6,574	5,356
December	.....	.....	1,437	4,405	3,233	3,512	1,701	5,205	1,640	3,259
Catch of Boston fleet	(20,139)	.....	32,458	.....	49,413	.....	54,002	.....	69,669	.....
Total	55,668	86,356	64,339	78,689	83,231	84,213	90,763	105,730	143,319	61,850
Grand total.	142,024		143,028		167,444		196,493		205,172	

*New.

PRICE OF MACKEREL IN MASSACHUSETTS.

STATEMENT VII.—*Showing the price per barrel of each grade of pickled mackerel in th first week of September, from* 1830 *to* 1881.

[Compiled from the files of the Gloucester Telegraph and the Cape Ann Advertiser.]

Year.	No. 1.	No. 2.	No. 3.	Year.	No. 1.	No. 2.	No. 3.
1830	$5 00	$4 50	$2 62	1859	$14 50	$12 59	$8 50
1831	5 75	4 75	2 62	1860	16 00	8 50	5 00
1832	5 00	4 00	2 75	1861	8 50	4 50	2 75
1833	5 72	4 72	2 85	1862	8 25	6 00	4 50
1834	5 72	4 72	3 35	1863	14 00	9 25	6 50
1835	7 00	6 00	4 00	1864	30 00	20 00	.....
1836	9 00	8 00	5 00	1865	22 00	15 00	9 75
1837	7 75	6 50	4 12	1866	22 75	13 25	.....
1838	11 00	9 25	5 50	1867	17 00	12 25	7 50
1839	12 50	10 50	7 00	1868	17 00	13 00	.....
1840	12 75	10 50	5 50	1869	23 00	11 50	.....
1841	12 00	10 00	6 00	1870—bay	21 50	11 00	.....
1842	9 00	6 00	4 00	shore	23 00	9 75	.....
1843	10 12	8 12	6 00	1871—bay	10 50	7 50	5 50
1844	9 50	7 50	5 50	shore	11 25	7 25	6 25
1845	13 00	10 50	6 87	1872—bay	11 50	9 25	7 00
1846	9 12	6 25	3 87	shore	14 50	9 50	.....
1847	12 75	8 25	4 25	1873—bay	14 75	12 25	9 00
1848	9 00	6 00	3 37	shore	20 00	12 25	.....
1849	12 00	7 00	3 50	1874—bay	15 00	8 00	7 00
1850	10 12	8 12	5 00	shore	18 25	9 00	7 00
1851	10 00	6 50	5 12	1875—bay	14 00	11 00	.....
1852	9 00	7 00	5 75	shore	16 25	10 25	7 50
1853	11 50	9 50	7 50	1876	15 00	6 75	5 50
1854	15 00	12 25	5 00	1877	16 50	12 50	8 00
1855	19 00	11 00	6 25	1878	18 00	8 00	5 00
1856	13 00	8 00	6 00	1879	[16 00]	5 00	3 00
1857	15 00	12 50	8 50	1880	14 00	7 00	4 00
1858	15 50	12 50	8 50	1881	14 00	6 00	4 00

UNITED STATES IMPORTS OF PICKLED MACKEREL.

STATEMENT VIII.—*Showing the number of barrels of pickled mackerel imported into the United States from the British North American Provinces from* 1821 *to* 1841, *and from* 1850 *to* 1881, *and also the value of same from* 1850 *to* 1881.*

Year.	Barrels.	Year.	Barrels.	Year.	Barrels.	Value.	Year.	Barrels.	Value.
.....	.....	1834	223	1850	75,326	$335,309	1866	56,613	$528,270
.....	.....	1835	8,153	1851	102,394	548,553	1867	77,503	675,986
.....	.....	1836	6,037	1852	78,334	327,613	1868	41,655	364,429
1821	.....	1837	1,256	1853	54,407	329,216	1869	29,701	327,079
1822	7	1838	182	1854	61,815	470,916	1870	30,712	346,956
1823	387	1839	7,046	1855	80,012	427,283	1871	29,333	254,986
1824	67	1840	11,823	1856	62,606	492,802	1872	77,731	438,410
1825	700	1841	10,877	1857	49,477	457,074	1873	89,698	605,778
1826	242	.....	.....	1858	67,345	604,852	1874	89,693	802,470
1827	87	.....	.....	1859	49,086	505,029	1875	77,538	385,836
1828	39	.....	.....	1860	63,549	588,969	1876	76,538	695,460
1829	38	.....	.....	1861	38,023	269,399	1877	43,080	372,408
1830	95	.....	.....	1862	37,710	247,678	1878	102,154	907,318
1831	391	.....	.....	1863	62,767	402,178	1879	101,422	649,735
1832	4,552	.....	.....	1864	80,665	599,109	1880	112,468	493,059
1833	32	.....	.....	1865	120,067	957,411	1881	129,297	614,820
	20	.....	.....						

*The statistics in this statement are obtained from the following sources: For the years 1821 to 1841 from Sabine's "Report on the American Fisheries"; for the fiscal years ending June 30, 1850 to 1855, 1867, 1868, and 1872 to 1881, from the annual reports of the United States Bureau of Statistics; for the years 1856 to 1866, 1869, 1870, and 1871, from sheets published in 1879 by W. R. Clark, and believed to be compiled from United States custom-house records. Mr. Clark's statistics are the most reliable we have obtained for the years for which we quote them, as the returns of the United States Bureau of Statistics do not give the desired details for those years.

UNITED STATES IMPORTS OF PICKLED MACKEREL.

STATEMENT IX.—*Showing the quantity and value of pickled mackerel imported into the United States from the British provinces, 1856 to 1872.*

[Compiled from "Statistics of Importation of Fish from the Provinces, 1856 to 1872, inclusive, entered according to act of Congress, in the year 1879, by W. R. Clark," 8 sheets (A to H) 18 by 12 inches.]

Year.	Maine.			Massachusetts.			New York.			Pennsylvania.		
	Barrels.	Value.	Duty.	Barrels.	Value.	Duty.	Barrels.	Value.	Duty.	Barrels.	Value.	Duty.
1855												
1856	321	$2,140	$642	47,350	$284,990	$94,700				5,209	$43,469	$10,598
1857	1,361	9,396	2,722	36,551	317,616	73,102	5,440	$60,351	$10,880	2,513	42,592	5,026
1858	1,830	13,321	3,660	49,592	488,968	99,184	7,129	76,455	14,258	3,944	48,473	7,888
1859	816	5,307	1,632	36,386	420,900	72,772	6,738	79,016	13,506	3,239	38,467	6,478
1860	461	3,499	922	49,362	439,730	98,724	5,869	70,706	11,738	5,552	58,296	11,104
1861	380	2,645	760	18,957	123,866	37,914	8,732	74,389	17,464	7,281	33,893	14,562
1862	1,673	17,730	3,346	23,334	142,361	46,668	5,537	29,980	11,074	4,953	34,769	9,906
1863	1,777	26,877	3,554	42,825	266,611	85,650	12,352	71,380	24,704	3,651	23,539	7,302
1864	2,395	28,672	4,650	48,440	340,710	96,880	22,462	176,989	44,924	6,472	47,126	12,944
1865	2,214	26,098	4,428	82,306	651,850	164,612	23,778	188,025	47,556	7,303	62,291	14,606
1866	2,545	30,667	5,090	46,425	467,684	92,850	3,617	23,261	7,234	3,492	36,171	6,984
1867	1,218	8,831	2,436	42,254	362,890	84,508	9,482	88,732	18,964	4,778	44,193	9,556
1868	3,698	39,080	7,396	26,765	248,650	53,530	6,775	52,724	13,550	613	6,582	1,226
1869	1,458	18,704	2,916	24,723	259,782	49,446	3,030	42,305	6,060	302	4,195	604
1870	3,315	37,211	6,630	24,673	273,923	49,346	1,982	24,224	3,964	6	90	12
1871	1,491	13,946	2,982	23,280	187,680	46,560	2,940	32,378	5,880	481	7,074	962
1872	6,026	32,891	12,052	46,155	298,000	92,310	8,123	50,895	16,246	1,742	14,753	3,484
	32,909	317,015	65,818	668,378	5,697,405	1,338,756	134,046	1,148,700	268,092	61,921	567,973	123,842

STATEMENT IX.—*Showing the quantity and value of pickled mackerel imported into the United States, &c.—Continued.*

Year.	Maryland.			Boston.*			Portland.*			Total.		
	Barrels.	Value.	Duty.	Barrels.	Value.	Duty.	Barrels.	Value.	Duty.	Barrels.	Value.	Duty.
1855				61,513	$391,625	$123,026	889	$5,463	$1,778			
1856	9,636	$62,204	$19,272	44,956	349,663	89,912	214	1,406	428	62,606	$492,803	$125,212
1857	3,312	27,125	6,624	30,734	270,800	61,588	109	972	218	49,477	457,074	98,954
1858	4,850	37,635	9,700	32,322	377,630	65,044	340	2,197	680	67,345	664,852	134,690
1859	1,847	21,339	3,694	41,372	390,915	83,144	441	1,649	882	49,086	565,029	98,172
1860	2,305	16,738	4,610	40,816	374,050	81,632	232	1,993	464	63,549	588,969	127,098
1861	2,673	14,606	5,346	17,179	90,046	34,358	148	523	296	38,023	269,399	76,046
1862	2,213	12,838	4,426	14,704	87,768	29,408	224	928	448	37,710	247,678	75,420
1863	2,182	11,771	4,324	35,048	211,253	70,096	425	2,603	850	62,767	402,178	125,534
1864	966	5,612	1,932	45,714	308,878	91,428	2,980	24,747	5,960	80,665	599,109	161,330
1865	4,466	33,547	8,932	67,300	524,998	134,600	95	991	190	120,067	957,411	240,134
1866	534	4,257	1,068	38,522	363,910	77,044	442	3,773	884	56,613	582,270	113,226
1867	1,487	12,887	2,974	29,176	259,186	58,352	155	1,308	310	59,219	517,533	118,438
1868	163	2,145	326	16,102	156,847	32,204	3,318	33,275	6,636	38,014	349,181	76,028
1869	188	1,803	376	18,343	186,821	36,686	1,365	17,563	2,730	29,701	327,079	59,402
1870	736	11,598	1,472	14,716	164,508	29,432	2,610	30,017	5,220	30,712	346,956	61,424
1871	1,141	12,998	2,282	15,900	109,578	31,800	1,223	11,725	2,446	29,333	254,986	58,666
1872	778	4,238	1,556	35,437	221,935	70,874	2,763	14,886	5,526	62,824	401,777	125,648
	39,457	293,191	78,914	600,314	4,843,461	1,200,628	17,973	156,019	35,946	937,711	8,024,284	1,875,422

*Included under Massachusetts and Maine.

CONSUMPTION OF FOREIGN MACKEREL IN THE UNITED STATES.

STATEMENT X.—*Showing the number of barrels and value of foreign mackerel entered for consumption in the United States, 1872 to 1881.*

[Compiled from reports of United States Bureau of Statistics.]

Year ended June 30—	Free of duty.		Dutiable.		Total.	
	Barrels.	*Value.*	*Barrels.*	*Value.*	*Barrels.*	*Value.*
1872			39, 572	$247, 796 73/100	39, 572	$247, 796 73/100
1873			70, 651 7/10	523, 357 56/100	70, 651 7/10	523, 357 56/100
1874	89, 376½	$793, 764	1, 496½	13, 325	90, 873½	807, 089
1875	78, 091½	586, 825	41	524	78, 132½	587, 349
1876	76, 582 88/100	695, 847	16	70	76, 598 88/100	695, 917
1877	44, 169½	373, 792 38/100	8½	105	44, 178	373, 897 38/100
1878	101, 995	907, 013	6	67	102, 001	907, 080
1879	101, 450	650, 048 13/100	2 3/100	19 1/100	101, 452 3/100	650, 067 13/100
1880	112, 385½	492, 807 19/100	12	127	112, 397½	492, 934 19/100
1881	120, 352½	615, 063 7/100	8½	98 88/100	120, 361	615, 161 88/100
Total	724, 403 88/100	5, 115, 160 1/100	111, 814 73/100	785, 489 88/100	836, 218 8/100	5, 900, 649 89/100
Duty paid				$223, 629 70/100		

NOTE.—All the consumption of foreign mackerel as given in the above table for the year 1877, and subsequent to that time, and nearly all, if not the entire consumption for the year prior to 1877, is the product of the British North American provinces.

MACKEREL FISHERY OF THE DOMINION OF CANADA.

STATEMENT XI.—*Showing the total value of the production of the mackerel fishery of the Dominion of Canada, 1873 to 1879.*

Year.	Quebec.	Nova Scotia.	New Brunswick.	Prince Edward Island.	Total.
1873	$61, 700	$1, 411, 676	$35, 447	$111, 512	$1, 620, 335
1874	72, 780	1, 234, 649	51, 280	221, 761	1, 580, 470
1875					1, 245, 752
1876	49, 750	714, 283	30, 610	203, 064	997, 687
1877	53, 579	1, 155, 140	54, 476	404, 620	1, 667, 815
1878	87, 360	1, 307, 611	97, 372	291, 976	1, 784, 319
1879	60, 420	1, 019, 640	114, 676	563, 411	1, 758, 150
Total 1873 to 1879					10, 654, 528

MACKEREL EXPORTS OF THE DOMINION OF CANADA.

STATEMENT XII.—*Showing the total value of mackerel exported from the Dominion of Canada to all countries, 1873 to 1879.*

Year.	Quebec.	Nova Scotia.	New Brunswick.	Prince Edward Island.	Total.
1873	$2, 076	$673, 894	$10, 232	$29, 830	$716, 032
1874	884	615, 992	25, 123	73, 329	715, 428
1875	953	509, 117	30, 338	252, 839	793, 247
1876	206	582, 155	56, 979	108, 332	747, 672
1877	65	442, 306	46, 179	98, 383	586, 933
1878	1, 078	677, 550	85, 239	279, 568	1, 043, 435
1879	1, 665	651, 037	83, 946	145, 098	881, 746
Total 1873 to 1879	7, 027	4, 152, 051	338, 036	987, 379	5, 481, 493

MACKEREL EXPORTS OF THE DOMINION OF CANADA.

STATEMENT XIII.—*Showing the total value of mackerel exported from the Dominion of Canada to the United States, 1873 to 1879.*

Year.	Quebec.	Nova Scotia.	New Brunswick.	Prince Edward Island.	Total.
1873	$940	$502, 226	$10, 232	$20, 440	$533, 838
1874	984	518, 809	25, 123	73, 279	618, 195
1875	860	242, 704	28, 978	251, 232	523, 774
1876	206	415, 143	56, 274	108, 332	579, 955
1877	21	216, 170	46, 023	97, 359	359, 573
1878	1, 088	473, 571	84, 082	279, 402	838, 743
1879	1, 394	406, 024	83, 605	145, 038	636, 061
Total 1873 to 1879	5, 493	2, 774, 647	334, 917	975, 082	4, 090, 139

MACKEREL FISHERY OF THE DOMINION OF CANADA.

STATEMENT XIV.—*Showing the quantity and value of mackerel produced by the fisheries of the Dominion of Canada, 1869 to 1880, including Prince Edward Island since its entry into the Dominion in 1873.*

Year.	Quebec.			Nova Scotia.			New Brunswick.			Prince Edward Island.			Grand total.			
	Pickled mackerel.		Value of fresh or canned mackerel.	Pickled mackerel.		Value of fresh or canned mackerel.	Pickled mackerel.		Value of fresh or pickled mackerel.	Pickled mackerel.		Value of fresh or canned mackerel.	Pickled mackerel.		Value of fresh or canned mackerel.	Total value.
	Barrels.	Value.		Barrels.	Value.		Barrels.	Value.		Barrels.	Value.		Barrels.	Value.		
1869	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51,011	$530,110	.....	$530,110
1870	3,677	$38,770	.....	85,254	$1,023,048	.....	3,282	$39,384	.....	.....	.....	.....	92,213	1,099,202	.....	1,099,202
1871*	7,638	76,380	.....	128,028	1,220,333	.....	4,639	56,603	.....	.....	.....	.....	140,305	1,349,682	$3,634	1,353,316
1872	1,759	17,590	.....	115,833	1,624,894	.....	2,217	32,728	.....	.....	.....	.....	119,439	1,665,110	10,102	1,675,212
1873	6,170	61,700	.....	141,005	1,410,050	$1,626	3,229	32,290	$3,157	9,126	$111,512	.....	159,530	1,615,552	4,783	1,620,335
1874	7,278	72,780	.....	122,258	1,222,580	12,069	4,243	42,430	8,850	27,317	221,761	.....	161,096	1,550,851	20,919	1,580,470
1875	.....	.....	.....	91,225	.....	.....	.....	.....	.....	.....	.....	.....	123,654½	1,236,545	8,207	1,245,752
1876	4,975	49,750	.....	70,964	709,640	4,623	3,034	30,340	270	25,383	202,064	.....	104,356	992,794	4,893	997,687
1877	5,343½	53,435	$144	113,638½	1,136,385	18,745	4,472	44,720	9,756	40,462	404,620	.....	163,916	1,639,160	28,855	1,667,815
1878	8,659	86,590	770	126,608	1,266,080	10,631	9,080	90,800	6,572	36,482	291,856	$120	183,919	1,766,226	18,093	1,784,319
1879	7,552½	60,420	.....	101,559	1,015,590	4,650	10,880	108,800	5,876	70,085	560,680	2,734	190,076½	1,745,490	12,660	1,758,150
1880	5,017	40,878	.....	126,432	1,264,320	6,048	19,650	196,500	9,964	82,570	660,560	696	233,669	2,162,258	16,708	2,178,966

* The annual report of the Department of Marine and Fisheries for the year 1871 gives the product of the mackerel fishery, 239,429 barrels, valued at $2,870,807, but the statistics presented at the Halifax Commission, as also a review in the annual report of the Commissioner of Fisheries for 1877 gives the value of the product of this fishery for the year 1871, $1,353,316, which is probably the more accurate value.

MACKEREL EXPORTS OF BRITISH PROVINCES.

STATEMENT XV.—*Showing the quantity and value of pickled mackerel exported to the United States from the Dominion of Canada, 1873 to 1879, also from Prince Edward Island, 1857 to 1873, and from Newfoundland, 1853 to 1876.*

Year.	Quebec.		Nova Scotia.		New Brunswick.		Prince Edward Island.		Newfoundland.		Total.	
	Bbls.	Value.	Bbls.	Value.	Bbls.	Value.	Bbls.	Value.	Bbls.	Value.	Bbls.	Value.
1853	.....	.....	.....	.....	.....	.....	.....	.....	10	$48	.....	.....
1854	.....	.....	.....	.....	.....	.....	.....	.....	19	144	.....	.....
1855	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1856	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1857	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1858	.....	.....	.....	.....	.....	.....	3,048	$25,000	.....	.....	.....	.....
1859	.....	.....	.....	.....	.....	.....	4,078	38,440	.....	.....	.....	.....
1860	.....	.....	.....	.....	.....	.....	3,243	33,890	.....	.....	.....	.....
1861	.....	.....	.....	.....	.....	.....	3,471	36,760	.....	.....	.....	.....
1862	.....	.....	.....	.....	.....	.....	1,143	11,525	.....	.....	.....	.....
1863	.....	.....	.....	.....	.....	.....	2,321	19,320	170	1,010	.....	.....
1864	.....	.....	.....	.....	.....	.....	3,402	27,045	.....	.....	.....	.....
1865	.....	.....	.....	.....	.....	.....	6,583	42,775	158	950	.....	.....
1866	.....	.....	.....	.....	.....	.....	16,530	181,075	4	24	.....	.....
1867	.....	.....	.....	.....	.....	.....	13,413	79,990	.....	.....	.....	.....
1868	.....	.....	.....	.....	.....	.....	12,302	119,195	17	102	.....	.....
1869	.....	.....	.....	.....	.....	.....	11,686	161,830	9	54	.....	.....
1870	.....	.....	.....	.....	.....	.....	10,242	109,625	.....	.....	.....	.....
1871	.....	.....	.....	.....	.....	.....	13,960	176,280	864	6,912	.....	.....
1872	.....	.....	.....	.....	.....	.....	17,216	146,925	916	7,328	.....	.....
1873	.....	.....	.....	.....	.....	.....	9,126	111,512	244	1,952	.....	.....
1874	106	$940	77,420	$502,226	1,276	$10,232	2,528	20,440	28	196	81,330	$538,838
1875	164	984	58,385	516,120	2,561	25,123	6,583	73,279	.....	.....	67,093	615,506
1876	146	860	35,508	242,578	3,375	28,978	31,466	251,232	.....	.....	70,556	523,648
1877	36	206	49,407	410,511	7,122	56,274	13,276	108,332	.....	.....	69,841	575,323
1878	3	21	27,285	215,119	5,049	45,901	10,867	97,359	.....	.....	43,204	358,460
1879	71	434	61,812	473,018	7,437	78,890	31,702	279,402	.....	.....	101,022	831,744
	228	1,394	65,949	402,574	9,952	81,596	18,526	145,038	.....	.....	94,655	630,602

VIII.—MATERIALS FOR A CHRONOLOGICAL HISTORY OF THE MACKEREL FISHERY OF NORTH AMERICA.

M.—EXTRACTS FROM RECORDS AND REMINISCENSES OF FISHERMEN.

50.—SEVENTEENTH CENTURY.

The mackerel fishery has been of great importance to the United States both from a commercial standpoint and as a motive for the formation of treaties with the Government of Great Britain and the establishment of rates of tariff intended to regulate the importation of mackerel from the British provinces. Its history from year to year has been so varied, the conditions under which it was prosecuted in successive years so changeable, that it seems worth while to present here a series of notes chronologically arranged which have been gathered from various sources and which illustrate the changes in method and in result which have been recorded by observers from 1620 to the present time.

1629 TO 1635.—ABUNDANCE OF MACKEREL ON THE COAST OF NEW ENGLAND IN THE FIRST HALF OF THE SEVENTEENTH CENTURY.

Francis Higginson, in his "Journal of His Voyage to New England," 1629, speaks of seeing "many schools of mackerel, infinite multitudes,

on every side of our ship" off Cape Ann, June 26. [Young's Chronicles, 232.] Richard Mather, in his "Journal," 1635, speaks of the seamen taking abundance of mackerel off Menhiggin (p. 470).

1671.—Early fishing on Cape Cod.

In 1671 the code of laws for the government of the colony was revised and ordered to be printed under the title of "The Book of the General Laws of the Inhabitants of the Jurisdiction of New Plymouth." Under these laws, or "General Fundamentals," as they were called, provisions were made, as, has been suggested, "for the better improving of fishing for mackerel, &c., at the Cape." Penalties were imposed for taking them at other than specified times, licenses were to be granted, &c., &c. It was now "ordered that the charges of the free schools, £33 per annum, shall be defrayed by the treasurer out of the profits arising from the fishing at the Cape until such time as the minds of the freemen be known concerning it."

At this time, also, "certain persons belonging in Hull petitioned the government for permission to fish at Cape Cod for mackerel, they having discovered a new method of fishing with nets by moonlight."—(Freeman's Hist. of Cape Cod, Boston, 1862, vol. i, p. 266.)

1677.—Rental of the Cape Cod fishery.

In July, 1677, the records of the Plymouth colony show that the Cape Cod fishery was let for 7 years, at thirty pounds per annum, to seine mackerel and bass, to certain individuals who are named. They were restricted to take in the Plymouth colonists with them, and if none offer, to admit strangers.

The profits of the hire which accrued to the colony were sometimes distributed to the schools.—(Massachusetts Historical Collections, iii, p. 220.)

51.—Nineteenth century.

1802.—Mackerel fishing in Cape Cod Bay.

The following paragraph is taken from the Gloucester Historical Collections, vol. viii, 1802, p. 199:

"Provincetown, 1802.

"The first mackerel which are taken to Boston market in the spring are taken in the harbor and yield a handsome profit, though the Boston marketmen purchase them at about ¼ of what they are sold for. 300 barrels are every year pickled and sent to Boston. The mackerel, bass, and herring are caught with seines, of which there are about 50 in the town, and which cost $100 each. Another seine, worth six dollars, is made use of for catching mackerel in the spring, and herring for bait."

1804–1832.—Price of mackerel in Boston market.

The average price of fresh mackerel in Boston market from 1804 to 1822 was six to eight cents apiece, sometimes ten; they were always sold by counts.—(Captain Merchant.)

1804.—Shore mackerel fleet of Cape Ann.

"From 1804 to 1822," remarks Capt. E. W. Merchant, of Gloucester, "Cape Ann had a considerable fleet of vessels engaged in the shore mackerel fishery for the sole purpose of supplying the Boston market; seven or eight from Gloucester Harbor, seven or eight from the north side of the Cape." They preserved their fish in a peculiar way, which will be described under the proper heading.

It is stated that the first shore mackerel fishing was prosecuted by the small boats, about the year 1800. The mackerel were caught mostly on the Inner Bank, and carried fresh to Boston market through the summer. Only the largest were saved, and these were sold for 5 or 6 cents apiece, and sometimes as high as 10 cents. Each boat was ballasted with pebbles; on this were placed hogshead tubs, each having a hole with a plug in it. These tubs were filled with salt water, and as soon as the mackerel were dressed they were put into the tubs, and the water changed every hour by drawing the plugs and allowing it to run off, until sufficient were caught to start for market, the changing of the water continuing until the boat arrived above the Castle, where it is said the water loses its coolness. The great object after catching the mackerel was to get them to market before daylight, in order to have the cool of the morning to sell them in. If a boat with three men and two boys stocked fifty dollars a week, it was considered satisfactory.

1804.—The introduction of hand-lining for mackerel from the decks of vessels.

According to Capt. E. W. Merchant, the first man to introduce this mode of fishing was John Story, of Rockport, about the year 1804.

1818–1821.—The first voyages made for the purpose of salting mackerel was in the summer of 1818, by Capt. Simeon Burnham, in the schooner "President," on a trip to Cashe's; consequently to Captain Burnham belongs the honor of being the pioneer in this branch of the fisheries. It was considered quite an important event at the time, so much so that Capt. Benjamin Tarr was hired to go as navigator. Seventy barrels were caught on this trip, and they were packed in Boston. Two years after, this branch began to increase, and in 1821 several other jiggers* were added to the fleet. They carried six hands, and were absent about a week. The jiggers were stowed with butts and washbarrels, and no mackerel were headed up on board until about 1820. In 1821, Samuel Wonson, Elisha M. Oakes, Robert Marston, Simeon Burnham, Samuel Brown, Nathaniel Blatchford, John Wonson, George

*The name "jigger" was first applied to the vessels engaged in jigging mcakerel. As these vessels were all, or nearly all, pinkeys previous to 1830, the name in later years came to have a more special reference to the style of craftthan to the particular branch of fishery in which she was engaged. Thus the term "jigger" came to be synonymous with "pinkey," and was often used in that sense by the fishermen.

Wonson, James Merchant, Epes Merchant, were the skippers of the jiggers which comprised the chief part of the mackerel fleet. These jiggers ranged in tonnage from twenty-seven to forty-five tons. Prior to 1818 there were but few mackerel packed in Gloucester, that part of the business being mostly done in Boston. Moses Gilbert was the only inspector in town until 1828, and his accommodations were quite limited. At this date several other inspectors were appointed, and the mackerel fishery began to assume quite a business importance.—(Fisherman's Memorial and Record Book.)

1815.—The Hingham mackerel fishery.

In 1815 there were packed in Hingham 5,615 barrels mackerel, and in 1828, 32,313 barrels. There were 54 vessels employed, some for the season and some for a shorter time. There were 15 employed for the whole season, averaging 1,027 barrels each. The average number of hands were 8 to each vessel, making 432 in the whole. The quantity of salt used in striking and packing, allowing 18 hogsheads to 100 barrels, would be about 6,000 hogsheads.

There is a company formed in this town who carry on this fishing to some extent, besides several vessels fitted out by individuals. We understand there is a mackerel company in Wellfleet, in this county, extensively engaged in this fishery. We would like to hear with what success.—(Barnstable Journal, July 16, 1829.)

1815.—Invention of the mackerel jig.

The mackerel jig is said to have been invented about the year 1815 by Abraham Lurvey, of Pigeon Cove, Cape Ann; according to other authority, by one Thurlow, of Newburyport.

1817.—Beginning of the southern mackerel fishery.

Capt. John Parsons, of Rockport, Mass., went South after mackerel in the schooner Defiance; went as far south as Cape May, and took 60 barrels of fish, all of which were caught by drailing.

1821.—The large vessels of the Gloucester fleet.

About 1821 the fleet began to enlarge. The "Volante," of 37 tons, a pinkie built by Mr. Epes W. Merchant, was considered a very large vessel; then came the Independence, and afterwards the Columbus, a square-sterned vessel of 43 or 44 tons, built by George Friend, which was considered a very large vessel. These vessels went after mackerel to salt. Previous to that the entire Gloucester fleet had 'tended the fresh-fish market. Plymouth, Scituate, and Cohasset began salting mackerel in advance of Gloucester.—(Statement of Capt. E. W. Merchant.)

1818–1836.—Mackerel fishery of Hingham.

Mackerel Fishery.—We believe the extent to which this fishery is carried on from the towns of Massachusetts is not generally known. For ourselves we were not aware of it and of the importance of encouraging this branch of industry, which not only furnishes the means of employment to a large number of persons, but is of great consequence to the commercial interests of the country in affording a good nursery for seamen. We have seen a pamphlet recently printed containing "A statement of the quantity of mackerel packed from Hingham vessels from 1818 to 1828 inclusive." It appears from this statement that there has been in that town a gradual increase during the above period of ten per cent. a year. In 1815 the number of barrels packed in that town was 3,615; in 1828, 33,313. During the last year 54 different vessels were employed from that place in the business, some for the season and some for a shorter period. There were 15 employed the whole season, averaging 1,027 barrels each, the highest vessel having packed 1,728½. The average number of persons was 8 to each vessel, making 432 in the whole, to which if the number employed in coopering, packing, &c., be added, would exceed 500. The quantity of salt used in salting and packing, allowing 18 hogsheads to 100 barrels, would be nearly 6,000 hogsheads.

The number of barrels packed in that town during the above period of years, 225,331½. The salt consumed for the same, 45,559 hogsheads.

We have been informed that this fishing is carried on at Scituate, in this county, about as largely as in Hingham, and several vessels from other towns in this vicinity on the bay.

A bill is now before the legislature of this State which provides for the repeal of the law requiring a reinspection of mackerel packed in other States when brought into this market.—(Gloucester Telegraph, July 18, 1829.)

1821.—Mackerel-fishing with the hook commenced in the province of Nova Scotia, and was prosecuted with great success in some of the harbors of the Bay of Fundy.—(Journal and Proceedings of the House of Assembly of the Province of Nova Scotia, 1857, Appendix 75.)

1822.—First mackerel voyages from Cape Ann to George's banks.

In the year 1822, Capt. William Marshall caught a few mackerel on George's, which were the first, so far as we can ascertain, ever caught there by a Cape Ann skipper. Mackerel have been caught there every year since, more or less, and rank in quality among the best.—(Fisherman's Memorial and Record Book.)

1823.—Introduction of the mackerel gaff.

The mackerel gaff was introduced about 1823.—(Fisherman's Memorial and Record Book.)

1823.—Introduction of bait-mills.

Bait-mills were first generally used by the Massachusetts mackerel fishermen about 1823. Previous to that time toll-bait had been cut with hatchets.

1825.—Mackereling in the Gulf of Maine.

In 1825, Captain Merchant went mackereling in the "Hornet," a schooner of 52 tons. The season began May 15, the vessel having been previously engaged in cod-fishing. During the season the crew of 7 men and a boy landed and packed 1,304 barrels. They caught 700 barrels in Massachusetts Bay in seven weeks' time, and packed them in Boston. The season continued until the 24th of November, and by that time the crew were entirely worn out by their continued labor. A considerable number of vessels in this same year packed from 1,000 to 1,300 barrels each. The proceeds of the season's work exceeded $2,700, the crew making about $350 or $400 each. The vessel cost about $1,300, when fitted for the work at the beginning of the season.

According to Captain Merchant the crews of mackerel vessels of Gloucester have made from $100 to $400 to the man during his experience of sixty years. In war times their average returns were about $400 each.—(Reminiscences of Captain Merchant.)

1825 and 1831.—Mackerel fishing from Cape Ann.

The seasons of 1825 and 1831 were the greatest known for mackerel up to this date. Vessels not over 50 tons landed upwards of 1,300 barrels, averaging through the fleet about 800. Mackerel continued in Boston Bay, near the land, in the year 1825, until the 4th day of December, the crew of schooner "Frances Elizabeth" having caught 12 wash-barrels on that day. The catch was not so large as in '31, to each vessel, but the aggregate was much larger, and the mackerel of a better quality. These fish were so plenty that the fishermen devoted the day to catching and the greater portion of the night to landing and dressing, and were completely worn out with their arduous labors. One morning during the first week in December, while the fleet were some ten miles off Eastern Point, the mackerel failed to come to the surface, after the usual throwing of bait. This was a pretty sure sign that they had gone, and the fishermen, whose sore hands and tired bodies bore evidence of the work they had accomplished in mackerel catching, were heartily glad that at last the fish had taken themselves off, and many of the fleet hoisted their flags as a token of their rejoicing over the event of the mackerel's departure. The price of mackerel this year was $5.50 for 1's; $3.50 for 2's; $2.50 for 3's, and out of this, $1.25 was paid for packing.—(Fisherman's Memorial and Record Book.)

1815 TO 1820.—A MACKERELING TRIP IN THE EARLY DAYS OF THAT FISHERY.

"I was ten years old when I made my first fishing trip. We went to Cashe's in a deck-boat of 20 tons. Capt. Daniel Robinson was skipper and I was cook. There were six of us, all told. We went at the halves, and all shared alike, the privilege of cooking and the glory of being skipper being considered in those days ample compensation for any extra labor or responsibility. We took about 40 barrels of mackerel, saving only the large bloaters, which we slat into the barrels; the small fish we slat into the lee scuppers and stamped them up with our boots for bait with which to toll the fish. Afterwards we chopped bait with a hatchet, until Gunnison, of Newburyport, invented the bait-mill, a god-send to the fishermen, who could now smoke and spin yarns while on watch, instead of chopping bait. A story is told on the best of authority, of one skipper, Andrew Burnham, who had been a great 'killer' in his time, that after the bait-mill came into use he was unable to sleep without the sound of the hatchet chopping bait, to which he had been so long accustomed. It is said that they tried pounding on the anchor stock, and tramping with their big boots on deck above his head, but all to no avail. There was an element lacking in the noise they made, and he wooed the somnolent god to no effect, and was obliged to retire to private life on a farm, in the 'second parish', I believe.

"We cooked in the old-fashioned way, in a brick fireplace with a brick chimney, and a wooden smoke-stack or funnel, which was intended to carry off the smoke, but did not always do so. The crane, pot-hook, Dutch oven, and trencher were all there, and all brought into use, as I well remember. We baked short-cakes on the trencher, bread in the Dutch oven, and hung our kettle on the crane, with the pot-hook, to make coffee or tea.

"We had fine weather, and everything passed off finely except the smoke, which refused to pass off at all, and under a less resolute commander than Skipper Robinson would doubtless have assumed command altogether. No casualties occurred except the burning of a few short-cakes, while 'Bijah (it being his first voyage) paid tribute to father Neptune, and was himself again. We were gone three days. Arriving on the fishing grounds we made but one 'berth,' catching and dressing until everything was full, when we hoisted the foresail, for jib we had none, and bore away for 'Squam, arrived in the channel, dropped anchor, furled the sails, and went home to see the folks."—(The Old-time Fishery at 'Squam, by Gideon L. Davis, in the Fisherman's Own Book, pp. 41, 42.)

1819 TO 1859.—REMINISCENCES OF "UNCLE" GEORGE DAVIS CONCERNING THE EARLY MACKEREL FISHERIES OF ANNISQUAM.—FIRST BAIT-MILL ON CAPE ANN.—SOUTHERN MACKEREL FISHERY, ETC.

"Uncle" George Davis, of Annisquam, Gloucester, says that in 1821 he helped make the first bait-mill that was ever made in Gloucester.

They had been made in Newburyport in 1820. At that date, or about 1824, there were six vessels of from 40 to 50 tons went as far south as New York for mackerel.

"I commenced mackerel fishing in 1819; built a pinky and went south; chopped our bait; worked sometimes all night; called 125 to 150 barrels a good trip for three or four weeks; sold no mackerel fresh in those days; all salted. The first trip was usually sold in New York; the next one brought home to Gloucester. In 1859 'Squam had twenty-five to thirty sail of mackerel catchers. Shore fishing was then first rate."—(Notes of A. Howard Clark.)

1828.—CLOSE OF THE MACKEREL SEASON.—POOR SUCCESS OF THE FISHERY.

The mackerel fishery is about terminated for the season, and we are sorry to say that anticipation in this article has not been realized. We believe other towns make a like complaint in regard to the failure of the fall fares. This will necessarily enhance the prices, and in part balance the failure in the number caught. The loss, however, falls upon those who are immediately engaged in taking them, and consequently deprives them of that on which they depend for a livelihood, as they seldom hold on in order to speculate.—(Gloucester Telegraph, November 22, 1828.)

1828.—THE MACKEREL FLEET.

The Gloucester Telegraph, June 21, 1828, states that from three hundred to four hundred mackerel vessels were often seen at anchor in Gloucester Harbor at one time.

1830.—FIRST VOYAGE FROM CAPE ANN TO THE GULF OF SAINT LAWRENCE.

The first trip to the Bay of Saint Lawrence for mackerel, from this port, was made in 1830, by Capt. Charles P. Wood, in the "Mariner." She was absent but four weeks, and came in full of large fat mackerel. This created quite an excitement among the fishermen, and the next season the Bay fishing commenced in good earnest. The vessels at first made but one trip, and finished up their season's work on this shore. Two hundred and fifty barrels was considered a good trip for a vessel of forty or fifty tons. As soon as the business was found to be profitable, vessels of a larger class were added to the fleet, and it has gradually increased from year to year until the present time.—(Fisherman's Memorial and Record Book.)

1830.—COMPARATIVE SCARCITY OF SMALL MACKEREL IN MASSACHUSETTS BAY PREVIOUS TO 1830.

Captain Merchant, of Gloucester, states that small mackerel were very scarce in Massachusetts Bay until 1830. He also says that small

mackerel always lead the large ones in their approach to the coast. When he was in the habit of fishing on George's he went there about the first of June, and always caught "finger mackerel" before the large ones.—(Notes on the Mackerel Fisheries, by G. Brown Goode.)

1832.—MARKETS FOR MACKEREL.

In 1832 the demand for mackerel was much greater than the supply, according to Captain Merchant. Philadelphia bought two-thirds of the entire catch of Gloucester, which amounted to 320,000 barrels.

1826.—The following account of a mackerel voyage on the coast of New England in 1826 is from the pen of N. E. Atwood:

"The first year that I fished for mackerel on this coast was in 1826, and having changed from the laborious and exposed business of cod-fishing on the Labrador coast, I took a good deal of notice of what passed, and, consequently, I still remember a good deal about the voyage. We sailed from Provincetown on the 28th of June, and went down to a point some twenty leagues northeast of Cape Cod.

"On the day following we saw one school of mackerel, and, getting into it, we threw out bait, and caught, well, some 3 or 4 barrels. That was the first school which we met with; and this happened on the 29th of June. It was the last school we saw until the 13th of September, my birthday; this was a very large school. In five weeks we caught 238 barrels of mackerel, and, although it was early in the season, still they packed very well. After they were packed we went out again and secured 250 barrels where we saw the school of mackerel on the 13th of September."

1827.—PRICE OF MACKEREL.

In 1827-'28, according to Capt. William H. Oakes, the price of No. 1 mackerel ranged from $4.50 to $5.50 per barrel, while No. 2's sold for $2.50.

1828.—MACKEREL, SALES, PRICES, ETC.

A large quantity of mackerel are afloat amounting, perhaps, to 1,500 barrils. The sales have been extensive, though at rather lower prices. The current rates have been 4¾ to ⅞ for 1's and 2's, and in some cases $5.—(Gloucester Telegraph, April 19, 1828.)

1828.—SCARCITY OF MACKEREL.

Our fishing vessels the past week have returned with very few mackerel. Some have brought in only 25 or 30 barrels after being absent a week or ten days. What have been caught were packed out as No. 3's, and very likely the fish have struck off in order to fat for No. 1's and 2's. We advise dealers to hold on to what they have, as there is likely to be a scarcity this season.—(Gloucester Telegraph, July 12, 1828.)

1832.—FAILURE OF MACKEREL ON THE WESTERN COAST OF NOVA SCOTIA.—IMPORTANCE OF THE AMERICAN MACKEREL FISHERY.

So far this fall the mackerel fishery on our western shore has been an entire failure. Some idea may be formed of the extent to which this fishery is carried on from the United States by the circumstance of 360 vessels having left the port of Gloucester for that purpose on the night of the 28th ultimo.—Halifax, November 20.—(Gloucester Telegraph, December 1, 1832.)

1833.—DISINCLINATION OF MACKEREL TO TAKE THE HOOK.

These fish [mackerel] are taken in much less quantities this season thus far than usual. The complaint of the fishermen is not so much that they can't find mackerel, but that they "won't bite" when they find them. This again makes the salt manufacturer complain that his commodity is less wanted, and consequently the price is reduced; and when our fishermen and salt makers are disappointed and have hard luck makes sorry times on Cape Cod. Some of our shoresmen, however, the onion growers, have good crops and they obtain a fair price for them at market. And the sea-serpent, or something else, has driven on shore upon the cape, at several places, a considerable number of black fish, the blubber of which makes very good oil, and some of these fish have a considerable quantity of it.—(Barnstable Patriot, August 28, 1833.)

1833.—GREAT ABUNDANCE OF MACKEREL IN MASSACHUSETTS BAY.

Mr. S. B. Brown, writing of the early fisheries of Gloucester, says: "The next year [1833] I went to Gloucester, hunted up my old skipper, who was still master of the same boat, and went with him that season.

"I recollect well the great school of mackerel that struck Middle Bank that year. September 22, at 10 o'clock at night, there were some two hundred sail at anchor, 25 miles southeast of Eastern Point light, in a dead calm, when our skipper sang out, 'Here they are, boys,' at the same moment every vessel in the fleet commenced the catch. We fished for three days, and filled everything, even our boat, and struck on deck until we were in fish knee deep. Then, a breeze up, we ran in and packed out 280 barrels, and returned to the bank just as the wind left us. We fished three days more when they struck off as suddenly as they had come."—(Fisherman's Own Book, page 197.)

1834.—MACKEREL FLEET IN THE GULF OF SAINT LAWRENCE.

According to Captain Atwood the fleet of American mackerel catchers in the Gulf of Saint Lawrence, in 1834, consisted of six vessels, three of which belonged at Provincetown. They secured full fares, and returned in a very short time.

1834.—SCARCITY OF MACKEREL ON THE NEW ENGLAND COAST.

The Gloucester Telegraph of September 3, 1834, copies the following extract from the Hingham Gazette:

"A Halifax paper states that herring and mackerel are very plenty this season. Our fishermen have never found mackerel more scarce than during this season. We hope the fall fishing will be more productive."

1835.—INSPECTION OF NO. 4 MACKEREL BEGUN.

TINKERS.—The legislature has concluded that the little fry caught by our mackerel fishermen, commonly called "Tinkers," shall be separated from those of a larger growth and packed by themselves, and branded No. 4. The distinction between No. 3 and No. 4 will be, we suppose, only in the size of the fish, without regard to the fatness. Something was said about making all those No. 4 which should be less than six inches long from tip to tail, but it was finally left rather indefinite, so that each inspector will have to exercise his own discretion and judgment as to what constitutes a "tinker."—(Barnstable Patriot, October 21, 1835.

1835.—CAPT. N. E. ATWOOD'S EXPERIENCE IN THE MACKEREL FISHERIES OF THE GULF OF SAINT LAWRENCE.

"In 1842 I was first master, and in 1835 I first came to the gulf for mackerel. When we arrived there we could hear of no mackerel anywhere. We went toward the Magdalen Islands, and about 8 miles off from them to the southwest we got a large number of mackerel the first day we were there. This induced us to fish in that vicinity, and we fished between that and the west head of the islands, as we call it, or Deadman's Island, as it is sometimes called.

"Q. Is that part of the Magdalen Islands?—A. Yes; it is the west end of them. We fished there all that trip, and the result was that we got about 180 barrels, speaking in round numbers. The crew received a large share, and did much better than those fished to the westward that season. * * *

"During my first year in the Gulf of Saint Lawrence, when we got 180 barrels, we fished at the west end of the Magdalen Islands, and when we set out to go home, the wind freshened from the southward, and we struck in somewhere near St. Peter's Sandhills, as we called the place, and while reefing the foresail, we hove the vessel to, and I threw out a few shovels full of bait. Mackerel came up, and seemed to be very abundant, but we only caught about half a barrel. Night came on just as soon as the foresail was reefed, and hoisting it up, we hauled in the hand-lines instead of anchoring there, and went about along shore, hove to, and let the vessel drift off. Next day we got back to Pleasant Bay, Magdalen Islands. That was all we got

there that voyage, and we never fished anywhere, or caught any mackerel on the Prince Edward Island side, or anywhere within the restricted limits, until 1842. During that year I was passing Port Hood late in the afternoon—it was just nightfall—when I hove to and tried the school, and I do not think that I was at the time three miles offshore I did not fish there over a day, and we obtained a few mackerel, perhaps six or seven barrels. When I came to talk with the crew, some said we were 6 miles offshore, and some 4 miles, and so on; but I will tell you what I thought about it: this was, that if a cutter came along he would take me, so I considered that I did not need to stay there. Soon after dark I discovered a vessel running down apparently towards the Strait of Canso, and hauling up for us. I was afraid she was a cutter, and I was then very sorry that I had obtained any mackerel there. She happened, however, not to be a cutter, and I got away the next day. This was all the mackerel I ever caught within the three-mile line."—(Testimony of Captain Atwood before Halifax Commission.)

1836.—Prices of mackerel.

Sales of mackerel at $9 for No. 1, $8 for No. 2, $4.25 to $4.50 for No. 3, per barrel, purchaser paying inspection.—(Gloucester Telegraph, June 8, 1836.)

1836.—Unusual scarcity of mackerel.

The Barnstable Patriot says: We learn from Wellfleet that the mackerel fishermen which have arrived at that place within two weeks have got unusually small fares, averaging less than 50 barrels each.—(Gloucester Telegraph, July 6, 1836.)

1836.—A protest against bobbing or "gigging" mackerel.

The Boston Journal protests strongly against the barbarous method of taking mackerel, called "gigging," and urges that it is not only liable to censure on the score of humanity, but is also *impolitic*, and that if this destructive method of fishing is generally continued a few years longer, it will break up the fishery. We have for a year or two past entertained a similar opinion, and probably the complaints now so frequently made by the fishermen that, though mackerel are plenty, they will not bite, is owing to the custom of "gigging." There is hardly anything which possesses life that has so little instinct as not to become very shy under such barbarous inflictions. It is obvious that all which are hooked in this manner are not taken on board; the gig frequently tears out, and thousands, millions of these fish are lacerated by these large hooks, and afterwards die in the water.—*Newburyport Herald.*—(Gloucester Telegraph, September 3, 1836.)

1836.—One of the great mackerel-fishing stations.

The principal business of the place [Sandy Bay, now Rockport, Mass.] is the bank, bay, shore, and mackerel fisheries, which, with the freight-

ing, employ probably not less than six or seven hundred hands. More mackerel is usually taken by them than by any other people on the coast.—*From the Salem Landmark.*—(Gloucester Telegraph, September 14, 1836.)

1836.—SMALL CATCH OF MACKEREL.

From present appearances the number of mackerel taken this year will fall short some hundred barrels of the last year's catch. There are mackerel enough, we are told, but they do not bite freely. Some fishermen have abandoned the mackerel fishery entirely and taken out cod-fishing papers.—*Democrat.*—(Gloucester Telegraph, October 1, 1836.)

1836.—ACTIVE DEMAND FOR MACKEREL.

The demand for mackerel has been very active, and in consequence of a limited supply, prices have advanced. Sales of No. 1, $9.75@$10; No. 2, $8.75@$9; No. 3, $6.—(Gloucester Telegraph, October 12, 1836.)

The supplies [of mackerel] are very light and prices have again advanced. No. 1 at $10@$10.50, No. 2 at $9, No. 3 at $6.50. One thousand barrels, principally Nos. 1 and 2, were taken out of our market on Monday.—(Gloucester Telegraph, October 19, 1836.)

1836.—CAPTAIN ATWOOD'S EXPERIENCE IN THE MACKEREL FISHERY OF THE GULF OF SAINT LAWRENCE.

Q. Where did you fish during the remainder of the six years?—A. The next year, 1836, was my second year there at the Magdalen Islands, I having done so well there the years previous. I want it to be understood that I was in a small vessel with a small crew.

Q. Perhaps you will give the tonnage and the number of the crew?—A. Her tonnage was 59, with the then reckoning, but now it would be called less than 40. We went direct that year to the Magdalen Islands, and we found that there had been some mackerel caught there, but none within a few days of that period; and as we had heard that mackerel were sometimes taken at Newfoundland, we bore up and went over there. The next day after our arrival we tried near Cape St. George, but though we tried all day, we never saw one, and so we returned to the Magdalen Islands, and remained there during the fishing term until we obtained a full cargo—225 barrels. We afterward proceeded westward, and found that vessels which had been fishing about Prince Edward Island, and further up, on Bradley Bank and elsewhere, had done better than that; but we were satisfied; our voyage suited us, and we had got all we wanted.—(Proceedings Halifax Commission.)

EXTENT OF MASSACHUSETTS FISHERIES FOR 1837.

In 1837 there were employed in Massachusetts in the cod and mackerel fisheries 1,290 vessels, manned by 11,146 men, and the fish taken were valued at $3,208,559; about one-half of these were in the cod fishery.—*Gloucester Telegraph, February* 20, 1839.—(From the report of the Washington Commission on Salt Bounty.)

1837.—POOR DOINGS OF THE MACKERELMEN.

The vessels from Cape Sable and the Western Banks have generally brought in good fares. The mackerel fishermen have not done so well. —*Yarmouth Register.*—(Gloucester Telegraph, July 4, 1837.)

1837.—SUCCESS OF THE CAPE COD AND CAPE ANN MACKERELMEN.

The Barnstable Patriot says: "Since 'hard times' have become the universal topic of conversation throughout the Union, if not the world, it affords us no little pleasure to find that the fishermen of Cape Cod have been blessed with large discounts from their favorite banks. We learn that five mackerelmen who have packed their fares in this town, have already caught 1,600 barrels for the quarter ending in July. During the same time last season there were less than 700 barrels."

"We have heard of several excellent fares having been brought in by our mackerel fishermen, within two or three weeks past; and, although the fish are reported rather scarce, yet the season promises well so far." —(Gloucester Telegraph, August 5, 1837.)

1837.—A BIG SCHOOL OF MACKEREL IN PORTSMOUTH AND GLOUCESTER HARBORS.

Nearly 400 barrels of mackerel were taken in Portsmouth Harbor, daily, for two or three days last week. It is not usual for them to be found there. Mackerel have been plenty for several days past just off Eastern Point, in this harbor, but we do not learn that any considerable quantity has been taken.—(Gloucester Telegraph, August 26, 1837.)

1837.—BOAT FISHING IN MAINE.

We learn that not less than 90 barrels of mackerel were brought into our harbor on Thursday, in open boats.—*Kennebunk Gazette.*—(Gloucester Telegraph, September 13, 1837.)

1837 TO 1841.—SCARCITY OF MACKEREL; INTRODUCTION OF NIGHT FISHING.

Captain Merchant, of Gloucester, informs me that there was a great scarcity of all kinds of mackerel from 1837 to 1841. He had at that time eight vessels engaged in this business, the smartest of which only packed 70 barrels, in the season of 1837. Mackerel continued scarce until 1841. At last the skippers became discouraged, and this year they went to Georges' in search of fish. They found there large schools of mackerel, which would bite only at night. Vessels would catch 30 or 40 barrels in a night when it was so dark that they must needs have lanterns to see their lines. These night schools were a godsend to Gloucester. Such habits had never been observed before that time nor since.

In 1837, according to Captain Merchant, the vessels did not get enough mackerel to cover the bottoms of their tubs. In 1841, mackerel struck in great abundance; there were oceans of "tinkers."—(Notes on the Mackerel Fisheries, by G. Brown Goode.)

1837.—Fall mackerel fishery at Portsmouth.

Nearly 400 barrels of mackerel were taken daily (with hand lines) for two or three days last week in Portsmouth Harbor; also plenty off Eastern Point.—(Gloucester Telegraph, August 26, 1837.)

1837–1838.—Mackerel fishery of Hingham.

The Hingham Gazette says, during the past year (1836) 49 vessels have been engaged in the mackerel fisheries; number of barrels taken, 14,436. In 1835, 57 vessels were engaged in the business; number of barrels taken, 15,398. During the past year several vessels formerly in the mackerel fisheries have been fishing for cod.—(Gloucester Telegraph, January 5, 1837.)

In Hingham during the past year 57 vessels have been engaged in the mackerel fishery; the catch was 17,134 barrels. In 1836, 49 vessels; catch, 14,436 barrels. In 1835, 57 vessels; catch, 15,398 barrels.—(Gloucester Telegraph, January 3, 1838.)

1838.—Fall mackerel in Cape Cod Bay.

Mackerel were abundant in Cape Cod Bay. On September 8 it is estimated that 3,000 barrels of mackerel were taken in Barnstable Bay; one vessel took 70 barrels.—(Gloucester Telegraph, September 12, 1838.)

1838.—Catch of mackerel for Massachusetts.

Returns of mackerel packed in this State up to January, 1839, all the packages reckoned in barrels; also, the number of vessels, tonnage, men and boys employed.

	Barrels No. 1.	Barrels No. 2.	Barrels No. 3.	Vessels.	Tons.	Men and boys.
Gloucester	11,582	6,854	5,796	245	11,699	1,831
Boston	5,301	4,307	6,128	162	9,761	1,315
Newburyport	5,709	3,000	4,316	99	4,876	772
Hingham	3,040	3,218	6,188	51	3,051	522
Wellfleet	3,314	3,609	3,617	72	2,777	449
Cohasset	2,052	1,729	6,665	47	2,637	439
Provincetown	2,203	1,707	4,748	70	3,492	546
Barnstable	1,000	1,365	1,533	11	789	129
Truro	677	800	1,645	19	638	119
Scituate	781	502	1,091	25	1,632	225
Yarmouth	470	539	659	10	697	106
Salem	748	309	273	11	690	104
Plymouth	340	305	472	7	240	58
Dennis	391	605	913	6	335	62
Chatham	223	127	103	7	320	46
Duxbury	110	159	80	8	284	40
Marblehead	76	40	52	5	425	55
Beverly	35	63	32	1	40	9
Ipswich	2	13	9	1	46	6
	38,054	29,341	44,320	857	44,381	6,833
1837	26,830	61,940	52,541			
1836	54,016	60,569	58,883			

	Barrels.
Total for 1838	111,815
Total for 1837	141,311
Total for 1836	173,468

(Barnstable Patriot, January 16, 1839.)

1838.—THE SPRING FISHERY.

The Philadelphia Daily Advertiser states that large quantities of mackerel have been taken during the last month, within 10 or 15 miles of Cape Henlopen. One boat from Portland took in one day 45 barrels.—(Gloucester Telegraph, July 21, 1838.)

1838.—SCARCITY OF MACKEREL IN GULF OF SAINT LAWRENCE.

Arrived, schooner Metamora, from Bay Chaleur, with 13,000 [cod] fish. Reports fish plenty, but mackerel very scarce; could not obtain them in sufficient quantities for bait.—(Gloucester Telegraph, July 25, 1838.)

1838.—EXCELLENT QUALITY AND ABUNDANCE OF MACKEREL IN MASSACHUSETTS BAY.

Our oldest fishermen have never known the season when *fat* mackerel were so plenty about our shores as they have been for a week or two past. On Sunday last (in these times people will fish on Sunday) at least 150 barrels were taken just off the shore opposite Eastern Point, by wherries and a few larger craft; and for size and fatness, the samples which came under our observation were altogether superior to any we had ever before seen. One of these beauties was exhibited by a gentleman, which weighed upwards of three pounds, and the fat upon him measured an inch in thickness.—(Gloucester Telegraph, September 12, 1838.)

The [mackerel] fishermen have brought in larger fares the last week. The vessels that have cruised around the shores of the Cape, have taken from 100 to 150 barrels during the last four weeks. The vessels in the Bay of Fundy are reported doing well; those off Mount Desert and the eastern shore have taken very few fish.—(Yarmouth Register.)

1838.—PROSPERITY OF THE MACKEREL FISHERY.

"THE FISHING BUSINESS.—Joyfully do we announce prosperity in this line of the business. Our bay seldom exhibits its late appearance, during the week past, from our office window. Oftentimes we could numerate 100 sail of fishermen, and on Saturday, Monday, and Tuesday last, 200 to 250 sail were counted, making a splendid sight. Mackerel have bitten for the past week remarkably well. Considering the industry and enterprise which lie at the root, no more imposing appearance can be witnessed than that of 200 or 250 sail of vessels spreading their bleached canvas to the wind, and gliding gently along on the coast. On Saturday we understand that the schooner 'Roxana,' of Wellfleet, was run afoul of by the 'Columbia,' of Dennis, by which accident she was dismasted. We do not learn that any other serious injury was sustained."—(Barnstable Patriot, September 12, 1838.)

OVERFISHING DESTROYING THE MACKEREL FISHERY.

After commenting on the great demand for mackerel in the West, it (the Newburyport Herald) says: "It appears now almost reduced to a certainty that the time is not distant when, if we are not compelled in a great measure to abandon the business, it will be prosecuted as an uncertain one, and by a greatly decreased number of vessels and men. There is of late not more than one successful season out of four."—(Gloucester Telegraph, August 18, 1838.)

1838.—CAPTAIN ATWOOD'S EXPERIENCE IN THE MACKEREL FISHERIES OF THE GULF OF SAINT LAWRENCE.

My brother and I bought a little vessel and fished around home, and we finally concluded to go to the Bay of Saint Lawrence. We did so, and stopped there some six weeks.

Q. When was that?—A. In 1838. We stopped only six weeks, and we got only about twenty barrels.

Q. Where?—A. We were at the Magdalen Islands all the time. We had poor sails and a poor vessel, and we found it much safer about the Magdalen Islands. We always considered it safer than in the bight of Prince Edward Island.

Q. And twenty barrels were all that you got that year?—A. Yes. We came home about the 20th of September. We went to the bay in August, and we remained there, I think, about six weeks.—(Proceedings Halifax Commission.)

1838.—APPEARANCE OF MACKEREL IN BARNSTABLE BAY.

Mackerel have made their appearance in the bay (Barnstable Bay) in considerable quantities. On Thursday we saw from the Highland a fleet of about 100 sail lying from Gurnet to Manomet, making a beautiful appearance. They were apparently taking fish. We noticed also a great number of small boats among them. We learned at Plymouth that boat fishing had been a very good business for the last week or two, some individuals clearing $30 per day each. The mackerel taken are of the best quality. * * *—(Hingham Patriot.)

PROVINCETOWN, *September* 9.—The mackerel fishermen are doing well. It is estimated that 3,000 barrels were taken in Barnstable Bay on Friday last. One vessel took 70 barrels on that day.—(Gloucester Telegraph, September 12, 1838.)

1838.—A BIG FLEET IN BARNSTABLE BAY.

The mackerel fishermen have continued to do a little better of late, though we suspect not near as well as is generally supposed. We have been informed, on what we esteem good authority, that the average number of barrels taken on Friday last would not exceed ten per vessel,

Some, it is stated, procured large fares (such, for instance, as the Ino, which took 150 wash-barrels), while others did not catch a fish. For a week or two past the bay has been thronged with fishermen. On Tuesday last 280 sail could be distinctly seen.—*Yarmouth Register.*—(Gloucester Telegraph, September 19, 1838).

1838.—SCARCITY OF MACKEREL IN BAY SAINT LAWRENCE.

Captain Morgan, of schooner "Cossack," of Beverly, cod-fishing from the Bay Chaleur, arrived here yesterday, reports that he was in the harbor of Castle Rock (?) the 25th August, with 120 sail of mackerel catchers. Mackerel were scarce, and none of the vessels in the harbor exceeded 30 barrels, except two. Captain M. left the Gut the 3d of September; saw a large number of vessels every day, but could hear of no vessels doing well.—(Gloucester Telegraph, September 22, 1838.)

1839.—ABUNDANCE OF MACKEREL IN THE BAY OF FUNDY.

The Saint Andrews Standard says: "Our bay and coves have been literally swarming with mackerel during the past week. Large quantities have been caught in the weirs at Bocabec and along the shores." The fishermen along our coast complain that the mackerel have all gone away. It appears from the above that they are on a visit to the British provinces.

1839.—MACKEREL FISHING FROM CAPE ANN.

Cape Ann, says the Telegraph, as everybody knows, has always taken the lead in the mackerel fishery, having a much larger number of vessels engaged in it than any other place; and the crews have in times past made their calculations to land by this time and have landed their 200, 250, or 300 barrels each, whereas the largest fare that has been brought in this season is 73 barrels, and the whole catch packed out probably does not exceed 500.—(Barnstable Patriot, September 4, 1839.)

1839 AND 1840.—CAPTAIN ATWOOD'S EXPERIENCE IN THE MACKEREL FISHERY.

In 1839 I went in my own vessel, the "Lucy Mary," which was the one in which I first went to the bay, to the Grand Bank. Mackerel were scarce, and the prospect was discouraging, so I went cod-fishing, curing the fish myself. I then hauled the vessel up and did not go for mackerel until 1840. I did not then go to the Grand Bank, and having no fish to cure I had to go mackereling somewhere. There was at the time no encouragement to fish for mackerel, either on our coast or in the Gulf of Saint Lawrence, and as people had told me stories about mackerel being found at the Azores, I was induced to fit out and go there.

Q. Did you get any mackerel at the Azores?—A. No.—(Proceedings Halifax Commission.)

1841.—Doings of the Cape Cod and Cape Ann fleets.—Night fishing a new feature in the mackerel fishery.

The quantity of mackerel taken the present season is, thus far, not materially different from the quantity caught last year. A few vessels from Barnstable, Yarmouth, and Dennis, have been more successful, but this is by no means the case with vessels generally.—(Yarmouth Register.)

Mackerel are reported to be more plenty the present than they have been the last two or three years past; but *our* fishermen do not seem to meet with much success in taking them. It is somewhat remarkable that thus far the present season nearly all the mackerel that have been caught have been taken *in the night*, while heretofore this fish has scarcely ever been known to bite after sundown.—(Gloucester Telegraph, July 21, 1841.)

There have been but few arrivals of mackerel this week, for which a ready demand has been experienced, and prices are consequently a shade higher, No. 1, $11.50; No. 2, $10.25; No. 3, $5.75 and $6 per barrel.—(*Ibid.*)

1841.—A curious reason given for the scarcity of mackerel

A correspondent suggests as a cause for the scarcity of mackerel the general practice of using "hardhead" [menhaden] for bait, the sharp-bones of which fish kill the mackerel that feed upon it. The suggestion is worthy of consideration, at least.—*Yarmouth Register.*—(Gloucester Telegraph, January 30, 1841.)

1841.—First fare of the season.

A fare of 66 barrels of mackerel, the first arrival this season, came up from an outport.—(Gloucester Telegraph, June 16, 1841.)

1841.—Discouraging prospects for the mackerelmen.

Two vessels arrived this week from mackereling, absent over three weeks, without obtaining one barrel of mackerel. The prospects for the mackerel fishermen this year are unusually discouraging.—(Gloucester Telegraph, August 7, 1841.)

1841.—The mackerel fishery.—What were considered good fares in 1841.

Several of the mackerel fishermen from our vicinity, who were unusually successful during the first part of the season, have recently returned with very small fares. Many of our most experienced fishermen are included in the number, who give as their opinion that the

number of mackerel rapidly diminishes every year.—(Yarmouth Register.)

Two of the Gloucester vessels have recently come in with tolerable fares—*good*, indeed, they may be called in the present state of the fisheries. We have heard of one vessel with 90 and another with 120 barrels.—(Gloucester Telegraph, August 11, 1841.)

1841.—Favorable reports from Gulf of Saint Lawrence.

Favorable accounts have been received from Bay Chaleur, and full fares are expected from the fishery in that quarter.—(Gloucester Telegraph, August 11, 1841.)

1841.—Almost total failure of the mackerel fishery.—Bad results therefrom.

The Gloucester Telegraph says that nearly the whole fleet from that port were returning, and mostly without mackerel.—(Philadelphia Gazette.)

So unfavorable has been the mackerel fishery the present season (and it was nearly as bad the last and preceding years) that most of those who have been actively engaged in it have not earned enough to carry themselves and families through the winter. Indeed, we heard one individual remark the other day that he himself had seen a hundred fishermen who, after all the toil, privations, and dangers they had endured during the whole fishing season, had *not a dollar* coming to them, or either of them, now that they have returned to their homes and families. We have heard of a firm who, upon settling up the voyages of their vessels, paid to the crew of one $1.43 each man—to that of another a little more, and to others nothing. And such has been the general result of the fisheries for the season just closed. * * * It would have been better for their owners, in a pecuniary point of view, had most of our fishing vessels been suffered for the last two or three years to remain at the wharves, instead of being sent either to the banks or down to the bay * * *.—(Gloucester Telegraph, November 17, 1841.)

The whole of the bay fleet are now in [the last two arrivals brought home 90 and 80 barrels of mackerel, respectively, besides from 100 to 200 quintals of codfish. Four Gloucester vessels reported as seized and condemned at Halifax for alleged violations of the treaty].—(*Ib.*)

1842.—Arrivals from George's.

Six schooners, reported in Gloucester Telegraph of August 10, 1842, arrived from George's Bank with fares of mackerel ranging from 20 to 140 barrels each. August 18, five schooners from George's with fares varying from 25 to 120 pounds.

1842.—SUCCESS OF THE SOUTH SHOREMEN.

We learn from a friend at Plymouth that the cod and mackerel fishermen at that place have been unusually successful thus far this season.—*Bay State Democrat.*—(Gloucester Telegraph, August 27, 1842.)

1842.—ARRIVAL OF MACKEREL CATCHERS.

For the week ending September 7, 1842, eight mackerel schooners are reported in the Gloucester Telegraph, with fares ranging from 5 to 126 barrels, the total being 416 barrels, or an average of 52 barrels each.

The following vessels [23 in number] have arrived since our last Wednesday's paper, with fares varying from 10 to 100 barrels and upwards. The above are the fleet that sailed from the 1st to the 10th of August.—(Gloucester Telegraph, September 14, 1842.)

1842.—POOR SUCCESS OF THE BAY MEN.

Arrived 24th, schooner "George Parker," from Bay Chaleur, 8 barrels mackerel. The G. P. brings accounts of Gloucester vessels, three months out, with less than 30 barrels.—(Gloucester Telegraph, October 26, 1842.)

1842.—SCARCITY OF FALL MACKEREL ON NEW ENGLAND SHORE.

No mackerel of consequence have been caught the last three weeks.—(Gloucester Telegraph, October 8, 1842.)

Arrived 20th, about 150 sail of mackerel fishing vessels; report mackerel very scarce, none having been taken for the past fortnight.—(Gloucester Telegraph, October 22, 1842.)

1843.—UNFAVORABLE OUTLOOK FOR THE MACKEREL FISHERY.

A writer in the Gloucester Telegraph of August 30, 1843, says: "At the present date the catch of mackerel falls far short of last year's, but it is very uncertain how it will terminate. The prospect is considered by our most experienced fishermen as not encouraging."

1843.—SUCCESS OF THE HINGHAM FLEET.

We are happy to hear that this business, so important to our town, bids fair to be more successful this season than it has been for many years. Our mackerel vessels are returning with fuller fares than usual at this season of the year, some of them lately arrived having brought in from 80 to 100 barrels.—*Hingham Patriot.*—(Gloucester Telegraph, July 15, 1843.)

1843.—ABUNDANCE OF MACKEREL ON NOVA SCOTIA COAST.

The Halifax papers state that the coast of Nova Scotia is now visited by mackerel and herring in larger quantities than ever were known at this season. In the Straits of Canso the people are taking them with seines, a circumstance without a parallel for the last thirty years.—(Gloucester Telegraph, August 16, 1843.)

1843.—SCARCITY OF MACKEREL IN NOVA SCOTIA.

Captain Stephens, the commander of one of the provincial revenue cruisers, published a letter in the last Acadian Recorder, which states that * * * the mackerel fishery in the spring proved remarkably unsuccessful, not more than 500 barrels having been taken, where upwards of 23,000 barrels were obtained last year. The subsequent catch has, however, been more abundant.—(Newburyport Herald, September, 1843.)

1843.—SMALL CATCH OF MACKEREL BY THE NEW ENGLAND FLEET.

Mackerel sell on arrival at last week's quotations. (No. 1, $10; No. 2, $8; No. 3, $5.75 per barrel.) There has been no great accumulation this week, and we quote the article as before. The catch will probably fall one-fourth to one-third short of what it was last year.—(Gloucester Telegraph, October 30, 1843.)

1843.—FAILURE OF THE MACKEREL FISHERY.

The mackerel fishery, says the Hingham Gazette, has thus far proved a poor business. Some vessels arrive in port with hardly fish enough to pay the expenses of the trip.—(Barnstable Patriot, October 4, 1843.)

1844.—DOINGS OF THE MACKERELMEN; POOR CATCH.

The mackerel fishermen have done but little lately. Most of the vessels heard from are clean, or nearly so. So says the Yarmouth Register.—(Gloucester Telegraph, July 24, 1844.)

The mackerel fishermen have been very unsuccessful for the last two months, the catch, which commenced well in the early part of the season, having suddenly declined. A schooner arrived at this place on Tuesday from a six weeks' cruise, with only *six barrels* of mackerel on board.—*Yarmouth Register.*—(Gloucester Telegraph, August 21, 1844.)

1844.—THE MACKEREL FISHERY OF HINGHAM.

The Hingham Patriot publishes a list of 23 vessels from that port which have been employed in the mackerel fishery during a part or the whole of the last summer, with the number of barrels of mackerel packed by each, amounting in all to 8,097 barrels, or an average of 356 barrels to each vessel. There are five other vessels owned in Hingham, whose names are not given, which packed 1,170 barrels, making in all 9,267 barrels.—(Gloucester Telegraph, November 27, 1844.)

1845.—A GOOD HAUL.

We learn that Holmes & Co., at Manomet Ponds, who were seining for menhaden, on Thursday afternoon last, in drawing their seine, found they had inclosed about a hundred barrels of mackerel. Barrels and

salt were sent from town yesterday morning for the purpose of packing them.—(Plymouth Memorial, July, 1845.)

1845.—MACKEREL ABUNDANT IN GLOUCESTER HARBOR.

For a few days past our harbor has been filled with mackerel, and on Monday about 400 barrels, it is estimated, were taken in seines, vessels, boats, and on the wharves. Upwards of a hundred barrels were taken in a seine at one haul. Considerable many were taken yesterday, but not in such quantities as on Monday. The visit of this fish to our harbor has afforded rare sport to such of our inhabitants who have never been a mackereling, but it will not last long, as the fish will take a start off in a day or two.—(Gloucester Telegraph, July 9, 1845.)

1845.—CANNING OF MACKEREL.

In an extract from the Eastport Sentinel, published in the Gloucester Telegraph of August 30, 1845, mention is made of the packing at Eastport, by Messrs. Treat, Noble & Co., of 3,000 cans of fresh mackerel.

1845.—MACKEREL IN THE BAYS OF MAINE; A BIG HAUL AT PROVINCETOWN.

Our piscatory visitors have nearly all left us and gone "down east." The Belfast Signal, of Thursday last, states that mackerel are quite plenty in that bay.

The Yarmouth Register is informed that at Provincetown, week before last, they seined about 1,000 barrels of mackerel at one haul. Those who took them gave half for dressing, but they were enabled to save only 500 barrels.—(Gloucester Telegraph, July 23, 1845.)

1845.—ABUNDANCE OF MACKEREL ON THE NEW ENGLAND COAST.

So many mackerel have not made their appearance in our bay [Ipswich Bay] for many years before; while the fishermen who have gone down to the Bay Chaleur, the principal place of the fishery, have had less success.

It will be seen by an item in the ship news, that the Gloucester fishermen, who came in full at the close of the week, report about 500 vessels busily engaged in fishing in the bay. The mackerel brought in now are mostly branded small No. 2.—*Newburyport Herald.*—(Gloucester Telegraph, September 20, 1845.)

1845.—NO MACKEREL ON GEORGE'S.

Arrived at Hyannis 9th, schooner "Resolve," and two other mackerel catchers from George's Bank; absent ten days; caught nothing.—(Gloucester Telegraph, September 16, 1845.)

1839 to 1846.—Nova Scotia fisheries.

The exports of mackerel from the port of Halifax during the years 1839 to 1846 inclusive, show that considerable attention was given to this fishery on the coasts of Nova Scotia thirty years ago.*

	No. of barrels.
1839	19,127
1840	25,010
1841	35,917
1842	54,118
1843	71,854
1844	50,698
1845	38,320
1846	82.645

1847.—Scarcity of mackerel.

The catch of mackerel thus far this season, says the Gloucester Telegraph, has been small in comparison with that of the two past years. The number of barrels taken on the coast has greatly diminished, and the prospects being so unfavorable, many of our vessels have gone to the Bay Chaleur. The fares that have arrived at this port are readily sold at good prices as soon as landed, and are immediately shipped to the great markets of New York and Philadelphia.—(Barnstable Patriot, October 6, 1847.)

1847.—Unprofitableness of the mackerel fishery.

Mackerel fishing has not prospered to such a degree as the cod-fishery, none of the small number of crafts engaged in the business from this port, having obtained a full cargo.—(Barnstable Patriot, October 13, 1847.)

1847.—Abundance of mackerel about Sable Island.

Mackerel were very abundant in the vicinity of Sable Island, and the fisheries committee of the house of assembly of Nova Scotia urged the granting of a bounty to all vessels engaged in the deep-sea mackerel fishery. This was not adopted.—(Journal and Proceedings of the House of Assembly of the Province of Nova Scotia, 1857, Appendix 75.)

1845 to 1848.—Importance of the mackerel fishery.

From the Barnstable Patriot we quote the following review of the mackerel fishery of Massachusetts from 1845 to 1848:

"The yearly inspection of returns of mackerel, show plainly that there is no more important branch of the fishing business carried on in this

* Inspected.

State than the mackerel fishery. From 1831 to 1840, the depreciation in the catch was 333,225 barrels; and from 1840 to 1845, the increase was only 36,270 barrels, during which, a period of thirteen years, the business had become nearly prostrated, and with it nearly all those who were engaged in it. In 1845, unexpectedly large shoals of mackerel appeared on our coast between Cape Ann and Cape Cod, of a small, uniform size, about 12 inches in length, but very fat. Owing to these fish being so near home, but little or no time was lost by the fishermen in going out and returning with full fares, except the delay in procuring barrels to put their fish in. At the close of the season the inspection returns showed an increase of 116,122 barrels from the previous year. This gave an impulse to the business.

"In 1846 this great shoal of mackerel did not return again on our coast, which disappointed the hopes of the fishermen, especially those who depend upon their small boats for a living. At the close of the season the catch had fallen off 28,439 barrels. Not being so easily discouraged by this depreciation in one year, they entered into business with renewed energy and enterprise, and were crowned with great success during the next year. In this year, 1847, the fishermen did not find any mackerel on our coast of much account, until late in the season, when a large school appeared off Cape Cod, called the 'Chatham school,' from which great quantities have been taken of the best mackerel that have been in the market for many years. All other mackerel, elsewhere, bore no comparison with these, either for size, fatness, or goodness. Unfortunately, however, for the Newburyport and Gloucester fishermen, they were nearly all in the Bay of Chaleur; for the mackerel which they brought home were of an inferior quality. This great difference between the two kinds caused much complaint, and created for a time some little excitement and feeling among the dealers both at home and abroad, which resulted in establishing a greater confidence in the different brands, and a more uniform cull, and a higher standard of inspection in 1848.

"The inspection returns in 1848 show that the increase is 67,548 barrels. More than one-half of this number are No. 3, and only one-quarter are No. 1. This great increase of No. 3 is owing chiefly to the mackerel which came from the Bay of Saint Lawrence, denominated 'Bay Chaleur,' being a poorer quality than those taken on our coast. For the last two or three years the mackerel in that quarter have been depreciated gradually both in size and quality. Formerly the best mackerel we had in the market came from that place, and they demanded the highest price, and were very much sought after, on account of their superior size and fatness.

"At one time the George's mackerel were all the rage, on account of their size; but within the past two years the Chatham mackerel have taken the lead, with the exception of that extraordinary fat school which appeared off Gloucester early in September. The mackerel taken from this school are said to be superior in size and fatness to any ever before

or since taken by our fishermen. It is estimated that there were upwards of 50,000 barrels taken from this school by our fishermen in the course of ten or fifteen days, which inspected nine-tenths No. 1, and this accounts for the increase in their number; otherwise there would have been a great deficiency in this branch.

"The increased consumption of No. 1 mackerel up to this time had been fully equal to the supply, according to the best information obtained on the subject; but the Nos. 2 and 3 mackerel coming more directly in competition with the English fish, on account of the low rate of duty, it is fair to calculate that the prices will rule much lower than the usual difference between the No. 1 and 2, especially in those years of a large catch.

"The English mackerel which have come into this market under the brand of No. 2 are of a fair quality, but none are fat enough to make No. 1, compared with the present standard of our inspection; therefore there will be less inducement for the trade to speculate in English mackerel with a view of reinspection, as formerly."—(Barnstable Patriot, January 31, 1849.)

1848.—LARGE SCHOOL OF MACKEREL IN THE SOUTH CHANNEL.

The largest school of mackerel Captain Harding ever saw was in the south channel about the year 1848. It was a winrow of fish. It was about half a mile wide and at least 20 miles long, for vessels not in sight of each other saw it at about the same time. All the vessels out saw this school the same day.

1848.—ABUNDANCE OF MACKEREL IN THE GULF OF SAINT LAWRENCE.

A gentleman who came up from Point Escuminac a few days ago says that the Prince Edward Island Gazette informs us that during the last fortnight there have been from 40 to 50 American schooners about two miles from the Point, the crews of which had been busily engaged in catching mackerel, and so abundant are the fish that they have hired persons from the shore to assist them. Some of them had 300 barrels on board.—*Halifax paper.*—(Barnstable Patriot, September 20, 1848.)

1848.—IMMENSE SCHOOLS OF MACKEREL OFF CAPE ANN.—SUPPOSED EARLY DEPARTURE.

The mackerel which were reported in such immense schools off Cape Ann week before last have been completely broken up or quitted the shores. The vessels took but a few last week. It is about time for mackerel to make their annual visit to the shores of Cape Cod. We have no fear that our fishermen will fail to bait them well and see that they don't suffer for want of salt.—(Barnstable Patriot, October 4, 1848.)

1848.—A LATE SCHOOL OF MACKEREL OFF CAPE COD, AND GREAT ABUNDANCE.

In 1848 large mackerel kept in close to Cape Ann. Two hundred and fifty vessels. Pilot found them abundant 26th November off Three-light Nauset. One hundred and fifty vessels.

Captain Wixon, schooner "Hamilton," of Dennis, in debt $250 September 15, and towards the end of the season made three trips (November) without taking off his oil clothes; made $900.

1849.—SCARCITY OF MACKEREL IN THE EARLY SUMMER.

The vessels that have arrived in this vicinity from mackerel voyages have brought in very small fares. The Yarmouth and Dennis fleets, which have just arrived from a two months' cruise, have packed, at an average, about 50 barrels to each vessel.—(Barnstable Patriot, June 27, 1849.)

1849.—ABUNDANCE OF MACKEREL OFF THE COAST OF MAINE.

MACKEREL CATCHING.—A fleet of nearly 200 vessels, says the Portland Advertiser of the 13th instant, was in the offing on Wednesday after mackerel. The mackerel were very abundant, and took the bait well in round the shores and reefs.—(Barnstable Patriot, July 25, 1849.)

1849.—THE MACKEREL FISHERY.

About 150 fishing vessels came into our harbor on Saturday p. m., 21st July, there being an appearance of a storm coming on. This was quite an unusual circumstance for this period of the year, as the mackerel are not in any quantity off our cape until the latter part of August and during the months of September and October. These vessels, we learn, had on board from 10 to 40 wash-barrels each, which they had taken during the previous week or ten days, which was rather slim doings.

There had been two arrivals this season from Bay Chaleur, and although they had an average fare, the men employed made poor wages in consequence of the low price of the article. We understand that but few vessels have gone to the bay this year, in consequence of the poor luck they have experienced at that place for a few years past.—(Gloucester Telegraph, August, 1849.)

1849.—A BIG FARE FROM THE BAY.

September 26, 1849, the schooner "Canton," Capt. Edward Watson, was reported arrived at Gloucester Monday week from Bay Chaleur, with 600 barrels mackerel, the largest number of barrels ever caught and brought into that port by one vessel up to that time. The "Canton" was

100 tons burden, manned by 18 hands, and had been absent three months. She reported very few vessels at the bay, and the prospect good. The whole Gloucester fleet at that time were on this coast, and were doing very poorly, and the prospects were not favorable for a heavy catch. At Gloucester there were 200 sail of Cape Cod vessels at anchor in the harbor, and many vessels had arrived at that port, absent four or five weeks, with only 40 barrels of mackerel. The trips averaged about one-third No. 1.

1849.—FALL MACKEREL FISHERY OF CAPE COD BAY.

The mackerel fishermen in several of the towns of the Cape during the months of October and November brought in good fares, which has helped to make up for an otherwise poor season's business. We learn that the mackerel caught off Chatham by fishermen in the south part of Dennis and Harwich during these months amount to more than $100,000. The vessels packing at the new establishment of Messrs. Fred. Scudder & Co., in the south part of this town, caught during the same time mackerel to the amount of more than $10,000, and several vessels packing at Messrs. Baxter & Bragg's returned with some thousands in value. All this was earned after many of the vessels of the Cape had hauled up.—(Barnstable Patriot, December 12, 1849.)

1849.—REMINISCENCES OF CAPT. J. W. COLLINS.

The mackerel off the New England shore in 1849 were all large fish and fairly abundant. That summer I made my first trip mackerel fishing, going out as one of the crew of the pinkey Walker. We fished off Mount Desert Rock, and caught 40 barrels of fine, large mackerel in three or four weeks. At that time each one of the crew was provided with a hogshead tub to strike their fish in; the mackerel were salted in butts, which were stowed on their heads in the hold, the catch of each one of the crew being counted by the splitter and placed to his credit. The pinkies of those days had no cabin aft, all hands sleeping in a dingy little cuddy forward, where the meals were also prepared and eaten.

1850.—SCARCITY OF MACKEREL.—INFLUENCE OF BLUEFISH ON THE MOVEMENTS OF MACKEREL.

The following extract, copied from the Newburyport Herald by the Gloucester Telegraph of September 4, 1850, gives an idea of the mackerel fishery at that date:

"We have never known fresh mackerel so scarce in this market in the season for them as they have been this year. Up to the present time no good mackerel, suitable for the table, have found the way here; and considering how very desirable they are in dog days as an article of food, it is quite a calamity to the lovers of good fish. Some attribute the scarcity of mackerel in our bay to the presence of the bluefish,

which within a few years have visited our shore and rivers in great abundance. From the movements of the bluefish in our rivers, and their savage treatment of the smaller fish which come in their way, we are not surprised that the mackerel should give them a wide berth.

"Fresh mackerel are not very scarce here, but the amount of fares of salted ones this season have been very small. Yesterday made thirteen days since we had an arrival of a fishing craft with mackerel of any description, either from our bay or from the Bay Chaleur. We think they cannot be plenty upon any of the usual fishing-grounds.

"If they are not taken more plentifully in course of the next six or eight weeks, the catch must be very limited and the season an unpropitious one for those engaged in the mackerel fishery."

1850.—Reminiscences of Capt. J. W. Collins.

In 1850 I went as one of the schooner "Mercy and Hope" to the Gulf of Saint Lawrence, starting on our trip about the 1st of June. The mackerel were large that year in the Gulf, but not very abundant. The fishing-grounds over which we cruised the most were round Gaspe, Bonaventure, Bay of Chaleur, off Point Miscou, the West Shore, and around the north cape of Prince Edward Island, and on Banks Bradley and Orphan. We were absent from home sixteen weeks, and succeeded in taking only 175 barrels of mackerel with a crew of eleven men, all told.

In the fall of the same year I shipped in the schooner "Three Sisters," and we fished from Portland to Chatham. An enormous school of mackerel was found by the fleet off Cape Cod, near Chatham, that fall, some time from the 1st to the 15th of November. The fish, which were exceedingly fine and large, took the hook very readily, and large catches were made by most of the vessels, some of them succeeding in obtaining a full fare in three or four days' fishing.

The fleet was a very large one, and was estimated to be about 700 sail. Sharp vessels were then just coming into use, and the "Mary S. Wonson," "Jennie Lind," and a few others of that class were looked upon as very remarkable for their beauty and speed. We did not reach the fleet until the "spurt" was nearly over, and, in consequence, did rather poorly. Our skipper, feeling rather chagrined at his ill luck, determined to stay on the fishing-ground in hopes that he could catch some fish from a later school. In this, however, he was disappointed, since we caught no mackerel of any importance, though we did not leave the fishing-ground off Chatham, except for a harbor in stormy weather, until the 5th day of December.

1850.—Slim doings of the Cape Cod fishermen.

Our mackerel fishermen, we regret to say, are doing a very slim business this year. A gentleman who has lately made a tour of the Cape informs us that there are not at present 2,000 barrels of mackerel in the

country. Two years ago, at the same season of the year, he counted over 20,000 barrels on the wharves of the Cape. A much larger fleet is now engaged in the business than at that time, and its failure this year would greatly depress our enterprising capitalists. We hope, however, that that last resort of our fishermen, the school "off Chatham," will not disappoint their reasonable expectations.—*Yarmouth Register.*—(Gloucester Telegraph, October 12, 1850.)

1850.—SCARCITY OF MACKEREL OFF CAPE ANN IN LATE AUTUMN, ARRIVALS FROM BAY, PRICES, ETC.

The arrivals of mackerel the previous week have been very small. Our vessels are doing nothing. Many of them for the last ten days have not salted one barrel. There are now in this port some 200 sail of mackerel vessels waiting for the fish to come on this coast.

There have arrived from Bay Chaleur since our last report about 1,800 barrels, and sales have been made at $8.75 for No. 1, $7 for 2's, and $5.12½ for 3's. There now remain about 1,200 barrels in first hands, which are held at higher prices.

There are now but 16 vessels to arrive from the bay, and five which have just sailed for that place.—(Gloucester Telegraph, October 26, 1850.)

The arrivals at this port since our last have been very light. The catch in Massachusetts Bay and on the coast of Maine has entirely failed for the last month past. There have been received from the Bay Chaleur this week about 400 barrels. Within a few days more desire is manifested to purchase, and sales have been made at $9 for 1, $7 for 2, $5.12½ for 3, and $4 for 4, leaving but few in first hands, which are held at higher prices.—(Gloucester Telegraph, November 6, 1850.)

1850.—QUICKEST BAY-TRIP EVER MADE.

The clipper schooner "E. W. Merchant" arrived from the Bay Chaleur on Friday last with about 200 barrels of mackerel, having been absent from this port only 27 days, which is the quickest trip ever made from this place. Beat that who can.—(Gloucester Telegraph, November 20, 1850.)

1850.—CLOSE OF THE MACKEREL SEASON.—LAST ARRIVAL FROM THE BAY.

The mackerel season has about ceased. The vessels are now hauling up as fast as they arrive. For the last two months not enough has been caught by the Massachusetts Bay fishermen to pay the outfits for the time. The last vessel from the Bay Chaleur arrived on Friday last.—(Gloucester Telegraph, November 20, 1850.)

Our mackerel season has closed with the Massachusetts Bay fishermen with a smaller catch than any season since 1841. The few vessels that were so fortunate as to go to Bay Chaleur have made fair voyages.—(Gloucester Telegraph, November 27, 1850.)

1841 TO 1851.—CAPTAIN ATWOOD'S EXPERIENCE IN THE MACKEREL FISHERIES.

"I went again to the Gulf of Saint Lawrence in 1841, when we fished off the Magdalen Islands. We got about 100 barrels of very excellent mackerel. They were about all No. 1's, I think; there were very few No. 2's. The next year I also went in the same "Lucy Mary" to the Gulf of Saint Lawrence, fishing off the Magdalen Islands. I was in the bay in 1841 and 1842. We staid there until the end of the season, but secured only 60 barrels. I was then master—that is, my brother was not with me, and I was master of the vessel. I went home with 60 barrels. This was my experience in the Gulf of Saint Lawrence up to 1842. I was there since, in 1851, when I was in a schooner called the "William Gray," 58 tons. She was a small and dull-sailing vessel. I thought we would be much safer off the Magdalen Islands, and so I went there, as I had done during previous years. I staid there until the middle of September, but was not very successful, getting only 90 barrels; so I concluded to go over to Prince Edward Island and try there. I did so, and the next day after my arrival I found that I was in more danger at this place than at the Magdalen Islands, for I was that day cast away, and I lost my vessel.

"Q. When was this?—A. In 1851. I was cast away on Fish Island, at the entrance to Malpeque Harbor.

"Q. Was this in the great gale, or previously?—A. It was two weeks before the great gale. I cleared up my wreck, saved what I could, took the mackerel out, and shipped for home, going on board another vessel. I was off the mouth of Saint Peter's Harbor when the great gale came on, and we were then cast away again. So I was cast away twice in a fortnight. This seemed to prove to my mind that Prince Edward Island was more dangerous than the Magdalen Islands.

"Q. You speak of fishing at the Magdalen Islands being safer than at Prince Edward Island; explain why it is that you think so?—A. Suppose we were at the Magdalen Islands and it looks stormy. If the wind is blowing on shore where we are, we just run round to the other side of the islands and anchor under the lee. If the wind blows up and it becomes stormy, we are there very comfortable, and night or day we hold ourselves in readiness to get under way and get to the other side again in case the wind should happen to change. Thus I have been round and round the islands time and time again.

"Q. Are the Magdalen Islands regarded by the American mackerel fishermen as a safe place?—A. Yes, I think so.

"Q. And as safe as any in the Gulf?—A. I think so; to a person well acquainted with them, they are considered as safe as any part of the Gulf, and I consider them, for my part, safer. I do not know that everybody is of the same opinion, but I think this would be the case if they are thoroughly acquainted with the matter."—(Statement of Captain Atwood before the Halifax Commission.)

1851.—CAPE COD TOWNS BUILT UP BY THEIR FISHERIES.

Wellfleet, like Provincetown, says the Yarmouth Register, is almost entirely built up by the fisheries. Last year some 17,000 barrels of mackerel were packed in the town, and a large quantity of cod and other fish were brought in by Wellfleet vessels. * * *—(Gloucester Telegraph, June 4, 1851.

1851.—GOOD CATCH AT YARMOUTH, NOVA SCOTIA.

The Yarmouth (N. S.) Herald states that large quantities of mackerel have been taken in that vicinity.—(Gloucester Telegraph, June 18, 1851.)

1851.—SMALL RECEIPTS OF MACKEREL AND UNUSUAL SCARCITY.

Mackerel continue to come in slowly, and have been sold at $4.75 per barrel for new No. 3.—(Gloucester Telegraph, July 9, 1851.)

The quantity of mackerel taken by our fishermen so far this season has been unusually small. During the last fifteen days less than 200 barrels have been packed, which includes only 2½ barrels fat mackerel. About 75 sail of Cape Cod fishermen made a harbor here on Wednesday, who report mackerel uncommonly scarce for the season.—(Gloucester Telegraph, July 12, 1851.)

1851.—BIG MACKEREL CATCH AT NOVA SCOTIA.—YANKEE CLIPPERS AT GASPE.

From Halifax papers we learn that the catch of mackerel off the eastern coast of Nova Scotia has been very great this season.

The Gaspé Gazette of July 10 says: "Great numbers of American schooners are busily engaged catching mackerel in our waters. Nineteen handsome looking Yankee clippers, some of them with their colors flying, as if in mockery of the Canadian Government, might have been seen the other day from our office windows, fishing within a short distance from land."—(Gloucester Telegraph, July 26, 1851.)

1851.—ARRIVAL OF BAY MACKEREL.

Mackerel have been arriving more freely within a day or two from Bay Chaleur, and prices are a shade lower.—(Gloucester Telegraph, September 20, 1851.)

1851.—EXTRAORDINARY LARGE AND FAT MACKEREL FROM SABLE ISLAND.

A gentleman yesterday assured us that he had seen in the stores of H. Lyle, esq., mackerel taken at Sable Island a short time since that had at least an inch thickness of fat on them. Some of these delicious fish weighed as much as 7 *pounds!—Halifax Chronicle.*—(Gloucester Telegraph, October 8, 1851.)

1851.—Terrible disaster to the bay fleet.

In the Gloucester Telegraph of October 11, 1851, is reported a dispatch from B. H. Norton, esq., United States consul at Pictou, Nova Scotia, which states that 100 sail of American vessels (all mackerel catchers) and probably more than 300 lives were lost in the Gulf of Saint Lawrence, principally on the north side of Prince Edward Island, in a terrific northeast gale, which had swept with almost unparalleled violence the waters and coasts of that region on the 3d and 4th of October. The Telegraph of October 25 gives the loss of lives, as then ascertained, as 100.

1851.—Reminiscences of capt. J. W. Collins.

In 1851 the mackerel, though abundant off the New England shore, were of small and medium size, and were so low in price that the majority of the fleet went to the Bay of Saint Lawrence, where large fish could be obtained. About the 1st of July I shipped in the schooner "Brutus," about 40 tons, old measurement, and made a trip mackerel-fishing in the Bay of Fundy. Having obtained a fare in four or five weeks, we packed out in Portland, and thinking we might do better elsewhere, we went to the Bay of Saint Lawrence. There we caught a trip of 160 barrels in about three or four weeks' time, taking these almost wholly in and about the bend of Prince Edward Island, a large part of them near Malpec. We left the fishing-ground on our return home about the last of September, just in time to escape the terrible gale which wrought such devastation among the large fleet of American mackerel schooners which at that time were in the bend of Prince Edward Island. It is now a matter of history that the northern shore of this island was strewn with the wrecks of vessels and bodies of drowned fishermen which were lost in this October gale. Never before had such a terrible disaster occurred to our fishing fleets. So great, indeed, was the loss of American vessels that this particular gale has been known to the residents of that province as the *Yankee gale.*

1851.—Vessels in the mackerel fleet.

The following table, compiled by Mr. Alexander Starbuck from official records, gives the number of vessels, tonnage, and number of men in the crews of the mackerel vessels composing the fleet in 1851:

Ports.	Number of vessels.	Tonnage.	Number of crew.
MASSACHUSETTS.			
Boston	7	596	85
Beverly	12	761	97
Barnstable	28	1,918	339
Brewster	4	259	47
Charlestown	2	74	14
Chatham	19	1,346	230
Cohasset	44	2,885	561

Ports.	Number of vessels.	Tonnage.	Number of crew.
MASSACHUSETTS—Continued.			
Dartmouth	1	117	16
Dennis	47	8,096	585
Eastham	3	170	23
Essex	1	71	10
Gloucester	241	13,639	2,326
Harwich	48	3,231	577
Hingham	37	2,492	491
Lynn	4	167	33
Manchester	1	45	8
Marblehead	1	30	5
Martha's Vineyard	6	421	65
Nantucket	3	168	30
Newburyport	67	4,343	707
Orleans	5	336	54
Plymouth	6	561	65
Provincetown	61	4,322	688
Rockport	42	1,537	283
Salem	1	80	9
Scituate	13	715	119
Salisbury	4	305	48
Truro	52	3,626	581
Wellfleet	79	5,411	852
Yarmouth	14	990	169
Total Massachusetts	853	53,712	9,117
OTHER STATES.			
Maine*	47	3,019	446
New Hampshire	8	515	84
Rhode Island	7	479	71
Connecticut	23	1,551	255
Maryland	2	141	25
Total other States	87	5,705	881
Grand total	940	59,417	9,998

*One of the writers, who was familiar with the mackerel fishery at this time, takes the responsibility of saying that there were probably 200 vessels on the coast of Maine in 1851 engaged in the mackerel fishery, and that Mr. Starbuck's table in this respect is incomplete.

1852.—FIRST MACKEREL OF THE SEASON.—PRICES.

Several lots of new No. 3 have been received, the first of the season, and sales have been made at $5.50, and some a shade under.—(Gloucester Telegraph, June 9, 1852.)

1852.—MACKEREL REPORTED PLENTY AT WESTERN NOVA SCOTIA.

The Yarmouth (N. S.) Herald of the 5th instant says: "We rejoice to learn that the mackerel fishermen [gill-netters] at Tusket Islands and other parts of the coast between Yarmouth and Cape Sable have taken good hauls within the last few days."—(Gloucester Telegraph, June 19, 1852.)

1852.—SUCCESSFUL SEINING AT ISLE OF SHOALS.

Great quantities of these fish [mackerel] have visited our shores the past few weeks, and the fishermen at the Shoals have been doing a smart business. These fish are rather shy of the hook, but are taken in seines

in great numbers. One or more fishing-smacks may at all times be seen at Star Island or Smutty Nose, waiting for a freight of mackerel for Boston market. The masters of these vessels, as soon as a good haul is made, purchase the mackerel of the fishermen as soon as they are taken from the net, and immediately set sail for Boston, where they arrive by the time the splitters have prepared the fish for market. Five or six thousand are frequently taken at one haul of the seine, and sell at from 1¼ to 2½ cents apiece. Several seine-owners have already made $1,000 each since the coming of these fish, and those engaged in setting and hauling not infrequently bag $10 or $15 for a day's work. * * *—*Portsmouth Messenger.*—(Gloucester Telegraph, July 31, 1852.)

1852.—FIRST SEIZURE OF AN AMERICAN VESSEL FOR FISHING OFF PRINCE EDWARD ISLAND.

Schooner "W. R. Burnham" has arrived at Boston from Prince Edward Island, having on board two of the crew of schooner Lion, of Brooklyn, which vessel was taken into Charlottetown by the Nova Scotian armed cutter Telegraph for violation of the treaty. This is the first instance of seizure for fishing off Prince Edward Island.—(Gloucester Telegraph, August 11, 1852.)

1852.—BRITISH CUTTERS IN BAY OF SAINT LAWRENCE DISGUISED TO INSURE THE CAPTURE OF AMERICAN SCHOONERS.

An exchange paper says: "Captain Whitmore, of Deer Isle, Maine, states that the commanders of the British cruisers in the Bay of Saint Lawrence are in the habit of disguising their vessels as fishermen, so as to decoy the American vessels within their reach, when they become fishers of men and of prize-money. This is true; and some of the tricks resorted to in years past by some of the provincial officers would disgrace any sailor. The present year the colonial vessels are said to look more like common merchant vessels than armed cruisers, and are distinguished from others only when they have the pennant up, which is not always the case."—(Gloucester Telegraph, October 18, 1852.)

1852.—AMERICAN MACKEREL SCHOONERS NOT PERMITTED TO FISH IN BAY CHALEUR, AND OTHERWISE ANNOYED BY BRITISH CRUISERS.

Schooner "Mary Niles," Captain Pool, arrived yesterday from the Bay of Saint Lawrence. Captain Pool informs us that the steamship "Devastation" will not allow the fishermen to fish in the Bay of Chaleur. He and others were driven out. There were plenty of fat mackerel there, six and seven miles from the shore, and had he been allowed to fish he could have filled his vessel with three or four hundred barrels, whereas he only brought home one hundred. The captain of the "Devastation" told Captain Pool that *he should not allow them to fish in the Bay of Chaleur, or within three miles of any of the bays.*

The officers of the steamer were making every effort to catch the vessels, and resorted to many tricks in order to entrap them. Captain Pool states that the steamer had several times come suddenly round Point Miscou (in order to catch the American fishermen unawares). Among other things, the officers of a cutter, when they boarded a vessel, even if she were six or seven miles from the shore, *would feel of the fishing-lines to see if they were wet.*—(Gloucester Telegraph, August 21, 1852.)

1852.—SCARCITY OF MACKEREL.

The Gloucester Telegraph says returns of mackerel at that port for the past year fall short full one-half of what the receipts were last year; cause, trouble with the English. Prospects for remainder of season not favorable, and if vessels now out return with more than half a fare it is more than is anticipated.—(Barnstable Patriot, August 28, 1852.)

1852.—ARRIVALS FROM THE BAY.—REPORTED INTERFERENCE OF BRITISH CRUISERS.

There have been several arrivals from the Gulf of Saint Lawrence since our last, and they confirm our previous statements in regard to not being allowed to fish in the Bay of Chaleur. * * * These vessels were obliged to return home without obtaining a full fare; could they have fished in the Bay of Chaleur they would have filled their vessels with fat mackerel. * * *—(Gloucester Telegraph, August 25, 1852.)

1852.—A SCHOOL OF MACKEREL OFF CAPE ANN.

Quite a "school" of mackerel have been around our shore during the week past, and our Rockport friends have reaped a rich harvest. Some of the boats from our harbor have taken large quantities, but we understand they had struck off yesterday.—(Gloucester Telegraph, August 28, 1852.)

1852.—REPORTED SCARCITY OF MACKEREL IN THE BAY.

Two or three vessels have arrived since our last, but they bring no news of importance, except a scarcity of mackerel.—(Gloucester Telegraph, September 18, 1852.)

1852—THE MACKEREL SEASON DRAWING TO A CLOSE.—SMALL CATCH OF THE FLEET DUE TO TROUBLE IN BAY OF SAINT LAWRENCE.

The fishing season for mackerel is fast drawing to a close, and there are but few weeks left before the vessels will be hauled up. The returns of mackerel this year at this port fall short full one-half of what the receipts were at this time last year. This, owing mainly to the trouble at the Bay of Saint Lawrence, the vessels being obliged to keep farther from the shore than they heretofore have done, for fear the offi-

cers of the cutters would say they were within the limits, and seize them. Not being allowed to fish in the Bay of Chaleur is another cause, as our vessels in years past have sometimes obtained full fares there, and would have done so this year could they have fished in that bay, as it was full of mackerel. Last year at this time many of the vessels had returned from their second trips, but now there are many who have not returned from their first, and there will be but few who will make more than two.

The prospect for the remainder of the season is not very favorable, and if those vessels now at the bay return with more than half a fare, they will do better than is now anticipated. The fish at this season tend mostly in-shore, and at the best fishing-grounds there are two or three cutters who will keep the Americans off, and they will therefore not be able to do much.

The quality of mackerel this season has been different than for a few years past. Those brought from the bay have been very large and handsome, and commanded high prices; while those taken off our coast have been smaller and not of so good quality. Sales have been made this week of several trips of bay mackerel at the following rates: No. 1's, $12; 2's, $10; 3's, $6.75. Shore mackerel have brought $9⅝, $7⅝, and $5½ for the three Nos.—(Gloucester Telegraph, September 25, 1852.)

1852.—Loss of many mackerel schooners in the bay.

The Gloucester Telegraph of October 30, 1852, reports the loss of 21 vessels at Souris, Prince Edward Island, in a heavy gale which took place on the 15th of that month. The vessels went into that harbor with the wind NE., but it shifted suddenly round to the SSW., and they could not get out.

1852.—Reminiscences of Capt. J. W. Collins.

In the spring of 1852 I went south on a mackerel trip in the schooner "Science," of about 50 tons, old measurement. We started about the 1st of May, and were gone four or five weeks, bringing to Boston a fare of 45 sea-packed barrels. Our fishing ground was from Barnegat to Block Island, though we caught but few mackerel south or west of Fire Island. At this time all of the vessels belonging to Northern New England ports salted their spring catch of mackerel, and generally packed them north of Cape Cod. A considerable number of sloop smacks, belonging at Noank and New London, Conn., engaged in the spring mackerel fishery to supply the New York market, taking the fish in alive in their wells. Their crews fished with poles, as anglers do for trout, being thus enabled to drop the mackerel into the well without touching them, even from the extremities of this vessel. In June we went to the Bay of Saint Lawrence, where we caught about 150 barrels, being absent from home nearly seven weeks. The mackerel were of large size that year in the Gulf of Saint Lawrence, but not very abun-

dant. Off the New England coast they were very plentiful and in fine condition, though of medium size, scarcely any, or none, being large enough to pack for No. 1's. After returning from the Gulf we fished off the New England coast from Mount Desert Rock to Cape Cod, though we did the best off and around Monhegan Island during the month of August and early in September. At that time a large fleet was fishing off the Maine coast.

1852.—MACKEREL FISHERY OF NEW BRUNSWICK IN 1852.

Perley, in his Report on the Fisheries of New Brunswick for 1852, says: "It must be considered settled that the mackerel fishery as a branch of business cannot be said to exist in New Brunswick, although the eastern shores of the province and the whole Bay of Chaleur offer the greatest facilities and most abundant supply of fish.

"It is highly desirable that something should be done to encourage and promote this fishery, which evidently offers such ample reward to the energy, enterprise, and industry of the people."—(Page 16.)

1853.—THE ARMAMENT IN PROVINCIAL WATERS FOR BREAKING UP THE AMERICAN MACKEREL FISHERY.

The St. John New Brunswicker, of the 31st ultimo, announces the arrival at St. John of H. M. ketch "Netley," which is to be stationed in the Bay of Fundy for the protection of the fisheries this season. H. M. screw steamship "Plumper," fitting out in England, is also expected to be stationed in the bay. H. M. steamers "Basilisk," "Vixen," and "Devastation" are to be stationed at Newfoundland and in the Gulf; and four brigantines or schooners are to be immediately fitted out at Halifax for the Gulf, each under the command of a lieutenant in the navy, with twenty-five picked men in each from the flag-ship "Cumberland." These vessels, says the Brunswicker, with other arrangements for an efficient boat service at several of the most favorable resorts in the Gulf for American mackerel fishers, will doubtless prove the means of preventing encroachments this season, and tend greatly to break up the American mackerel fishery in the Saint Lawrence.—(Gloucester Telegraph, June 4, 1853.)

1853.—MACKEREL IN WESTERN NOVA SCOTIA.

The Yarmouth Herald says: "We are glad to hear that mackerel have been abundant at the Tusket Islands during the past week. In two days two seines secured over 600 barrels. Within the last few days a considerable quantity of small mackerel and fat herring have been caught in this harbor."—(Gloucester Telegraph, July 16, 1853.)

1853.—FIRST ARRIVAL FROM THE BAY—REPORTED SCARCITY OF MACKEREL.

The "Leonard McKenzie" arrived at this port on Sunday from the Bay of Saint Lawrence; reports mackerel as not being very plenty, and the vessels were not doing much.—(Gloucester Telegraph, July 20, 1853.)

1853.—MACKEREL IN GLOUCESTER HARBOR.

A large school of mackerel has been in our harbor this week, which has given our shore fishermen a good benefit, and many of them have improved it. The fish are larger than those here a week or ten days previous.—(Gloucester Telegraph, July 30, 1853.)

1853.—SUCCESSFUL PURSE-SEINING ON NEW ENGLAND SHORE.

The Newburyport Union states that the schooner "Ada" [arrived] at that port on Wednesday with 320 barrels of mackerel. This is her second trip in our bay, in both of which she has taken 560 barrels; most of them have been caught with a seine. What other mackerel vessel has done as well as that this year?—(Gloucester Telegraph, August 3, 1853.)

The Newburyport Union states that the schooner "Ada" has completed her third trip in eleven days, with 300 barrels, making a total of 850 barrels in less than two months. We do not recollect that any vessel from this place has ever done so well before; and at the present prices of mackerel she will pay a handsome profits to her owners.—(Gloucester Telegraph, August 13, 1853.)

1853.—ARRIVALS AND REPORTS FROM THE BAY.

There were several arrivals yesterday from the Bay of Saint Lawrence. * * * In some parts of the bay mackerel were plenty, in others they were scarce.—(Gloucester Telegraph, August 17, 1853.)

1853.—SUCCESS OF THE SWAMPSCOTT MACKEREL SEINERS.

The schooner "Romp" and the schooner "Vanguard" of Swampscott arrived home last week, having been engaged in mackerel fishing off Boone Island a few days past with remarkable success. One of the boats took at one haul of the seine ninety-four wash-barrels of mackerel. In one day she took 155 barrels.—*Lynn Bay State.*—(Gloucester Telegraph, August 31, 1853.)

1853.—RECEIPTS AND PRICES.

Mackerel remain without change. The arrivals continue moderate for the seasen. Sales of large for $13.00, $11.50, and $8.12½, and shore at $11.75, $9.72, and $7.50 per barrel.—(*Ib.*)

1853.—EXTREME HIGH PRICES CONSEQUENT UPON THE SCARCITY OF MACKEREL.

The scarcity of this article (mackerel), and the poor prospect, both in the bay and off our coast, has caused the prices to reach a higher point this season than ever before known. A trip which arrived on Saturday morning, was taken up at $15⅛ per barrel for No. 1's, and other numbers in proportion.—(Gloucester Telegraph, September 11, 1853.)

1853.—ARRIVALS FROM THE BAY.

Quite a number of vessels have arrived since our last from the Bay of Saint Lawrence. * * * Fish are reported scarce, and but few of the vessels are doing anything.—(*Ib.*)

1853.—THE SHORE FLEET.

Our harbor was filled up on Thursday with about 200 sail of fishing vessels. It was the largest fleet which has been in this season. * * * —(Gloucester Telegraph, October 8, 1853.)

1853.—DESTRUCTIVE GALE AND LOSS OF VESSELS AT THE BAY.

The Gloucester Telegraph of October 8, 1853, contains a report of several mackerel schooners in the Bay of Saint Lawrence during a heavy gale which occurred on the 29th of September.

1853.—ARRIVALS FROM THE BAY.

About 25 vessels have arrived home from the Bay of Saint Lawrence since Saturday morning. They bring no news of importance, but all report stormy weather and a scarcity of mackerel.—(Gloucester Telegraph, October 26, 1853.)

1853.—REVIEW OF THE MACKEREL FISHERY FOR 1853.

The season for mackerel is fast drawing to a close, but about six weeks remaining before the vessels will be hauled up. Present appearances indicate that the catch will be very small compared with last year. At this port not more than one-third as many mackerel have been packed as there were up to this time last year. The vessels which return from the bay do not average half a fare, and those which are fishing off this coast are doing no better comparatively. There are no mackerel around our Capes, which is unusual at this time of the year. This scarcity of the article has carried the price up higher than ever before known, and the tendency is still upward. Sales have been made in town, this week, of bay mackerel at $15\frac{3}{4}$ for No. 1's, $13\frac{3}{4}$ for 2's, and $8\frac{1}{8}$ for 3's; shore do. at $14 for 1's, $10\frac{3}{4}$ for 2's, $7\frac{1}{2}$ for 3's, and $5\frac{1}{8}$ for 4's.—(Gloucester Telegraph, October 5, 1853.)

1853.—REMINISCENCES OF CAPT. J. W. COLLINS.

In June, 1853, I went to the Gulf of Saint Lawrence, in the schooner "Valiant," leaving home about the middle of June. The mackerel were large that year in the Gulf, but rather scarce. Some of the vessels succeeded, however, in getting fine fares, but we were not so fortunate, since we brought back only 60 barrels of mackerel, though absent from home six weeks. Medium-sized mackerel were quite plentiful off the coast of Maine in August and September, and some of the vessels did

quite well. A curious thing, however, in connection with the shore-fishery that year was, that while mackerel could be caught to a considerable extent close into the shores of the out-lying islands and around the ledges, but comparatively few could be taken farther out to sea. The consequence was that many of the vessels were provided with boats in which the fish were caught. This was especially the case with those fishing round Monhegan Island, where a small fleet of vessels lay in the harbor, and the crews went out in boats round the island, catching the mackerel close into the rocks. The vessel I was in was one of this fleet. On several occasions we found excellent good fishing in our boats, frequently not more than a stone's throw from the surf on the shore.

1853.—SUCCESS OF THE SPRING MACKEREL FISHERY ON THE COAST OF THE UNITED STATES.

Several mackerel catchers have returned to Provincetown to pack, with liberal success. A large quantity of mackerel have been caught in and about the harbor in nets—prospect for fishing remarkably good.—(Barnstable Patriot, May 31, 1853.)

1853.—NEWBURYPORT VESSELS IN THE GULF OF SAINT LAWRENCE.

The Newburyport Herald, of Friday a. m., has a letter dated Cascumpeque, Prince Edward Island, September 15, which says:

"It is blowing a gale from the northeast, and this harbor is full of vessels, say 120 sail. Hereby I send you a memorandum of Newburyport vessels and their catch of fish. These vessels are all here in the harbor: 'Gentile,' 230 barrels; 'Paragon,' 100; 'Arctic,' 190; 'Equator,' 130; 'Lydia,' 370; 'Palm,' 60; 'M. C. Ames,' 20; 'Angelia,' 70; 'Ada,' 12; there is quite a fleet near Gaspe and some at East Point. As a general thing the fleet has been unfortunate."—(Barnstable Patriot, October 4, 1853.)

1854.—ABUNDANCE OF MACKEREL ON THE NEW ENGLAND COAST.

Mackerel were unusually plenty on the coast this year. Old fishermen declared them to be more so than at any other time within twenty-five years. Considerable quantities were taken from the wharves in Lynn.—(History of Lynn, Lewis & Newhall, p. 439.)

MACKEREL.—We learn from the Salem Register that mackerel continue abundant in the waters near the city. On Tuesday week, a leviathan of the mackerel species, three pounds in weight, was caught near Black Rock, and on the same day two others weighing five pounds each, were captured off Tompkins Island.

A correspondent of the Herald says that mackerel had made their appearance in great numbers during the past week at Danversport, and they have been caught by the bushel from the wharves and boats.—(Barnstable Patriot, August 8, 1854.)

1854.—Reminiscences of Capt. J. W. Collins.

In July, 1854, I again went on a mackerel trip to the Gulf of Saint Lawrence in the pinkey "Julia Ann." The Gulf mackerel that summer were large, though rather scarce on the greater part of the fishing grounds. A fleet of about fifty sail, of which our vessel was one, did remarkably well in August on a small spot of shoal ground lying off to the southwest of Cape Gaspé, and known to the local fishermen as *Yankee Bank*. Instead of fishing here as in the usual manner, by *lying to* and *drifting*, the vessels were all brought to anchor at a short distance from each other, and, while fishing, lay *sprung up*. As a rule the mackerel would take the hook only at night and early in the morning, at which times they would bite, perhaps, for an hour or two, while during the middle of the day scarcely one could be caught at all. The weather at this season was exceptionally fine, and the fleet lay for some weeks contentedly at anchor. Each morning more or less mackerel would be taken, and when they ceased biting, these were dressed and salted. In the same manner the fishermen were almost always sure of a "sundown spurt." Many of the vessels did excellently well, catching more than 200 barrels of fine large mackerel, for which they obtained a high price, and we, ourselves, succeeded in taking over a hundred barrels, with a small crew of nine or ten men. This amount, together with the fish we had previously caught, made us up a fine fare of 150 barrels, for which we obtained a high price. This year the schooner "Game Cock," of Hingham, was provided with a peculiar form of spring seine, by which it was expected that a school of mackerel which had been tolled alongside of the vessel might all be caught at one time in the net. The schooner was provided with long outriggers, from the bow and stern, by means of which the net could be drawn outward from her side, underneath the fish, in such a manner that they might be inclosed in a bag of netting—the edges of which would be at the water's surface—before they would be aware of it. This contrivance did not, however, succeed very well, and no attempts were made to use it, that I am aware of, after this summer in the bay.

1854.—Poor quality of the mackerel taken in the Gulf of Saint Lawrence.

The Gloucester Telegraph says that "in previous years the quality of mackerel taken at the Bay of Saint Lawrence has been mostly large and fat, but this year it has been different. In 1853 Gloucester returned over 20,000 barrels of No. 1 mackerel. This year there will be returned scarcely 5,000 of that No. 1"—(Barnstable Patriot, December 26, 1854.)

1855.—Mackerel fishery of Cape Cod.

Several mackerel fishermen arrived at different harbors on the Cape last week, having from 150 to 180 barrels each. The prospect of the fishermen is generally very good.—(Barnstable Patriot, August 28, 1855.)

1855.—SPRING FISHING IN BARNSTABLE BAY.

For a week past our bay has been enlivened with the presence of quite a fleet of vessels and boats, engaged in taking mackerel. They are quite abundant, and the most encouraging fares are realized. Yesterday a fleet of nearly two hundred sail was in sight from our office, and we learn that most of the crews have averaged some thirty barrels per day for some days past. Persons in boats have, in many instances, taken several barrels, and last week Capt. Ainsley Howes, of Dennis, took seven barrels in a single day. These are lucky times for our fishermen.—(Barnstable Patriot, May 20, 1855.)

1855.—REPORTED ABUNDANCE OF MACKEREL SOUTH.

The Newburyport Herald learns from one of the crew of the schooner "Flying Cloud," who arrived home by land on Friday, that all the vessels were rapidly filling up, and that the catch of mackerel out south, this year, will be greater than for many years past. He reports the mackerel to be of large size and of good quality, the coves and harbors being literally swarming with them.—(Gloucester Telegraph, June 6, 1853.)

1855.—FIRST ARRIVAL FROM THE SOUTH.

The schooner "Leader" arrived at Newburyport on Saturday. The Herald says that this is the first of the fishing vessels arrived from the southern coast. The fleet are reported as doing a fair business. The "Leader" packed out 104 barrels. Only $6 per barrel offered for the catch.—(Gloucester Telegraph, June 13, 1855.)

1855.—ONLY MODERATE FARES OBTAINED BY THE SOUTHERN FLEET.

The Newburyport fleet of southern fishermen are fast arriving home with moderate fares, and, at the present prices of mackerel, making but small profits. Several of them by falling in with fish off Cape Cod, on their way home, were able to add something to voyages that otherwise would not have paid.—(Gloucester Telegraph, June 27, 1855.)

1855.—ARRIVALS FROM THE BAY—UNPROFITABLE TRIPS.

Several vessels have arrived within a few days from the Bay of Saint Lawrence with tolerable trips of mackerel, so far as quantity is concerned, but the quality is poor, and the price is so low that hardly one of them will pay their expenses. This, however, is better than last season, when many of the vessels came home with only from 15 to 40 barrels each.—(Gloucester Telegraph, August 1, 1855.)

The Newburyport Herald states that the fishermen of that port are fast arriving from the Bay of Saint Lawrence with about average fares, and report the fleet not to be doing more than that. If prices keep up they will barely make a living business, and if they decline the fishermen will come out at the close of the season where they have often been of late years, without enough, take the fleet together, to square their bills.—(Gloucester Telegraph, October 3, 1855.)

1855.—Large hauls in Halifax harbor.

The Halifax Colonist of the 3d instant says: "Large hauls of mackerel have been taken, within the last few days, along the shores from the head of the Basin to Portuguese Cove, wherever there was a seine set. Some of these fish will make superior No. 1's, and the quantity taken is valued at a very large sum of money."—(Gloucester Telegraph, November 14, 1855.)

1855.—The baymen.

All of the bay vessels have now arrived home but three, and those, we understand, are on their way. A larger quantity of mackerel has been taken this year than last, and some of the vessels have made a good year's work, but the average of the vessels is not much better than it was in 1854, the expenses of the business being so high and the quality of the mackerel being so low. The season closes later this year than usual, some of the packers having several trips still on hand to pack out.—(Gloucester Telegraph, November 28, 1855.)

1855.—Reminiscences of Capt. J. W. Collins.

The spring mackerel on the southern coast, in 1855, were small, averaging 12 inches or less in length. They were fairly abundant, but being so small, and also very poor, were low in price and scarcely worth catching.

In the summer mixed mackerel were very abundant in the Gulf of Saint Lawrence. It should, however, be mentioned that but few of these were of large size, that is, of suitable size to cull as No. 1 fish. The great majority of the mackerel were of small size, ranging in length from 10½ to 12 inches. These were exceedingly plentiful, and, especially during the early part of the season, took the hook very readily, so that some of the vessels succeeded in obtaining full fares in a very short time, in fact, in some cases the only limit being the time required by the crews to catch and dress the fish.

I went south early in May in the schooner "Matilda," about 45 tons, old measurement. We fished principally at Sandy Hook and along the back side of Long Island. The best day's fishing (about 30 wash-barrels) was obtained a little to the westward of Montauk Point. We were absent about four weeks, bringing to Boston a fare of about 50 barrels of salt mackerel.

About the middle of June I went to the Gulf of Saint Lawrence in the same vessel. Our skipper had been one of the "lucky ones" who had succeeded in getting a fare of large mackerel on Yankee Bank the previous summer, and being fully impressed with the idea that he could again do the same, and thinking the small mackerel hardly worth saving, he made it a rule to throw away all but the largest fish during the first part of the trip; it often happened that, from a catch of twenty to

twenty-five barrels, we would not save more than two or three barrels. The result of this was that a large part of the best fishing season passed away almost unimproved by us. In the end, after four months absence, we had to return home with only 160 barrels of mackerel, considerably less than a full fare.

1856.—Relative importance of the shore and gulf of Saint Lawrence mackerel fisheries.

According to the Cape Ann Advertiser, the shore mackerel fishery in 1856 was very unsatisfactory, the mackerel refusing to take the hook. The bay fishery was fairly successful.

1856.—The mackerel fishery of New England.

The Gloucester Advertiser of January, 1857, reviews the season of 1856 in the following manner:

"The first trips to the bay were very successful, and the prospect to the 1st of September very encouraging. The catch of mackerel exceedingly large. Mackerel, however, have rated low, and the poor success of the last trips to the bay proved very disastrous, and rendered the closing up of the season's work very poor. Many of the vessels have not paid their current expenses, and empty barrels and salt are left on the owners' hands."

1856.—Reminiscences of Capt. J. W. Collins.

In the summer of 1856 the small mackerel which were found the year before in the Gulf of Saint Lawrence had increased in size so that they ranged in length from about twelve to twelve and a half inches; though at this time, scarcely any large fish were found in the schools. In July I went on a mackerel trip to the Gulf in the schooner "Good Intent." After trying a week round the northern part of Prince Edward Island and on Bank Bradley, we went to the Magdalen Islands, where, about the eastern end of the group, we found mackerel abundant, and succeeded in obtaining a full fare in two or three weeks. After returning home and packing out our trip, we fished off the New England shore but found mackerel rather scarce, and, like those in the Gulf, of medium size. Many of the vessels did excellently well mackerel fishing in the Gulf of Saint Lawrence this year, bringing home two full fares.

1857.—Slim doings of the southern fleet.

Accounts from the southern fisheries have been received. The Boston Traveller says the catch has been very slim. A few vessels from Newburyport were reported. The "Atlas" had the largest number, 80 barrels; "Roanoke," 24; "Tyro," 10. The two first weeks of this month being considered the best of the fishing season in those waters, there is

a slight chance of their being able to increase their catch sufficient to meet their expenses. As a general thing the southern fishery does not pay to follow. The fleet to these waters every year diminishes, and will eventually be abandoned.—(Gloucester Telegraph, June 10, 1857.)

1857.—THE PRICE OF MACKEREL ENHANCED BY THE DEMAND FOR SHIPMENTS TO CALIFORNIA AND AUSTRALIA.

The active demand for mackerel for shipment to California and Australia, says the Boston Traveller, and the comparatively small catch thus far has caused an upward tendency in prices, and speculators are now paying for No. 2 $12.50, large 3's $9, and small 3's $8 per barrel, which are higher prices than we have ever before known. Heretofore Philadelphia has controlled the market for these fish, but the New Yorkers are now attempting to get this trade in their hands, and it is resulting very favorable to the fishermen. As new markets are being opened for shipment, an impetus will be given to this branch of business heretofore unknown. Additions are making to the fleet in all our fishing ports, and upon the arrival of the baymen there is considerable competition by the New York and Philadelphia agents to secure fares. * * * —(Gloucester Telegraph, August 5, 1857.)

1857.—UNFAVORABLE REPORTS FROM THE BAY.

A vessel arrived from the Bay of Saint Lawrence yesterday reported that the vessels have done but little during the last four or five weeks. Mackerel were scarce and the weather very rough. During one fortnight but two days were obtained in which the vessel could go out to fish. Some of the vessels were coming home with half fares.—(Gloucester Telegraph, October 3, 1857.)

1857.—MACKEREL SCHOONERS STRANDED IN THE BAY.

A dispatch received in town this morning reports that eleven [Gloucester] vessels went ashore at Cheticamp last Thursday * * *—(Gloucester Telegraph, November 3, 1857.)

1857.—HIGH LINE OF THE MACKEREL FLEET.

Capt. George Janovin, of the schooner "Eleanor," which arrived yesterday, has made three trips to Bay Chaleur, and packed out 660 barrels of mackerel. This being the largest fare caught, Captain Janovin will be entitled to wear the laurels for this season.—(*Newburyport Herald.*—(Gloucester Telegraph, November 14, 1857.)

1857.—REMINISCENCES OF CAPT. J. W. COLLINS.

This was another year when mackerel were plentiful in the Gulf of Saint Lawrence, and at this time a considerable percentage of them

were of suitable size to be packed for large fish. As in previous years a large fleet of vessels went to the Gulf. In July I went to the bay in the pinkey "Rinaldo," 33 tons, old measurement. We fished principally along the north shore of Prince Edward Island from Eastern Point to Cascumpec. We succeeded in getting a full fare of mackerel—about 150 barrels—in five or six weeks, with a crew of seven men all told. I left the "Rinaldo" in the Strait of Canso on her return home, and shipped on the schooner "Mary Ellen," of Truro, Massachusetts, and returned again to the Gulf. During September and the first part of October, we fished on the north side, or in the waters termed the Bend of Prince Edward Island, mostly in the vicinity of Malpec, where was gathered a fleet of 200 or 300 sail of American mackerel schooners. Mackerel were fairly abundant in that locality, and many of the fleet did well. Having secured enough fish to complete our fare early in October we left the Bay and came home. After packing out our fish we engaged for a few weeks in fishing on the New England coast, though with indifferent success. The mackerel off our own shores that fall were mostly of small size and not very plentiful. The vessels that arrived home with their fares early in the fall were much more fortunate than those coming in at a later date, since the price of mackerel was very much affected by the financial panic, which occurred during that autumn. I left the "Mary Ellen" a couple of weeks before the close of the season and went home. But little was done, however, at mackerel-fishing late in the fall.

1858.—EARLY START FOR THE BAY.—INCREASE IN THE BAY FLEET.

Several vessels have already started on their first trip to the bay; and active preparations are now being made for the fitting out of others, which will be ready to sail in the course of a fortnight. The bay fleet will be larger this season than last by some thirty sail.—(Cape Ann Advertiser, May 22, 1858.)

1858.—ARRIVAL OF BAYMEN.—SCARCITY OF MACKEREL.

Since our last issue there have been several arrivals from the Bay with average fares. They report mackerel scarce when they left.—(Cape Ann Advertiser, July 31, 1858.)

1858.—EARLY START FOR THE BAY.—POOR SUCCESS OF THE SOUTHERN FLEET.

The George's fishing has been very dull for the last month or six weeks, and a large portion of the fleet are now in port, painting up and getting ready for the bay. It is calculated that by the last of the month two-thirds of the fleet will be there or on the way. This is earlier than usual, and we trust they will return with full fares.

Several vessels have arrived within a few days from the South, where they have met with poor success, getting few mackerel. Our vessels have never been very successful in the spring mackereling at the south.—(Gloucester Telegraph, June 2, 1858.)

The Yarmouth Register reports that the fishermen who have this spring made their usual trips to the southern waters have met with poor success, the best returning not over 25 barrels. Those who have arrived report the whole mackerel fleet as doing a poor business.—(Gloucester Telegraph, June 16, 1858.)

1858.—THE SHORE FLEET OFF CAPE ANN.

Quite a large fleet of mackerel catchers have been visible a few miles off the Cape during the past week. Several of them have done well; one vessel we learn having caught sixty wash-barrels in one day, others have taken twenty-five. They report mackerel plenty, but unusually shy of the hook.—(Cape Ann Advertiser, October 9, 1858.)

1858.—A GOOD BAY TRIP.

One of our vessels recently returned from the bay with a fare, the proceeds of which amounted to $4,234.—(Cape Ann Advertiser, November 25, 1858.)

1858.—LAST ARRIVAL FROM THE BAY.

The last of the bay fleet that is expected to arrive has made her appearance, and the mackerel season has closed.—(Cape Ann Advertiser, December 3, 1858.)

1858.—A BIG DAY'S WORK.

The Portland Argus states that one day last week two men engaged in fishing off that harbor caught mackerel which they sold for the sum of $90. The weight of the mackerel caught was about 1,500 pounds.—(Gloucester Telegraph, June 26, 1858.)

1858.—MACKEREL PLENTY OFF NEWBURYPORT.

Mackerel are now schooling in abundance in Newburyport Bay. The schooner Coral seined one day last week, in the vicinity of the Isle of Shoals, 30 barrels.—(*Ib.*)

1858.—SMALL SPRING CATCH.

The Hyannis Messenger says that the catch of mackerel up to the present time has not been a quarter of what it was last year.—(Gloucester Telegraph, July 3, 1858.)

1858.—THE SPRING FISHERY AT THE MAGDALEN ISLANDS.

We subjoin an extract from a letter dated Port Amherst, Magdalen Islands, 7th June. * * *

We are now taking large quantities of mackerel; in fact the greatest quantity ever taken here will be this spring. About 50 sail of strangers are now fishing here. * * *—(Gloucester Telegraph, July 7, 1858.)

1858.—THE BAY MACKEREL FLEET FROM GLOUCESTER HARBOR.

Two hundred and twelve of the fleet have gone to the Bay of Saint Lawrence, and are manned by 2,550 men and boys.—(Gloucester Telegraph, July 24, 1858.)

1858.—SLIM DOINGS OF THE EARLY BAY FLEET.

Schooner "John Gerard," from Bay Chaleur, mackereling, arrived at Newburyport 21st instant, and reports sailing with a fleet of 25 vessels, the largest catch of which was 80 barrels. As none of the fleet have arrived here, it is supposed they are Cape Cod or eastern vessels. Our skippers prefer staying the whole season in the bay to coming home with fares of 80 barrels and less.—(Gloucester Telegraph, August 25, 1858.)

Several vessels direct from the bay have arrived at Hingham and Cohasset the past week, with very slim fares, the highest catch being about 150 barrels. They report mackerel plenty but will not bite.—Gloucester Telegraph, September 8, 1858.)

1858.—THE MACKEREL FISHERY ALMOST A FAILURE.

The mackerel fishery seems to have been almost a complete failure so far this season, the number caught being small, and the fish small and poor. We trust something better may result from the fall fishing.—*Provincetown Banner.*—(Gloucester Telegraph, September 15, 1858.)

1858.—THE BAY MACKEREL FISHERY.

Though our vessels are not bringing full fares, the mackerel are very fine, all large and fat.—(Gloucester Telegraph, September 25, 1858.)

1858.—PARTIAL FAILURE OF THE MACKEREL FISHERY.

There is little hope now that any turn in the fisheries will render them profitable this year; but the latest accounts from the Bay of Saint Lawrence are more favorable, and those vessels that succeed in taking full fares—since the mackerel are uncommonly good and the prices higher—will do well. On our shore the mackerel fishing is not much, but the vessels here employed in pollock catching have the promise of a good season. The fish that have annually struck into our bay in

large schools for some years past, are now plenty.—*Newburyport Herald.*—(Gloucester Telegraph, October 13, 1858.)

1858.—MACKEREL MARKET.—DOINGS OF THE SHORE FLEET.

Since last reported the market has been inactive. The shore fleet of mackerel catchers do not report any success. Last sales at $12.50, $10.50, and $8.31, for Nos. 1, 2, and 3.—(Gloucester Telegraph, October 27, 1858.)

The Yarmouth Register reports the arrival last week of a fleet of some 50 sail of fishermen at Wellfleet, with from 10 to 25 barrels each. They sailed again on Tuesday for another three weeks' cruise, and if not more fortunate their gross earnings will be very small.—(Gloucester Telegraph, November 3, 1858.)

Over 100 sail of mackerel catchers, says the Provincetown Banner, tarried in our harbor over Sunday. As yet they have not paid their way, but still have a faint hope to do something before winter sets in. * * * —(Gloucester Telegraph, November 10, 1858.)

1858.—SUCCESS OF THE GLOUCESTER BAYMEN.

Before the last of the present month the last of our fishing fleet will have returned and the season will be finished. Some time since, in the midst of discouraging news from the bay fleet of mackerel catchers, we ventured to predict that they would bring at least one full fare of mackerel which would command high prices. All that have returned up to the present writing have proved the truth of our prediction, and those which are yet to come—about 75 sail—if the last news be reliable, will bring average fares. * * * But reports from other places seem to indicate that the business has been almost a failure this season. The Cape Cod fishermen, especially, as we learn, have been peculiarly unfortunate. Their vessels sent into the bay early, but the poor prospect discouraged them, and they returned home to meet the same hard luck, and unless they meet with remarkable success in the few days that remain of the season, vessels and crews will be deeply in debt.—(Gloucester Telegraph, November 13, 1858.)

1858.—THE TOP AND BOTTOM OF THE MACKEREL FISHERY.

One of our vessels recently arrived from the bay with a fine fare, the total proceeds of which amounted to $4,234. As a contrast to this we will mention the fact that one which had been absent a number of weeks brought home only 37 barrels.—(Gloucester Telegraph, November 24, 1858.)

1858.—LAST ARRIVAL FROM THE BAY.

The last of the bay fleet that was expected to arrive made her appearance on Saturday.—(Gloucester Telegraph, December 1, 1858.)

1858.—POOR SUCCESS OF THE NEWBURYPORT BAY FLEET.

The whole bay fleet of Newburyport, comprising upwards of fifty vessels, have returned for the season. The Newburyport Herald says this has been a very hard year for the fishermen, and adds: "The result of this season may be briefly summed up. The schooner, Young America, takes the lead, having packed out 500 barrels, stocking $6,150. But seven vessels have more than paid their expenses; six others have barely met their expenses, and the remainder have sunk money."—(Gloucester Telegraph, December 4, 1858.)

1858.—REMINISCENCES OF CAPT. J. W. COLLINS.

Early in June I again started for the Gulf of Saint Lawrence on a mackerel trip on the schooner "Good Intent." During June and the early part of July, we fished along the west shore from Point Miscou to Richibucto; around the north cape of Prince Edward Island, and on Bank Bradley. Mackerel were found most plentiful during June and early July about Point Escuminac and in Miramichi Bay. On one occasion in June the schooner "Governor," of Deer Isle, Maine, with a crew of 12 men, caught more than a hundred wash-barrels in Miramichi Bay, and nearly every vessel in the fleet, which numbered 40 to 50 schooners, did well. About the middle of July we went down to the east point of Prince Edward Island where our skipper had secured a good fare of fine mackerel the year previous. Here we continued to cruise for five or six weeks, going as far up the north side of the island as Saint Peters, and as far as Surrey and Georgetown on the south side. We found mackerel scarce, however, in that locality, and were obliged to return home with a small fare of about 150 barrels; though vessels fishing at the Magdalens secured full fares in a much less time. There was a large fleet fishing off the New England coast that fall, and we also engaged in the shore mackerel fishery after packing out our bay trip. Mackerel were not abundant, however, off our own coast, and we did rather poorly. In October I left the "Good Intent," which was about to haul up, and shipped in the schooner "E. W. Merchant," of Gloucester, in which I continued for about three weeks. During that time we fished all the way from Cape Ann to Chatham, including Middle Bank and Barnstable Bay. Our success, however, was limited, since we caught only about 30 barrels of mackerel. The "Merchant" was the first real clipper-schooner in which I had sailed. Her performances seemed to me, at that time, quite wonderful.

1858.—SUCCESS OF THE GILL-NET MACKEREL FISHERY IN CAPE COD BAY.

The Provincetown Banner of early December, 1858, contained the following paragraph:

"FAT MACKEREL.—The bay was visited last week with one of the

finest schools of mackerel that was ever known to enter these waters. Those who set nets on Thursday and Friday nights were exceedingly fortunate. On both of those nights every net meshed more or less fish, while some of them were so loaded with mackerel as to sink; some men took as high as 1,500 in one night from their nets. These mackerel are large and fat, packing about 200 per barrel. All those fish do not take the hook at this season of the year; those who expect a share of them are under the necessity of providing themselves with nets. To knit these affords employment during the winter to those who follow the business or are hired by them. The success of those who have supplied themselves with this apparatus for taking these mackerel is an incentive to others, who have neglected to provide it, to spend their leisure moments in furnishing themselves with the means of obtaining a share with their neighbors in future years. While the profits of the mackerel taken in the bay last week will not in all cases, perhaps, fall into the hands of the most needy, they will be quite generally distributed and many, both in this town and Truro, are to be congratulated most heartily on their good fortune. Last night 2,000 mackerel were taken off here in three nets—a great haul."—(Barnstable Patriot, December 7, 1858.)

1859.—DECLINE OF THE SOUTHERN MACKEREL FISHERY.—SMALL FLEET FROM GLOUCESTER.

The practice of going south for mackerel has almost died out of late years, and this year there are but three or four vessels in the business. Some of the vessels who go in quest of bait, however, take mackereling apparatus with them, to use in case they should be so fortunate as to fall in with a school.—(Cape Ann Advertiser, May 20, 1859.)

1859.—GROWING IMPORTANCE OF GILL-NET FISHING AT CAPE COD.

Net mackereling seems to be a growing and important business. The absence of the bluefish in the bay seems to be hailed with inward satisfaction by the citizens of Provincetown, and they confidently predict the return of the palmy days of profitable boat and net fishing, and the consequent thrift to their town if this piratical enemy of almost every other species of fish has taken his final departure from their waters.—(Cape Ann Advertiser, July 1, 1859.)

1859.—SPRING MACKEREL FISHING.

Schools of mackerel reported in Boston Bay June 5–10, 1859. Several vessels returned from the south with good fares. Fleet has been small, but those that have been engaged in this southern fishery did better than the average of seasons. Largest catch, 140 barrels of small mackerel, selling at $9.50.

1859.—ADVANTAGES OF GILL-NETTING.

HABITS OF FISH.—Mackerel fishermen once found fish inclined to take the hook, as blueflsh, by trawling. Late years they take the hook as soon as it is thrown into the water, and a vessel needs but a few hours for a full supply if they will "bite." Now it would seem that the water may be full of them and not one of them can be taken by the hook. At the present, in Provincetown Harbor, none are taken by the hook, while the whole harbor is crowded full of them. The introduction of nets has been a great gain in the way of taking them, and it is predicted by some that mackerel will soon be taken upon this coast only by nets. However this may be, it would seem that a change of mackerel would render it desirable that there should be the corresponding change in the mode of taking them.—(Barnstable Patriot, June 28, 1859.)

Our Provincetown neighbors seem to have a special benefit this season. The harbor is crowded full of mackerel, and though they will not take the hook, they are abundantly meshed in the nets which are set for them. Some nights as many as two thousand fish have been taken in the nets of a single man.—(Cape Ann Advertiser, July 1, 1859.)

1859.—FITTING AWAY OF THE BAY FLEET.—A NEW FEATURE IN THE MACKEREL FISHERY OF TAE GULF OF SAINT LAWRENCE.

Most of our vessels are making preparations for the bay. The prospects of a good season's work are very flattering, and the number of vessels this season will exceed that of last by a large number.

Some of the mackerel fleet in the bay fishery will take dories this season. This is a new feature, and will doubtless prove an advantageous one. Quite a large fleet of cod fishermen are now fitting for bay mackereling.—(Cape Ann Advertiser, May 20, 1859.)

1859.—REPORTED ABUNDANCE OF MACKEREL IN MASSACHUSETTS BAY.—SUCCESS OF THE SOUTHERN FLEET.

Large schools of fresh mackerel have been reported in Boston Bay the past week. Several of our mackerel catchers have returned from the south with good fares. The fleet at the south has been very small, but those that have been there do rather better than the average of seasons. The largest catch yet landed has been 140 barrels of small mackerel. It will be seen by our market quotations that they bring a good price.—(Cape Ann Advertiser, June 10, 1859.)

1859.—SUCCESSFUL USE OF THE PURSE-SEINE OFF CAPE ANN.—SCHOOLS OF MACKEREL IN GLOUCESTER HARBOR.

Last week large quantities of mackerel were seined by vessels on the north side of the Cape.

Our harbor has been visited by schools of mackerel the present week, but they do not take to the hook.—(Cape Ann Advertiser, July 1, 1859.)

1859.—A SCHOOL OF MACKEREL IN GLOUCESTER HARBOR.—ARRIVALS FROM THE BAY.—PROSPECTS.

A large school of mackerel in the harbor yesterday, near Day Bar; large and fat; several dories took good loads with hook and line; schooner "Jane," of Swampscott, seined a good number.

Twelve vessels arrived from the bay with moderate fares the past week. They do not speak very encouragingly of the fleet, many of the vessels having done nothing, and others have succeeded in getting from 50 to 100 barrels. Probably the whole fleet in the bay will not average 50 barrels apiece.

Our fishermen, however, are not discouraged, but rely on making better trips in the fall.—(Cape Ann Advertiser, August 19, 1859.)

1859.—MACKEREL FISHING IN THE BAY.—PRICES, ETC.

Within the last three days 12 vessels have arrived from the bay, averaging 140 barrels each. The fleet generally have not been very successful. Sales yesterday at 16, 13½, and 8½ for 1's, 2's, and 3's.—(Cape Ann Advertiser, August 19, 1859.)

The prospect for a successful fishing season in the bay is quite encouraging. * * * If the second trip to the bay should prove successful, the business of the year will wind up profitably, and our owners be prepared to commence winter fishing.—(Cape Ann Advertiser, August 26, 1859.)

1859.—THE BAY AND SHORE FLEETS.

There are about 240 sail of vessels yet to arrive from the bay; a few have arrived; report very rough weather; no chance to fish for a month past, and the prospect for a fall catch rather discouraging; a few vessels reported with good trips; some have had bad luck (50 to 75 barrels), and will probably hold on till late in November.

The shore fleet have done nothing the past week, as the weather has been very cold and blustering. The prospect now is that unless mackerel make their appearance off Chatham, the fall catch will be small indeed. Some of the mackerel-catchers have gone into pollock-catching, meeting with good success.—(Cape Ann Advertiser, October 28, 1859.)

1859.—REMINISCENCES OF CAPT. J. W. COLLINS.

Early in June, 1859, I left the brig "Houston," in which I had made a coasting trip, in Providence, R. I.; went on to Gloucester and shipped in the schooner "Arcturus" for a trip to the Gulf of Saint Lawrence. This schooner was then on the stocks, but was launched in a few days, made ready for sea, and we started for the bay. The mackerel were of large size in the Gulf that year, but exceptionally scarce. On our first trip we cruised over nearly all of the fishing-grounds that are usually frequented at that season, and although our vessel was commanded by one of the most expert skippers then sailing from Gloucester,

we obtained only 100 barrels of mackerel—considerably less than half a fare. We left the bay in August on our return home, and having packed out our fish and refitted, returned again for a fall trip. We succeeded in catching 150 sea-packed barrels that autumn, which was more than an average for the fleet. The price of mackerel was good, since, to the best of my recollection, we got $14.50 per barrel for our No. 1 fish. My own share for the season's work, from the 1st of June to November, amounted to $150. The mackerel were also scarce on our own shore so far as I can remember, and nearly all of the New England fleet resorted to the Gulf of Saint Lawrence. Several vessels secured excellent fares of fine large mackerel in the summer of 1859 along the south shore of the Saint Lawrence between Cape Gaspe and Cape Chatte, the best catches being obtained in the vicinity of the Magdalen River and Mount Louis. Captain Peter Sinclair, in the schooner, "C. C. Davis," did excellently well, perhaps better than any others, bringing home a full fare of extra large mackerel, for which a high price was obtained. These fish were taken chiefly in boats which went out from the vessel and caught the mackerel close into the rocks and along the reefs making out from either side of the coves. In some instances when the mackerel *played in* to the coves, where the vessels lay at anchor, the fishing was carried from the decks of the schooners which were *sprung up* for the purpose. We had also cruised along this coast in July, but the mackerel not then having arrived on the shore in any numbers, our skipper fearing to remain longer, decided to return to the more frequented fishing-grounds in the lower part of the Gulf. An incident transpired, however, before leaving this section that may be worthy of mention here. Failing to find the mackerel inshore we one day stood off between Magdalen River and Anticosti Island, where we caught 17 barrels of fine large fish. It is altogether probable that these mackerel were a part of the school that a short time thereafter were found close in to the shores.

1859.—Prices for mackerel caught in 1858.

Mackerel, no sales reported some small lots are held at $16.25 and $14.26, Nos. 1 and 2.—(Cape Ann Advertiser, May 13, 1859.)

1859.—A good trip from the bay.—Big stock.—Other arrivals. Prices, etc.

Schooner "C. C. Davis" from the Bay Saint Lawrence, arrived yesterday with 250 barrels of large mackerel. Advices from the fleet there are a little more favorable.—(Cape Ann Advertiser, November 4, 1859.)

Schooner "C. C. Davis" made good trips—two trips to the bay, packing 535 barrels, sold for $7,487.74, leaving over $6,400 net profit after deducting expenses. Add to this $5,600 made in fishing, and we have the handsome net stock of over $12,000 in a single season. Who can beat this?

About 100 sail of baymen have arrived the past week, and our streets have presented a lively appearance. Clothing dealers doing a good business. There are now some 50 or 60 sail to arrive. Some do poorly. One arrived with 20 barrels, another with only 8 barrels. The catch will fall greatly below last season. The shore fleet have mostly given up. Mackerel season is about over, and the fleet will soon haul up. Prices of mackerel: $14.50 and $14.75 for 1's, $12.50 and $12.75 for 2's.—(Cape Ann Advertiser, November 18, 1859.)

1859.—A LATE SCHOOL IN MASSACHUSETTS BAY AND AT CAPE COD.

Mackerel again made their appearance in our waters last week, and the few vessels who were fortunate enough to be out succeeded in doing a pretty good business, some of them taking as high as 60 barrels. Some vessels which had been hauled up fitted out again, and will be ready to try them as soon as the weather is suitable. It is rather late in the season, however, to expect any great number of mackerel will be taken, but if there be any catch the Gloucester boys will be on hand to get their share of them. Mackerel quiet the past week. Prices $14.50 for 1's, $12.50 for 2's.—(Cape Ann Advertiser, November 25, 1859.)

1859.—MACKEREL MARKET FOR 1859.

BOSTON, *January* 4, 1860.—Mackerel have sustained very full prices throughout the year, and have been quite steady. In January last prices ranged from $15 to $16 for No. 1's, $14 to $14.50 for No. 2's, and $9.75 to $10 for No. 3's, and they were the current rates for the first four months of the year. In May prices advanced for No. 1's and No. 2's, and ruled at $16.75 to $17 for No. 1's, $15 to $15.50 for No. 2's, while No. 3's were sold at $9.50 to $9.75 a barrel. The first arrival of new No. 3's sold at $10.25 to $11, but prices soon declined to $8 and $9. The principal sales for some months past have been $14.50 to $15.50 for No. 1's, $12 to $14 for No. 2's, and $9.50 to $10 for No. 3's, closing firm for all kinds. Mild weather prolonged the fishing season later than usual, but it is believed that the catch this year will fall short of the last.

The highest and lowest prices for some years past have been as follows:

	No. 1.	No. 2.	No. 3.
1859	$14 00 to $17 00	$11 50 to $15 50	$8 00 to $11 00
1858	9 00 to 16 00	8 90 to 14 00	5 00 to 11 00
1857	8 00 to 14 00	7 00 to 13 00	6 50 to 9 00
1856	9 00 to 16 00	7 00 to 8 00	4 75 to 5 25
1855	13 00 to 18 00	7 00 to 10 00	3 50 to 5 00

1860.—AN EARLY START FOR THE BAY.

Two vessels, "Charger" and "Fleetwing," the first of the season, sailed from this port for Bay of Saint Lawrence Wednesday [May 23]. About 20 sail will be ready next week, and in a few weeks the greater portion of the fleet will be ready.—(Cape Ann Advertiser, May 25, 1860.)

1860.—THE NEWBURYPORT MACKEREL FLEET.

The Newburyport Herald, April, 1860, states that the bay fleet has nearly abandoned the practice of going south for mackerel in the early spring. But two schooners are fitting out, the "Lola Montez" and the "Eleanor," and they are stimulated by the high price offered for 3's—$10 a barrel. Labrador fleet has usually been successful. Would not pay for a single year, from great cost of outfits, but those who continue for several years, till nets and other outfits are used up, find it remunerative.

1860.—A PROPOSED INNOVATION IN THE MACKEREL FISHERY.

There is talk of organizing a company for the purpose of fitting out a vessel to engage in the mackerel fishery of the North Sea.—(Cape Ann Advertiser, March 23, 1860.)

1860.—FIRST ARRIVAL FROM THE BAY.—REPORTED SMALL CATCH.—MACKEREL PLENTY ON NEW ENGLAND COAST.

Schooner "Light of Home" arrived from the bay with 70 barrels; been gone ten weeks. This is the first arrival of the season, and a little earlier than usual. Have reports for the following vessels: "St. Cloud," 125 barrels; "Cyrena Ann," 125; "J. J. Burns," 120; "Anglo Saxon," 100; "North Star," 100; "Flora Temple," 80; "Electric Flash," 90; "Oronoco," 25; "Shooting Star," 75; "Chas. McDonald," 75; "Saint Louis," 90. The fleet will probably average about 60 barrels. "Light of Home" will fit for another trip.

Shore mackerel quite plenty to the eastward; one vessel from the Point has caught 90 barrels on the hook.—(Cape Ann Advertiser, August 3, 1860.)

1860.—MACKEREL ABUNDANT OFF CAPE ANN.—A GOOD CATCH.

Large quantity of mackerel taken off Rockport on Saturday last. One seine obtained 225 barrels of pretty fair mackerel, while quite a number of barrels were caught by dory fishermen. Quite a streak of luck.—(Cape Ann Advertiser, July 13, 1860.)

1860.—ABUNDANCE OF MACKEREL OFF THE MAINE COAST.—SCARCITY IN THE BAY.

The shore fleet have met with a streak of luck quite unprecedented, mackerel of good size swarming the eastern shores of Maine, and take

the hook very readily; largest haul is 160 bbls. brought in by the "Electric Flash," all caught on the hook in about ten days. Glad of the luck, because for many years they have done poorly. Bay fleet advices report mackerel scarce.—(Cape Ann Advertiser, August 10, 1860).

1860.—ARRIVALS FROM THE BAY AND SHORE FLEETS.

Eighteen vessels arrived from the bay during the past week, bringing in 1,743 barrels to a vessel, averaging 97 barrels to each vessel; 12 of shore fleet arrived with 1,305 barrels—108 barrels to a vessel. From the bay 9,000 barrels less this year than last. Many have not paid their outfit bills. Shore fleet have done a little better, but not first rate.

Quite a number of the Cape Cod mackerel fleet in the harbor yesterday; brisk trade retailing mackerel at 5 cts. lb.—(Cape Ann Advertiser, September 14, 1860).

1860.—ARRIVAL OF SOME OF THE BAY FLEET.

Since our last 12 vessels have arrived from the bay with an aggregate of 1,377 barrels of mackerel.—(Cape Ann Advertiser, August 24, 1860.)

1860.—GOOD CATCH OF A COHASSET HOOKER OFF THE NEW ENGLAND COAST.

Schooner "Harriet Torrey," of Cohasset, caught 1,500 barrels of mackerel in 1860. Wm. Berdick, of Cohasset, caught 137 barrels with his own hook, which will clear, above expenses, $548. Shore fleet have all done well. Bay fleet have done poorly.—(Contemporary record.)

1860.—REMINISCENCES OF CAPT. J. W. COLLINS.

In July, 1860, after returning home from a cod-fishing trip to Cape North I went to the Gulf of Saint Lawrence on a mackerel cruise, in the schooner "Ocean Traveller" of Gloucester. Leaving home about the 1st of July, we passed through the Strait of Canso on the 5th, passed up along the north side of Prince Edward Island; along the west shore, crossed Bank Orphan, fished around Bonaventure, and up by Cape Gaspe and Cape Rozier without finding mackerel enough to induce us to remain in any one place, though we tried frequently on our way. In the cove at Cape Rozier we anchored, with a number of other vessels, and succeeded in catching 21 barrels *at a spring* in three or four days, getting a few mackerel each morning and evening. Influenced by the success which had been met with by several vessels the previous year along the southern shore of the Saint Lawrence we, as well as many others of the mackerel-catchers, went there fitted for inshore fishing, taking along with us four or five dories in addition to our yawl-boat which was carried at the stern. Leaving Cape Rozier, where the mackerel had ceased taking the hook, we ran up around the coast to Magdalen River, where we stopped and tried for mackerel. We continued to cruise

along the shore for about five weeks, going as far north as Mount Louis, but met with extremely poor success; so much so, indeed, that after being in the bay nearly six weeks we had taken only 27 barrels of mackerel, including the 21 barrels caught at Cape Rozier, of which mention has been made above. At last, feeling fully convinced that mackerel would not strike in on the south shore of Saint Lawrence, and the advanced season and state of the weather warning us of the risk of remaining any longer on that coast, we proceeded south and began fishing around the Magdalen Islands, where, in about three weeks, we succeeded in catching enough mackerel to make us up a fare of 125 sea-packed barrels, which, for the time and place, was much better than an average. For the No. 1 mackerel on this trip (a large percentage was No. 1's) we obtained $18.50 per barrel. My own share for the trip was $124.25. After returning home and packing out our bay trip, we engaged in the mackerel fishery off the New England coast. The contrast this year between the Gulf of Saint Lawrence and the New England coast was quite remarkable, since in the former the mackerel were almost all of large size and very scarce, as has been shown, while on our own coast mackerel were of medium size, averaging about 12 inches long, and very abundant. After returning from the bay we made two trips, taking altogether 275 sea-packed barrels of mackerel. For the first fare of 175 barrels we got $8.50 per barrel; but for the last trip the price was lower. A large portion of the mackerel catchers were fishing off the New England coast during the summer and autumn, and it is perhaps safe to estimate that at one time a fleet numbering five or six hundred sail were engaged in fishing for mackerel in Barnstable Bay. The mackerel at one time during the fall were exceedingly abundant off Truro and Wellfleet. This was very advantageous to the fishermen, since in this partially sheltered bay fishing could be carried on much longer than in other places, and, consequently, a great amount of mackerel were taken. But little was done, however, outside of Cape Cod along its eastern shore, from the Highland to Chatham, as has been the case in other years. The mackerel which had remained for several weeks in Barnstable Bay, when once outside of Race Point and on their way south, moved so rapidly that but comparatively few were taken.

1860.—SUCCESSFUL USE OF THE PURSE SEINE OFF CAPE ANN.

A large quantity of mackerel were seined off Rockport on Saturday last. One seine obtained 225 barrels of pretty fair mackerel, while quite a number of barrels were caught by dory fishermen.—(Cape Ann Advertiser, July 13, 1860.)

SMALL CATCH BY THE NEWBURYPORT FLEET AT THE SOUTH.

Southern fleet have all returned, and are now fast leaving for the Bay of Chaleur. Catch south small. "Sarah Jane" took 112 barrels of mackerel, and 50 of bait. Largest catch.—(Newburyport Herald, June 28, 1860.)

HOOK AND LINE FISHING OFF THE NEW ENGLAND COAST.

THE SHORE FLEET.—The largest trip brought into this port is by the "Sunnyside," 200 barrels, after an absence of three weeks. Schooner "Ripple" arrived lately with 100 barrels in 10 days.—(Cape Ann Advertiser, August 24, 1860.)

1860.—SPRING AND GULF MACKEREL FISHERY.

The Cape Ann Advertiser of May 4, 1860, remarks:

"A few vessels have started for the south to prosecute the mackerel fishery. The number will be less than any previous season, owing to the ill-success of this branch of the fisheries of late. A large number will leave for Bay Chaleur the latter part of May and early in June, as the George's fishery is not very profitable at present."

1860.—THE SOUTHERN MACKEREL FLEET.

The Cape Ann Advertiser of June 8, 1860, announces that six vessels had arrived since the last issue of the paper, the average being 100 barrels, and the prospect very good.

1860.—SPRING AND GULF MACKEREL FISHERY.

The Cape Ann Advertiser of June 15, 1860, states as follows:

"The southern fleet have nearly all arrived home and are fitting away for the bay. Late arrivals report the mackerel as being very small, the large ones having struck off to other waters; evidently the mackereling season at the south is about over. Vessels did better than last year."

1860.—FISHING ON THE COAST OF MAINE.

Mackerel of good size are swarming the eastern shores of Maine, and take the hook very readily. The largest haul brought into this port is 160 barrels, by schooner "Electric Flash," all caught on hook in about ten days.—(Cape Ann Advertiser, August 10, 1860.)

1860.—THE FALL MACKEREL FISHERY IN CAPE COD BAY.

The Gloucester Telegraph of December 19, 1860, quotes from a recent number of the Yarmouth Register to the effect that mackerel had never been more numerous in Cape Cod Bay than during the four preceding weeks. They would not bite, but were caught in great abundance in nets. One man took from his nets set in Provincetown Harbor 3,000 mackerel, valued at 7 cents apiece.

November 23, mackerel were very abundant off Billingsgate Point. The Yarmouth Register stated that they were being taken in Cape Cod Bay in the latter part of November in large numbers.

On November 24 the Lieutenant's Island weir, at South Wellfleet,

captured 118 barrels at one tide.—(Gloucester Telegraph, November 28, 1860.)

Mackerel of medium size were this fall exceedingly abundant about Cape Ann and other points along the coast of Eastern New England.

In October there was a large fleet of perhaps 300 sail in Barnstable Bay. The vessels had followed the mackerel from Portland to Cape Ann and across Massachusetts Bay.—(Captain Collins.)

1860.—MACKEREL IN THE GULF OF SAINT LAWRENCE.

In 1860 mackerel were quite scarce in the Gulf of Saint Lawrence, though of large size. Nearly all of the vessels which went to these waters early in the season fished off the coast of New England in the fall. No. 1 bay mackerel were sold at $18.25 a barrel, and No. 2's, taken off the New England shore, sold for from $7 to $8 50 per barrel.

1860.—SPRING MACKEREL FISHERY.

SOUTHERN MACKEREL.—Six vessels have arrived from the south since our last issue with very good fares, averaging about 100 barrels to a vessel. They report the prospect good. * * *—(Barnstable Patriot, June 12, 1860.)

1861.—FALL MACKEREL FISHERY AT CAPE ANN.

Five weir-loads were taken in a seine off Rockport, at one haul, August 28.—(Cape Ann Advertiser, August 30.)

1861.—FIRST MACKEREL TAKEN.

The first mackerel of the season was taken May 20.—(Cape Ann Advertiser, May 24, 1861.)

1861.—NOTES ON SOUTHERN FISHERY.—SCARCITY OF MACKEREL.

Reports from Newport last week, says the Newburyport Herald, state that fish are very scarce, and that 60 barrels is the largest fare yet caught. Many of the vessels have caught but 20 barrels. They are determined to persevere, but it is evident unless they meet with an unusual "streak of luck," the business will prove a losing one. A large fleet of Cape vessels were in Newport on Sunday week, with small fares on board.—(Barnstable Patriot, June 11, 1861.)

1861.—SPRING MACKEREL FISHERY IN CAPE COD BAY.

MACKEREL.—The mackerel fishery in the vicinity of Barnstable Harbor has been doing a good business for some days past. Several of the boats have taken 3,000 each, and yesterday a new school came inshore, increasing their prospects for a profitable spring business.—(Barnstable Patriot, May 28, 1861.)

1861.—SPRING MACKEREL FISHERY.

THE MACKEREL FLEET.—Sixty barrels, the largest trip caught yet. —(May 31, page 2, column 2, Cape Ann Weekly Advertiser, 1861.)

1861.—UNFAVORABLE NEWS FROM THE SOUTHERN FLEET.—SAILING OF THE FIRST OF THE BAY FLEET.

Schooner "Shooting Star" arrived from the south on Tuesday, with 60 barrels mackerel; reports poor catch for most of the fleet; one or two have above 80 barrels.

About a dozen of the fleet have sailed for the bay, and quite a number are fitting away and will sail in a few days. Last year at this time there were many more vessels on their way to the bay than the present season.

There is yet a large stock of last year's catch on the wharves. Last year the catch of the previous season was exhausted long before June. —(Cape Ann Advertiser, June 7, 1861.)

1861.—A BIG SCHOOL OF MACKEREL IN GLOUCESTER HARBOR.—GOOD CATCH OFF ROCKPORT.

A large school of mackerel made their appearance in the harbor on Wednesday afternoon; some twenty boats were present, and there was quite a successful catch; many of the mackerel were of good size.

Five wherry-loads of mackerel were taken in a seine, off Rockport, at one haul, on Wednesday of last week.—(Cape Ann Advertiser, August 30, 1860.)

1861.—FIRST ARRIVAL FROM THE BAY.

Schooner "Arcturus" arrived from the bay on Tuesday, with 240 barrels mackerel, absent six weeks. This is the first arrival of the season from the bay, and is somewhat earlier than usual, as vessels rarely arrive before August 1.—(Cape Ann Advertiser, July 19, 1861.)

1861.—QUICK BAY TRIPS.

Schooner "Joseph Story" returned from the bay; gone but little over four weeks; returning with a good fare. Schooner "Queen of the West," gone five weeks. These we believe are the shortest bay trips that were ever made from this port, the usual time of making a voyage being from ten to twelve weeks, and sometimes longer. Eight weeks is considered good time for a vessel in the bay fishing.

The mackerel, which have been schooling off this shore the past month, have struck off to other waters, consequently our market has been without its usual share of fresh mackerel of late.—(Cape Ann Advertiser, August 23, 1861.)

1861.—A FALL SCHOOL ON THE NOVA SCOTIA COAST.

We are pleased to hear that large quantities of mackerel have made their appearance along our shore, and hundreds of barrels taken by our fishermen.—*Halifax Express.*—(Cape Ann Advertiser, September 20, 1861.)

1861.—THE SHORE FLEET.—ITS SUCCESS.—REPORTED SCARCITY OF MACKEREL IN THE BAY.

Three hundred sail of fishermen in the harbor last Saturday; the fleet have done well of late, and report mackerel of good quality and quite plenty. Advices from the bay report mackerel scarce.—(Cape Ann Advertiser, October 11, 1861.)

The shore fleet did well last Saturday; some of the vessels got 90 wash-barrels. Quite a number got 30 to 50 wash-barrels of large, fat mackerel. Some 20 sail from the bay have arrived during the week, and report hard luck. The mackerel season, take it all in all, has not proved very profitable this year.—(Cape Ann Advertiser, October 25, 1861.)

1861.—CLOSE OF THE MACKEREL SEASON.—ADVANCE IN PRICES.

The mackerel fishing business is closed for the season; vessels are hauling up. The catch this season has been 25 per cent. below that of last year, and prices have ruled very low. Within a few weeks prices have advanced.

No. 1 mackerel, which were worth only $7 per barrel October 25, at this date sold for $13. No. 2's, now selling for $9, brought only $5 in October.—(Cape Ann Advertiser, November 23, 1861.)

1861.—REMINISCENCES OF CAPT. J. W. COLLINS.

In the summer of 1861 medium-sized mackerel were very abundant off the New England coast, and some of the hookers obtained a catch of about 1,000 barrels or more, though the price was so extremely low, owing to the distracted condition of the country at the beginning of the war, that the fishermen obtained but little remuneration for their labor. Large mackerel were exceedingly rare, however, and as a consequence of much greater value than the smaller ones. In the Gulf of Saint Lawrence, also, mackerel were fairly plentiful, and there being a greater percentage of large fish, some of the vessels did much better, financially, than those which fished off our own shore. This was especially the case with those which remained late in the bay, or made their home passages in a leisurely manner, since, during November, the prices advanced very rapidly, so much so, indeed, that mackerel nearly doubled in value in the short space of two or three weeks. On the 16th day of August I left Rockport, for the Gulf of Saint Lawrence, in the schooner "Sarah B. Harris." At first we fished about the Magdalen Islands

and the north side of Prince Edward Island, and around its eastern point. Later in the fall we obtained some very good catches of mackerel off Cape Saint George, where there was a large fleet collected. Other vessels, however, about the same time, took a considerable quantity of mackerel about Margaree Island and Cheticamp. We left Port Hood for home on the 1st day of November and met with very boisterous weather, causing us to lay in harbor on the Nova Scotia shore for some days. Our passage was also further retarded by strong headwinds, while at sea, so that we did not arrive home until the 19th day of November. In the mean time, while we had been making our passage, mackerel had risen from $7.50 to $12 per barrel, and by the time we were ready to sell we were able to get $13.50 for our best fish. My own share amounted to $100, which was a sum rarely obtained from one trip by any fisherman in 1861.

1862.—Uncertainty of the mackerel fishery compared with that for cod.

Some of the Georgians make shares of $30 to $50 per man.

The mackerel fishery is quite uncertain, and if the fishermen make a poor season's work at mackerel, then George's Bank is made to discount, and from this source they draw the cash, in the shape of codfish and halibut.

George's Bank furnishes them with the ready cash, promptly paid, and dollars would be scarce indeed among them, were it not for this source of revenue.—(Cape Ann Advertiser, March 7, 1862.)

1862.—Southern mackerel fishery.—Fitting away of the fleet.

Quite a number of vessels are now being fitted out to prosecute the early mackerel fishery in southern waters. This branch of the fisheries has been prosecuted for several years past with but indifferent success, the vessels not making enough to pay for their outfit The vessels engaged in this business do not follow the George's fishing, but spend a month or six weeks in Southern waters, prior to going to the bay, in order to help make out a good season's work. The mackerel are generally small and poor, and the prices realized are not very lucrative.—(Cape Ann Advertiser, April 25, 1862.)

1862.—Vessels and men engaged in the Gloucester mackerel fisheries.

About 350 sail of vessels engaged in the fishery, from this port, averaging twenty men to a vessel, making an aggregate of more than 4,000 men that are required to man the fleet.—(Cape Ann Advertiser, May 8, 1862.)

1862.—FLEET FITTING FOR THE BAY.—SUCCESS OF THE SOUTHERN MACKEREL FISHERY.—LARGE FLEET IN GLOUCESTER.

Quite a large fleet of vessels will be ready to start for the bay immediately after the 4th.

The southern mackerel fleet have mostly returned from their first trips with average fares, and many have gone on a second trip, as mackerel are plenty.

Shore mackereling will be prosecuted quite extensively this season. Large fleet of mackerelmen were in port on Wednesday, mostly south-shore vessels fishing on the shore. It is unusual to see a fleet of mackerel catchers in our harbor at this time of year.—(Cape Ann Advertiser, June 27, 1862.)

1862.—THE EARLY BAY FLEET.

Quite a number of vessels are fitting for an early trip to the bay; will be ready to start June 1; no arrivals yet from the southern mackerel fleet.—(Cape Ann Advertiser, May 23, 1862.)

1862.—THE MACKEREL FISHERY IN THE GULF OF SAINT LAWRENCE.—FAVORABLE REPORTS.

Advices from the bay report vessels doing well. July 1 "Bridget Ann" had 150 barrels; "Cyrena Ann," 175; "Wide Awake," 130; "Electric Flash," 120; "Ocean Gem," 60. Weather unfavorable the past fortnight, and the mackerel taken thus far were rather poor.—(Cape Ann Advertiser, July 25, 1862.)

1862.—FIRST ARRIVAL FROM THE BAY.

One fare of 200 barrels of mackerel has arrived from the bay. Sold at $\$4\frac{7}{8}$ and $\$3\frac{7}{8}$ per barrel for large and medium 3's. The shore fleet have not done much of late.—(Cape Ann Advertiser, July 18, 1862.)

1862.—GOOD FARES FROM THE BAY.—PRICES AND QUALITY OF MACKEREL BETTER THAN IN 1861.

There has been quite a number of arrivals from the bay during the past fortnight, bringing in good fares. The quality of mackerel is said to be vastly superior to those of last season, and the prices are higher than last year.—(Cape Ann Advertiser, September 12, 1862.)

1862.—MACKEREL ABUNDANT IN IPSWICH BAY AND AT CAPE COD.—TEN ARRIVALS FROM THE BAY.

Shore mackereling good the past week. Ipswich Bay has been swarming with mackerel, and the mild, pleasant weather has been very favorable. A large school of mackerel have made their appearance at Cape Cod. Previous to the present month the catch has been small. Bay

trips arrive slowly, as most of the fleet will remain late in order to fill up with fat mackerel.—(Cape Ann Advertiser, October 10, 1862.)

Mackerel were quite plenty in the bay on Wednesday, and the shore fleet did a good day's work, some of them catching as high as 70 wash-barrels. The mackerel are quite large, and the best of them sell readily at $11 per barrel.—(Cape Ann Advertiser, October 17.)

The Newburyport Herald says: "The mackerel have been swarming in our bay for the last ten days; 200 vessels and any number of small boats were fishing. Vessels take from 5 to 40 barrels apiece. On Tuesday the fleet numbered 4,000 vessels, and the fish were so plenty that the 'Live Yankee,' with only 4 hands, brought in 10 barrels."—(Barnstable Patriot, October 14, 1862.)

1862.—A BIG CATCH BY A HOOKER.

Schooner "Nor' Wester" arrived from the Bay of Saint Lawarence yesterday. The day before leaving she took 123 wash-barrels of mackerel, the value of which is $1,000.—(Cape Ann Advertiser, July 14, 1862.)

1862.—REMINISCENCES OF CAPT. J. W. COLLINS.

In the season of 1862 mackerel were quite plentiful in the Gulf of Saint Lawrence, where the larger part of the fleet were engaged in this fishery. Off our own coast there was a school of mixed mackerel—much the greater portion being undersized—while among them were some very large fish. After making two trips' cod fishing to George's I took charge of the schooner "Hattie Lewis" and sailed for the Gulf of Saint Lawrence on a mackerel trip early in June. We fished principally on Bank Bradley, about the North Cape of Prince Edward Island, off Point Miscou and in the vicinity of Point Escuminac, taking a part of our fare, however, in the latter locality. On our first trip we caught 208 sea-packed barrels, which were nearly all No. 3's, and started for home early in July. After landing our fish we went back on a second trip to the Gulf; obtained a fare of 200 barrels and left the bay early in October. In the latter part of the fall we fished off Cape Ann and around Cape Cod. On one occasion we found mackerel quite plenty off Chatham and got 50 wash-barrels in one day; though the majority of these were undersized fish there were a few among them remarkably large; some specimens which I weighed, after they had been salted for a number of weeks, turned the scales at 2½ pounds. The following day we could find no fish in the same locality but struck mackerel in the afternoon about 25 miles in a southerly and easterly direction from Chatham, nearly down off the fishing-rip. These fish, which were moving quite rapidly in a southerly direction, were quite different from those caught the day before, since we did not find any large sized ones among them. On the third day the mackerel were gone, and although we ran to the southward 15 or 20 miles farther we

did not succeed in finding them. I have never, at any other time, with the experience of twenty-five years in the mackerel fishery, caught mackerel so far south in the fall as we did on this occasion. The exact date of this last catch I do not now remember, and can only say that it was some time about the middle of November.

1863.—First mackerel in Massachusetts Bay.

The first mackerel were taken in the vicinity of Gloucester May 26.

1863.—Southern mackerel fishery.

There will be but few vessels engaged in this branch of the fishery the present season, owing to the low price of poor mackerel and the great expense which attends fitting out vessels for this business. Salt which sold last year for $2 is now worth $4 per hogshead. Barrels have also advanced considerably; in fact, everything in shape of outfits for mackerel trips has nearly doubled in price. There is but one vessel fitting away at the present time, and we are informed that not more than six vessels at most will prosecute the business this season.—(Barnstable Patriot, June 9, 1863.) In May, 1863, the southern mackerel fleet was reported as doing a good business. The first vessels came into Gloucester June 1; average, 100 barrels each, which sold for $9 and $6.

1863.—Newburyport mackerel fishery.

The mackerel fleet have all arrived with good fares, which have all commanded good prices. We have had fewer vessels in the bay this season than for several years before; we think only eleven. The business had been too poor, the wages and outfits were too high, and there was at one time great danger from Confederate pirates, but the business has been very prosperous to those engaged. Other places have also fewer vessels this season; the aggregate catch, therefore, notwithstanding the success that has attended them, will be small, and consequently the market is very active. The number of barrels packed here will not be far from 6,000. As we are constantly having new markets open for our fisheries, the prices will be likely to advance even upon the present high rates. The last sales were $28 for mess, $12.25 for 1's, $10.25 for 2's, $8 for large 3's, and $5.56 for small 3's. Captain Brown, of the "Sea Spray," considering the time engaged, made the best trip, stocking $6,200.—(Barnstable Patriot, November 17, 1863.)

1863.—Dearth of experienced mackerel fishermen.

In 1863 there was a decided dearth of experienced fishermen at Gloucester and other New England ports on account of the numerous enlistments in the Army. The three hundred vessels fitted out that year for the mackerel fishery in the Gulf of Saint Lawrence were obliged to fill up a large portion of their quota of 4,000 men from green hands.

1863.—REMINISCENCES OF CAPT. J. W. COLLINS.

In the summer of 1863 mackerel were abundant in the gulf of Saint Lawrence and comparatively scarce on the New England coast. In July I started from Gloucester in the schooner "Sea-Witch" on a mackerel trip to the Gulf. We fished about Bank Bradley, North Cape of Prince Edward Island, and the Magdalens, securing a full fare of 250 barrels in four weeks. The last catch of the trip was made off to the eastward of Entry Island, Magdalens; we got more than 60 wash-barrels; not only enough to fill all the barrels we had on board, but also our yawl-boat and every other receptacle we could find which would hold the fish. Returning again to the Gulf on our second trip, we found good fishing off the Magdalens for a few days, when, the mackerel slacking off, we ran down to Sydney, on the east side of Cape Breton Island, where the year previous some of the mackerel catchers had obtained good fares. There we also met with good success, as did the fleet of some 60 or 70 vessels which were fishing in that locality. Again we obtained a full fare of 275 barrels in about four weeks' fishing. After returning home and packing out our mackerel we spent the remainder of the fall, some four or five weeks, in fishing off Cape Ann and Cape Cod, but mackerel being scarce we succeeded in taking only about 30 barrels. The fleet off our own coast engaged in the mackerel fishery that fall compared with that in the Gulf of Saint Lawrence was small and unimportant.

1864.—HARWICHPORT MACKEREL FISHERY.

Our mackerel catchers are beginning to report themselves. The following schooners have arrived at Harwich Port: The "Diadem," Robbins, with 90 barrels; "D. Ellis," Baker, 110 barrels; "Prince Laboo," Nickerson, 175 barrels; "E. S. Hammond," Cahoon, 150 barrels; "S. Smith," Taylor, 110 barrels; the "Electric Spark," Godfrey, 125 barrels. Others are expected soon, besides several George's fishermen, which are reported to have good fares.—(Barnstable Patriot, June 13, 1864.)

1864.—MACKEREL FISHERY.

OUR BAY FLEET.—About twenty-five of our bay fleet have arrived since our last issue, bringing full fares, and several fares have been sent home by vessels remaining in Bay Saint Lawrence. The prospects seem good for a fair season's catch. The market is active, mackerel being in demand at prices much in advance of those of any year within the memory of the oldest inhabitant. The expense attending the prosecution of this business is larger by one-half than in ordinary times, all kinds of vessel's gear and supplies of every description being held at enormous rates, and unless good prices for fish are sustained there will be but a small margin for profit. But with present prices and good luck in the way of a catch, we may set the season as a good one.—(Barnstable Patriot, September 13, 1864.)

1864.—Mackerel fishery in the Gulf of Maine.

Mackerel appeared on the coast in great abundance during the early part of the autumn. The crew of the little fishing schooner "Minnehaha," of Swampscott, on the 18th of September, off Boone Island, caught 350 barrels, and the crew of the "Flying Dart," of the same place, at another point, took 130 barrels in some four hours.—(History of Lynn, Lewis & Newhall, p. 478.)

1864.—Gulf of Saint Lawrence mackerel fishery.

From the bay.—Quite a number of baymen have arrived the present week, and a large portion of the fleet are on their way home. They report mackerel very scarce for the present month and but little doing. In view of these facts the market has been a little more active for the past week, and quite a number of transactions have been effected at $12 and $15. Shore has also advanced in price, and the prospect now is that still better prices will be obtained the coming month. Mackerel are a staple, and there will doubtless be quite an active demand for them during the fall and winter months. Our fishing firms acted very wisely in not sacrificing their mackerel at panic prices, as we believe they will yet obtain a fair equivalent for them and be enabled to make a very good season's work.—(Cape Ann Advertiser, October, 1864.)

1864.—Reminiscences of Capt. J. W. Collins.

Mackerel have rarely or never been more abundant in the Gulf of Saint Lawrence than they were in 1864, while on the New England coast but little was done in this fishery. I sailed for the bay for mackerel in the schooner "Sea-Witch" early in July, passing through Canso about the 10th of the month. We fished over the same ground that we did on the first trip the previous year, obtaining a full fare of about 275 barrels short of four weeks. We were absent from home five weeks and three days. My own share, exclusive of captain's commission, was $175. We returned again to the bay. Having secured another fare about the last of September, and learning that the prospect on our own coast was poor, we went to the Strait of Canso, where we shipped 200 barrels of our fish on board a freighter and sent them home, while we refitted and returned again to the bay. During the last of September and early part of October the weather was stormy and the mackerel did not appear to take the hook so well as they had previously. A few of the vessels, however, in the mean time, had found very good fishing off Cheticamp, but that locality being so dangerous in the fall, when heavy gales are liable to come on very suddenly, and losses had so frequently occurred in previous years, that the fishermen, as a rule, did not care to take the risk of venturing on that inhospitable shore. For about two weeks after refitting in Canso we did poorly, getting only 60 barrels mackerel, but immediately after we, together with 50 or 60 other vessels, struck a

heavy body of mackerel at Margaree, on the north shore of Cape Breton Island. Our vessel was small, being 49 tons, new measurement, but with a crew of ten men we caught 100 wash-barrels the first day at Margaree, while several of the larger schooners, carrying crews from sixteen to nineteen men, secured catches ranging all the way from 100 to 150 wash-barrels. Strong winds and stormy weather prevented us from fishing for a couple of days after this, but in the two or three fine days which occurred during the week we succeeded in obtaining more than enough mackerel to fill all the barrels we had on board. Our catch for the season, from July to October 20, amounted to about 775 sea-packed barrels. Some of the largest vessels of the fleet, which remained in the bay the entire season, landing their fish and refitting at Canso, were reported as catching 1,200 or 1,500 barrels. These vessels, however, began their season's work early in June. The great abundance of mackerel brought down the prices very much in the fall, so that No. 1 fish, which brought more than $20 per barrel at midsummer, were sold for about $14 in November.

In the chapter on "Financial profits of the mackerel hook-fishery," printed above, may be found an account of several large stocks made by vessels fishing in the Gulf of Saint Lawrence in 1864.

1865.—First arrivals from the Bay of Saint Lawrence.

There have been five arrivals from the Bay of Saint Lawrence the present week, all bringing good fares. The mackerel are mostly 3's and will meet with a ready sale, as the market is quite bare. The prospect for a successful season's catch is most encouraging.—(Cape Ann Advertiser, July 21, 1865.)

1865.—Abundance of mackerel on the coast of Maine.—Big catches with a purse seine.

The Portland Argus of Wednesday says that mackerel were never more plenty than at present. A vessel went out last Thursday and secured 110 barrels, returned to Portland, discharged, and was off again on Saturday. On the latter day she secured 120 barrels. They were caught by seining, and the top of the water is said to be literally covered with fish.—(Cape Ann Advertiser, July 21, 1865.)

1865.—Arrival of baymen.—Prices.—The shore fleet.

The baymen have arrived pretty freely the past week, with good fares. The mackerel are mostly poor, and do not bring very remunerative prices. Last season the first trips were sold at $13 and $11 for the large and medium 3's; this year they have been sold for $8.50 and $6.50. Most of the vessels will return home to refit instead of landing their mackerel at the bay, as was the case last year—a project which resulted very unfavorably to those engaged in the business, as the expense of

freighting the mackerel home and the bad condition in which most of them were in on their arrival here materially lessened the profits of the voyage. Fat mackerel have not yet made their appearance in the bay. The shore fleet are doing moderately well, and the mackerel are of much better quality than those brought from the bay.—(Cape Ann Advertiser, August 4, 1865.) Twenty-four hundred and three barrels of mackerel have arrived here from the bay this week, having been freighted home. They have found a ready market.—(Cape Ann Advertiser, September 29, 1865.)

The bay fleet have come home along quite freely the present week, some hundred sail having arrived in port, and the balance are now on their way home. Although the weather of late has been such that but few mackerel have been caught, yet the fleet, on the whole, will make very good trips, and the season wind up prosperously for those engaged in the business. Mackerel are now selling at very fair prices (No. 1 at $16.50, No. 2, $13.50), and the prospect is that they will advance rather than decline. The shore fleet have not done much of late, but they may have a streak of luck yet if the weather continues favorable.—(Cape Ann Advertiser, November 3, 1865.)

The baymen have all arrived home, the last of the fleet arriving yesterday. Last year at this time there were 35 sail in the bay, the last vessel arriving as late as the 12th of December.—(Cape Ann Advertiser, November 17, 1865.)

1865.—Abundance of mackerel in Ipswich Bay.

A large school of extra fat mackerel have made their appearance in Ipswich Bay, and the fishermen are paying their respects to them in a most complimentary manner. They are real "bloaters," and fetch the highest price. The weather is all that can be desired, and the fishermen will take every advantage which the season offers. The shore fleet are doing better and the mackerel are working up this way.—(Cape Ann Advertiser, October 6, 1865.)

1865.—Reminiscences of Capt. J. W. Collins.

The year of 1865 was another remarkable season in the mackerel fishery of the Gulf of Saint Lawrence, and in this respect it almost rivaled the previous year. About the middle of June I sailed for the bay in the schooner "Mary Ellen," hailing from Halifax, Nova Scotia, but owned in the eastern part of the province. We caught three fares of mackerel during the summer, making a total of above 900 barrels. The fish during the early part of the year were, as usual, found most plentiful about the North Cape of Prince Edward Island, along the west shore and on Bank Bradley. I recall one occasion, while lying becalmed between North Cape and Point Escuminac, of seeing a

remarkable display of schooling mackerel. As far as the eye could extend from aloft, in every direction not bounded by the land, large bodies of mackerel could be seen at the surface of the water like darkened spots on a disk of silver. The previous year I had witnessed such a display on the north side of the eastern point of Prince Edward Island, when, for at least a distance of 20 miles up and down the island, and, perhaps, even farther, mackerel could be seen schooling in great bodies at the surface of the water; their frequent rushing sounding like the noise made by heavy showers striking on the water. For a greater part of the month of August and until the middle of September, in 1865, the weather was extremely rough in the bay, and the mackerel catchers were, in consequence, prevented from fishing a considerable portion of the time, the catch during this period being slight compared with other portions of the season. During the fall an immense school of *biting* mackerel were found on the north side of Prince Edward Island along its entire extent, but more especially in the vicinity of Malpec, where had gathered a fleet of perhaps 300 or 400 sail of vessels. Indeed, so abundant were the mackerel off Malpec in October, and so eagerly did they take the hook, that some of the schooners secured almost a full fare in a few days' fishing. The only trouble was to be able to catch and cure the fish fast enough, and at the same time secure an opportunity of stowing them below. Nearly every vessel in the fleet could be seen with their decks filled with barrels of fish, which were stowed in every available place. Great risks, too, were taken by the fishermen in remaining on the fishing-grounds at night, since at that season a heavy gale was liable to spring up at any time, and should they have been caught on a lee shore in their lumbered-up condition there is no doubt but what the result would have been extremely disastrous. As it was, however, no losses were met with in this case. The last important catches of the season were obtained between the eastern point of Prince Edward Island and the Cape Breton shore, at which time the fish were moving very rapidly to the southward. There can be no doubt but that this school of mackerel could have been followed much farther had the weather not obliged the fishermen to seek shelter.

In the paragraph on the financial profits of the hook-fishery is an account of the "Kit Karson" bringing home to Gloucester 591 barrels of mackerel on her first trip, which she made in about ten weeks. Her net stock amounted to $6,542.

1866.—Reported abundance of mackerel on the New England coast.

Mackerel are reported to be quite plenty. A large fleet of vessels are engaged in taking them. Quite a number of them have been taken in nets by the fishermen in some of the lower Cape towns.—(Barnstable Patriot, June 12, 1866.)

1866.—THE OUTLOOK FOR THE BAY OF SAINT LAWRENCE FISHERY.

The mackerel fishery in the Bay of Saint Lawrence will be quite extensively prosecuted the coming season, notwithstanding the repeal of the reciprocity treaty. From 30 to 40 sail of vessels will be added to the fleet, and although the business will be attended with considerable risk, yet our fishermen are not scared at trifles; they will keep a sharp lookout for English cruisers and get good trips in spite of them. A few overventuresome ones may get seized, but we believe the most of the fleet will come out all right; strict vigilance will be required, and we think our fishermen will not be caught napping. The mackerel, in the first part of the season, are mostly caught outside of the prescribed limits; but it is in the fall of the year, when the fish play in round shore, that most of the difficulty is apprehended.—(Cape Ann Advertiser, April 13, 1866.)

1866.—THE SPRING FISHERY.

Quite a large fleet of vessels from this port are now engaged in the menhaden and early shore mackerel fishing, and are meeting with fair success. The early bay mackerel fishery will be quite extensively prosecuted, and the fleet will sail earlier than last season. Several vessels are now fitting away and will leave the latter part of this month. No serious trouble is apprehended from the provincials.—(Cape Ann Advertiser, May 18, 1866.)

1866.—FIRST START OF THE BAY FLEET.

The first of the bay fleet sailed on Tuesday and others will soon follow. It is about three weeks earlier than they started last season.—(Cape Ann Advertiser, May 25, 1866.)

Considerable activity now prevails at our wharves in fitting out vessels for the bay. Having finished their George's fishing they are now discharging their ballast and having a general overhauling and painting up, which usually occupies about a fortnight. With the new vessels added to the fleet the present season we shall have about 400 sail in the business (from Gloucester)—the largest number that ever sailed from here. A few of the vessels have already left, and by the last of this month we shall have quite a large fleet in the bay. Some of the vessels will probably make three trips if they are fortunate enough to find mackerel plenty and are not molested by English cruisers.—(Cape Ann Advertiser, June 8, 1866.)

1866.—THE SOUTHERN FLEET.

A mackerel fleet of a hundred vessels, with a thousand men, rendezvoused in the harbor of Newport, R. I., last Friday.—(Cape Ann Advertiser, June 1, 1866.)

The fleet of southern mackerel catchers have mostly arrived home with moderate fares. The highest trip we have heard of is 175 barrels, but the fleet will not average more than 150 barrels to a vessel. Good prices are obtained and they will make a fair business of it.—(Cape Ann Advertiser, June 15, 1866.)

The southern mackerel fleet have mostly arrived home with light fares; sales of large and medium 3's at $12.50 and $11.50.

1866.—SCARCITY OF MACKEREL IN THE BAY EARLY IN THE SEASON.

Recent advices from the bay state that mackerel are very scarce and the fleet have done nothing as yet. Last year the mackerel made their appearance there quite early, and the first vessels arrived home about the 1st of July with good fares.—(Cape Ann Advertiser, June 29, 1866.)

1866.—AMERICAN VESSELS PERMITTED TO FISH IN CANADIAN WATERS ON PURCHASE OF A LICENSE.

The honorable Sir Frederick W. A. Bruce, the British minister, accredited to this government, by an official note of the 24th instant, announces that the Governments of Nova Scotia and New Brunswick have agreed that the possession of a license issued by Canada to fish shall entitle the holder, during the season of 1866, to fish in the waters of New Brunswick and Nova Scotia as well as in those of Canada; the holder of a license from the Government of Nova Scotia or New Brunswick, if any such shall be issued, being entitled to fish in Canadian waters as well as New Brunswick.

The notification is supplemental to one issued early in June, by P. Foster, esq., commanding the Canadian Government schooner "La Canadienne," employed in protecting the fisheries, who was authorized to issue fishing licenses on the payment of 50 cents per ton measurement of the vessel to which they were granted, to remain in force during the season, and conferring the same rights, so far as Canadian fisheries were concerned, as were conferred by the reciprocity treaty to the United States fishermen.—(Cape Ann Advertiser, June 29, 1866.)

1866.—UNUSUAL SCARCITY OF MACKEREL IN THE BAY, PRICES, ETC.

The baymen have about all sailed, and our warves and railways now present a very quiet appearance. It is full time that some of the early fleet were at home, but as mackerel have been unusually scarce the present season there will probably be few arrivals before August, when business about the wharves will be more lively. Last year most of the fleet arrived home in July with good fares, and many of the vessels made three trips, but the prospect now is that the first fares will be light and prices rule much higher than last season. The shore fleet pick up a few mackerel, and they are readily disposed of at very remunerative prices, which are steadily advancing, showing in very light receipts.

We quote Nos. 1, 2, and 3, at $18, $16, and $13.—(Cape Ann Advertiser, July 20, 1866.)

1866.—FIRST ARRIVAL FROM THE BAY.

Schooner "Wingaersheek" arrived at Annisquam on Friday last (July 20) from the bay with 313 barrels of mackerel. This is the first arrival of the season, and the mackerel were in good demand. The 2's were sold for $16 and 3's for $13. This is quite an advance over the price obtained for the early trips last year, when they were sold for $11.62 and $8,50. Other vessels are daily expected to arrive, and as mackerel are scarce the trips will be in good demand and bring very remunerative prices.—(Cape Ann Advertiser, July 27, 1866.)

1866.—THE BAY MACKEREL FISHERY.

Since our last issue 14 vessels have arrived from the bay, averaging about 200 barrels apiece. They report seeing plenty of mackerel, but they were rather backward about biting. Most of the vessels that have been spoken have from 150 to 200 barrels, and the prospect for the fall catch is considered very good. Out of nearly 400 sail of vessels in the business, but 20 have as yet arrived home, and during the coming three weeks there will undoubtedly quite a large number arrive to fit away for their fall trips. Some of the fleet, in order not to lose any time, will ship their mackerel home by the steamers and refit from there. Prices have slightly declined the present week, but there are so few mackerel in the market that they will have a tendency to advance rather than decrease in price. Shore mackerel continue scarce, and are in good demand.—(Cape Ann Advertiser, August 10, 1866.)

1866.—A BIG HAUL IN A PURSE-SEINE.

Schooner "Oconee," engaged in shore mackereling, arrived at this port on Monday with 240 barrels of mackerel, which she obtained in three seinings. At the third haul it was estimated that there were 500 barrels in the seine, and the pressure was so great that it burst while drawing it up, and a large portion of the mackerel escaped. They succeeded, however, in saving about 140 barrels, all large and fat. The "Oconee" was absent but ten days, and will make a very handsome stock.—(Cape Ann Advertiser, August 17, 1866.)

1866.—COMPARATIVE SCARCITY OF MACKEREL.

Twenty-one vessels have arrived from the bay since our last issue, making a total of 79 that have thus far arrived home, leaving about three-quarters of the fleet that will make but one trip. There is quite a marked difference in the appearance of our wharves at the present time compared with last season. Here and there a vessel may be seen discharging her mackerel, but most of the wharves have decidedly a

deserted appearance. Last year at this time about all of the baymen had arrived from their first trips, and the cullers, coopers, and packers were up to their eyes in business. Should the vessels succeed in getting good trips this fall, they will make a fair season's work if mackerel continue at present prices; but the aggregate catch will fall far short of last year's, and the business prove far less lucrative. The shore fleet have met with rather poor success the past fortnight, and but few mackerel have been landed.—(Cape Ann Advertiser, August 31, 1866.)

1866.—MACKEREL IN GLOUCESTER HARBOR.

Mackerel have been quite plenty in our harbor the present week, and the small boats have done a very good business in catching them. Some of them were very large and fat.—(Cape Ann Advertiser, September 7, 1866.)

1866.—DECIDED ADVANCE IN PRICES.

The market continues firm and prices are greatly advanced on those of last season. No. 1 are $6 higher; No. 2 show an increase of $5 and No. 3, $3.75.

About 2,000 barrels (bay) in the market. Last sales at $22.50, $17.50, and $13.25 for Nos. 1, 2, and 3. Shore in light receipt; sales of No. 1 at $22.75.—(*Ibid.*)

1866.—THE MACKEREL FISHERY.

There have been 42 arrivals from the bay since our last issue, the vessels averaging about 200 barrels apiece. About one-third of the fleet have now arrived home from their first trips, and as the season has now become so far advanced there will probably be but few, if any, more arrivals for the present, as it will be too late to return for a second trip. Mackerel have slightly declined the past week, owing to the late arrivals, but the probability is the prices will again advance, as the stock on hand will not begin to supply the demand constantly being made on our market. Some of the shore fleet have done pretty well of late, but the seiners have not met with very good luck.—(Cape Ann Advertiser, September 14, 1866.)

1866.—ROUGH WEATHER IN THE BAY.—THE FLEET EXPECTED HOME.

There have been seven arrivals from the bay the past week, one at Annisquam from her second trip, and six at this port from their first trips. They report very rough weather in the bay the past month, and there is scarcely one day out of a week that is suitable for fishing. The vessels that have arrived home during the past fortnight will not return for a second trip, but will make up their season's work on this shore. The shore mackerel fleet have not done much lately, but there is yet opportunity of doing something next month should the mackerel continue on the coast. * * *

It will be busy times on our wharves next month, as there are upwards of 300 sail of baymen that will probably arrive home during October, and the work of culling, packing, coopering, &c., will call for quite a large force of men.—(Cape Ann Advertiser, September 28, 1866.)

1866.—THE SHORE MACKEREL FLEET.

The shore fleet of mackerel catchers, numbering about 400 sail, have been off the Cape the present week, the mackerel having struck this way. On Saturday last there was pretty good fishing in Ipswich Bay, and some of the vessels did well. There does not appear to be a large body of mackerel off shore, but they cruise in single schools, which is not so favorable for a big catch. On Tuesday afternoon about 100 sail came into our harbor and remained over night, leaving at daylight on Wednesday morning. They report mackerel rather shy, but consider the prospect good.—(Cape Ann Advertiser, October 5, 1866.)

1866.—SUCCESS OF THE SHORE FLEET.

The shore mackereling fleet found very good fishing on Saturday, Sunday, and Monday, in Ipswich Bay, some of the vessels catching as high as 40 and 50 wash-barrels of large fat mackerel. Monday night it commenced blowing heavily, and the larger portion of the fleet came into our harbor, where they remained through Tuesday.—(Cape Ann Advertiser, October 12, 1866.)

1866.—SUNDAY KEEPERS.

About 100 sail of the mackerel fleet, designated as "Sabbath-keepers," lay at anchor on Sunday evening on the verge of the outer harbor, stretching across from Norman's Woe to the Point. At early dawn they made sail and joined the remainder of the fleet off Rockport.—(*Ibid.*)

1866.—HIGH LINE OF THE FLEET.

The schooner "Waterfall," of Southport, Me., claims the flag for being "high line" of the fishing fleet this season. Her fare since the 10th of June last is 810 barrels of mackerel, about two-thirds of which are No. 1's. Whether or not any of the Cape Ann vessels will exceed this remains to be proved.—(Cape Ann Advertiser, October 12, 1866.)

A paragraph is going the rounds of the papers stating that schooner "Lucy J. Warren," of Deer Isle, Me., is "high line" of the bay fleet this season, having landed 846 barrels of mackerel since June 17.

We happen to know of two vessels belonging to this port that have done much better than that, viz, schooner "Electric Flash" has landed 923 barrels of mackerel in two trips to the bay, and the "Wildfire" has landed 875 barrels. The "Electric Flash" consequently has the honor of being "high line" of the bay fleet the present season.—(Cape Ann Advertiser, November 2, 1866.)

1866.—Arrival home of the baymen.

The baymen have come in quite freely the past week, 93 sail having arrived since our last issue. The vessels that have been absent all the season bring in pretty good fares, but the second trips are rather slim, some vessels bringing in as low as twenty-five barrels. We should judge the aggregate catch would prove full one-third less than last season, but the increase in price will probably make up the deficiency in catch, so that the trips will average about as well as last year. There are now about sixty vessels to arrive, which will close up the business for the season. Prices continue firm at $18 and $16, and the market is quite active.

The prospect now is that the supply for fall and winter consumption will prove far less than the demand, and that prices will advance rather than decline.—(Cape Ann Advertiser, November 2, 1866.)

1866.—Reminiscences of capt. J. W. Collins.

In the spring of 1866 I engaged in the southern mackerel fishery, in the schooner "Lizzie F. Choate," starting on our trip early in May. We fished principally about the south side of Long Island, from Sandy Hook to Montauk, and in the vicinity of Block Island and Noman's Land. Mackerel that spring were not inclined to take the hook very readily, and therefore we obtained only a small fare of about 45 or 50 barrels. We were absent from Gloucester about four weeks, part of which time was occupied in obtaining a supply of menhaden at Seaconnet River, to be used for mackerel bait in the Gulf of Saint Lawrence during the summer.

After returning from the south we went to the bay, where we arrived about the middle of June. On our first trip we fished almost exclusively between Bonaventure and Prince Edward Island—that is to say, on Bank Orphan and Bank Bradley; off North Cape of Prince Edward Island; along the west shore, from Point Escuminac to Point Miscou, and to a limited degree in the Bay of Cahleur. We succeeded in catching 275 barrels of mackerel, arriving home about the beginning of September. We reached the bay on our second trip on the 13th day of September, proceeding immediately to the Magdalen Islands, where in five days we caught 115 barrels of fine fat mackerel. After that the fish discontinued biting in the vicinity of the Magdalens, and we ran across to the north side of Prince Edward Island, about North Cape and in the vicinity of Malpec, where mackerel were found quite abundant, and where a fleet of about 300 sail had collected. Here we did quite well, so that when we had been in the bay eighteen days we had between 250 and 300 barrels of mackerel. At this time we were off Malpec, and a strong blow from the southwest having come on, we went in there with the fleet (which numbered about 250 or 300 sail) for the purpose of filling water, which we stood much in need of, expecting,

as a matter of course, that we would be able to return to the fishing-ground in one or two days at the farthest. The wind came out from northeast on the following day, and continued in an easterly direction almost uninterrupted for nearly two weeks. All of the vessels, including our own, were kept in harbor almost as if we had been in prison. During the time, however, the fleet managed to get out for a few hours on one or two occasions, but an easterly wind springing up before the vessels had an opportunity of getting an offing compelled them to run back again in the harbor, since it would have been extremely hazardous, to say the least, at this season of the year, to have remained out during the night on a lee shore so notoriously dangerous as that on the north side of Prince Edward Island. Though the easterly winds were not so extremely heavy, their long continuance made a heavy swell, which broke with great violence across the bar at the entrance to Malpec Harbor, and rendered any attempt to get out exceedingly risky. On one occasion a vessel which started to pass the bar with a light breeze was carried into such shoal water by the current and undertow that she grounded on the sand, and was only saved from destruction by the efforts of her own and the crews of various other vessels.

While this large fleet was thus kept in harbor, a smaller number of vessels, some 30 or 40, which were around the north cape of the island, succeeded in obtaining a very large catch of mackerel, nearly every one of these vessels getting a full fare in two weeks. By the time the larger fleet was able to leave Malpec the schools of mackerel in that vicinity and about North Cape had evidently departed, and the vessels scattered in different directions, according to the judgment of the several skippers, some of them going to the Magdalens and the others in the direction of the east point of Prince Edward Island and the north shore of Cape Breton. However, by this time it was late in the season, and the weather had become so boisterous that fishing could be carried on only on occasional days. A few good catches of mackerel were obtained about the Magdalen Islands after this, which practically finished the season's work. On the whole, we secured a fare of 315 barrels, and left the bay about the 20th of October. The mackerel caught in 1866 were of large size and of good quality, but were far less abundant than during the previous year.

1867.—THE SPRING MACKEREL FISHERY.

The southern mackerel fishery is being prosecuted by the usual number of vessels, and late advices represent the prospect as good. Some of the fleet are landing their mackerel fresh, and obtain very good prices. Mackerel are also reported very plenty off Cape Cod, and some pretty big hauls have recently been made by the Provincetown seiners. The prospect for the shore mackereling fleet is certainly most encouraging.

The bay mackerel fishery will be quite extensively prosecuted the present season, but the vessels will not engage in it so early as they did

last year. But few, if any, of the fleet will sail before the middle of June.

There will probably be some 400 sail of vessels employed in the business from this port.—(Cape Ann Advertiser, May 24, 1867.)

1867.—ALARGE BAY FLEET.

Considerable activity now prevails at our wharves and railways, as the early mackerel fleet are getting ready to start, and in about a fortnight quite a number of vessels will be on their way to the Bay of Saint Lawrence. * * *

We shall have the largest fleet of vessels engaged in the bay fishery this season that has ever prosecuted it, and most of them will make two trips. The shore mackerel fishery will also be extensively prosecuted.—(Cape Ann Advertiser, June 7, 1867.)

1867.—UNUSUAL SUCCESS OF THE SOUTHERN FLEET.

The southern mackerel fishery has proved very successful this season. The fleet have arrived home with good fares, averaging about 200 barrels each. Most of the vessels are now absent on their second trip, and the prospect is said to be very encouraging. It is seldom that the fleet make but one trip out south, but this year mackerel are sufficiently plently in those waters to warrant the undertaking. We learn that one vessel has arrived at Newburyport with a second fare, having landed upwards of 500 barrels on both trips.—(Cape Ann Advertiser, June 14, 1867.)

1867.—THE BAY FLEET.—SCARCITY OF MACKEREL.

Some 50 sail of vessels have left for the bay this week and others will speedily follow. In the course of a fortnight there will be from two to three hundred sail of vessels in the business.

Advices from the early bay fleet represent mackerel rather scarce, and the prospect not very encouraging. The highest trip reported was 50 barrels.—(Cape Ann Advertiser, July 12, 1867.)

1867.—A GOOD SCHOOL ON GEORGE'S.

Mackerel have been quite plenty on George's lately, and those of the fleet who were lucky enough to be there did well. About a dozen vessels have arrived, averaging about 200 barrels each, which were quickly disposed of at remunerative prices.—(Cape Ann Advertiser, August 2, 1867.)

1867.—AMERICAN MACKEREL SCHOONERS FISHING IN THE GULF OF SAINT LAWRENCE REQUIRED TO PAY LICENSE TO THE CANADIAN GOVERNMENT.

In 1867, after the expiration of the "reciprocity treaty," the Canadian Government imposed a tax of 50 cents per ton on all American vessels

for the privilege of participating in the inshore fisheries of the Dominion. For this sum a license was granted which, for the purpose above specified, continued good for the year. Afterwards this tax was increased to $2 per ton.

Capt. Fitz J. Babson, collector of customs of Gloucester, Mass., writes: "This tax was considered as an onerous burden by American fishermen, but was submitted to, more in order to prevent capture and confiscation than for the fishing privileges accorded; upon the increase of this tax American vessels generally refused to pay it, preferring rather the risk of annoyance and capture."

1867.—FIRST ARRIVAL FROM THE BAY.—REPORTED SCARCITY OF MACKEREL.

Schooner "Addie M. Story" arrived from the Bay of Saint Lawrence on Tuesday, with 250 barrels of mackerel, having been absent about eight weeks. This is the first arrival of the season. Captain Rowe reports mackerel scarce and the fleet not doing much. The prospect now is that most of the vessels will make but one trip.—(Cape Ann Advertiser, August 9, 1867.)

1867.—ARRIVALS FROM THE BAY.

Seventeen vessels have arrived from the bay since our last issue, making twenty in all this season—less than one-half the number that had arrived last year up to this time. About 3,500 barrels have thus far been landed, which is exceedingly slim doings. The fleet come along very slowly, and the prospect now is that a large proportion of them will make but one trip.—(Cape Ann Advertiser, August 23, 1867.)

Fifty-three vessels have arrived from the bay during the past week, leaving about twenty sail to come. About 12,000 barrels of mackerel have been brought in by the above fleet, averaging 236 barrels to a vessel, most of which have been in the bay all the season, making but one trip. The market is rather quiet the present week and buyers are not disposed to purchase very freely. Holders are firm at $15 for No. 1's, although a few lots caught early in the season have been sold at $14.—(Cape Ann Advertiser, November 8, 1867.)

Forty vessels have arrived from the bay since our last issue, bringing about 8,000 barrels of mackerel.—(*Ibid.*)

Thirty-eight vessels, with a total of 7,000 barrels of mackerel, had arrived from the Bay of Saint Lawrence during the month of August.—(Cape Ann Advertiser, August 30, 1867.)

1867.—GOOD MACKEREL FARES FROM GEORGE'S.

Schooner "B. K. Hough" arrived from George's last Friday and the "Kearsarge" on Monday, with full trips of mackerel. These vessels have made two trips to George's the present season, landing in the aggregate 1,180 barrels of mackerel.—(Cape Ann Advertiser, September 6, 1867.)

1867.—SMALL CATCH OF MACKEREL BY THE BAY AND SHORE FLEETS.

Mackerel still continue very scarce, and the receipts of both shore and bay are very light. The eastern fleet are doing but little, and the prospect of a successful fall catch is anything but encouraging. About 2,200 barrels have arrived from the bay the past week, which have been quickly taken at advanced prices. We quote sales of No. 1's at $21.50 to $21; No. 2's, $13.50 to $13.25. Shore very scarce with slight advance. Least sales of No. 1's at $13.50; No. 2, $13.25. The mackerel catch this season will probably be fully one-third less than that of last.—(Cape Ann Advertiser, September 27, 1867.)

BOYS IN THE MACKEREL FISHING.

James S. McDonald, about fourteen years of age, has caught the present season 36 barrels of mackerel, and James Babson, fifteen years of age, 40 barrels.—(*Ibid.*)

1867.—HIGH LINE OF THE MACKEREL FLEET.

The Newburyport Herald states that the schooner "Tanny" takes the palm for this season among the mackerel fleet, having landed 910 barrels, which stocked $13,000.—(Cape Ann Advertiser, November 15, 1867.)

1867.—REVIEW OF THE MACKEREL FISHERIES.

The shore mackerel and seining business has been largely engaged in, but has proved far less remunerative than last year. The southern fleet did remarkably well; but the shore fleet has not done as poorly for many years.

The bay mackerel fishing has proved rather unprofitable the present season. Less than one-third of the fleet have made two trips, and the catch will fall far short of last year.—(Cape Ann Advertiser, November 22, 1867.)

1867.—REMINISCENCES BY CAPT. J. W. COLLINS.

Toward the latter part of May, in 1867, I started on a mackerel trip to the Gulf of Saint Lawrence in the "Lizzie F. Choate." We arrived in the bay about the 1st of June; but, notwithstanding we cruised over all the fishing-grounds usually resorted to at this season, we failed to catch any mackerel until about the middle of the month, and none were taken by other vessels, so far as we could learn, any earlier. Mackerel that year were all large size, as during the two previous seasons, but were apparently not so plentiful as the year before. We fished on the ground usually resorted to in the early summer, but obtained the best catches in the deep water between Bank Orphan and Bank Bradley, where, on one occasion, we took, in a single day, 50 or 60 barrels of

mackerel. Having obtained a fare of 300 barrels about the middle of August, we returned home, arriving in Gloucester on the 26th. We packed out our fish and again went back to the bay on a second trip. After arriving in the bay the second time we fished principally about the Magdalens and the north shore of Prince Edward Island, especially in the vicinity of Malpec, and the North Cape of the island. On one occasion during the fall, while fishing near Cascumpec with a large fleet, a smart northwest gale came on very suddenly in the afternoon, and most of the fleet went into Malpec. We also made an attempt to enter the harbor, but owing to the crowded condition of the vessels in the channel and the danger of being injured by a collision, decided to run out again and lay by for the night, which we did. During the night the iron plate on the stem to which our jibstay set up, was carried away and obliged us to go into harbor the following day for repairs. We were detained in Malpec several days on account of the strong winds and stormy weather. After leaving the harbor we ran up toward North Cape, trying the ground with the fleet, but failed to find mackerel in satisfactory numbers. We therefore ran across to the Magdalens, where we continued fishing with indifferent success until well into October. Being caught out in a northeast gale, which came on suddenly one afternoon, we had our sails badly torn, and were obliged to run across the following day to Port Hood for shelter, from which place we proceeded to Canso for repairs and to land a sick man. Leaving Canso, we ran across again to the Magdalens; but not finding any mackerel, returned to Port Hood. In the mean time, during the four or five days while we had been absent at the Magdalens, a fleet of vessels had found mackerel exceedingly abundant about Margaree Island and Cheticamp, on the north side of Cape Breton, and had obtained exceedingly large catches, in some instances almost entire fares having been caught in this short time. The day on which we arrived at Port Hood, with other vessels from the Magdalens, the wind was northeast, blowing a strong breeze, and most of the vessels which had been engaged in fishing along the Cape Breton shore ran into Port Hood for a harbor. On the following day, the wind having changed to the southwest, we, together with many of the other vessels, ran down to the northeastward, along the Cape Breton shore, past Margaree, to Cheticamp, where we found a fleet of about 75 sail of schooners busily engaged in catching mackerel, which were biting eagerly just off the mouth of the harbor. Although we did not reach the fleet until about noon, and had consequently but few hours to fish, we succeeded in taking 75 wash-barrels of fine large mackerel. That night most of the fleet lay to off Cheticamp, preferring to do this instead of anchoring in this one-sided and extremely unsafe harbor. On the following morning it was found that the body of mackerel had changed its position considerably, and the fish were first found off the eastern end of Cheticamp Island some six or seven miles from where they had been taken the previous afternoon. By this time a

fleet of 250 sail or more had gathered on the fishing-ground; the wind blew a smart breeze from the southwest, and the mackerel, which were near or at the surface, were moving northeastwardly in the direction of Cape North. The fishermen, feeling that it was their last chance of the season to obtain any fish, made every possible effort to improve the opportunity, and the scene soon became wild and exciting in the extreme. The vessels crowded closely in masses wherever the fish were biting best, the eagerness of the fishermen rendering them in many instances reckless to a fault; booms and bowsprits were carried away; sails were torn; boats smashed up; and in some cases the broadsides of vessels were crushed in, leaving them almost in a sinking condition off a rock-bound and dangerous coast many miles from any safe harbor. Though the mackerel bit very eagerly while alongside the vessel it was impossible to detain them in their onward course for any length of time. The consequence of this was that the vessels were in constant motion, shifting continually to leeward in the direction which the fish were going. Most of the vessels obtained good catches, and we succeeded in taking about 50 wash-barrels during the day. That night a considerable portion of the fleet passed around Cape Breton, but, owing to the strong winds which prevailed for several days thereafter, no reasonable opportunity was offered for pursuing the mackerel any farther, and the vessels were obliged to seek shelter in Sydney Harbor, the season by this time becoming so far advanced that there was no reasonable prospect of any more mackerel for the year; therefore, as soon as the state of the weather permitted, most of the vessels started for home. We arrived in Gloucester early in November with a fare of 375 barrels.

1868.—THE SPRING MACKEREL FISHERY.

The southern mackerel fishery will be extensively prosecuted the present season. Some of the fleet have already commenced to fit away, and by the latter part of the month there will be quite a large fleet in readiness to start.—(Cape Ann Advertiser, April 4, 1868.)

The southern mackerel fleet have about all sailed. There are from 40 to 50 vessels in the business this season—a much larger number than have ever prosecuted it before.—(Cape Ann Advertiser, May 8, 1868.)

The prospect of a successful catch of mackerel by the southern fleet is quite encouraging. One vessel arrived at New York on Friday, after two days' absence, with 10,000 mackerel in number; another had taken 50 barrels in a week's cruise.—(Cape Ann Advertiser, May 22, 1868.)

The fishermen are having a lively time of it in Barnstable Bay. On Monday 5,500 mackerel were taken, which were shipped to Boston.

Three hundred barrels of mackerel passed over the Cape Cod Railroad, Tuesday and Wednesday of last week, for New York and Boston, caught by the Cape fishermen.—(Cape Ann Advertiser, May 22, 1868.)

1868.—INCREASE IN THE PRICE DEMANDED FOR LICENSE TO FISH IN BRITISH WATERS.

Information has been received at Ottawa from England that the British Government has agreed to fix the tax on American vessels fishing in Canadian waters at $2 per ton, and that the three warnings heretofore required to be given to American fishing vessels will be dispensed with. * * * Our fishermen would not object to a reasonable tax, but $2 per ton is altogether too much.—(Cape Ann Advertiser, May 15, 1868.)

1868.—FIRST ARRIVALS OF THE SOUTHERN FLEET.

Two eastern vessels have arrived at this port from the south the present week with about 150 barrels of mackerel each. These are the first arrivals of the season, and the mackerel met with very ready sales. None of the Gloucester fleet have as yet arrived.—(Cape Ann Advertiser, June 5, 1868.)

1868.—MACKEREL PLENTY OFF BOSTON.

Mackerel have been quite plenty in the bay (Massachusetts Bay) the past week. The school has mostly tended off Boston harbor, and there has been a large catch. They have been retailed for 3 cents each, and the demand has been quite lively.—(*Ibid.*)

1868.—THE MACKEREL FISHERY; FITTING AWAY OF THE BAY FLEET; SEINING TO BE TRIED IN THE BAY.

The George's fishery is now slacking up a little and some of the vessels are hauling off, preparatory to fitting away for the bay of Saint Lawrence. A few of the fleet have already sailed, and by the last of the month there will be quite a number of vessels on their way there. The bay fleet will be quite as large as it was last season. * * *. A new feature will be introduced in this branch of the fisheries this season; that of seining. Some seven or eight vessels are to engage in the business, which it is expected will prove very remunerative. It is an experiment that has never tried, but we see no reason why it should not prove as successful as seining on this shore. Should the vessels which are to engage in it find it profitable, it will no doubt be more extensively engaged in another season.

The southern fleet having had very bad weather through the month of May, are rather backward on their trips this season, and but few of them have arrived home. Another week will probably bring along most of the fleet in time to fit for the bay.—(Cape Ann Advertiser, June 12, 1868.)

1868.—THE SOUTHERN FISHERY.

Some fourteen sail of vessels have arrived from the south the present week with good fares of mackerel, averaging about 200 barrels each.

The mackerel sell readily at remunerative prices (from $6.50 to $9.75), and the business bids fair to prove as successful as last season. Some of the vessels have sailed on second trips, but most of the fleet will fit away for the bay on their arrival home.—(Cape Ann Advertiser, June 19, 1868.)

Schooner "Cyrena Ann" arrived from a southern mackereling cruise on Tuesday, with 325 barrels of mackerel. About 100 barrels of the trip were taken on George's, which were of good size, and the first caught there this season. Captain Elwell has been absent about six weeks, and the vessel will probably stock rising $3,000. This is the best mackerel trip of the season.—(Cape Ann Advertiser, July 3, 1868.)

1868.—A GOOD TRIP FROM GEORGE'S.

Schooner "Maud Muller" arrived from George's yesterday with 200 barrels of mackerel, having been absent about three weeks. She spoke several of the Gloucester fleet on the banks, all of which are doing well.—(Cape Ann Advertiser, July 31, 1868.)

1868.—UNFAVORABLE REPORTS FROM THE BAY.

The reports from the bay are not so encouraging as could be desired. Mackerel are scarce, and the fleet doing little. The catch last season showed considerable falling off from the previous year, and appearances would seem to indicate a light catch this season.—(*Ibid.*)

1868.—MACKEREL ABUNDANT ON GEORGE'S.

The mackerel fleet on George's are meeting with excellent luck of late, and some very good fares have been landed the last week. The mackerel are of good quality, and the vessels are doing much better than those that have gone to the bay. One vessel which started for the bay stopped to try for mackerel on the banks, and returned home on Monday, with 230 barrels. The eastern shore fleet are also doing better of late, and the prospect now is that the home-catch will prove far more remunerative than the bay the present season.—(Cape Ann Advertiser, August 7, 1868.)

EXCELLENT SUCCESS OF ONE OF THE SHORE FLEET.

Schooner "Eureka" is high line of the mackerel fleet from this port, having already landed 800 barrels thus far this season. She has made four trips and her net stock is $904.—(*Ibid.*)

1868.—FIRST ARRIVALS FROM THE BAY.—REPORTED SCARCITY OF MACKEREL IN THE GULF.—PRICES.

Schooner "A. H. Wonson" arrived from the Bay Saint Lawrence yesterday with 200 barrels of mackerel, having been absent nine weeks. This is the first arrival of the season, and is about a week later than

the first arrival last year. Captain Webber reports mackerel very scarce, and the fleet not doing much. He heard of no vessel having over 100 barrels.—(Cape Ann Advertiser, August 14, 1868.)

Schooner "Sargent S. Day" arrived from bay, on Wednesday, with 125 barrels of mackerel, having been absent since the 1st of June. This is the second arrival of the season, and rather a poor fare; but there are many of the fleet who have not done as well as this. * * * Last year 38 sailing vessels arrived during the month of August, averaging about 180 barrels each. The scarcity of mackerel causes prices to rule high, and bay 1 sell at $25.25, against $18 last season. The shore fleet bring in some pretty good fares lately, which meet with ready sale.—(Cape Ann Advertiser, August 21, 1868.)

1868.—ARRIVALS FROM THE BAY.

Twenty-one vessels have arrived from the bay since our last issue, averaging about 150 barrels each. The total number of arrivals thus far this season is 41, and an aggregate of 6,000 barrels of mackerel, against 65 vessels and 13,000 barrels up to this time last year—quite a large falling off.—(Cape Ann Advertiser, September 11, 1868.)

1868.—AMERICAN VESSELS NOT TROUBLED BY ENGLISH CRUISERS IN THE BAY.

Thus far, the mackerel fleet fishing at the bay have not been troubled by English cruisers. There seems to be a good feeling prevalent in that quarter, and the American fishermen catch mackerel whenever and wherever they can prevail upon them to take the hook.—(*Ibid.*)

1868.—MACKEREL IN GLOUCESTER HARBOR.

Mackerel made their appearance in our harbor on Saturday for the first time this season. They were of small size. The schools have also shown themselves several times this week.—(Cape Ann Advertiser, September 18, 1868.)

1868.—THE BAYMEN.—DOINGS OF THE SHORE AND GEORGE'S FLEET.

There have been but few arrivals from the bay the past week, as those of the fleet that intend making two trips have about all arrived home. Several of the vessels which had small fares have shipped them by steamer, and refitted there for a second trip. Less than one-fifth of the fleet will make two trips, and there will be a great falling off in the catch from last season, providing all the vessels get full fares this fall. About 1,000 barrels of shore have arrived the past week, but the George's fleet have done nothing, the mackerel having left the banks.—(*Ibid.*)

1868.—INFLUENCE OF THE MACKEREL FISHERY ON THE WELFARE OF THE FISHING TOWNS.

The success of the mackerel fleet, both at the bay and off-shore, is looked forward to with deep interest. There is much depending upon the fall catch.—(Cape Ann Advertiser, September 15, 1868.)

1868.—SCARCITY OF MACKEREL ATTRIBUTED TO BLUEFISH.

Bluefish have been unusually plenty on this coast the present season, and the fishermen attribute the scarcity of mackerel to this fact. They are great destroyers of smaller fish, especially of mackerel, and whenever they come, the "small fry" get away as soon as possible.—(Cape Ann Advertiser, September 25, 1868.)

1868.—SUCCESSFUL CATCHES MADE BY THE SEINERS OFF THE NEW ENGLAND COAST.—UNFAVORABLE NEWS FROM THE BAY.

The weather the past week has been very favorable for the shore fleet, and the seiners have had pretty good luck, some of them taking from 100 to 150 barrels in one day. The mackerel, however, do not take the hook very readily. They are of large size, and if the good weather holds on the fleet will yet have an opportunity of making up a fair season's work. The baymen are picking up a few mackerel when the weather is favorable; but the catch there will not be large, and those vessels that succeed in making even one good trip will be fortunate. Late advices from there are not very encouraging.—(Cape Ann Advertiser, October 2, 1868.)

1868.—ARRIVALS FROM THE BAY.—SLIM DOINGS.

Fifty-six sail of vessels have arrived from the bay since our last issue, most of them with light fares. There are upwards of 100 sail yet to arrive, most of which will be along by the middle of the month. So far as we can learn the vessels will average about 150 barrels each, which is rather slim doings for those that have been down there all the season. There will be quite a falling off in the catch—fully one-half.—(Cape Ann Advertiser, November 6, 1868.)

A large portion of the bay fleet have arrived the present week, leaving about 10 sail to come. In consequence of the light catch the market is very active, and fares are sold as soon as landed. Prices are improving, sales yesterday being effected at $22, and the probability is that they will go still higher.—(Cape Ann Advertiser, November 13, 1868.

1868.—SAD RESULTS OF THE FAILURE OF THE MACKEREL FISHERY IN 1868.

The mackereling season is rapidly drawing to a close, and with some few exceptions the profits are on the wrong side of the ledger. Every-

thing has been done within the power of mortals to render the season a successful one. The vessels have been on the ground early and late, and in some instances days have merged into weeks without having a real lively catch. This has been exceedingly discouraging, no one can deny. * * *

That there are very many families in this town who have no money wherewith to support life the coming winter, on account of the poor returns of the mackerel season, is also a fact that stares us in the face in these dull and cheerless days of November. * * * The fishermen with families dependent upon them for bread are eager and anxious to be earning. It is no fault of theirs that they have not a balance of two or three hundred dollars whereby to meet the wants of their families. They did their best and failed. Such men are deserving of praise and substantial encouragement. * * *

Let us hope that winter fishing will yield good returns; and it hardly seems possible that there can be another unsuccessful mackereling season to follow in the footsteps of the past three years.—(Cape Ann Advertiser, November 13, 1867.)

1868.—Reminiscences of Capt. J. W. Collins.

During the early part of 1868 I was engaged in the cod fisheries on George's and Western Bank; but leaving this fishery, I started for the Gulf of Saint Lawrence on the schooner "Glenwood" in July. We fished about the north side of Prince Edward Island, on Bank Bradley along the west shore, in the Bay of Chaleur, and about the Magdalens. Mackerel were large, but perceptibly scarcer than for a number of years previous. Having obtained a fare of over 200 barrels, we returned home in the latter part of August to pack out our fish and refit for a second trip to the bay. On our second trip we fished chiefly about the Magdalens, though to some extent off east point of Prince Edward Island and along the north shore of Cape Breton. We obtained a fare of good barrels, and arrived home about the middle of November.

1868.—Mackerel fishery on the French coast.

The mackerel fishing on the French coast is at present exceedingly good. Two smacks have just returned to Dieppe, one with 12,060 fish and the other with 18,525. Also a boat belonging to Boulogne has brought in nearly 18,000.—(Barnstable Patriot, May 12, 1868.)

1869.—American vessels in the Gulf of Saint Lawrence.

The following statement of the number of fishing vessels in the Gulf of Saint Lawrence mackerel fishery and the American shore mackerel fishery, was submitted by David W. Low to the Halifax Commission:*

	Barrels.
194 vessels in Gulf, average catch 209 barrels	40,546
151 vessels off shore, average catch 222 barrels	33,552
Mackerel caught by boats and some eastern vessels, packed in Gloucester	19,028

*Documents and Proceedings Halifax Commission, 1877, U. S. edition, p. 2595.

1869.—MACKEREL FISHING IN CAPE COD BAY.

Three thousand mackerel were taken in the last weir at Provincetown in two nights.—(Provincetown Advertiser, June 23, 1869.)

1869.—FALL FISHERY IN CAPE COD BAY.

M. L. Adams caught, on Thursday morning in his weir, eight tons of mackerel, and Thursday evening, 2,200 mackerel.—(Provincetown Advertiser, November 10, 1869.)

1869.—HIGH PRICE FOR MACKEREL.

Bay mackerel have advanced to $28 per barrel, $1.10 more than they sold for last year at this time.—(Cape Ann Advertiser, April 30, 1869.)

1869.—FRESH MACKEREL IN BOSTON.

Fresh mackerel have made their appearance in Boston market the past week, and are selling for 30 and 35 cents apiece.—(Cape Ann Advertiser, May 7, 1869.)

1869.—GOOD CATCHES OF THE PROVINCETOWN GILL-NETTERS.

The several Provincetown mackerel fishermen, which have been rendezvousing in Barnstable Harbor, have been very successful the past week. On some days they have averaged 2,000 [mackerel] to a boat. They are taken by nets.—(Cape Ann Advertiser, May 14, 1869.)

1869.—EARLY APPEARANCE OF MACKEREL OFF CAPE ANN.—GOOD CATCHES BY THE SEINERS.

Mackerel have been quite plenty off this shore the past week, and the seiners have made some pretty good hauls. One vessel belonging to this port took as high as 120 wash-barrels on Monday; and others from 20 to 50 wash-barrels. None of the southern fleet have as yet arrived. One Gloucester vessel has been into New York with a small fare which were sold for $500. Mackerel are earlier than usual offshore this season, and the prospect for the home fleet is very encouraging.—(Cape Ann Advertiser, May 28, 1869.)

1869.—FIRST ARRIVALS FROM THE SOUTH.—PRICES.

Schooner "Hattie Lewis" arrived at this port on Saturday, from the south, with 205 barrels of mackerel, and the "Northern Light" on Wednesday with 50 barrels. Yesterday the schooner "Colorado" arrived with 250 barrels, and others of the fleet are daily expected. These are the first arrivals of the season, the mackerel selling for $8 and $10 per barrel. The reports from the fleet do not indicate a very heavy catch thus far, but there is yet time for the vessels to make fair trips before fitting for the bay.—(Cape Ann Advertiser, June 4, 1869.)

1869.—BIG CATCH IN A WEIR AT CAPE COD.

About 100,000 mackerel were taken in the "Philip Smith weir," at Eastham, week before last, netting the owner about $7,000. So says the Barnstable Patriot.—(*1 bid.*)

1869.—EFFECT OF THE RECIPROCITY TREATY ON NOVA SCOTIA.

The Halifax Chronicle, in speaking of the great need of a reciprocity between the Dominion and the United States, has the following significant article:

Our rulers should have common sense enough to cease prating about the Dominion dignity, and to make some strong effort to renew the reciprocity treaty, the abrogation of which has reduced this country and the other maritime provinces to a state of comparative destitution. From the making of the reciprocity treaty until its abrogation, Nova Scotia increased in wealth and population at a most extraordinary rate; from its abrogation until the present we have retrograded with the most frightful rapidity. Want of a good market has depreciated the value of our coal mines, has nearly pauperized our fishermen, farmers, and miners, and should this want not be supplied in the only way it can be, by a new treaty with the United States, Nova Scotia will in five years be one of the least desirable countries to live in on this continent.—(Cape Ann Advertiser, July 2, 1869.)

1869.—THE BAY FISHERY.—GOOD CATCH ON GEORGE'S.

A dispatch was received in town on Monday by the owners of schooner "Finance," stating that she had landed 260 barrels of mackerel. Some good fares of mackerel have also been taken on George's lately.—(Cape Ann Advertiser, July 30, 1869.)

1869.—FIRST ARRIVAL FROM THE BAY.

Schooner "Carleton" arrived from the bay on Wednesday, with 300 barrels of mackerel. This is the first vessel that has arrived from there this season. The "Carleton" made her trip in less than six weeks.—(Cape Ann Advertiser, August 20, 1869.)

1869.—ARRIVAL OF THE BAYMEN.—INFERIOR QUALITY OF BAY MACKEREL.—PRICES.—SUCCESS OF THE SHORE FLEET.

The bay fleet have not come along very freely the present week, but nine vessels having arrived since our last, making 22 in all that have arrived thus far this season. The fares average about 250 barrels, and the mackerel are of fair quality, but not so fat as those caught on this shore, and do not bring so good prices. Bay ones have been sold the present week for $18 per barrel, $4 less than the first trips that were brought in. Some of the fleet have shipped the mackerel home

by steamer and refitted in the bay for another trip in order to save time, and the prospect for the fall catch is considered very good. A large portion of the fleet went into the bay late in July, and will make but one trip. The shore fleet are doing fairly of late, and the mackereling season bids fair to be a successful one.—(Cape Ann Advertiser, September 10, 1869.)

1869.—HIGH LINE OF THE BAY FLEET.

Schooner "Finance," of this port, has recently landed her second fare of mackerel, 250 barrels, at Charlottetown (Prince Edward Island), making in all 510 barrels landed thus far. On her last trip she took 130 wash-barrels in one day. She is now out on her third trip, and bids fair to make a great season's work.—(Cape Ann Advertiser, September 17, 1869.)

1869.—SUCCESS OF THE WELLFLEET SCHOONERS.

The mackerel catchers of Wellfleet have done remarably well. Sixteen thousand barrels have been landed on the wharves, and 3,500 barrels are now afloat.—(*Ibid.*)

1869.—THE BAYMEN.

Seven of the bay fleet have arrived since our last issue, bringing about 1,700 barrels of mackerel.—(*Ibid.*)

1869.—GREAT DISASTER TO THE SHORE MACKEREL FLEET.

A terrific hurricane swept the coast of New England on the 8th of September, causing great loss of life and property in the mackerel fleet. The gale came on so suddenly and unexpectedly that the vessels were not able to reach a harbor in time to escape its fury, and being caught on a lee shore many of them were driven ashore. The Cape Ann Advertiser of September 10 and 17 gives detailed accounts of the losses.

1869.—SMALL FALL CATCH IN THE BAY.—LIGHT FARES BROUGHT HOME BY BAYMEN.

The prospect in the bay in the early part of the season for a successful catch of mackerel was most excellent, as many of the vessels obtained good fares on their arrival there; but the September catch fell off amazingly, and for the past month the vessels have done nothing at all.—(Cape Ann Advertiser, October 28, 1869.)

The bay fleet have mostly arrived home, there being but about forty sail now absent. The fares brought in are very light, ranging from 20 to 100 barrels, and the market is quite firm at advanced prices. No. 1's are selling the present week at $25 per barrel, and No. 2's at $15.

Shore mackerel are out of the market. The last sales of No. 1's were made at $26.—(Cape Ann Advertiser, November 12, 1869.)

1869.—Reminiscences of Capt. J. W. Collins.

Having spent the greater part of the fishing-season in the pursuit of codfish on George's, Western Bank, Cape North, and the Gulf of Saint Lawrence, I did not engage in the mackerel fishery in 1869 until August, when I went to the bay in the "Glenwood." We fished principally about the Magdalens and along the west shore between Escuminac, Point Miscou, and off the North Cape of Prince Edward Island. The best catch of mackerel which we obtained was in Miramichi Bay, eight or ten miles off shore, about the middle of September. At this time we had taken, in three or four weeks' fishing, 140 barrels of fine large mackerel, notwithstanding the fact that these fish were still less abundant than they had been the previous season. A strange thing occurred in the mackerel fishery of the Saint Lawrence in the fall of 1869, since the mackerel appeared to leave the bay much earlier than usual. After the middle of September but few fish were obtained by any of the fleet, and none secured large catches. Though we remained in the bay until the middle of October or later, and made every effort to catch fish on all of the principal grounds, yet we succeeded in taking only five barrels in addition to what we previously had, and this amount was a fair average for the fleet. Some four or five vessels, as it was reported, caught 30 or 40 barrels each off the North Cape of Prince Edward Island about the last of September or beginning of October; but, so far as I was able to learn, no other catches of importance were made after the middle of September. The vessels that went to the bay early enough to obtain reasonably good fares before the mackerel left the fishing-grounds were partially remunerated for the loss of time by the advance in the price of the fish, which resulted from the small catch.

1870.—Small number of Newburyport vessels engaged in the southern mackerel fishery.

The Newburyport Herald of the 29th ultimo says: "The southern fleet will be remarkably small this season, some of the vessels which usually go south engaging in the herring fisheries at the Magdalen Islands. This business is thought by some to be more profitable than the early mackereling trips."—(Gloucester Telegraph, May 7, 1870.)

1870.—Success of the gill-net fishery in Barnstable Bay.

The Cape Cod Gazette says: "Six mackerelmen have been doing a brisk business in meshing mackerel in the bay off Sandwich."—(Gloucester Telegraph, May 18, 1870.)

Success of two "south-shore" vessels.

Schooner "Isaac Somes," of Harwich, with a crew of 19 men, has landed this season 1,800 barrels of mackerel; stocked, $15,875; average stock among the crew, $886.

Schooner "Mary B. Taylor," of the same port, with a crew of 23 men, landed 1,912 barrels of mackerel; stocked, $17,400; average stock among the crew, $756.30.—(Gloucester Telegraph, November 23, 1870.)

1870.—NOTES ON THE SOUTHERN MACKEREL FISHERY.

A Newport correspondent says that "the mackerel fleet as yet, according to the most reliable news, have done but a slim business. Some 30 sail of vessels were at Newport on the 17th instant, ready to proceed to sea, having obtained bait from the Vineyard Sound fish weirs."—(Gloucester Telegraph, May 25, 1870.)

1870.—FIRST ARRIVAL FROM THE SOUTH.

The schooner "Geo. S. Low" is the first to arrive from the southern mackereling grounds, bringing 190 barrels of mackerel of good quality for the season.—(Gloucester Telegraph, May 28, 1870.)

1870.—SUCCESS OF THE SOUTHERN MACKEREL FLEET.

The southern mackerel fleet are meeting with a very fair success. There have been four arrivals at this port, bringing good fares. Nantucket reports an arrival with 137 barrels, and the Newburyport fleet have averaged over one hundred barrels each so far this season.—(Gloucester Telegraph, June 4, 1870.)

1870.—REPORTED SMALL CATCH OF MACKEREL IN THE GULF OF SAINT LAWRENCE.—PROFITABLE SHORE FISHING.

News from the Bay of Saint Lawrence indicates that the mackerel catch has been small so far this season, although large schools are reported in the waters about Prince Edward Island. The shore mackereling business continues to prove profitable, and this, with the troubles in the bay, will have a tendency to diminish the number of vessels pursuing the bay fishing this season.—(Gloucester Telegraph, July 16, 1870.)

1870.—ABUNDANCE OF MACKEREL IN GLOUCESTER HARBOR.

A school of mackerel was in our harbor yesterday. They took to the hook well, and good fares were secured by anything in the shape of a boat.—(Gloucester Telegraph, August 10, 1870.)

1870.—FISHING IN MASSACHUSETTS BAY.

The Yarmouth Herald, of last Friday, says: "Mackerel are taken in considerable quantities in our bay, and cod and bass in our weirs."—(Gloucester Telegraph, May 18, 1870.)

On Monday of last week the Swampscott fishermen made a good haul of mackerel off Egg Rock. One schooner took a fare of 80 barrels, another of 75, and six others made good trips. Some of the drag-boats brought in from six to eight hundred mackerel apiece from their net-fishing.—(Gloucester Telegraph, June 8, 1870.)

1870.—FALL FISHING IN BARNSTABLE BAY.

The Provincetown netters last week caught considerable quantities of mackerel in Barnstable Bay; 25,000 were sent to Boston by the steamer on a recent trip.—(Gloucester Telegraph, November 23, 1870.)

1870.—SPRING MACKEREL FISHERY.

Mackerel are finding their way along the coast in considerable numbers. On Friday one of our fishing schooners arrived with a fare of 35 barrels which had been taken that day in her seine. The mackerel were large and handsome, though not fat.—(Gloucester Telegraph, May 25, 1870.)

1870.—FISHING IN MASSACHUSETTS BAY.

Mr. William Stone, of Swampscott, had unusually good luck in his net-fishing week before last, making, including Monday's and Tuesday's catch, over $200 by the sale of mackerel landed by himself from a dory during eight days. On Tuesday he caught over 500, which netted him 6 cents apiece.—(Gloucester Telegraph, June 15, 1870.)

1870.—SPRING MACKEREL FISHERY IN CAPE ANN BAY.

The fishermen at Scusset one day last week took 15,000 mackerel.—(Barnstable Patriot, May 31, 1870.)

1870.—FIRST MACKEREL IN MASSACHUSETTS BAY.

Capt. Miles Blanchard, of Swampscott, caught some fine mackerel in the bay on Friday, the first of the season.—(Gloucester Telegraph, May 18, 1870.)

1870.—THE MACKEREL FLEET.

On one occasion 625 mackerel schooners were anchored in the harbor at Gloucester.

1870.—THE MACKEREL FISHERY.

The Portland Press of the 10th says that for ten days past the mackerel fleet had not met with a single mackerel until Friday morning, when they encountered great schools of them about 80 miles off the Cape. They had great luck, and for the next week we may expect they will spend the nights with us. The harbor is packed with their vessels; some 400 sail arrived in the harbor yesterday afternoon, presenting a splendid sight as they came past the breakwater under full canvas at race-horse speed.—(Gloucester Telegraph, September 14, 1870.)

1870.—THE MACKEREL FISHERY OF THE GULF OF SAINT LAWRENCE.

A fishing schooner arrived at Booth Bay on Sunday from the Bay Saint Lawrence with a fare of 380 barrels of mackerel.—(Gloucester Telegraph, October 15, 1870.)

1870.—SUCCESS OF THE SWAMPSCOTT MARKET FISHERMEN.

One of the Swampscott fishing vessels, last week, with a captain and three men, caught more than 4,000 mackerel, some of which were sold on the beach for 20 cents each. Another caught 4,800; another, 4,000; one man alone, 900; a man and his son, 1,600; another man and his son, 1,400; and a single man and his dory, 800.—(Gloucester Telegraph, October 19, 1870.)

1870.—GILL-NETTING AT DENNIS.—NEW YORK PRICES FOR FRESH MACKEREL.

The mackerel-netters of Dennis made one or two good hauls, and but for the unfavorable weather last week would have done well, the prices of fresh mackerel in New York being from 18 to 20 cents apiece.—(Gloucester Tel graph, November 23, 1870.)

1870.—THE MACKEREL FISHERY FROM GLOUCESTER.

Fifty-nine vessels pursued the southern mackerel fishery in the spring, seven of them making two trips. Good fares were secured and the fleet was free from accident. The shore mackerel fleet was unusually large during the summer months, and proved successful. One vessel was lost in the business, the schooner "Day Star," 40.46 tons burden. The bay fleet was a very small one, owing to the difficulties apprehended and experienced from the course pursued by the Dominion authorities. This business met with serious embarrassments by the seizure of four of our vessels and the threatened seizure of others, and the business as a whole did not prove profitable.—(Gloucester Telegraph, November 19, 1870.)

1870.—GENERAL DISCUSSION OF THE MACKEREL FISHERY.

The southern mackerel season was closed up during the early part of the month of July, eight vessels arriving home from the south during the first ten days of the month, six of which were from a second trip. The whole number of vessels reported as making southern trips in pursuit of mackerel this season was 59, of which number seven made two trips each. These vessels met with a very fair success, and found a ready market for their catch on their arrival home.

The eastern mackerel fishing was actively pursued during the month, and a large proportion of the fleet secured excellent fares. The number of fares landed at this port in July was about 80, and the market has been quite active, and the stock has been kept well reduced. Some 20 vessels have also been engaged in seining along the eastern shore, ostensibly for porgie bait, but some of them have made good hauls of mackerel in their seines, and have made good trips.

The Bay of Saint Lawrence fleet has been constantly augmented, and

so far as is known has been free from molestation by British cruisers of late. The fleet now in the bay is quite respectable in point of numbers, though probably not as large as the last few years.—(Gloucester Telegraph, August 6, 1870.)

The shore mackerel fishing is now at its height, and employs a large fleet from the Cape Ann and Cape Cod fishing towns. During the month of August 117 Gloucester vessels were reported as arriving from mackereling cruises east, 11 of which arrived twice, making a total of 128 fares of shore mackerel landed at Gloucester in August, against some 80 fares in July. Besides these, 17 vessels engaged in seining arrived during the month, many of which had secured good fares of mackerel. There were 20 arrivals from seining in July. The fleet has met with good success, although as a rule the mackerel have not been of a very good quality. The last week or two, however, has shown an improvement in the quality of the smaller grades, and the disparity of prices between the ones and twos will probably soon be lessened. No. 1 mackerel have commanded good prices, ruling from $22 to $26 per barrel for shore, but most of the 2's have been closed out at $9.75 per barrel, and 3's have ruled at $6 per barrel since the 1st of July. The arrivals from the bay have not been numerous. Only 10 vessels have arrived here this season, and these have met with a moderate success, averaging about 200 barrels each. The bay mackerel received have been of good quality, and sold at $24 to $25 per barrel for No. 1's; $12.50 to $13 for 2's, and $10.50 for 3's.

Last year the number of arrivals from the bay to this date was 13. In 1868 only 8 vessels arrived in August. In 1867 there were 51 arrivals, and in 1866 84 arrivals from the bay previous to this date. The average fares of the bay fleet arriving previous to September, last year, was about 290 barrels. The Portland fleet are doing about the same as the Gloucester vessels, 13 arrivals having been reported, with a total catch of 2,384 barrels.

Letters received at Newburyport state that 9 vessels belonging to that port had fares on the 15th ultimo ranging from 20 to 110 barrels, and averaging 55½ barrels each, and there has been one arrival from the bay, at Newburyport, with only 80 barrels. Three vessels have arrived at Booth Bay from the bay, averaging less than 150 barrels each.—(Gloucester Telegraph, September 3, 1870.)

1870.—Reminiscences of Capt. J. W. Collins.

In the summer of 1870 I started on a mackerel trip to the Gulf of Saint Lawrence, about the middle of June, in the new schooner "Alice G. Wonson." We reached the fishing ground about the 25th of June. The mackerel in the Gulf of Saint Lawrence were large, but very scarce, and they did not seem to fatten so rapidly as in previous years. We returned home in August after an absence of eight or ten weeks, with a fare of 175 barrels of mackerel, which brought a high price, our No.

1 fish selling for $22.50 per barrel. After packing out our bay trip we engaged in the mackerel fishery off the New England coast, fishing all the way from Mount Desert Rock to Cape Cod, though we caught but few mackerel east of Monhegan. The fish off our own shore in 1870 were of medium size, the greater portion packing for No. 2's. Mackerel were abundant, but did not seem inclined to take the hook very readily until they began moving to the westward along the coast toward Cape Ann and Cape Cod. Good catches were obtained off Boone Island, Ipswich Bay, and in Massachusetts and Barnstable Bays. We made two trips off shore, securing a catch of about 300 barrels.

1870.—THE MACKEREL FISHERY OF THE SAINT LAWRENCE.—HOSTILITIES OF CANADIANS CAUSES LOSS TO AMERICAN VESSELS.

The following extract from the Gloucester Telegraph shows the condition of the Bay of Saint Lawrence mackerel fishery during the year 1870:

"The Bay of Saint Lawrence mackereling season has closed, and the ill success of this branch of our industry is apparent at a glance. The hostile attitude of the Dominion Government had a tendency to deter many vessels from engaging in this fishing, so that the early fleet in the bay was quite small, and the success of the shore fleet later in the season tended to still further decrease the number of vessels engaging in the bay fishery, so that our fleet was smaller than for many years. The whole number of vessels reported as making bay trips this year is but 80, only three of which made two trips each, and none were allowed to ship mackerel home; whereas, last year, there were 194 vessels employed in the bay fishery, 21 making two trips, and 33 shipping their early trip home, and refitting in the provincial ports.

"Four Gloucester vessels were seized this season by the Canadian authorities on the pretense of unlawful fishing; one of these was released under a bond to pay whatever damages were found by the courts; one was condemned and repurchased by her owners at a cost of nearly $3,000, and two remain in the hands of the provincials."—(Gloucester Telegraph, November 16, 1870.)

1871.—LACK OF INTEREST IN THE MACKEREL FISHERY EXHIBITED BY CANADIAN FISHERMEN.

MACKEREL FISHERY.—GASPE DIVISION.

"In a special report on the duties performed by 'La Canadienne' in connection with the marine police, I shall have the honor of speaking of mackerel fishing by foreign schooners. This pursuit is not much followed by our own fishermen, and has steadily decreased since 1869. The fish did not come near the shores, and not more than 100 barrels were caught in Bay des Chaleurs. It was more abundant in Gaspe Bay, the catch being 400 barrels over that of last year. Cod-fishing is the main occupation of the people in this division. This fish was so

abundant, and the price of mackerel so low, that this may account for their not attending to the latter."—(Report of the cruise of the government schooner "La Canadienne," in the River and Gulf of Saint Lawrence, for the season of 1871, under command of N. Lavoie, esq., fishery officer. Annual report of the department of marine and fisheries, for the year ending 30th June, 1871, Appendix C, pages 19, 20.)

WATSHEESHOO DISTRICT. *Felix Sylvestre, overseer.*

"Mackerel abundant, but the fishermen of this division do not follow this fishing."—(Synopsis of fishery overseers' and guardians' reports in the Province of Quebec, for the season 1871. Annual report marine and fisheries, 1871, Appendix H, page 72.)

MOISIE DIVISION. *F. Thivierge, overseer.*

Mackerel were abundant. The fishermen in this division do not, however, in general, follow this fishing, but one man took 64 barrels.—(*Ib.*, p. 71.)

PABOS DIVISION. *James M. Remon, overseer.*

In the mackerel fishing nothing is done beyond taking what is required for bait.—(*Ib.*, p. 67.)

ANTICOSTI DIVISION.

"Although mackerel are very abundant around the island they are not much sought after, and only 20 barrels were caught at Salmon River."—(Report of N. Lavoie, commander government schooner "La Canadienne," of a cruise in the River and Gulf of Saint Lawrence, 1872. Annual Report, marine and fisheries of Canada, 1872, Appendix B.)

1871.—INFERIOR QUALITY OF MACKEREL TAKEN IN CANADIAN WATERS.

The following is taken from letters furnished by the county overseers of Nova Scotia to Mr. Rogers, the fish-officer of the province:

"I am happy to be able to report a very large increase in the quantities of almost all kinds of fish taken this year, and although prices have ruled much lower for most descriptions, the aggregate value is more than one million dollars over the previous year. Mackerel, particularly, show a very large increase, but being mostly the early runs, they are inferior in quality."—(Report of W. H. Venning, esq., inspector of fish for Nova Scotia and New Brunswick. Annual report marine and fisheries, 1871, Appendix N.)

1871.—BAD SEASON FOR MACKEREL IN THE GULF OF SAINT LAWRENCE.

These fish struck in on our shores about the middle of June in large quantities, and the first catches were taken in a very short time, some vessels taking 200 barrels in three weeks; but the fish were poor, not

making more than *threes* when culled. After that the catch was moderate, and I do not think that more than 30,000 barrels of mackerel were taken by the whole fleet. It has been a bad year for mackerel, the market prices, as a rule, being one-half below the average prices, and great numbers of American vessels were laid up by their owners, for the reason that the outlay required for fitting the vessel out for fishing being more than the proceeds of the summer work.—(G. V. Story, commander marine police schooner "Water Lily," Pictou, November 27, 1871.)

THE MACKEREL FISHERY.—The Gloucester Telegraph says that the latest news from the Bay of Saint Lawrence reports a large number of American vessels on the fishing-grounds between Saint Margaret's and East Point, with mackerel scarce at the time. At Rustico mackerel catching was slack, and had been for a fortnight, though the few caught were larger than the earlier school. Mackerel were reported plenty at Port Daniel and East Point. All the fish were east of Rustico, and the Cascumpec boats reported neither codfish nor mackerel west. Sixty sail of vessels were reported at Magdalen Island on the 3d instant, with mackerel scarce, and reports from Bradley's, three days later, represent fish "few and far between."—(Boston Journal, August 26, 1871.)

1871.—REAPPEARANCE OF MACKEREL ON THE LABRADOR COAST AFTER FORTY YEARS' ABSENCE.

"Mackerel, which for the last 40 years had disappeared from the waters of the coast of Labrador, returned this season and in as great abundance as formerly. I have seen as many as 400 or 500 barrels caught in one haul of the seine at Bonne Esperance and Meccatina. Several schooners loaded at Seven Islands. Mackerel remained two months in the bay during the winter. A much larger quantity than was needed for their own use was caught at several ports along the coast, but prices were very low. There is no doubt that if codfish and mackerel continue to visit the waters of this division in as large numbers as they did this year, the coast of Labrador will assume an importance which may become superior to that of the Gaspe division."—(Report of the cruise of the government schooner "La Canadienne," in the River and Gulf of Saint Lawrence for the season of 1871, under command of N. Lavoie, esq., fishery officer. Annual report of the department of marine and fisheries for the year ending 30th June, 1871, Appendix C, page 26.)

1871.—ABUNDANCE OF MACKEREL AT SMALL POINT, ME.

The Bath (Me.) Times says that on Thursday, Small Point Harbor was thronged with mackerel, the like of which was never known, and countless thousands of them were caught in seines, nets, and with hook and line. One fishing vessel secured a thousand barrels. Other vessels got several hundred barrels, and the citizens in that vicinity made free with that "school" without consulting the teacher.—(Germantown Telegraph, August 16, 1871.)

1871.—NOTES ON THE MACKEREL FISHERIES, ETC., OF THE PROVINCES OF NEW BRUNSWICK AND NOVA SCOTIA.

In his report for 1871 Mr. Venning states that Mr. John Fitzgerald, overseer for the western district, says: "The mackerel was more productive this year than it has been for the last ten years, but the quality was very poor. The fall mackerel have been a total failure; and as this fish, if of first quality, would bring a high price, the loss has been seriously felt by the fishermen. The mackerel that have been caught this year have brought a very low price, but when the large quantity taken is considered, the fishermen have no reason to complain."

Mr. Daniel Dimock, overseer for the eastern district of Lunenburg, says: "The shore fisheries in this district have been productive, more especially the mackerel."

In same report, Mr. Venning also stated that, "Overseer James A. Tory, of Guysborough County, says with reference to his district: 'The fisheries as a whole have been good this season, especially for mackerel, and although prices have ruled low they will compare favorably with the past.'"

In same report Mr. Venning further states that, "Mr. Francis Quinan, the officer in charge of Cape Breton County, reports as follows: 'The total quantity of fish taken is considerably above that of former years. The run of mackerel was abundant, but of small size; the large brands were conspicuous by their absence; No. 3's ruled, and of their kind were good, but the price realized in our markets was less than in years past.'"—(Report of W. H. Venning, esq., inspector of fisheries for Nova Scotia and New Brunswick. An. Rep. Mar. and Fish., 1871, Appendix N.)

1871.—THE MACKEREL FISHERY.

The Cape Ann Advertiser of September 1 gives the following account of the mackerel fishery in 1871:

"THE FISHERIES.—The bay fleet come along slowly. There have been but eleven arrivals thus far, the vessels averaging about 300 barrels each. The quality of the mackerel is not as good as those taken off this shore, and but few number ones have as yet been landed, but the catch of the present month and next will, no doubt, average much better. Prices rule low, considering the small number of barrels landed this year, and it will require pretty large fares to realize a paying season's work. Late advices from the bay report mackerel scarce.

"The shore fleet have done rather a slim business the past month. Some of the seiners have made some good trips, but the hookers, with a few exceptions, have done very poorly, the mackerel not inclining to bite. Had it not been for the seiners the market would have been bare of shore mackerel; as it is, the catch has not been half as large as it was up to this time last year. The mackerel average mostly ones and are very large and fat, the quality being much better than those caught off

this shore last year, but the prices rule much lower. No. 1's are selling the present week for $11.25 per barrel, less than one-half the price they brought at this time last year. Unless mackerel come in more freely than they have, the season's catch will be light and prices must necessarily advance.

"The George's fishery has been prosecuted through the season by a much larger fleet than usual, and most of them have realized very good fares. The catch is greatly in excess of that of last year, and although the prices have not been as remunerative, still the increase in catch will more than make up the difference, and the vessels engaged in this branch of the fisheries will make a very good season's work.

"The Grand Bank halibut fleet have brought in rather light fares of late, and prices have ruled low. About thirty sail of vessels are now engaged in this branch of the fisheries, and the business, as a whole, has proved but moderately successful." (Boston Journal, September 22.)

"BAY SAINT LAWRENCE MACKEREL FISHERY.—The mackerel fishery for this season is rapidly drawing to a close. The shore fleet are doing but little, and may soon be expected in our waters for a week or two, preparatory to winding up the business for the year. The news from the bay indicates a scarcity of mackerel, and, as rough weather may soon be expected, a large portion of the fleet will soon be along. The number of arrivals from the bay reported at Gloucester this season has been fifty-two. The fares have been comparatively small, and the quality poor, while prices have ruled much lower than the past few years. The fares of 31 Gloucester vessels have been reported, ranging from 160 to 450 barrels, and averaging 247 barrels, which will probably be about the average of the fleet. Sixteen of the Portland fleet show an average of 211 barrels, and 11 of the Newburyport fleet show an average catch of 192 barrels. The average catch of the fleet from other fishing towns, so far as reported, is equally small; Booth Bay 227 barrels, North Haven 160, Wellfleet 140, Belfast 110, and New London 235. A Salem vessel has landed 307 barrels, and one Frankfort vessel is reported with a catch of 312 barrels and another with 620. Nineteen vessels reported at Port Mulgrave show an average catch of 200 barrels." (Gloucester Telegraph, August 27.)

1871.—FALL MACKEREL FISHERY IN CAPE COD BAY.

Dennis.—On Wednesday a. m. (8th) the fishermen took 300 to 800 mackerel each in nets.

Barnstable.—Smith Bros. caught 1,200 yesterday (14th).—(Provincetown Advertiser, November 15, 1871.)

1871.—In the Cape Ann Advertiser, of July 28, are the following remarks upon the mackerel fishery:

"The mackerel season has now commenced in earnest, and good returns are anticipated, as the season bids fair of being a prosperous one. The prospect at the bay is very encouraging, many of the fleet

having already landed good fares. American vessels are subject to the same treatment as last year, if caught fishing within the limits; but they have liberty to ship mackerel home, and purchase supplies this season, which will greatly add to their chances of making a good year's work.

"The skippers will undoubtedly keep a sharp lookout and give the Dominion cruisers a wide berth, and we do not anticipate any difficulty in those waters at present. Later in the season, when the mackerel tend in shore, it may be a little more difficult to obtain a fare, but we do not believe that the Dominion cruisers intend to annoy American fishermen in the manner which characterized last season.

"The treaty has not been signed by the Dominion Government as yet, consequently it will not take effect this season. It is evident that the price of mackerel will not rule as high as last year, which will tend to bring about quick sales, as people can afford to eat these fish when the price is brought within their means, and the prospect for a lively market is quite encouraging.

"Altogether, the mackerel season, both off shore and at the bay, promises well, and we hope that good trips will crown the efforts of all engaged in this branch of the fisheries."—(Boston Journal, July 29.)

1871.—Reminiscences of Capt. J. W. Collins.

I was engaged in the halibut fishery during the season of 1871 until August, when I fitted out for a mackerel cruise off the New England coast, still being the same vessel in which I had sailed the previous season. The mackerel were comparatively scarce in the fall off shore and disinclined to bite. We succeeded, however, in catching 175 barrels with hook and line, which was much better than the average for the time we were engaged. The last two days' fishing which we had were off Chatham. The first of the two days we caught 50 barrels between Nausett and Chatham, and the following day we obtained 30 wash-barrels more about 15 or 20 miles ESE. from Chatham Light. The fish at that time moved very rapidly in a southerly direction.

Many of the seiners obtained large catches during the fall, but as we were fishing with hook and line it frequently happened that we could get few or no mackerel, even where they were most abundant, and the seiners were filling up.

1872.—Good luck of some of the market fishermen.

On Friday of last week the schooner "Yankee Lass," Captain Brown, took 60 barrels of mackerel off the Highlands of Cape Cod, and sold them in Boston the next day for $1,500. A few weeks before the same vessel sold $1,200 worth, which she caught in a single day. Another vessel made $2,520 in a couple of days. In all these cases the market was bare of mackerel, and hence the high prices obtained. The fore-

going fares were sold fresh without dressing.—(Gloucester Telegraph, October 12, 1872.)

1872.—Mackerel fishery of Provincetown.

The Provincetown mackerel fleet, in the early part of last week, after a trial of two days without finding mackerel, broke in small squadrons and sought their home ports to haul up, or to engage in other pursuits. It has hovered around Provincetown, and been in the harbor since August, taking but few fish. Inquiry at the packing establishments discloses the fact that the entire catch of that part of the fleet hailing from Provincetown will not much exceed 12,000 barrels. In 1870 the catch packed 37,552 barrels, and in 1871 it was 24,918 barrels. From information received, the opinion prevails that the falling off in the catch of the whole fleet will not be less than that part of it sailing from Provincetown. A very few vessels using seines have been successful, but those depending upon the hook and line, constituting much the largest part, will not, as a whole, realize a sum sufficient to pay expenses.—(Cape Ann Light and Gloucester Telegraph, May 31, 1874.)

1872.—Mackerel on the south coast of Nova Scotia.

H. S. Jost, esq., overseer for the western district of Lunenburg County, Nova Scotia, reports that mackerel are of a better quality than those taken in 1871, and have generally been sent to the United States, where a fair price has been obtained for them. The hitherto uncertain fares in the North Bay mackerel fishing has had the effect of causing most of the Nova Scotia vessels to seek other employments this fall.—(Report of W. H. Venning, inspector of fisheries for Nova Scotia and New Brunswick. An. Rep. Mar. and Fish., 1872, Appendix N.)

1872.—Disinclination of the Canadian fishermen to engage in catching mackerel.

Mackerel fishing is pursued only to a very limited extent in Gaspe Bay since the repeal of the reciprocity treaty, the few accidently caught in herring nets being used as bate for cod; and even under reciprocity this kind of fishing was entirely in the hands of Americans, the Gaspe fishermen not catching the fish even for local consumption. For the space of about one month this summer mackerel was very abundant in Gaspe Bay, some catching as many as 1,700 in one day. Mackerel as well as salmon sold fresh, but prices being low, fishermen considered it more advantageous to engage solely in the more remunerative pursuit of cod-fishing. During September and October prices ruled higher, but mackerel had then left the bay.—(Report of N. Lavoie, commander of government schooner "La Canadienne," in a cruise in the River and Gulf of Saint Lawrence, 1872. An. Rep. Mar. and Fish. 1872, Appendix B.)

1872.—A BIG TRIP FROM GEORGE'S.

Schooner "Volunteer," Captain Smith of this port, arrived from George's on Friday with 340 barrels of mackerel, which were seined on the bank. This is the largest fare brought in this season, and the mackerel were all large and fat.—(Cape Ann Advertiser, August 16, 1872.)

1872.—A BIG SCHOOL OF MACKEREL—SUCCESS OF THE SEINERS.

Schooner "Judith Ann," of this port, recently came across a big school of mackerel off Thatcher's Island, and had such a heavy draught of them that they were obliged to cut the purse-rope of the seine in order to save it. Out of the lot, estimated at 1,000 barrels, they succeeded in saving only 40 barrels.

Several of the mackerel seiners had quite a streak o' luck last week, which will very materially help out their season's work. * * *

Schooner "Isaac Somes," Capt. E. H. Taylor, was absent from Harwich Port thirty hours, and during that time seined 250 barrels of mackerel. This is reported as the largest catch in the shortest time this season.—(Cape Ann Advertiser, September 13, 1872.)

1872.—REMINISCENCES of CAPT. J. W. COLLINS.

In August, 1872, I went to the Gulf of Saint Lawrence on a mackerel trip in the "Alice G. Wonson." Mackerel were large though scarce, and as a result we cruised over nearly the whole of the fishing grounds in the Gulf from Bonaventure to Cape Breton. We did not succeed in obtaining any great catches, neither did we hear of many being taken. However, we secured a fare of 250 barrels of fine mackerel, for which a fair price was obtained, making the voyage, on the whole, a reasonably profitable one.

1873.—THE PASSAGE OF THE FISHERIES BILL—ANTICIPATION OF ITS BEING INJURIOUS TO AMERICAN FISHERMEN.

The bill to carry into effect the fishery provisions of the treaty of Washington, passed the House Monday by an unexpectedly strong vote, 145 yeas and 30 nays. The only amendment, which was offered by Mr. Buffinton, delays the date on which the duties on fish from the provinces are removed until July 1, and was agreed to both by the Committee on Foreign Affairs and by the State Department. General Butler opposed it, and denounced the treaty as very unfair to the United States. President Grant sent a special message to the Senate and House, in which he urged the passage of the bill. It will go into effect July 1. There are grave apprehensions that we have paid dearly for the whistle in the admission of foreign fish duty free; and the provincial fishermen have thus obtained great advantages over the American, both on the lakes and sea-coast. Be that as it may, there is no help for

it now, and ere the end of the present year we shall probably know whether or not we can catch and sell fish under the disadvantages of this treaty as cheaply as our neighbors in the provinces can with the great advantages it affords them.—(Cape Ann Advertiser, February 28, 1873.)

1873.—SAILING OF THE FIRST OF THE SOUTHERN FLEET.

A portion of the southern mackereling fleet have sailed the present week, and others will soon follow.—(Cape Ann Advertiser, April 18, 1873.)

Two of the Newburyport schooners sailed on the 17th instant, for the south, on a mackereling cruise.—(Cape Ann Advertiser, April 25, 1873.)

1873.—FIRST ARRIVAL OF FRESH MACKEREL IN NEW YORK MARKET.

The first fresh mackerel of the season were carried into New York on Thursday (May 1) of last week, by a Chatham schooner. She had 25,000, which were sold at 20 cents apiece.—(Cape Ann Advertiser, May 9, 1873.)

1873.—A BIG FIRST TRIP.

Schooner "Fleetwing," of this port, carried into New York on Tuesday 52,000 fresh mackerel, which were sold for $2,657.—(*Ib.*)

1873.—FIRST MACKEREL CAUGHT OFF CAPE ANN.

May 20, schooner "Sea Foam" caught about 200 mackerel, which, being the first catch of the season off Cape Ann, sold for 10 cents apiece. Last season the same vessel also brought in the first fare of mackerel, having been fortunate in securing 120 barrels on the 22d of May, which sold for $2.50 per hundred.—(Cape Ann Advertiser, May 23, 1873.)

1873.—FIRST ARRIVAL IN GLOUCESTER OF THE SOUTHERN FLEET.—GOOD PRICES.

Schooner "Emma Jane" arrived home from the south on Thursday last (May 19) with 170 barrels of mackerel, which were sold for $9.25 and $7.25 per barrel. First arrival of the season.—(Cape Ann Advertiser, May 30, 1873.)

1873.—FIRST START OF THE BAY FLEET.

The first of the bay fleet sailed on Tuesday (June 3), and others will soon follow. Some 30 sail will be on their way by the middle of the month.—(Cape Ann Advertiser, June 6, 1873.)

1873.—SPRING MACKEREL FISHERY.

The fishing season has fairly commenced in Long Island waters, in the Great South Bay, and the other bays on the south side. Large num-

bers of bluefish, weakfish, and mackerel are taken daily. On Friday and Saturday the fishermen found it impossible to dispose of their catches, and most of those who had loads of mackerel were obliged to cast anchor and salt them. On Friday the fishing company at Southold caught 100,000 at one haul.—(Cape Ann Light and Gloucester Telegraph, Gloucester, Mass., May 31, 1873.)

1873.—THE SOUTHERN MACKEREL FLEET AT NEWPORT.

One hundred and fifty sail of mackerel catchers put into Newport Harbor on the 5th instant, in consequence of thick weather. They report mackerel more plenty of late, the catch the previous days averaging about 25 barrels to a vessel.—(Cape Ann Advertiser, June 13, 1873.)

1873.—THE SOUTHERN MACKEREL FISHERY.—PRICES.—THE BAY FLEET.

The Newport southern mackereling fleet has been doing only fairly. The "Miantonomoh" has taken three fares of fresh mackerel, caught by seine, into New York, of 45,000 fish; the "Lizzie Thompson" has taken there two fares of 13,000 fish, and the "G. W. Brown" has taken two fares of 25,000, making in all 83,000 fresh mackerel taken into New York by Newburyport vessels. One firm has received $2,000 for fresh mackerel sold, and has about the same amount to come.

By the hook the schooner "Matilda" has caught 12,000, and the "John Gerard" 8,000, and these also have been carried into New York.

The southern mackerel fleet, as a whole, have not done so well this season as last. A large proportion of the fleet have sold their mackerel fresh in New York, and some of the seiners have made good stocks; but the hookers have done very slim. Some fourteen sail have thus far arrived home, averaging about 100 barrels. The market being bearer of old mackerel, the new stock have been in good demand, recent fares selling at $10.25 and $8.25 per barrel, with prospect of advance on these prices. A large fleet will visit the Bay of Saint Lawrence the present season. The early fleet have already sailed, and by the 1st of July there will probably be a hundred vessels in readiness to start. The shore mackereling fleet will be smaller than that of last season, and comprised mostly of seiners.—(Cape Ann Advertiser, June 13, 1873.)

1873.—THE FIRST FARE FROM GEORGE'S.—A GOOD HAUL.

Schooner "Mary Odell," of this port, arrived from George's on Monday with 240 barrels of mackerel, the first fare from there this season. They lost most of the first haul they made in consequence of a shark going through the seine just as they had commenced bailing out. After repairing the seine, they made another immense haul, filling all their barrels

and the dories, and let as many more go, being unable to take care of them. The mackerel were of large size and excellent quality, and the trip proved a profitable one.—(Cape Ann Advertiser, July 18, 1873.)

1873.—A GOOD STOCK IN THE SHORE FISHERY.

Schooner "Isaac Somes," of Harwich Port, engaged in the shore mackerel fishery, has stocked about $7,500 thus far this season, and is high line of the fleet from that port.—(Cape Ann Advertiser, July 25, 1873.)

1873.—ANOTHER BIG GEORGE'S TRIP.

Schooner "Eddie Pierce" arrived at Boston last week, from a three weeks' cruise, with 550 barrels of George's mackerel. She stocked $6,000 for the trip—pretty good returns for a short voyage.—(Cape Ann Advertiser, August 8, 1873.)

1873.—SHORE AND BAY FISHERIES, PRICES, ETC.

The mackerel catch off this shore still continues light for the season. Nineteen seiners have arrived since our last issue, five of which were from George's, and brought in good fares. The total catch for the past week has been about 2,500 barrels, which have been sold at $20 and $19 for No. 1's; $12.75 and $13 for No. 2's. Schooner "Highflyer" arrived from the Bay of Saint Lawrence on Tuesday (August 5)—the first arrival of the season, and a week earlier than the first arrival last year. She brought in 225 barrels. Others of the fleet are on their way home, and daily expected. Two fares have been sent home per steamer. The quality of the mackerel taken at the bay early in the season is not as good as those taken off this shore, but those caught the past three weeks are said to be much fatter.—(*Ib.*)

1873.—THE MACKEREL FLEET OF NEWBURYPORT, PAST AND PRESENT.

The Newburyport Herald says: Our mackerel fleet, which numbered 140 vessels forty years ago, is now reduced to about 20.—(Cape Ann Advertiser, August 15, 1873.)

1873.—LIGHT CATCH IN THE BAY.

On July 29 there were in the harbor of Georgetown, Prince Edward Island, about 50 sail of American mackerel schooners. The highest catch reported among them was 200 barrels, and the average fares of the whole fleet was estimated at 150 barrels. The catch of mackerel in the Gulf of Saint Lawrence has, up to this time, been light. The fish appear to be abundant, but do not bite freely.—(*Ib.*)

1873.—AN OLD VESSEL MAKES A LARGE STOCK IN THE SHORE MACKEREL FISHERY.

Schooner "I. H. Horton," which recently arrived at Wellfleet from George's, has caught and landed 1,402 barrels of mackerel, stocking

$14,023, having been employed two months and ten days. This is the largest stock made in the mackereling business from any port this season. The schooner is twenty-three years old, and owned by Capt. I. H. Horton, of Eastham.—(Cape Ann Advertiser, August 22, 1873.)

Schooner "I. H. Horton" has recently arrived from her fourth trip, with 282 barrels of mackerel. The "Horton" has now landed 1,664 barrels, making her stock in three months $18,425.—(Cape Ann Advertiser, September 12, 1873.)

1873.—DESTRUCTIVE GALE IN THE GULF OF SAINT LAWRENCE.

In the Cape Ann Advertiser of September 5, 1873, 36 Gloucester mackerel schooners were reported driven ashore in the hurricane of August 24 and 25, causing the loss of thirty-six lives. Besides these many vessels and lives were lost from other ports engaged in the mackerel fishery of the Bay of Saint Lawrence.

1873.—SCARCITY OF MACKEREL OFF NEW ENGLAND COAST.—ARRIVALS FROM BAY, HIGH PRICES, ETC.

Mackerel still continue very scarce off this shore, and some of the seiners have abandoned the business and fitted away for the bay. With the exception of a haul by one of the Swampscott boats, and one by a Harwich schooner Saturday on Jeffries, there have been no mackerel seined off this shore the past week. One George's fare of 240 barrels arrived on Tuesday, which were quickly taken up at $23.50 per barrel for No. 1, the highest price obtained this season. No. 2 sold for $13.

Six bay fares, about 1,200 barrels, have arrived the past week, which have met with quick sales, No. 1's selling for $14.50 and $15 per barrel. The market was never so bare of mackerel at this season of the year, and the supply for the fall and winter trade bids fair to be a meager one.—(Cape Ann Advertiser, September 12, 1873.)

1873.—A SCHOOL OFF CAPE COD.

A school of mackerel struck the waters off Cape Cod last week. A Harwich schooner took 100 barrels, and other vessels shared in the good luck.—(Cape Ann Advertiser, October 31, 1873.)

1873.—ARRIVAL HOME OF THE BAY FLEET.

The bay fleet have come in freely the past week, 63 vessels having arrived since our last issue, averaging good fares. This leaves about 30 sail yet to come, most of which will be along before the close of another week. The vessels arrive on a dull market, and but few of the late fares have been sold, as holders are not desirous to sacrifice their mackerel at the prices at present offered, unless actually forced to do so. The stock in the market is held at $14 and $12 for Nos. 1 and 2, which prices, if not higher, will no doubt be realized ere many weeks elapse.—(Cape Ann Advertiser, November 14, 1873.)

1873.—THE GLOUCESTER MACKEREL FISHERIES.

The southern fleet in the spring was of usual size—embracing 54 vessels—and fairly successful, marketing their early catch in New York at good prices.

The summer fishery off the shores of Maine, New Hampshire, and Massachusetts was of respectable size, and mostly engaged in seining of mackerel, with a very good average success, although a few vessels did not pay expenses. Eighty-six vessels engaged in this business. Schooners "Beloidem" and "Empire State" were lost in this business.

The Bay of Saint Lawrence fleet was unusually large, consisting of 185 vessels, against 60 last year. The catch was good, and the business would have proved quite successful but for the disastrous gale in August, by which so many vessels were wrecked or temporarily disabled in the height of the fishing season, materially reducing the receipts. Of the 185 Gloucester vessels engaged in this fishery 10 were wrecked, and are total losses, and three remain ashore at the Magdalen Islands, but are not abandoned. Twenty-six vessels made two bay trips each during the season, and the whole number of fares received at Gloucester this season will be 198 against 65 last year.—(Gloucester Telegraph, November 19, 1873.)

1873.—REMINISCENCES OF CAPT. J. W. COLLINS.

During the first part of 1873 I was engaged in the haddock and cod fisheries. About the 25th of August I started from home on a mackerel trip to the Gulf of Saint Lawrence, still being in the same vessel in which I had sailed the three previous years. We arrived in the bay soon after the first of September and immediately proceeded to the Magdalens. There we had an opportunity of witnessing the great destruction which had been wrought by the hurricane of the 24th and 25th of August. At the head of Pleasant Bay, and in Harbor Le Barre, some 20 or 25 sail of American mackerel schooners were driven high up on the sand; many of them lying in such positions as to render it extremely doubtful if they could be again got afloat. Many vessels were also stranded on Prince Edward Island, some being lost with all hands, while the crews of others were fortunate enough to escape. Some of these schooners we had an opportunity of seeing later on our trip. I have taken occasion to allude to this gale here, since it was one of the most disastrous which our mackerel fleet has ever encountered, resulting in very great loss of life and property. The mackerel were scarce in the bay during the fall of 1873, and though mostly of a large size were not so fat as might be expected. We fished most of the time about the Magdalen Islands, visiting, however, other points of the bay more or less frequently. We succeeded in obtaining a fare of 208 barrels, and returned home about the middle of November.

1874.—THE SOUTHERN MACKEREL FISHING.—LIGHT FARES BROUGHT IN.

Southern mackerel fleet are arriving home, averaging light fares. The largest of the season, 300 barrels, was brought in by schooner "Falcon" on Wednesday, June 3; the trips will not average over 140 barrels. The business has been overdone this year.—(Cape Ann Advertiser, June 5, 1874.)

1874.—THE SPRING MACKEREL FISHERY.

The Cape Ann Advertiser of June 12, 1874, states that during the past week twenty vessels belonging to the southern mackerel fleet had arrived with light fares, the average quantity being 100 barrels.

1874.—FISHING IN THE GULF OF MAINE.

The Cape Ann Advertiser of September 25, 1874, states that there are from eight to nine hundred mackerel vessels between Portland and Mount Desert; the catch is light.

1874.—SUCCESSFUL GEORGE'S TRIP.

Schooner "Florence E. Tower," Captain Frye, arrived at Boston on Saturday (June 27), from a mackerel cruise to George's Bank. She brought in 450 barrels, the fare which has arrived at that port this season. * * Most of the fish were of good quality. Her trip this time was four weeks.—(Cape Ann Advertiser, July 3, 1874.)

1874.—HIGH LINE OF THE SEINING FLEET.

Capt. Hanson B. Joyce, of Swan's Island (Maine), is high line of the seining fleet this season. Landed to 9th October 2,300 barrels of mackerel, the largest number ever landed. A small craft of 52 tons still follows the trade, and may get another haul.—(Cape Ann Advertiser, October 16, 1874.)

ANOTHER GOOD CATCH.

Schooner "John Atwood," of Provincetown, had landed up to October 9, 1874, 2,000 barrels mackerel. She took in all 2,100 barrels; was high line of the Provincetown fleet.—(*Ib.*)

LATE CATCH OF MACKEREL OFF CAPE COD.

Schooner "Willie B. Wilbur" took with the hook 20 barrels of fine mackerel off Race Point November 18, 1874.

1874.—A QUICK TRIP.

Schooner "Florence Nightingale" left Swampscott Monday morning, August 24, on a market fishing cruise and arrived in Boston the next

morning, August 25, with 350 barrels of mackerel, worth at least $2,500—a good day's work.—(Cape Ann Advertiser, August 28, 1874.)

ONE OF THE LUCKY VESSELS.

Schooner "Daniel Masey," of Portsmouth, N. H., has landed 1,800 barrels of mackerel up to August 25, and claims to be high line of the fleet.—(Cape Ann Advertiser, September 11, 1874.)

1875.—THE FIRST APPEARANCE OF MACKEREL.

One of the first mackerel fares caught by the mackerel fleet was taken April 29, 1875, by the schooner "Cora E. Smith," of Gloucester, and sold at New York for $15 per 100.

On June 6 a Newburyport vessel arrived at New York with 25,000 mackerel.

1875.—AMERICAN VESSELS IN THE GULF OF SAINT LAWRENCE.

The following statement of the number of fishing vessels in the Gulf of Saint Lawrence mackerel fishery and the American shore mackerel fishery was submitted by David W. Low to the Halifax Commission:

Mackerel inspected in Gloucester	93,126
58 vessels in Gulf, average catch 191 barrels	11,078
117 vessels American shore, average catch 409 barrels	47,853
	58,931

The average catch is based on the average catch of 84 vessels from 17 firms in 1869, and 28 vessels in bay and 62 vessels off American shore from 20 firms in 1875. These firms have done better than the rest.—(Docs. and Proc. Halifax Com., 1877, U. S. edition, p. 2595.)

1875.—FIRST MACKEREL OF THE SEASON.

The first catch of mackerel was brought to New York last week. The fish were of good size, but had not yet acquired that primeness and excellence of savor which mackerel only acquire in colder waters. The fish were struck south of Cape Henry, and now some twenty smacks are in search of the coming shoals.—(B. Phillips, in New York Times, May 9, 1875.)

1875.—FISHING IN THE GULF OF MAINE.

One vessel took 250 barrels of mackerel off the point at Provincetown, Saturday afternoon.—(Provincetown Advocate, October 6, 1875.

1875.—SAILING OF THE SOUTHERN FLEET.

A large part of the George's fleet have fitted out to go south, mackereling.

Several of the south mackerel fleet have sailed, and the balance will follow in a few days. They will tend New York market, selling their fish fresh.—(Gloucester Telegraph, April 21, 1875.)

1875.—FIRST FARE OF MACKEREL FOR THE SEASON—A BIG STOCK.

To a Portland schooner, the "Georgie Willard," belongs the credit of landing the first fare of mackerel this season. The "Willard" arrived at New York on Friday (April 30) and landed her catch of 22,000 mackerel, stocking over $4,000.

1875.—THE SPRING FISHERY.

The southern mackerel fleet are meeting with fair success. Last week, Monday, the schooners "Bell of the Bay," and "Bloomer" arrived at New York with 200 barrels each, and schooner "Roger Williams" with 700 barrels. The "Bell of the Bay" had been out eight days, "Bloomer" forty-eight hours, and "R. Williams" three days. On Wednesday the "William S. Baker" (six days out) arrived with 220 barrels. The first vessel to arrive home with a southern mackerel fare was the "Pathfinder" (on Friday), with 280 barrels. Schooner "James A. Stetson" arrived from a southern trip on Sunday, with 250 barrels of mackerel.—(Gloucester Telegraph, May 26, 1875.)

1875.—A GOOD CATCH AT NEWPORT.

A fishing gang near Newport, Thursday, with a purse seine, passed it around a school of fish, supposing them to be menhaden. The result of their haul proved to be upwards of 14,000 mackerel, which were sold from 10 to 15 cents apiece.—(Gloucester Telegraph, June 9, 1875.)

1875.—SMALL CATCH OF MACKEREL IN JUNE.

Only 53 mackerel arrivals were reported for the month of June, with a total catch of some 7,000 barrels, less than one-half of the receipts for the corresponding month last year.

Mackerel, notwithstanding the lessened receipts, have sold at some two dollars less than last June.—(Gloucester Telegraph, July 14, 1875.)

1875.—SMALL BAY FLEET.

The Gloucester bay fleet will be smaller this season than for many years.—(Gloucester Telegraph, July 21, 1875.)

1875.—SCARCITY OF MACKEREL OFF SHORE—BIG FLEET ON GEORGE'S.

The schooner "Mary B. Tower," from George's Bank, arrived at Boston 28th ultimo, after an absence of thirty weeks, with 140 barrels of mackerel. She reports fish very scarce. Severel vessals had been out a month without taking anything worth reporting. Many of the vessels which had been cruising off the coast of Maine, finding no fish, put off for the Banks. There were about 200 sail on George's on the 27th ultimo.—(Gloucester Telegraph, August 4, 1875.)

1875.—FIRST ARRIVAL FROM THE BAY.

One arrival has been reported from the Bay of Saint Lawrence the past week, the first of the season, with 241 barrels.—(Gloucester Telegraph, September 1, 1875.)

1875.—SCARCITY OF MACKEREL IN THE BAY.—THE FLEET AT THE MAGDALENS.

The Prince Edward Island Times reports no great catches of mackerel this season about the island. The catch will not be above two-thirds of that of last year, but of superior quality. Reports from all quarters speak of a small catch.—(*Ib.*)

But few mackerel are taken. Nothing has been done at Bay Chaleur or Gaspe. The American fleet in the bay almost wholly surround Magdalen Islands.—(Gloucester Telegraph, September 16, 1875.)

1875.—ARRIVAL OF THE SHORE FLEET.—SMALL NUMBER OF ARRIVALS FROM THE BAY.

The mackerel fleet have mostly arrived from the eastern coast—56 having been reported last week—and are now engaged upon the Cape Cod shore, meeting with moderate success in the capture of small mackerel. One arrival has been reported from Bay Saint Lawrence, making three bay arrivals this season, against 31 arrivals up to October 1 last year. The mackerel fleet were reported off Plymouth on Saturday, and on Sunday there were 100 sail on Middle Bank, apparently doing well.—(Gloucester Telegraph, October 6, 1875.

1875.—MACKEREL PASSING CAPE COD.—A GOOD HAUL.

On Tuesday, the 5th instant, immense shoals of mackerel were seen passing down by Highland Light (Cape Cod), and were even so near shore that a stone might have been thrown among them from the beach. The schooner "Nellie T. Campbell" threw her seine around a school and scooped up many more barrels than she could handle, and after filling her decks full signaled to another vessel to come and take what remained in the net.—(Gloucester Telegraph, October 20, 1875.)

1875.—A BIG HAUL AT NEWPORT.

A school of large mackerel were reported off Newport last week, and 125,000 in number, large ones, were seined on Tuesday.—(Gloucester Telegraph, November 3, 1875.)

1875.—HIGH PRICE OF BAY MACKEREL.

At Newburyport last week bay mackerel were sold from $24 to $26 per barrel for choice mess; $17.50 to $18 for No. 1's; $14 to $16 for 2's, and $9, $11, and $14 for No. 3's.—(*Ib.*)

1870 TO 1876, INCLUSIVE.—THE MACKEREL FISHERIES OF PROVINCETOWN, MASS.

"Going back to 1870, we had that year 41 vessels engaged in mackerel fishing, not one of which went into the Gulf. They all fished on our coast. The aggregate quantity of mackerel which they all packed was 37,552 barrels. In 1871 we had still 41 vessels, which still continued to fish on our coast, having done pretty well there the year before. None went to the Gulf. The aggregate catch which these vessels packed amounted to 24,918 barrels. In 1872 we had 36 vessels, of which 3 went to the Gulf of Saint Lawrence, leaving 33 fishing on our own coast. These 36 vessels packed out 16,303 barrels, and the 3 vessels which went to the Gulf packed out 785 barrels, making an average per vessel of 261¾ barrels.

"In 1873, when the Washington treaty went into effect, as we intended going to the bay, having now no fear of the cutters, we enlarged our bay fleet, and so 6 went there that year instead of 3. Two of these 6, or one-third of them, were lost in the gale in which so many vessels were lost. The vessels lost were the schooner "Helen M. Woodward," off the Magdalen Islands—the vessel was a total loss—and the "Carrie P. Rich," off North Cape, Prince Edward Island; vessel and crew total loss.

"The latter went to the bay early in the year, and she had shipped some mackerel home before the gale took place. She was lost, with all she had on board. The whole catch of these six vessels that year was 845 barrels. In 1873 we had 38 vessels, and their total catch was 15,772 barrels, including the 845 barrels mentioned. In 1874 we had 35 vessels engaged in the mackerel fishery, and they packed out 23,098 barrels. Three vessels went to the Gulf, bringing home 590 barrels, which are included in the total catch of the 35 vessels, 23,098. In 1875 we had 37 vessels, which packed out 10,613 barrels. Two of them went to the Gulf, and they brought home 270 barrels, which are included in the gross amount stated.

"In 1876 we had 32 vessels, whose total catch was 16,150 barrels. Two of them went to the Gulf of Saint Lawrence, bringing home 202 barrels, which are included in the 16,150. These totals make a grand total of 144,406 barrels, of which 2,692 were caught in the Gulf of Saint Lawrence in 16 voyages during the several years I have named. The average catch of these vessels since 1872, and since the fishery clause of the Washington treaty went into effect, was 146⅓ barrels per vessel, and prior to that the average was 261⅓ barrels per vessel, in the Gulf of Saint Lawrence."—(Statement of Captain Atwood before the Halifax Commission.)

1876.—THE SOUTHERN FLEET.

About 90 Gloucester and Cape Cod schooners, employed in the mackerel fishery, were reported off Lewes, Del., on Thursday of last week.—(Cape Ann Advertiser, May 12, 1876.)

1876.—FIRST AMERICAN VESSELS IN THE BAY.—FAILURE OF SPRING MACKEREL AT THE MAGDALENS.

The first American mackerelmen in the bay arrived at Port Mulgrave [Canso] on the 13th instant. The first Gloucester schooner in the bay, the General Grant, arrived the next day.

Advices from Magdalen Islands on Monday report net mackerel fishing a failure.—(Cape Ann Advertiser, June 23, 1876.)

1876.—A SCHOOL OF MACKEREL IN THE EEL GRASS.

A school of mackerel became entangled in the eel grass in Chauncy's Creek, near Portsmouth, the other day, and about 30 barrels were taken by hand.—(Cape Ann Advertiser, July 4, 1876.)

SUCCESS OF A GLOUCESTER SCHOONER IN THE MACKEREL FISHERY.

Schooner "Argonaut," Capt. E. A. Horton, landed from May 15 to July 21, 1876, 825 barrels of mackerel.—(Cape Ann Advertiser, July 21, 1876.)

1876.—EXTINCTION OF THE HINGHAM MACKEREL FISHERY.

Mackerel fishery at Hingham, Mass., once gave employment to 65 vessels; now extinct.—(Cape Ann Advertiser, January 28, 1876.)

1876.—MACKEREL FISHERY IN MASSACHUSETTS BAY.

The Swampscott shore fleet, up to the 5th of June, was said to have had success. The best day's catch landed was 1,000 barrels; this amount of course refers to the catch of the whole fleet.

1876.—THE MACKEREL FISHERY IN THE GULF OF SAINT LAWRENCE.

The first American mackerel vessels arrived at Port Mulgrave June 13, 1876; one from Boston, and one from Booth Bay. The first Gloucester vessel arrived on the 14th. A fair catch of mackerel was reported at Canso; on the 16th of June mackerel were reported on both sides of the Gulf.

1876.—THE SOUTHERN MACKEREL FLEET.

The Cape Ann Advertiser of June 19, 1876, remarks: "The southern mackerel fleet have met with good success of late, and a large fleet have arrived the present week, bringing fares of 200 to 400 barrels. There has been a reduction in price."

1876.—THE GULF MACKEREL FISHERY.

The Halifax Chronicle states that in 1874 there were 74 vessels engaged in the mackerel fishery from that city.

In the Gulf of Saint Lawrence, in 1876, the schooner "Samuel Davis," of Halifax, was high line, having landed 282 barrels of sea-packed mackerel.

1876.—THE SPRING MACKEREL FISHERY.

Thirteen vessels of the Gloucester fleet were at Lewes, Del., April 22. At the same place, May 4, there were 90 vessels from Cape Cod and Gloucester. The Cape Ann Advertiser, of May 19, announced that the earliest sales, amounting to about 400 barrels, brought $4 a barrel in New York; the catch so far having been very light.

1876.—FALL MACKEREL FISHERY.

Eleven hundred and eighty-five barrels of mackerel were landed at Boston September 25; 700 barrels September 27; 1,200 barrels September 29. They were chiefly taken off Minot's Ledge, and sold at 12 to 14 cents for large, 3 to 4 cents for clinchers, and 1½ cents for blunts.

An enormous school a mile long and half a mile wide was struck by fishing boats off New London, October 30, and though many of the nets had to be cut, because of the excessive weight of fish, 300,000 fish, worth $10,000, were taken.

A gang from Wilcox's fish-works at Quiambog surrounded off Watch Hill, September 29, what they supposed to be a large school of menhaden. When the net was hauled they proved to be mackerel; 120,000 of them were No. 1's; they weighed from 1½ pounds to 3 pounds each, and, at 5 cents apiece, were worth over $5,000.—(Cape Ann Advertiser, October 6, 1876.)

Smith & Horton, of Eastham, caught about 2,000 barrels of mackerel in their weirs Friday, November 3. They were large fish. One hundred and twenty-five cart-loads were taken out, still leaving many more to be secured.—(Cape Ann Advertiser, November 10, 1876.)

Mackerel plenty November 13–14 at Vineyard Haven. Small boats have been catching them for two or three days.—(Cape Ann Advertiser, November 17, 1876.)

1876.—BIG TRIPS OF NEW ENGLAND VESSELS.

Schooner "Daniel Marcy," Capt. Abraham Cahoon, jr., of Harwich, arrived at Portsmouth 1st September, 1876, with 410 barrels mackerel, making total catch for the season 1,500 barrels. Captain C. claims to have been high line for 15 years.

Schooner "Alice," of Swan's Island, packed out 2,700 barrels of mackerel this year, and made another haul of 300 barrels, giving her a catch of 3,000 barrels for the season. She claims to have beaten the "Mary Odell," of Gloucester, and to stand high line in the New England fleet.

Schooner "Rebecca M. Atwood," of Portland, has landed over 2,600 barrels at her home port this season.

Schooner "Mary Odell," Capt. Geo. McLean, made a large haul of fat mackerel in Barnstable Bay last week, taking from her seine 300 bar-

rels, which were all that her crew could handle, besides giving away 110 barrels to the crew of a Boston schooner, and losing several hundred barrels through a break in the seine. She had already landed 2,200 barrels, stocking $11,000 net (the crew sharing $436.96 each), up to September 22, and the next week landed two fares, one of 200 or 300 barrels; during the past week she has made two trips into Boston. Her stock for the season is probably double that of the schooner "Alice."—(Cape Ann Advertiser, October 6, 1876.)

1877.—THE SPRING FISHERY.—ARRIVALS OF FRESH MACKEREL IN NEW YORK.

The early arrivals at New York the middle of last week landed good fares, and prices were good considering the almost simultaneous arrivals of nine vessels on Thursday and Friday. The schooner "Mary Odell" was the first to arrive, followed closely by the schooner "Seth Stockbridge" with 35,000 mackerel in number. The schooner "Madawaska Maid" came next with 180 barrels, and the rest of the fleet had from 100 to 150 barrels each. The market opened with sales of large mackerel at 12 to 15 cents, but soon fell to 10 cents for extra large, 8 cents for large, 5 cents for tinkers, and 3½ cents for flinks.—(Cape Ann Advertiser, May 4, 1877.)

1877.—A NOVA SCOTIA SCHOONER BOUND SOUTH FOR MACKEREL.—THE TABLES TURNED.

Now that our Bay of Saint Lawrence fleet has dwindled to comparative insignificance, and no longer throw the bait that keep the waters swarming with mackerel, it looks as if the Nova Scotia fishermen would have to resort to American waters for a catch. One provincial vessel was in port a few weeks since bound south in pursuit of mackerel.—(Cape Ann Advertiser, May 25, 1877.)

1877.—A GOOD CATCH IN NOVA SCOTIA WEIRS.

A good mackerel catch is reported along the western shore of Shelburne County, N. S. Some traps have taken over 1,000 barrels, and all others are doing well.—(Cape Ann Advertiser, June 29, 1877.)

1877.—A LUCKY HAUL AT PROVINCETOWN.

The keeper of Wood End Light, with the assistance of his wife, seined 4,500 mackerel the other day, which sold for $150.—(*Ib.*)

1877.—A LARGE CATCH IN A CAPE COD WEI.

The Yarmouth Herald reports that upwards of 1,400 barrels of mackerel have been taken from the Sandford fish-trap this season; value not far from $7,000.—(Cape Ann Advertiser, July 20, 1877.)

1877.—DOINGS OF THE SHORE FLEET.—SMALL CATCH.

The Boston Fish Bureau reports the catch of the shore fleet to August 1 at 34,657 barrels, against 113,246 barrels at the same time last year. The July catch was 6,614 barrels, against 81,193 in July, 1876. The reports from the fleet continue unfavorable, nothing being done except in the neighborhood of Block Island. The vessels there are reported with fares ranging from 25 to 160 barrels each. The schooner "Alice," of Boston, arrived at that port Wednesday, with 170 barrels large mackerel, caught off Block Island, the result of four weeks' fishing.—(Cape Ann Advertiser, August 3, 1877.)

1877.—A BIG CATCH OF MACKEREL ON THE NOVA SCOTIA SHORE.

The Halifax Herald reports a mackerel strike in the vicinity of that city. At Tom's Bay the boats landed over 300 barrels, which will average No. 2. At Upper Prospect the catch averaged from 30 to 300 barrels to a seine, over 1,000 barrels being taken the first day after the fish struck in. The reports from all the coves in the vicinity were encouraging.—(Cape Ann Advertiser, August 17, 1877.)

1877.—SMALL CATCHES OF THE MACKERELMEN.

The prospects of the mackerel fleet do not brighten. Out of 18 arrivals from off shore the past week the only fares worth mentioning are 125 barrels in the "Argonaut," caught off Block Island, and 75 barrels in the "Volunteer," the rest of the fleet realizing less on a two or three weeks' trip than is often the result of a half hour's good fishing. The news from the bay is not of an encouraging character. There have been six arrivals at this port to date this season, with an average of about 200 barrels each, which does not give the prospect for the rest of the fleet a flattering aspect.—(Cape Ann Advertiser, August 31, 1877.)

1877.—FAILURE OF THE BAY MACKEREL FISHERY.—THE FARE OF THE HIGH LINE OF THE BAY FLEET COST MORE THAN IT CAME TO.

Recent arrivals from the Bay of Saint Lawrence report the mackerel fishery a failure there, as well as on our own shores, and some of the vessels had not seen a mackerel for a fortnight before leaving the bay. The vessels already arrived, representing the portion of the fleet meeting with the best success, report an average catch of 183 barrels, which would not be more than half a fare in ordinary seasons, and will not pay the expenses of the voyage, even at the present high prices. Unless the majority of the fleet still remaining in the bay find better fishing this month, which is not deemed probable, most of the vessels will be obliged to return empty, and the mackerel fishery will prove a lamentable failure this season.

The masters of the vessels returning from the Bay of Saint Lawrence agree in the opinion that the mackerel have left the bay, and that the

fall fishery will be a failure. The schooner "Cayenne" is high line of the fleet, and of her fare of 320 barrels sea-packed mackerel, only 45 barrels were caught within the three-mile limits. The vessel was chartered, and for two months the charter was $450; the use of seines and boats was $300 more, and the outfit of provisions, &c., $450; the crew were on shares, but, at the rates paid those hired by the month, their wages would amount to $960; to this add the captain's wages, $150; insurance on seines and boats, $30; salt used, $140; bait, $162.50; and expenses of barrels, packing, &c., $525, and we have a total expense of $3,117.50. The fare packed out 300 barrels, which sold for $2,845, leaving a net loss on the trip of $272.50. With such a record for the high line it will be readily seen that the failure of the majority of the fleet to secure fares will entail a serious loss upon this industry.—(Cape Ann Advertiser, September 7, 1877.)

1877.—SLIM DOINGS OF THE MACKEREL FLEET.—THE HIGH LINERS.

The shore mackereling fleet continue in the neighborhood of Cape Cod, meeting with indifferent success, and it becomes more and more apparent that the mackerel stock for 1877 will be the smallest known for years. Scarcely a vessel employed in this business will pay expenses. * * * The schooner "Alice," of Swan's Island, is high line of the mackerel fleet, having caught rising 1,400 barrels this season. The new schooner "William M. Gaffney" has made the best stock, her catch having realized about $10,000 since she came from the stocks, April 16. * * *

The bay fleet report no catch of consequence since the gale a month ago. The prospect is that many of the vessels will be compelled to come home with very light fares.—(Cape Ann Advertiser, October 26, 1877.)

1877.—UNPROFITABLENESS OF THE MACKEREL FISHERY IN THE GULF OF SAINT LAWRENCE FROM 1873 TO 1877.

The Bay of Saint Lawrence mackerel fishery to the Gloucester fleet has been a growing failure for many years, both in the number of vessels prosecuting it and in their catch. Exceptional trips have been made at a profit, yet the average vessel has prosecuted it yearly with considerable loss.

In proof of which, take an average bayman for an average season's fishing. Her expense account will average at least $2,600 (without charging interest on vessel and outfits, or for depreciation on hull, or any partial loss not covered by insurance). She must catch 400 barrels of packed mackerel, worth an average price of $13 per barrel, to pay her expenses. Any less number of barrels than 400 would only lessen the amount of her bills by the salt not used. The packing of a less number of barrels and the master's commission on decreased amount of stock, the wear of the sails, rigging, cables, &c., would be the same; the crew must be fed; the bait would be used in trying for fish; so that any one

can estimate the loss to an average vessel whose catch or its value varies from the above estimate.

Of 19 firms, including those that have been most successful in the Bay of Saint Lawrence mackerel fishery, with 81 vessels employed in that fishery in 1873, their average catch was 283 barrels to each vessel. In 1874, with 46 vessels, 358 barrels was the average; in 1875, with 20 vessels, 195 barrels was the average; in 1876, with 17 vessels, 124 barrels was the average; in 1877, induced by the encouraging reports sent from the Straits of Canso and other places, the fleet to the bay from the same firms was increased to 28 vessels, with still more disastrous results, the catch of those that have arrived or been heard from being far below that of last year, proving now to a certainty that the prosecution of the mackerel fishery in the Gulf of Saint Lawrence by American vessels is a complete and utter failure.

The same firms, during the above years, with 55 vessels employed on the American shore, in 1873 averaged a catch of 350 packed barrels of mackerel each; in 1874, 63 vessels averaged 554 barrels; in 1875, 54 vessels averaged 381 barrels; in 1876, 57 vessels averaged 674 barrels.—(Cape Ann Advertiser, November 2, 1877.)

1877.—LARGE SCHOOLS OF MACKEREL SEEN OFF THE NEW ENGLAND COAST.

The largest school Captain Harding ever surrounded and kept with his seine amounted to 300 barrels. In 1877 he lost a school off York, Me., which filled his net full. He saw a school off Block Island in 1877 which he estimated to contain 1,000,000 barrels. He could see only one edge of it at a time.

1877.—MACKEREL FISHERY IN CAPE COD BAY.

Mackerel struck last week in unusual abundance. The like has not been known for years. The day will be remembered as "mackerel day" for a good many years.—(Provincetown Banner, July 18, 1877.)

1878.—MACKEREL FISHERY OF NEW ENGLAND.

MACKEREL FISHERY.—The Bay of Saint Lawrence mackerel fishery by the American fleet opened last year June 7, when the first vessel arrived, and closed November 30, when the last vessel sailed for home. The whole number of vessels in the bay was 273, of which 125 or 42⅔ per cent. were from Gloucester. Wellfleet sent 29; Portland 15; Boston 24; Booth Bay 12; Newburyport 10; Swan's Island 8; Provincetown 8; Rockport, Deer Isle, North Haven, Southport, and Bremen, 5 each; Camden and Cohasset, 3 each; Salem, Rockland, and Dennis Port, 2 each; Danversport, Essex, Harwich, Brooklin, Orleans, Truro, Belfast, Sedgwick, Hingham, Swampscott, Portsmouth, Vinalhaven, New London, Bristol, and Perth Amboy, 1 each. Of the Gloucester fleet, 118 vessels are reported to have taken 28,847 barrels. Of these

8,735 barrels, of a value of $36,725, were caught within the three-mile line. Taking this as a basis, and the American catch in the bay last year was 66,749 barrels of mackerel, of which 20,202 barrels, of a value of $84,848, were taken within the three-mile line, for which latter privilege we have paid $450,000 in cash (without including interest), and probably as much more in remission of duties.—(Provincetown Banner, January 30, 1879.)

1878.—Notes on the mackerel fishery.

The southern mackerel fishery.—The fish dealers of Boston are exercised over the early catch of mackerel, which they think diminishes the later supply and affects the market unfavorably. It would be difficult to prove that the catch or market are influenced either by the early fishery, or by the use of seines, as many contend. The demand for the first fresh mackerel of the season gives the business promise of success, and the quantity packed is not likely to interfere with the sale of the small stock of better quality fish remaining on the market from last year's catch. The Southern mackerel fishery will be followed by the usual fleet as the season advances. Quite a number of vessels are fitting away, and the "Moses Adams," Captain Jacobs, the pioneer of the fleet, sailed for the South Saturday. Schooners "Seth Stockbridge," "Crest of the Wave," "Smuggler," "Ada R. Terry," "Lizzie," and "Namari," have sailed the present week. Others are busy fitting out. The fleet will comprise some 60 sail.

The first southern mackerel caught last year was by the schooner "Seth Stockbridge," Capt. James Anderson, who arrived in New York, April 25, with 35,000 in number. The mild winter gives promise that the first catch this year will be somewhat earlier.—(Cape Ann Bulletin, March 20, 1878.)

1878.—Arrival of mackerel on George's Bank.

Mackerel appeared on George's Bank about the 1st of June. The Cape Ann Advertiser of June 7 states that twelve barrels caught there were received at Edgartown the previous week.

1878.—Spring mackerel fishery.

There were about one hundred and fifty sail of mackerel catchers at Newport on Thursday week, and the "high line" was 150 barrels.—(Cape Ann Advertiser, May 10, 1878.)

1878.—The earliest catch of mackerel.

The schooner "Lilian," of Noank, Captain Latham, took 40 barrels small and large mackerel off Chincoteague March 30. This was the first catch of the season and the earliest ever known on our own coast, except in 1831.

1879.—Fall fishery of Cape Cod Bay.

Mackerel were abundant in Provincetown Harbor on November 22, 1879; one boat caught 1,400 in set-nets.—(J. H. Blake, Cambridge, Mass.)

1879.—Shore fishery in Cape Cod Bay.

A large school of mackerel came into our bay last week, and many of the vessels get good hauls with their seines, from 120 to 160 barrels; besides that, some of the hook fishermen got from 10 to 30 barrels. They were caught along the Plymouth shore, and from that northward close in to the land. For some days past the wind has been blowing too strong for fishing. A few mackerel are being taken here in gill-nets by our shore fishermen. Some of the fishermen that set bluefish nets got from 60 to 90 large fat bluefish to a man.—(Letter of N. E. Atwood, October 27, 1879.)

Notes on the shore mackerel fishery of 1878.

The first mackerel of the season.—Three weeks earlier than last year.—The schooner "Lillian" arrived at Lewes on Friday, from a southern mackerel cruise, with ten barrels of fresh mackerel, the first of the season. They found a ready sale at 20 cents each for large, 15 cents for medium, and 10 cents for tinkers. The first arrival last year was the schooner "Seth Stockbridge" of this port, April 25, with 35,000 in number.

The "Lillian" belongs in Noank, Conn., a small port near New London, and sailed March 12th. She reports seeing a good many tinkers, but there was a rough sea and high winds at the time. The mackerel caught by the "Lillian" were mostly small and were sent to New York from Lewes, Del., by steamer, in water. There have been no other receipts at New York or elsewhere so far as reported.—(Cape Ann Bulletin, April 6, 1878.)

The mackerel fishery.—The early appearance of mackerel this season, and the fact that they are already of quite good size and quality, give promise of a successful shore catch, but it is already evident that prices must rule low in order to compete with the present low prices of all sorts of provisions. Last year the first receipts of fresh mackerel were April 25, and the first receipts of salt mackerel May 4. This year there were fresh mackerel on the New York market April 5, a few being taken off the Delaware coast and forwarded by steamer, and the first fare received arrived on the 12th, quickly followed by others, so that within a day or two there were two thousand "wash-barrels" on the market. The first receipt of new salt mackerel this season was April 22d, and during the [last] week 500 barrels were landed at New York, 450 at Harwich, and about 25 at Boston.—(Cape Ann Advertiser, May 3, 1878.)

New fishing enterprise.—The schooner "Notice," of this port, owned in part and commanded by Capt. Knud Markurson, cleared on

Monday for an experimental fishing trip on the coast of Norway. Captain Markurson is familiar with the fishing grounds of the North Sea and with our improved methods of mackerel fishing, which ought to give him success in a field where the operations have heretofore been confined to old-time methods. He takes out a crew of twelve experienced men and will doubtless dispose of his catch in European markets. The "Notice" is a fine vessel of 66.50 tons burden, Gloucester built, nine years old, and thoroughly fitted for mackereling. This voyage is the fulfillment of an old project, which was first broached eighteen years ago, when the mackerel fishery of New England was at a low ebb, but Captain Markurson is the first to overcome the difficulties surrounding such an undertaking and to make the venture. The present time seems a favorable one for the experiment, and we wish the enterprising master and crew abundant success in striking out in this new field of industry.—*Cape Ann Advertiser.*—(St. John's Chronicle, May 17, 1878.)

MIGRATIONS.—THE PROSPECT OF MACKEREL IN THE BAY.—A gentleman from Halifax informs us that a pilot of twenty-five years' experience on the Nova Scotian shore, states that he never saw such a large body of mackerel off that coast as he has seen this season. They were *en route* for the bay, and there ought to be a good catch there this season.—(Cape Ann Advertiser, June 21, 1878.)

THE BAY FLEET.—The first installment of the Bay of Saint Lawrence fleet have about completed their preparations, and quite a number of the fleet have already sailed. The prospect for mackerel in this region is said to be much better than in the last few years, a large body being reported as passing Nova Scotia on their way thither. The fleet will go prepared to fish with either seines or hand-lines, and it is hoped that their efforts to secure large fares will prove successful.—(Cape Ann Bulletin, June 26, 1878.)

1878.—NOTES ON THE MACKEREL FISHERIES IN THE GULF OF SAINT LAWRENCE, AND OFF THE NEW ENGLAND COAST.

Late advices from the bay report schooner "Jacob Bacon" high line of the fleet, 225 barrels mackerel, schooner "Ratler" coming next with 125 barrels, and a few other fares ranging from 40 to 80 barrels. The "Charles Haskell" left the bay after three days' unsuccessful fishing, and picked up a fare of 100 barrels shore tinkers on the way home, where she arrived Monday. The "C. B. Manning" arrived from a shore trip Tuesday with 80 barrels of inferior quality. Schooner "Smuggler" arrived yesterday with 130 barrels small mackerel. The only large mackerel landed here were taken by schooner "Mary Odell" a few days ago, on the Block Island fishing grounds. She brought in a fare of 25 barrels mixed mackerel, of which 15 barrels were extra 1's, and sold at a fancy price. The whole number of mackerel arrivals for the week has been 9, but there have been no other fares of consequence.—(Cape Ann Advertiser, July 19, 1878.)

THE BAY FLEET.—The schooner "Jacob Bacon" of this port, Capt. William Gray, employed in the Bay of Saint Lawrence mackerel fishery, has shipped home by steamer to Boston, from Port Hawkesbury, 222 barrels good mackerel. A few other vessels are reported with fares from 200 to 300 barrels, of good quality, and the prospect is considered more favorable than heretofore this season.—(Cape Ann Advertiser, July 26, 1878.)

Schooner "Golden Hind" arrived from a Bay Saint Lawrence trip on Wednesday, being the second arrival of the season, but there are others on the way, to arrive in a day or two. The later reports from the bay indicate an improvement in quality and catch, and it is not too late to hope for profitable returns before the season closes. The weather has been rough of late, and unfavorable for fishing, but some good fares are reported. The "Golden Hind" brought 280 barrels mackerel, 100 barrels of which were taken at one haul of the seine off North Cape.

The shore mackerel fleet continue to meet with ill success, and there is little hope for improvement until the mackerel turn southward in the fall. The number of arrivals the past week has been 12 and the receipts some 500 barrels. There is a fair stock on the market, but the call for inferior grades is light.

1878.—MOVEMENTS OF THE FISHING FLEET.

Schooner "David F. Low," Captain Chisholm, arrived home from the Bay of Saint Lawrence on Wednesday, with a fare of 200 barrels good mackerel, being the first arrival and first receipts of bay mackerel at this port this season. Two other vessels fitted for the bay arrived home before the "Low," but neither of them stopped to make a trip, although one secured 19 barrels before leaving to make up a fare of shore mackerel on the way home. One fare of bay mackerel was received at Boston, last week, by steamer, sent home by schooner "Jacob Bacon," and sold without culling or packing, averaging about 187 pounds to the sea barrel, at $9 per barrel, which would be equivalent to about $11 packed. The first arrival at this port from the bay, last year, was the schooner "Eastern Queen," August 15.

The shore mackerel fleet have abandoned the Block Island grounds, having made a much smaller catch there than last year. There were some sixty sail engaged in the business, and most of them secured from 3 to 20 barrels of extra large mackerel, which brought about $26 the barrel. The fleet continue to bring in moderate fares of tinker mackerel, and there are about 1,000 barrels on the market, for which there is little demand. Number of shore arrivals the past week, 12; receipts, 1,550 barrels.—(Cape Ann Advertiser, August 2, 1878.)

The arrivals for the past week have given a more hopeful aspect to the fishing outlook, and our wharves have presented the busy appearance which characterized them in more prosperous season. The arrivals have not been numerous, numbering 56 in all, but some

very good fares have been landed in the several departments of fishing followed by Gloucester vessels. The receipts of bay mackerel, 1,400 barrels, fill a want that has long been felt, and indicate a much better prospect for successful ventures in this line than was anticipated a few weeks ago. There have been 5 bay arrivals, the schooner "Ellen M. Adams" being high line, with rising 400 barrels of good quality, and the "Ralph E. Eaton" coming next about 300 barrels. The shore fleet continue to report a scarcity of large mackerel, though a few 2's and and large 3's, are culled from most of the trips. The number of arrivals for the week has been 6, and the receipts about 600 barrels. Schooner "Joseph Garland" brought in a fare of 240 barrels, the "Fleetwing" 190, the other fares being in moderate amounts.—(Cape Ann Advertiser, August 16, 1878.)

Fish of all kinds have been in fair receipt the past week, but the market continues firm except in mackerel, which are somewhat unsettled, though no concessions have been made from the inside rates quoted last week. The receipt of 12,000 barrels Provincial-caught mackerel at Boston last week went far to supply present demands, but there is no considerable accumulation of stock on this market. The number of bay arrivals for the week has been 9, bringing 2,800 barrels, and 624 barrels have been received by freighters. Shore arrivals 6, with a catch of 650 barrels.—(Cape Ann Advertiser, August 30, 1878.)

1878.—Small catches of mackerel at Block Island and in the Gulf of Saint Lawrence.

The mackerel fishery.—A large mackerel fleet, including a number of Gloucester vessels, put into Newport harbor on Saturday, and report the catch of mackerel very light, in some instances scarcely sufficient to feed the crew. The fleet sailed again on Monday.

There is no news of especial encouragement from the bay fleet. Mackerel put in an appearance there several weeks earlier than usual, and the boat and net fishermen met with good success for awhile, but the capricious fish seem to have abandoned their old haunts before the arrival of the American fleet.—(Cape Ann Advertiser, June 28, 1878.)

1878.—First arrival of mackerel in Boston.

Schooner "Ellen M. Adams," of the southern mackerel fleet, arrived in Boston yesterday afternoon with 70 barrels of mackerel, which is the first arrival of the season at that port.—(Cape Ann Bulletin, Wednesday, April 24, 1878.)

1878.—First arrival of mackerel at Gloucester.

The schooner "Marion Grimes" arrived home from a southern mackerel-trip, on Wednesday, with about 250 barrels of mackerel, being the first of the fleet to arrive at this port. Her catch was of good quality,

running nearly all large 3's, and was sold immediately upon her arrival at $5.50 per barrel, with barrel, out of pickle.—(Cape Ann Advertiser, May 10, 1878.)

1878.—FIRST FARE OF FRESH MACKEREL AT PORTLAND FOR THE SEASON.

The first fare of fresh mackerel at Portland, 60 barrels, received last week, retailed at 5 cents per dozen.—(Cape Ann Advertiser, June 7, 1878.)

1878.—THE MACKEREL FISHERY IN THE GULF OF SAINT LAWRENCE.

THE BAY MACKEREL FLEET.—Our correspondent at Port Mulgrave writes as follows under date of last Saturday:

We have had very stormy weather of late in the North Bay, and the mackerel fleet has done nothing since the 15th. Late arrivals report the prospect good with the hook, but the mackerel do not school lately. The arrivals at the several stopping places hereabouts, since the 15th, have been as follows:

Gloucester—"Bloomer," 70 barrels; "Cora E. Smith," 250; "Chocorua," 235; "Commonwealth," 430; "Jacob Bacon," 278.

Boston—"M. B. Tower," 400.

Wellfleet—"Gertrude Summers," 345; "Merrimac," 307; "Nellie M. Snow," 365; "Sarah E. Smith," 306.

Harwich—"Nettie Moore," second trip.

Cohasset—"Katie Hall," 300.

Swan's Island—"Augusta E. Herrick," 478; "Alice," 715; "Queen of the West," 270.

Boothbay—"Alice C. Fox," 275; "E. K. Dresser," 320.

Portland—"Venelia," 336.—(Cape Ann Advertiser, August 30, 1878.)

1878.—REVIEW OF THE MACKEREL FISHERY OF THE GULF OF SAINT LAWRENCE.

The Cape Ann Advertiser gives the following review of the Bay of Saint Lawrence mackerel fishery during 1878:

The Bay of Saint Lawrence mackerel fishery by the American fleet, last year, opened June 7, when the first vessel arrived, and closed November 30, when the last of the fleet sailed for home. The whole number of vessels visiting the bay was 273, of which 125 or 45⅞ per cent. were from Gloucester; Wellfleet sent 20, Portland 15, Boston 14, Booth Bay 12, Newport 10, Swan's Island 8, Provincetown 8, Rockport, Deer Isle, North Haven, Southport, and Bremen 5 each, Camden and Cohasset 3 each, Salem, Rockland, and Dennis Port 2 each, Danversport, Harwich, Essex, Brooklyn, Orleans, Truro, Belfast, Sedgwick, Hingham, Swampscott, Portsmouth, Vinalhaven, New London, Bristol, and Perth Amboy 1 each. Of the Gloucester fleet 118 vessels are reported to have taken 28,847 barrels; of these, 8,735 barrels, of a value of $36,725, were caught within the three-mile line. Taking this as a basis, and the American

catch in the bay last year was 66,749 barrels of mackerel, of which 20,202 barrels, of a value of $84,848, were taken within the three-mile line, for which latter privilege we have paid $450,000 in cash (without including interest) and probably as much more in remission of duties.—(Cape Ann Advertiser, January 10, 1879.)

1878.—REVIEW OF THE NEW ENGLAND MACKEREL FISHERY.

The annual report of the Boston Fish Bureau for 1878 gives the following review of the mackerel fishery for that year:

The season opened unusually early. Schooner "Lillian," sailing March 12, landed the first fresh mackerel April 6, followed a few days later by 50 sail, with from 100 to 150 barrels each of mixed fish of poor quality, the early catch resulting, as usual, in a loss to nearly all as well as an injury to the trade. We hope to see its discontinuance in the future. The catch early gave promise of being larger than for years, very soon fell off, and was followed with fluctuation and but partial success off our own shores as well as in the Gulf of Saint Lawrence, a large fleet going there doing worse than those that remained near home, the fish proving of inferior quality in either case. The value of the fisheries in English waters to the United States the past season is not far from 6,200 barrels of mackerel of not over $5 a barrel value, the total Bay or Gulf of Saint Lawrence catch of fish being 62,000 barrels, not over 10 per cent. of which was taken within the three-mile limit. The total Massachusetts catch was 144,205 barrels, a gain of 39,187 barrels over 1877, the shrinkage in value making the catch no more profitable. Total receipts in Boston in 1878, 143,028; in 1877, 142,024. Never in the memory of the oldest dealers has the price been as low on inferior grades as this season, while the average price has not been as low in twenty or more years. Choice mackerel having been scarce all the season, have sustained a good price, a wide margin from the highest to the lowest ranging from $25 down to $1.50 per barrel.

1879.—FAILURE OF THE GULF OF SAINT LAWRENCE MACKEREL FISHERIES.

GLOUCESTER, MASS., *August* 19, 1879.

Advices from Collector Babson, who is cruising in the Bay of Saint Lawrence, represent that mackerel fishing in the bay this season is a complete failure. Many firms are going out of the business.—(New York Herald, August 19, 1879.)

1879.—ABUNDANCE OF MACKEREL OFF THE NEW ENGLAND COAST, AND SCARCITY IN THE BAY.

BATH, ME., *August* 28, 1879.

DEAR SIR: It may interest you to know the present condition of the Portland mackerel fisheries, as I learn it from conversation with several of the more prominent dealers of the place.

They say that mackerel have not been so plenty off the Maine coast for a number of years. A large fleet of vessels are fishing between Portland and Mount Desert Island, taking mostly large No. 2's, and all very fat. The vessels "fill up" in from ten days to two weeks, sometimes bringing in a deck load beside. A good many vessels from different parts of the State, and some from Cape Ann, are packing in Portland at $1.25 per barrel. All the packing houses are kept busy, and it is estimated by Mr. E. G. Willard that they have packed over 7,000 barrels in the three weeks ending August 23. Of these he has bought and shipped over 6,000 barrels to parties in New York.

The price for 2's three weeks ago was $5, but under the heavy receipts, prices have gradually fallen, until Saturday they were selling at $4.12½, and Mr. Willard thought that Monday they would reach $4.

Vessels fishing in the bay have done very poorly, and have mostly returned with "broken trips," or filled up on their way home, off this coast. Mr. Charles A. Dyer gives me the following: Schooner "M. E. Torrey" arrived home about August 1 from a mackerel trip in English waters. She was gone five weeks at an expense for outfit of $470. She brought home 200 barrels of fish that sold at $3 per barrel net, of which the crew took one half. This left a loss to the vessel of $170 in money, beside loss of time and general wear. This represents a fair average, he thinks, of vessels in English waters in 1879.

During the same time of schooner "M. E. Torrey's" trip the schooner "Alice" landed from American waters 700 barrels of better fish, and stocked $2,500.

I know of but one Portland vessel in the bay at the present time, and she has not been heard from since June 25, when she had 20 barrels.

Very truly, yours,

R. E. EARLL.

Prof. G. BROWN GOODE,
United States Fish Commission, Provincetown, Mass.

1879.—MACKEREL FISHERIES OF THE GULF OF SAINT LAWRENCE.

The following observations on the mackerel fishery in the Gulf of Saint Lawrence are from the report of Collector F. J. Babson and Alfred D. Foster, esq., who visited the provincial inshore fisheries in the United States steamship "Kearsarge" in the summer of 1879:

"The principal fishery followed by the American fishermen in the waters of the Gulf of Saint Lawrence is the mackerel fishery. * * * Previous to the reciprocity treaty of 1854 the mackerel fishery was almost wholly in the hands of the Americans, the provincial fishermen confining themselves entirely to the cod-fishery. This treaty, by opening the markets of the United States to Canadian fish, stimulated this industry, until now Canadian fishermen engage in this fishery on all the coasts of the maritime provinces. The methods of taking mackerel in use by the Canadian and American fishermen differ widely. The Canadians fish

in small boats, going out a short distance only from the shore, returning to their homes each night, and using hand lines alone. In Prince Edward Island there were engaged in these fisheries during the year 1878 1,175 boats and only 17 vessels.

"Professor Hind, in his confidential report to the Canadian Government upon the effect of the Washington treaty on Canadian fisheries, speaking of the difference in the modes of fishing used by the Canadians and Americans, says: 'Mackerel catching is a special industry, and requires sea-going vessels. The boat equipment so common throughout British-American waters is wholly unsuited to the pursuit of the mackerel so largely carried on by United States fishermen. Immense schools of mackerel are frequently left unmolested in the Gulf and on the coast of Newfoundland, in consequence of the fishermen being unprovided with suitable vessels and fishing gear.' * * *

"The size, quality, and number of mackerel in the Gulf vary exceedingly in different years, sometimes being a mixed quality of large and small, and at other seasons being very poor and of little value. During the present season the mackerel taken in the Gulf have been smaller and poorer than ever before, and will hardly pay even the Canadians themselves for taking them. At Prince Edward Island mackerel can be bought for about $1 a barrel unpacked, while packed, salted, and delivered in Boston they cannot be sold for more than $3, and the dealers there have refused to advance more than $2 upon the mackerel consigned to them. Indeed, the managers of some of the largest fishing establishments upon the island have this summer given up the mackerel fishery and turned their attention entirely to catching cod for the West India market, considering that after paying the expense of packing and transporting the mackerel there was no margin left for any profit.

"The number of American vessels in the Gulf varies very much each year. There have been seasons previous to the treaty of Washington when as many as 500 vessels were in the Gulf at one time, but since the treaty has been in operation the number has greatly diminished. By the official record kept by the collector of customs at Port Mulgrave in the Gut of Canso, there appear to have been in the Gulf in 1873, 254 vessels; 1874, 164 vessels. This record for the years 1875 and 1876 was demanded by the counsel of the United States at the Halifax Commission, but was refused by the British counsel, although it was admitted that the records were in their possession. The evidence produced by the United States shows that during those years there were not more than 100 vessels in the Gulf. There were in 1877, 60 vessels; 1878, 273 vessels; 1879, 44 vessels.

"Of the vessels in the Gulf in 1879, 24 are reported as having obtained 7,045 barrels, an average of 293 barrels each, which would make for the whole fleet, 13,905 barrels taken by American vessels in the Gulf in this year. If one-half of the fish were caught within three miles of the shore, which is a very large estimate, the value of the Canadian inshore

mackerel fishery to the United States in 1879 was only $6,860—this is calculating the value of the fish at the price for which it can be purchased unpacked in Prince Edward Island, and making no allowance for the expense of catching the mackerel. In 1878 more American vessels went to the Gulf than any year since the treaty has been in operation. Early in the season the fishing was poor upon the United States coast, and many vessels went to the Gulf in hope that they would find the mackerel there, but most of them returned at once and did much better on the American shore. The whole American catch in the Gulf, in 1878, was only 61,923 barrels, while 134,545 barrels were taken on our own coast. Every vessel engaged in the Gulf mackerel fishery during the last two years has lost money. * * *

"On Friday, August 15, we left Prince Edward Island for the Magdalen Islands, arriving there the evening of the 16th. Under the convention of 1818 the American fishermen have the right to fish on the shores of the Magdalen Islands, without any restriction as to distance. Situated in the center of the Gulf of Saint Lawrence, these islands were formerly the resort of large bodies of mackerel, which remained there all summer, and until the last few years American vessels found around these islands the best fishing places in the Gulf.

"Mr. Fox, the collector and fishery overseer of the Magdalen Islands, testified before the Halifax Commission that in 1861 he counted 500 American schooners engaged in fishing near the islands. When we saw him there, this summer, he informed us he had not seen a single United States vessel. In 1877 about 30 vessels fished near the islands; in 1878, only 20, and none of these did well. This year the mackerel catch at the islands has been a failure; very few have been taken by the inhabitants, and they were all small, not exceeding 13 inches in length. * * * The great dependence of the Canadian fishing industry upon the markets of the United States for the sale of their fish, and the great benefit which they receive from the remission of duties, clearly appear from the returns. Nearly one-half of all the fish exported from Canada goes to the United States, while of mackerel alone nearly four-fifths of the entire exportation is to the United States. In 1877, 102,698 barrels of mackerel were exported to the United States, and only 28,523 barrels to all other countries. Practically, the United States is the only market for the best qualities of mackerel, and if a prohibitory duty should be imposed, the fishery would be almost abandoned by the Canadians. If an average duty of 20 per cent. had been imposed on Canadian fish, more than two millions of dollars would have been received by the United States since the treaty of Washington came into force.*

1879.—HIGH LINE OF THE MACKEREL FLEET.

Schooner "Ada R. Terry," of this port, Capt. Russell D. Terry, master, has landed this season 4,150 barrels mackerel, and her net stock is

*House Ex. Doc. No. 84, 2d sess. 46th Congress.

$10,970, sharing $363 to a man, making her high line of the mackerel fleet from New York to New Brunswick.—(Cape Ann Advertiser, December 12, 1879.)

1879.—REVIEW OF THE NEW ENGLAND MACKEREL FISHERY.

In the annual report of the Boston Fish Bureau for 1879 is the following concerning the mackerel fishery:

With few exceptions the spring catch is followed only at a loss, the past season proving no exception. The first to arrive generally realizing a handsome sum, induced the usual number, seventy-five sail, to go south, sailing in March and April. The first to report, schooners "Ellen M. Adams" and "Sarah M. Jacobs," taking 150 and 120 barrels of mixed size and poor quality, on April 13. But a small amount of the spring catch was cured. First fare of salt mackerel landed by schooner "Cora E. Smith," May 3. As the season advanced and the fish reached our New England coast, finding an abundance of their natural food, they rapidly improved in condition and remained plenty all the season, and much later than for years past, having been taken as late as December 19. The catch is particularly noticeable for its superior quality, much better than for years, as well as for its uniform size, being mostly 2's and 3's, with very few 1's; and the absence of the very small, or No. 4's, of the two previous years gives promise of a size larger, or at least a fair amount of large fish the coming season. While the early-caught, poor fish realized but $2.50 a barrel, as they improved in quality the demand and price also increased, the average price being $16, $6, and $3.50, for 1's, 2's, and 3's. Late in the season our shores were visited by the largest mackerel ever seen, of most excellent quality, measuring from 16 to 19¼ inches long, weighing from 1¾ to 3 pounds each, readily selling from 25 to 30 cents each, and from $35 to $40 per barrel, cured. Our North Bay fleet was, fortunately, very small, only 42 sail from New England, averaging 257 barrels; aggregate catch 10,796 barrels of small and very inferior fish, one vessel securing but 25 barrels all the season; while the shore fleet, much smaller than usual, numbering 283 sail, averaged 740 barrels; the average shore catch 209,803 barrels. Total catch of the Massachusetts fleet, 156,125 barrels, against 144,205 barrels in 1878. As to the relative value of the mackerel fishery off the New England coast as compared to those in provincial waters, it will be noticed our catch began in April, ending the middle of December, three-fourths of a year. It is now in contemplation sending vessels south to prosecute this branch the remaining three months, making our catch perennial, while the provincial catch, with favorable weather, lasts about four months. [The receipts of fresh mackerel in Boston in 1879 were 11,724,943 fish in number. This is in addition to the receipts of salt mackerel.]

1880.—THE SOUTHERN MACKEREL FISHERY.—EARLY CATCHES.—THE FLEET FOR 1880.

The tendency in the mackerel fishery is to earlier trips from year to year, the use of seines enabling the fishermen to secure a catch as soon

as mackerel put in an appearance and before they are ready to take the hook, and the ready market for the first fresh mackerel proving a temptation to enterprising fishermen. The first receipts in the New York and Philadelphia markets in 1875 were April 30; in 1876, April 24; in 1877, April 25; in 1878, April 5; and in 1879, April 14. This year the pioneers of the fleet sailed a month earlier than usual, hoping by going farther South to make an early catch, and quite a respectable fleet are now in southern waters, awaiting the first appearance of mackerel. The following vessels comprise the fleet sailing in March:

Boston.—Schooner "G. W. Bentley," 1.

Booth Bay.—Schooners "Alice G. Fox," "Cyrena Ann," "Cynosure," "Lettie S. Reed," "Louis and Rose," 5.

Chatham.—Schooners "Leila Linwood," "Willie Irving," 2.

Dennis.—Schooners "Charlotte Brown," "Cora Louise," "Mary Doane," "Quivet," "Titmouse," "Willie Parkman," 6.

Gloucester.—Schooners "Bounding Billow," "Chocorua," "Crest of the Wave," "Charles Haskell," "Earnest F. Norwood," "Frank A. Smith," "Golden Hind," "Goldsmith Maid," "Fred. L. Webb," "Fred. P. Frye," "Ellen M. Adams," "Edward E. Webster," "Fleetwing," "Helen M. Crosby," "Joe Hooker," "John W. Bray," "Joseph Garland," "Herald of the Morning," "Marion Grimes," "M. L. Wetherell," "Onward," "Ossipee," "Piscataqua," "Reporter," "Wide Awake," "William S. Baker," "Edward Everett," "Falcon," "Georgianna," "Isaac Patch," "Mary O'Dell," "Madawaska Maid," "Oceanns," "Rattler," "Sarah M. Jacobs," 35.

Harwich.—Schooners "Kate Florence," "Nettie Moore," "Phebe and Emma," "Chas. H. Kelly," "Isaac Somes," 5.

Newburyport.—Schooners "George W. Brown," "Lizzie Thompson," "Miantonomah," 3.

Portsmouth.—Schooners "Gov. Goodwin," and "Daniel Marcy," 2.

Portland.—Schooners "Georgie Willard," "Maggie W. Willard," 2.

Swan's Island—Schooner "Alice," 1.

Total, 62.—(Cape Ann Advertiser, April 10, 1880.)

1880.—First arrival of fresh mackerel in New York.

Fresh mackerel—The first fare of fresh mackerel the present season was landed at New York, Saturday, by schooner "Edward E. Webster," Capt. Solomon Jacobs, of this port. She brought in a fare of 20,000, which were sold at 8 cents apiece, making her stock $1,600.—(Cape Ann Advertiser, April 7, 1880.)

1880.—The largest mackerel ever seen.

Some of the mackerel taken at Block Island Monday, July 25, weighed 3 pounds 2 ounces, *the largest ever seen.*—(Cape Ann Advertiser, August 6, 1880.)

1880.—ABUNDANCE OF MACKEREL.—GOOD FARES.

Large schools of large mackerel were reported off Monhegan on Sunday. Five vessels did well.

Schooner "Alice" of Swan's Island is reported high-line of the bay mackerel fleet, having landed and sent home three fares.

The schooners "Gov. Goodwin," "Helen F. Tredick" and "Anna M. Nash" of Portsmouth, arrived on Tuesday with 400 barrels of the largest mackerel ever brought to that port. They average less than 100 to the barrel. For several days past the water off the harbor has been literally black with mackerel, those at the bottom crowding toward the top. Fishermen report nothing like it for years.—(*Ibid.*)

1880.—MILLIONS OF MACKEREL ON THE NEW ENGLAND COAST.

The vast strike-in of mackerel all along our coast is really phenomenal. Nobody remembers anything like it. Thousands were caught yesterday and the day before, even without bait, as if mackerel were as simple as "Hancock Union soldiers" who snap at a bare rebel hook. Every boat, from the craziest old dory to the fashionable yacht, is pressed into service, and there are as many "kits" going to Boston and Lynn, and Salem and Gloucester, as the unwary boy supposes are on their way to St. Ives, when the famous problem of Pike's old arithmetic is propounded. From any look-out the schools can be seen on the surface of the water, hunting around for somebody to catch them, like bummer politicians seeking for bids. The theory that the mackerel had been depopulated in our waters is annihilated. There are still as good fish in the sea as ever were caught, and apparently more of them. It is said that the mackerel are pursued by the bluefish and the bluefish by the sharks. What is after the sharks is not stated. But our thanks are due to the bluefish in the first degree. They are the mackerel schoolmaster, and the success of our fishermen is due to the fact that the schoolmaster is abroad in the waters.—(Lowell (Mass.) Courier, July 16, 1880.)

1880.—MACKEREL FISHERY OF GLOUCESTER.

The records of the United States Fish Commission at Gloucester, Mass., show that the total number of fares of salt mackerel landed at that port in the year 1880 was 722, of which 25 fares were from the bay of Saint Lawrence in American vessels. The total receipts of salt mackerel were 135,774 sea-packed, equal to about 122,200 inspected barrels of 200 pounds each, making the total weight of the fish 24,440,000 pounds in the salt state, which is equivalent to 36,660,000 pounds of round or fresh mackerel. The receipts of 135,774 sea-packed barrels include 125,214 barrels taken by Gloucester vessels, 6,890 barrels taken by vessels from other New England ports, 505 barrels taken off the United States coast by the schooner "Lertie" of Nova Scotia, 3,623 barrels caught by boats and traps at Gloucester Harbor, and 3,437 barrels taken

by United States vessels in the bay of Saint Lawrence. The receipts by months were as follows: April, 7 barrels; May, 3,977 barrels; June, 1,730 barrels; July, 19,105 barrels; August, 28,030 barrels; September, 39,534 barrels; October, 30,996 barrels; November, 12,395 barrels.

The Cape Ann Advertiser record for the year 1880, gives the following facts concerning the mackerel fishery of Gloucester in that year:

The mackerel industry employed 175 vessels and about 2,500 men; the number of vessels engaged in no other fishing branch for the year was 90. Fifteen were employed in mackereling and the shore fishery; 27 in mackereling, the herring and shore fisheries; and 38 in the mackerel, Georges and bank fisheries, &c. * * * The Block Island mackereling fleet comprised 15 vessels, the Southern fleet 34, and the Bay of Saint Lawrence fleet 15, all of which were successfully engaged in the offshore mackerel fishery. Most of the southern fleet disposed of their catch, in large proportion fresh, in the Philadelphia, New York, and Boston markets; the bay of Saint Lawrence trips were failures; the Block Island catch was smaller than in 1879; but the shore catch was larger than for many years, and proved profitable. The total catch is estimated at 129,620 barrels.—(Cape Ann Advertiser, January 14, 1881.)

1880.—Review of the New England Mackerel Fishery.

In its review of the New England fisheries for the year 1880 the Boston Fish Bureau has the following concerning the mackerel fishery:

The season opened by the early, or southern, fleet sailing in March. First catch reported by schooner "Edward E. Webster," 25,000 fish, April 2. The record of the fleet will be found in the report of the various fleets, and shows another financially disastrous early catch, some of the vessels returning without fish, very few with profit. We have in previous reports mentioned the injurious effects of this branch of the catch, even when followed at a profit, a large catch of poor fish injuring the demand later in the season. The past few years fully demonstrates that the sooner the early catch is abandoned the better it will be for all interested. The first catch in the weirs at Cape Cod April 26; first new salt mackerel arrived at Boston May 10. The market for a new stock ranged from $5 to $6, vessels doing only fairly up to July 1, the fish and fleet being scattered from Cape Cod to Jeffrey's Banks. Early in July an unprecedented large body of mackerel appeared in Massachusetts Bay, at our very doors. The oldest dealers and fishermen report never having known them so plentiful. They continued in the bay until the close of the season in December, during which time the entire fleet did well, while many of them made remarkable "stocks," as will be seen in the reports of individual vessels. The catch was noticeable for the absence of large and very small fish, its excellent quality, however, causing an active demand for immediate consumption. The catch in the North Bay and provincial waters by the American fleet was almost an

entire failure, numerous vessels returning without a single barrel. Fortunately, but a small number of vessels visited those waters, and, not finding fish, returned in time to secure enough of the home catch to save them from a disastrous season. The total catch of inspected barrels by the Massachusetts fleet is the largest since 1874, amounting to 255,986 barrels. This season's catch has been exceeded but ten times since 1864. The total catch by the New England fleet is 349,674 inspected barrels, a gain over the previous year of 99,861 barrels on the Massachusetts catch, and total gain of 129,075 barrels. In addition to our own large catch there has been imported from the provinces 105,730 barrels, against 84,213 the previous year.

The total amount of mackerel received in Boston during 1880 from domestic and foreign ports, with home catch, 196,493 inspected barrels.

* * * * * * *

Our report and table of receipts, number of vessels, and crew, having been confined to salt or cured fish, we wish briefly to call attention to the importance and steady growth of the fresh-fish business, * * * the abundance of mackerel at our doors most of the season resulting in the receiving and distributing throughout the country of 75,000 barrels of fresh mackerel. Day after day, for weeks, from 1,000 to 2,000 barrels were received. Notwithstanding this unusually large production, all were used fresh. For the first year in the history of the business not a week during the year has passed but fresh mackerel could be bought at reasonable prices.

1881.—What our government paid for.

Inshore catch of mackerel in the Bay of Saint Lawrence by the Gloucester fleet this year, 18 barrels. That's what we helped to pay a twelfth of $5,500,000 for for this year's fishery. Our herring and bait and ice and other supplies we buy at a profit to the provincials, who send thousands of barrels of mackerel and quintals of codfish to the American market free of duty, in competition with the American fishermen.—(Cape Ann Advertiser, October 14, 1881.)

1881.—The mackerel fishery of Gloucester.

The records of the United States Fish Commission at Gloucester, Mass., show that the total number of fares of mackerel received at that port in 1881 was 713. The total number of sea-packed barrels of mackerel landed was 165,497, equal to 148,948 inspected barrels of 200 pounds each, equal to 29,789,600 pounds of salt mackerel, or 44,684,400 pounds in a fresh condition. The entire catch, with the exception of one fare of 48 barrels from the Bay of Saint Lawrence, was taken off the United States coast.

The records of the Cape Ann Advertiser for the year 1881 show that the American mackerel fleet from Gloucester numbered 149 vessels, 81

of which confined their operations for the year to this department, and the total receipts of salt mackerel were 163,851 sea-packed barrels.—(Cape Ann Advertiser, January 6, 1882.)

1881.—REVIEW OF THE NEW ENGLAND MACKEREL FISHERY.

The annual report of the Boston Fish Bureau for 1881 has the following review of the mackerel fishery for that year:

The catch opened unusually early, schooner "Edward E. Webster," on March 21, taking the first fare, 32,700 mackerel, 800 of which were large, balance medium and small. The first fare of new salt mackerel arrived in Boston May 9, one day earlier than in 1880, schooner "Roger Williams" landing 240 barrels that were caught off the Jersey coast. May 10, schooner "J. S. McQuinn" arrived with the first fare of fresh mackerel, 200 barrels, caught southeast from Sandy Hook. First cargo arrived fresh same date in 1880. May 4th the first catch was made in the weirs at Cape Cod; previous year on April 26th. March 25 schooner "Lizzie K. Clark" was capsized by a squall and lost, 20 miles from Barnegat; the crew were saved. This was the only mackerel vessel lost during the season. Although the season opened early the catch of cured mackerel reported at this office during the season, up to November, was as follows: May, 1,670 barrels; June, 38,683; July, 81,748; August, 70,424; September, 71,643; October, 57,268.

A light catch in November brought the season to an early close, the total catch of the New England fleet of 298 sail being 391,657 barrels, of which 269,495 were packed and inspected in Massachusetts—a gain in Massachusetts inspection of 19,534 barrels over 1880. This amount has been exceeded but five times in seventy-eight years.

As will be noticed, the catch off the New England coast opened a little later than usual, and continued good all the season, with the exception of 470 barrels, the entire catch being taken off the United States coast. The size and quality were of an average, with more No. 1's, and an absence of the very small, or No. 4. The price opened low, the first sale recorded being at $4.50 a barrel for large, $3.75 for medium, falling off in June to $4 for packed, or early 3's; inspected 3's, 2's, and 1's selling through the season as follows: July, $3.25, $3.50 for 3's; $5.25, $5.50 for 2's. August, $3.25, 3's; $5, 2's. September, $4.25, 3's; $6.50, 2's; $16, 1's. October, $6, $8 to $9, $18. November, $6.50, $9, $19. December, $7.50, 3's; $9 to $10, 2's; $20, 1's.

The catch in provincial waters being a failure, our imports show a falling off of 43,880 barrels. Fortunately very few American vessels visited them, securing only 470 barrels; they returned home in season to make a good record.

Besides the large quantity of mackerel that were salted, many thousand barrels were sold in a fresh condition. In Boston 2,200,000 and in Gloucester about 650,000 one-pound cans of fresh mackerel were put up.

IX.—APPENDIX—INSPECTION LAWS.

Compiled by A. HOWARD CLARK.

52. EXISTING LAWS.

MAINE.

Inspectors of pickled fish to be appointed. Act February 10, 1875, section 1.

The governor, with advice of the council, shall, from time to time, as occasion may require, appoint in each city, town, and plantation in this State, where pickled fish are cured or packed for exportation, one or more persons skilled in the quality of the same, to be inspectors of fish, who shall hold their office for a term of five years, unless sooner removed by the governor and council.

Bond for the performance of their duties. Ibid., section 2.

Every such inspector, before entering upon the duties of his office, shall be duly sworn, and shall give bonds with sufficient sureties to the treasurer of the city, town, or plantation, for which he is appointed, to the satisfaction of the mayor and aldermen of the city, the selectmen of the town, and the treasurer of the plantation, in the penal sum of not less than five hundred nor more than five thousand dollars, for the faithful performance of his official duties; and such municipal officers shall, at least once a year, examine the bonds given by said inspectors, and if that of any inspector is not in their opinion sufficient, they shall forthwith notify him, and if he for thirty days after such notice neglects to give a bond satisfactory to them, they shall give information thereof to the governor, and he shall remove such inspector from office.

Annual report of inspectors. Ibid., section 3.

Every inspector shall, on or before the tenth day of December, annually, make a return into the office of the secretary of state of all fish by him inspected during the year preceding the first day of December, designating the quantities, kinds, and qualities of pickled fish, and the secretary shall publish the same immediately after in the State paper.

Relief of persons injured by neglect of inspectors. Ibid., section 4.

Any person injured by the neglect or misdoings of any inspector, on tendering to such treasurer a reasonable indemnity against the costs, shall be entitled to bring an action on such inspector's bond in the name of the treasurer, for his own use, and to have a copy of the bond therefor; and if judgment shall be rendered thereon for the plaintiff, execution shall issue for the sum found due to the person for whose

use such action is brought, and the sum awarded in damages shall be entered by the clerk of the court on the original bond, to remain in the custody of the treasurer.

Qualities of fish. Ibid., section 5.

Every inspector who inspects any kind of fish that are split or pickled for packing, shall see that they are in the first instance free from taint, rust, or damage, and well struck with salt or pickle; and such of said fish as are in good order and of good quality, shall be pickled in tierces, barrels, half-barrels, quarter-barrels, and tenths of barrels, or kids; each tierce containing three hundred pounds, each barrel two hundred pounds, and so on in that proportion; and the same shall be packed in good clean coarse salt sufficient for their preservation; and then each cask shall be headed up and filled with clear, strong pickle, and shall be branded by the inspector with the name and quality of the fish therein. Mackerel of the best quality, not mutilated, measuring, when split, not less than thirteen inches from the extremity of the head to the crotch or fork of the tail, free from taint, rust, or damage, shall be branded *number one;* the next best quality, being not less than eleven inches, measuring as aforesaid, free from taint, rust, or damage, shall be branded *number two;* those that remain after the above selection, free from taint or damage, and not less than thirteen inches, measuring as aforesaid, shall be branded *number three, large;* those of the next inferior quality, free from taint or damage, not less than ten inches, measured as aforesaid, shall be branded *number three;* all other mackerel, free from taint or damage, shall be branded *number three, small.* The inspector shall brand, in plain letters, on the head of every such cask, the weight, the initials of his Christian name, the whole of his surname, the name of his town, and the letters Me., an abridgment of the month and the year, in figures, when packed.

Quality and size of casks or barrels. Ibid., section 6.

All tierces, barrels, and casks, which are used for the purpose of packing pickled fish, shall be made of sound, well-seasoned white oak, white ash, spruce, pine, chestnut, or poplar staves, with heading of either of such kinds of wood, sound, well planed and seasoned, and when of pine to be free of sap, and the barrels to be hooped with at least three strong hoops on each bilge, and three also on each chime; the barrel staves to be twenty-eight inches in length, and the heads to be seventeen inches between the chimes, and made, in a workmanlike manner, to hold pickle.

Packing of alewives or herring. Branding. Ibid., section 7.

Every inspector who inspects pickled alewives or herring, packed whole or round, shall see that they are struck with salt or pickle, and

then put in good casks of the size and material aforesaid, packed closely therein, and well salted, and the casks filled with fish and salt, putting no more salt with the fish than is necessary for their preservation; and the inspector shall brand all such casks with the name of the inspected fish as aforesaid, but in no case shall the inspector brand the casks unless the fish contained therein shall have been packed and prepared under his immediate supervision.

Fees for inspecting and branding. Ibid., section 8.

The fees for inspection and branding, exclusive of cooperage, shall be for each barrel seven cents, and all such fees shall, in the first instance, be paid by the original owners of the fish, but such owners shall be entitled to recover the amount thereof from the party purchasing or receiving the same, under the marks and brands aforesaid, and in addition to the price thereof.

Penalty for selling uninspected pickled fish. Revised Statutes, 1871, chap. 40, sec. 13.

If any person sells in this State, or exports therefrom, any fish in casks not inspected, packed, and branded, as aforesaid, or any tainted or damaged fish, known to be such, except good and wholesome fish packed in kegs of less than ten gallons, or pickled or dry fish imported into this State from some other State or country lawfully inspected and branded there, he shall forfeit ten dollars for every hundred-weight thus sold or exported.

Certificate required for shipment of pickled fish. Ibid., section 14.

No pickled fish in casks shall be shipped from this State, unless the master or owner of the vessel produces to the officer authorized to clear the vessel a certificate from the inspector that the same have been inspected, packed, and branded according to law; and the certificate shall express the number of tierces or casks thus shipped, the kind and quality of fish they contain, the name of the master and owner and that of the vessel into which such fish are received for exportation; and shall take and subscribe the following oath before the officer as aforesaid:

"I, A B, do swear, according to the best of my knowledge and belief, that the certificate hereunto annexed contains the whole quantity of pickled fish packed in barrels or casks on board the ———, ———, master; and that no pickled fish are shipped on board said vessel for the ship's company, or on freight or cargo, but what are inspected and branded according to the laws of this State, or exempted by the provisions thereof: So help me God."

Penalty for transporting uninspected pickled fish. Ibid., section 15.

If any person lades or receives on board any vessel or other carriage, for transportation from this State, any pickled fish, or cured or salted

whole fish, packed or not packed, not inspected and branded as aforesaid, except such as is described in the exception of section thirteen, he shall forfeit at the rate of not less than five nor more than ten dollars for every hundred pounds thereof; and any justice of the peace may issue his warrant to the proper officer, directing him to seize and secure any such prohibited fish, and convey it to any inspector within a convenient distance for inspection; and every person refusing to give necessary aid in the service of such warrant, when required by the officer, shall forfeit five dollars to the person suing therefor in an action of debt; and such inspector shall open, inspect, pack, and brand such fish according to law and detain the same till all lawful charges of seizure and inspection are paid.

Penalty for illegally branding or mixing. Ibid., section 16.

If any person takes from a cask any pickled, cured, lawfully inspected and branded, and substitutes therefor or fraudulently intermixes other fish; or any inspector marks any cask out of his town, or which he has not inspected, packed, and prepared himself according to law; permits other persons unlawfully to use his brands; or willfully and fraudulently uses the same himself after the expiration of his commission, he shall forfeit twenty dollars for each cask or box so dealt with.

Recovery of penalties. Ibid., section 17.

All the penalties aforesaid, not otherwise herein appropriated, may be recovered in an action of debt, half to the use of the person suing therefor, and half to the town where the offense is committed.

Branding of smoked herring. Laws of 1871, passed February 24.

Be it enacted, &c.

Hereafter no inspection of smoked herring shall be required in this State, but all smoked herring put up in boxes or casks for sale in this State shall be branded on the cask or box inclosing them with the first letter of the Christian and the whole of the surname of the person putting up the same, and with the name of the State and the place where such person lives, and all such fish offered for sale or shipping not thus branded shall be forfeited, one-half to the use of the town where the offense is committed, and the other half to the person libeling the same; and all laws and parts of laws inconsistent herewith are hereby repealed.

NEW HAMPSHIRE.

(General laws of New Hampshire, 1878.)

Appointment and qualification of inspectors and deputy inspectors. Chap. 124, Section 1–4.

Inspectors of flour, beef, and pork, of potash and pearlash, of butter and lard, of hops, and of fish, shall be appointed by the governor, with

the advice and consent of the council, and shall hold their offices for the term of five years, unless sooner removed by the governor and council.

Each inspector, before entering upon the duties of his office, shall give bond to the State, with sufficient sureties, to the satisfaction of the treasurer thereof, in the sum of two thousand dollars.

Each inspector shall appoint so many deputy-inspectors as may be necessary, removable at his pleasure, and for whom he shall be answerable, who shall first give bond to him, with sufficient sureties, in a sum not exceeding one thousand dollars, and shall once in six months, or oftener if requested, make such returns to him as he may require.

All oaths required to be taken by any deputy may be administered by the inspector, and all oaths required to be taken in the inspection of provisions or merchandise may be administered by the inspector or any deputy, or, in either case, by a justice.

If a vacancy shall occur in the office of inspector, his deputies shall continue to perform their duties and shall possess the same powers and be subject to the same liabilities as if no vacancy had occurred, until an inspector shall be appointed and duly qualified.

The word "inspector" in this title may include deputy inspector.

Pickled fish to be well preserved. Chap. 129, sections 1, 2.

The inspector of fish or some deputy shall see that all kinds of split pickled fish and fish for barreling, intended for exportation, have been well struck with salt or pickle in the first instance, and preserved free from rust, taint, or damage.

Such fish as are in good order and of good quality shall be packed in tierces, barrels, or half-barrels; the tierces to contain three hundred pounds, the barrels two hundred pounds, and the half-barrels one hundred pounds of fish each, and shall be packed with good clean salt, suitable for the purpose; and the casks, after being packed and headed, with the fish and sufficient salt to preserve the same, shall be filled with a clear strong pickle.

Qualities of pickled fish. Branding. Ibid., sections 3–5.

Each cask shall be filled with fish of one and the same kind, and shall be branded "salmon," "shad," "alewives," "herring," or as the case may be; those of the best quality, caught in the right season, to be most approved and free from damage, shall be branded "cargo number one"; those which remain after the best have been selected, being sweet, free from taint, rust, or damage, shall be branded "cargo number two"; and the thinnest and poorest of those that are sweet and wholesome shall be branded "cargo number three."

There shall be four numbers of mackerel: Those of the best quality, not mutilated, measuring not less than thirteen inches from the extrem-

ity of the head to the fork of the tail, free from rust, taint, or damage, shall be branded "number one." The next best quality, being not less than eleven inches, measuring as aforesaid, free from rust, taint, or damage, shall be branded "number two." Those that remain after the above selections, if free from taint or damage, and not less than thirteen inches, measuring as aforesaid, shall be branded "number three, large." Those of the next inferior quality, free from taint or damage, shall be branded "number three." All other mackerel free from taint or damage shall be branded "number four."

The inspector shall also brand, in plain, legible letters, on the head of every such cask, the initials of his Christian name and the whole of his surname, the name of the town for which he is appointed, and the abbreviation N. H. All mackerel shall also be branded on each cask with the month in which the same are packed.

Inspection of smoked alewives or herrings. Ibid., sections 6–8.

All herrings or alewives intended to be smoked and packed shall be sufficiently salted and smoked to cure and preserve the same, and afterward closely packed in the boxes in dry weather.

All smoked alewives or herrings shall be divided and sorted by the inspector or some deputy, and denominated, according to their quality, "first sort" or "second sort." The "first sort" shall consist of all the largest and best-cured fish; the "second sort" of the smaller but well-cured fish; and in all cases all fish which are belly-broken, tainted, or scorched, slack-salted not sufficiently smoked shall be taken out as refuse.

Each box of alewives or herrings so inspected shall be branded on the top by the inspecting officer with the initials of his Christian name and the whole of his surname, the name of the town where it was inspected, with the abbreviation N. H., the quality, whether "first sort" or "second sort," and the month and year in which they were so branded.

Quality and size of package for pickled fish. Ibid., section 9.

All tierces, barrels, and half barrels used for packing or containing pickled fish shall be made of sound, well-seasoned white oak, ash, red oak, spruce, pine, or chestnut staves, of rift timber, with heading of either of said kinds of wood, well planed, sound, and well seasoned, the heading of pine to be free from sap; and shall be well hooped with at least three good and strong hoops on each bilge, and three hoops on each chime; the barrel staves shall be twenty-eight inches in length, and the heads seventeen inches between the chimes; the barrel shall contain not less than twenty-nine nor more than thirty gallons, the half barrels not less than fifteen gallons, and the tierces not less than forty-five nor more than forty-six gallons, and each cask shall be made in a workmanlike manner to hold pickle, and shall be branded on the side thereof, near the bung, with the name of the maker or owner.

Quality and size of boxes for smoked fish. Ibid., section 10.

All boxes used for packing and containing smoked alewives or herrings shall be made of good, sound boards, sawed and well seasoned, the sides, top, and bottom of not less than half-inch boards, and the ends of not less than three-quarter-inch boards, securely nailed with wrought or cut nails, and shall be seventeen inches in length, eleven inches in breadth, and six inches in depth, in the clear.

Branding-irons to be furnished the inspector. Ibid., section 11.

Every person having fish for packing or pickling, either in bulk, casks, or boxes, to the amount of twenty barrels or forty boxes in one season, shall furnish the inspector, or one of his deputies, with a branding-iron containing the initials of the owner's Christian name and the whole of his surname; and the inspecting officer shall cause such name to be fairly branded on the head of every cask and on one end of every box of fish inspected for such person. If he shall refuse or neglect to furnish such brand, he shall forfeit three dollars for such neglect or refusal.

Inspection of fish packed whole. Ibid, section 12.

All small fish which are usually packed whole with dry salt shall be put in good casks, of the size and materials above required for pickled fish, and shall be packed close, edgewise, in the cask, and well salted; the casks shall be filled with the fish and salt, putting in no more salt than is necessary for the preservation of the fish; and the inspecting officer shall brand each cask with the name of the fish and the quality thereof, whether "first sort", or "second sort," as in the case of smoked fish aforesaid.

Annual report of inspectors and their deputies. Ibid., section 13.

The inspector shall make return to the governor annually, on or before the first Wednesday of June, of all the fish of every kind, whether in casks or boxes, which have been inspected by him or his deputies during the year preceding; and each deputy shall seasonably furnish said inspector with a return of all the tierces, barrels, half barrels, and boxes by him inspected and branded since his last return.

Fees for inspection of fish. Ibid., sections 14, 15.

The fees for inspecting and branding each cask or box of fish as provided by this chapter shall be, for each tierce, fourteen cents; for each barrel, nine cents; for each half barrel, five cents; for each smaller cask or box, three cents; for nailing each cask or box, one cent, exclusive of the labor of packing and coopering; and twenty-five cents for each certificate thereof given; and the general inspector shall have and receive from his deputies the sum of four cents for each and every

tierce, and one cent for each barrel or box, and one half cent for each half barrel or smaller quantity so inspected and branded by any of his deputies.

These charges shall be paid by the owner or person employing the inspecting officer, and may by such person be recovered of the subsequent purchaser or exporter, in addition to the purchase or cost of the fish.

Certificate required for shipment of pickled or smoked fish. Ibid., sections 16, 17.

No pickled fish or smoked alewives or herring shall be shipped or exported by water from this State in casks or boxes unless the owner or master of the vessel shall produce to the collector, or other officer authorized by the laws of the United States to clear vessels out, a certificate from the inspector or some deputy that such fish has been inspected, packed, and branded according to law, together with the number of tierces, barrels, half barrels, and boxes thus shipped, the kind and quality of fish they contain, the name of the vessel in which such fish are received for exportation, and the owner or master thereof.

The master or owner, on producing such certificate to such officer, shall take and subscribe the following oath: "I, A B, of ———, do swear, according to the best of my knowledge and belief, that the certificate hereunto annexed contains the whole quantity of pickled and branded fish, smoked alewives, and herrings on board the ———, ———, master, and that no fish is shipped on board said vessel for the ship's company, or on freight or cargo, but what is inspected and branded according to law. So help me God."

Penalty for transporting uninspected fish. Ibid., sections 18, 19.

If any person shall put or receive on board any vessel or other carriage of conveyance, to transport the same from this State, any pickled or whole fish, or any smoked alewives or herrings, packed in casks or boxes, which are not inspected and branded according to law, he shall forfeit not less than two dollars nor more than ten dollars for every hundred pounds of pickled or whole fish, and one dollar for each box of smoked alewives or herrings so uninspected.

If any pickled or barreled fish, smoked alewives or herrings as aforesaid, shall be put on board any vessel, boat, or carriage of conveyance, with intent to sell or export the same contrary to law, any justice may issue his warrant to the sheriff, his deputies, or a constable, requiring such officer to seize and secure said fish, and carry them to the inspector or deputy nearest to such vessel, boat, or carriage, who shall open and inspect, pack, and brand the same as is provided in this chapter, and shall detain the same until the expense and charges of seizure, inspection, packing, and all other charges arising from such seizure shall be paid.

Penalty for illegally banding or repacking. Ibid., sections 20, 21.

If the inspector or any deputy shall brand any cask or box the contents of which he has not inspected, packed, salted, coopered, and nailed according to the provisions of this chapter, or shall permit any other person to use his brands in violation or evasion thereof, he shall forfeit twenty dollars for each cask or box so branded, and shall also be removed from office.

If any person shall intermix, take out, or shift any inspected fish, packed and branded as aforesaid, or shall put in other fish for sale or exportation, he shall forfeit five dollars for each cask, package, or box so altered; and if any casualty shall render it necessary to repack a cask or box of inspected fish it shall in all cases be done by an inspector.

Penalty for selling tainted or damaged fish. Ibid., sections 22, 23.

If any person shall sell or export, or cause to be sold or exported, within or from this State, any tainted or damaged pickled fish, or smoked alewives or herrings, he shall forfeit three dollars for every hundred weight of such pickled fish, and one dollar for each box of such smoked alewives or herrings which shall be thus sold or exported.

Packing of shell-fish. Ibid., section 23.

All shelled clams or other shelled fish used for fish bait, hereafter offered for sale, shall be put in barrels or half barrels of the description required for pickled fish; and the casks shall be filled full and salted sufficiently to preserve the same; if any person shall offer for sale any shelled fish, aforesaid, not packed agreeably to this section, he shall forfeit for each offense two dollars.

Packing of fish for consumption within the State. Ibid., section 24.

All kinds of pickled fish which are packed in tierces, barrels, or half barrels, and all smoked alewives or herrings packed in boxes, for consumption in this State, and which are not subject to be inspected and branded as provided in case of exportation, shall, however, be packed with only one kind of fish in each cask or box, and there shall be the same weight in each cask as hereinbefore provided; and for intermixing different kinds of fish in the same cask or box, or for short weight in any cask, the owner or seller shall forfeit the same sum hereinbefore provided for the like offense is such fish were inspected.

Fish packed in small kegs exempt from inspection. Ibid., section 25.

Nothing in this chapter shall extend to fish packed in kegs of less than ten gallons.

MASSACHUSETTS.

(General statutes of Massachusetts, 1859, with subsequent amendments.)

Appointment and qualification of inspector-general and deputies. Chap. xlix, sections 1, 2, 33, 34.

There shall be inspectors-general of butter and lard, fish, hops, leather, and pot and pearl ashes appointed by the governor, with the advice and consent of the council, for the term of five years, from the time of their respective appointments, unless sooner removed by the governor and council, who, before entering upon the duties of their respective offices, shall be sworn. The inspectors-general now in office shall hold their offices according to the term of their respective commissions, unless sooner removed.

Each inspector-general may appoint deputy inspectors, removable at his pleasure, who shall once in every six months make such returns to him as he requires to carry into effect the provisions of this chapter.

The inspector-general of fish shall give bond with sufficient sureties to the treasurer of the commonwealth in the penal sum of ten thousand dollars, and shall have no interest directly or indirectly in the cure or packing of pickled fish.

He may appoint deputy inspectors in every seaport or other town where such fish is packed for exportation, for whose official conduct he shall be answerable. He shall take bonds of each of them with sufficient sureties, and shall receive from each deputy an excise or fee for his commission and bond of one dollar, and no more. The deputies shall be sworn either before the inspector-general or some justice of the peace.

Pickled fish to be well preserved and packed. Ibid., sections 35, 36.

The inspector-general and deputy inspectors shall inspect all fish for the inspection of which provision is made in this chapter.

Under the supervision of the inspector-general and his deputies, respectively, all kinds of split pickled fish and fish for barreling except herrings, and all codfish tongues and sounds, halibut fins and napes, and sword-fish, whenever said articles are intended for exportation, shall be struck with salt or pickle in the first instance, and preserved sweet and free from rust, taint, or damage; and, when the same are found in good order and of good quality, they shall be packed either in tierces containing each three hundred pounds, in barrels containing each two hundred pounds, in half barrels containing each one hundred pounds,* or in packages containing each less than one hundred pounds, on which

*The conclusion of this sentence, from the words "one hundred pounds," is given as amended by act of April 1, 1879. The Revised Statutes of 1859 conclude the sentence as follows: "in quarter barrels containing each fifty pounds, in eighths of a barrel or kids containing each twenty-five pounds, or in kids or packages containing each less than twenty-five pounds, on which the number of pounds therein shall be branded."

the number of pounds therein shall be plainly and legibly branded. Every cask, kid, or package shall be packed with good, clean salt suitable for the purpose, and, after packing with sufficient salt to preserve its contents, shall be headed or well secured, and filled up with a clean, strong pickle.

Qualities of pickled fish. Ibid., section 37.

There shall be five qualities of mackerel, three of salmon and shad, and two of other kinds of pickled fish. Mackerel of the best quality, not mutilated, measuring not less than thirteen inches from the extremity of the head to the crotch or fork of the tail, free from rust, taint, or damage, shall be branded *number one.* The next best quality, being not less than eleven inches, measuring as aforesaid, free from rust, taint, or damage, shall be branded *number two.* Those that remain after the above selections, if free from taint or damage, and not less than thirteen inches, measuring as aforesaid, shall be branded *number three, large.* Those of the next inferior quality, free from taint or damage, not less than ten inches in length as aforesaid, shall be branded *number three.* All other mackerel free from taint or damage shall be branded *number four.* Those salmon and shad which are of the best quality for family use, free from rust or damage, shall be selected for number one and number two, the best of them selected and branded *number one,* the residue, *number two;* all that remain, free from taint, and sound, shall be branded *number three.* Of all other pickled fish, the best which are free from taint and damage shall be branded *number one,* those that remain, free from taint, and sound, *number two.*

Penalty for illegally packing. Ibid., section 38.

Each cask, kid, or package shall be filled with fish of the same kind, or parts of the same kind of fish; and whoever intermixes, takes out, or shifts any inspected fish which are packed or branded as aforesaid, or puts in other fish for sale or exportation, shall forfeit fifteen dollars for each package so altered. If any casualty renders it necessary to repack a cask of inspected fish, it shall in all cases be done by an inspector of such fish.

Branding of packages. Ibid., section 39.

The inspector shall brand in plain, legible letters, on the head of each cask of fish inspected by him, the denomination of the fish packed or repacked therein, the initials of his Christian name and the whole of his surname, and, if a deputy, the name of the place for which he is appointed, the letters Mass., and the year in which the fish are packed; and shall also, when, in his judgment, it may be necessary, nail in a suitable manner any cask in which fish are packed.

Pickled fish inspected elsewhere not subject to reinspection. Ibid., section 42.

Pickled fish, duly inspected in the State or country in which it is packed, shall not be subject to reinspection in this State.

Inspection of fish packed whole. Ibid., section 43.

Small fish, which are usually packed whole with dry salt or pickle, shall be put in good casks of the size and materials required in this chapter for the packing of split pickled fish, and shall be packed close in the cask and well salted; the casks shall be filled full with the fish and salt, and no more salt shall be put with the fish than is necessary for their preservation, and the casks containing such whole fish shall be branded with the denomination of the fish, and a like designation of the qualities as is before prescribed in this chapter in respect to the qualities of other pickled fish.

Quality and size of packages for pickled fish. Ibid., sections 44, 45.

Casks used for packing or repacking pickled fish intended for exportation, except casks containing less than twenty-five pounds weight, shall be made of sound, well-seasoned white oak, ash, red oak, spruce, pine, or chestnut staves, of rift timber,* sound and well seasoned, with heading of either of said kinds of wood, and when of pine such heading shall be free from sap and knots, and be planed; the barrels, half barrels, and tierces shall be well hooped with at least three good hoops of sufficient substance on each bilge, and three hoops of the like quality on each chime; the barrel-staves shall be twenty-eight inches in length, and the heads shall be seventeen inches between the chimes; the barrels shall contain not less than twenty-eight nor more than twenty-nine gallons each; the half barrels not less than fifteen gallons each; and the tierces not less than forty-five nor more than forty-six gallons each. Each cask shall be made in a workman-like manner, and branded on its side, near the bung, with the name of the maker.

The inspector-general or his deputies shall strictly examine and inspect all casks in which they may be required to pack fish; and shall reject such as are not made in a substantial manner and according to the provisions of this chapter.

Fees for inspection of pickled fish. Ibid., sections 46, 47.

The fees for inspecting and branding, exclusive of cooperage, shall be, for each tierce fourteen cents, each barrel nine cents, each half barrel six cents, each cask of a smaller denomination three cents, and, in addition to the fees aforesaid, one cent for each cask nailed as before provided; and all fees shall in the first instance be paid by the original

*The words "of rift timber" struck out by amendment passed January 30, 1867.

owner of the fish, or by the person employing the inspector, and may be recovered by them respectively of the person who afterwards purchases or exports the same.

The inspector-general may receive from each of his deputies for every cask of fish inspected by him the following fees: For each tierce four cents, for each barrel one cent, for each half barrel,* and all packages less than one hundred or more than fifty pounds, one-half cent, and on all packages of fifty pounds and less, one-quarter of a cent each.

Inspection of smoked alewives or herrings. Ibid., sections 48–52.

Alewives or herrings intended to be packed for sale or exportation, shall be sufficiently salted and smoked to cure and preserve the same, and afterwards shall be closely packed in boxes in clear and dry weather.

Smoked alewives or herrings shall be divided and sorted by the inspector or his deputy, and denominated, according to their quality, *number one* and *number two.* Number one shall consist of all the largest and best cured fish; number two of the smaller but well-cured fish; and in all cases those which are belly-broken, tainted, scorched, or burnt, slack-salted, or not sufficiently smoked, shall be taken out as refuse.

Boxes made for the purpose of packing smoked alewives or herrings, and containing the same, shall be made of good sound boards, sawed and well seasoned; the sides, top, and bottom of not less than half-inch, and the ends of not less than three-quarter inch, boards securely nailed, and shall be seventeen inches in length, eleven inches in breadth, and six inches in depth, in the clear, inside.

Each box of alewives or herrings inspected shall be branded on the top by the inspecting officer with the first letter of his Christian name, the whole of his surname, the name of the town where it was inspected, with the addition of Mass., and also with the quality of *number one* or *number two.* Herrings taken on the coasts of Nova Scotia, Newfoundland, Labrador, or Magdalen Islands, and brought into this State, shall also be branded with the name of the place or coast where taken.

The fees for inspecting, packing, and branding, shall be five cents for each box, which shall be paid by the purchaser; and the inspector-general may require from his deputies one cent for each box inspected, packed, and branded by them.

Annual report of fish inspected. Ibid., section 53.

The inspector-general shall, in the month of January, annually, make a return into the office of the secretary of the commonwealth, of all the

*The conclusion of the section from the words "half barrel" is given as amended by act of April 1, 1879. The Revised Statutes of 1859 conclude the section after the words "half barrel," as follows: "half a cent, and for each smaller cask one-quarter of a cent."

fish inspected by him and his deputies during the year preceding the first day of said January, designating the quantities, kinds, and qualities of pickled and smoked fish, respectively, and distinguishing the quantities, kinds, and qualities of pickled fish of a first inspection from those reinspected; and the secretary shall, as soon as may be after receiving such returns, cause the same to be published in any newspaper in Boston authorized to publish the laws of the commonwealth.

Penalties for selling or transporting uninspected fish. Ibid., sections 54–56.

No smoked alewives or herrings shall be exported from this State, unless inspected and branded as aforesaid, under a penalty of two dollars for each box exported; nor said alewives or herrings be taken from a box, inspected and branded as aforesaid, and replaced by others of an inferior quality, with intent to defraud any person in the sale of the same, under a penalty of five dollars for each box so changed; provided, that all smoked herrings and alewives, arriving from any other State in the United States and having been there inspected, may be exported in a vessel from this State without being reinspected.

Pickled or smoked fish, which has not been inspected and branded according to the provisions of this chapter, put on board of a boat or vessel, or into a carriage of conveyance, with the intent that the same shall be sold within, or exported from, this State, shall be forfeited, and the inspector-general or a deputy may seize and libel the same.

If a master of a vessel or other person puts or receives on board of a vessel, or in a carriage of conveyance, for transportation from this State, pickled fish, or smoked fish, not inspected and branded as provided in this chapter, he shall forfeit a sum not exceeding ten dollars for every hundred pounds of such fish, and in the same proportion for any other quantity.

Penalty for selling tainted or damaged fish for food. Ibid., section 57.

Whoever sells within this State or exports therefrom tainted or damaged fish, unless with the intent that the same shall be used for some other purpose than as food, shall forfeit the sum of ten dollars for every hundred pounds of such fish, and in the same proportion for any other quantity; and upon a trial in such case the burden of proof shall be upon the defendant to show for what purpose such fish was so exported or sold.

Penalty for illegally branding. Ibid., section 58.

If the inspector-general, or a deputy inspector, brands a cask or package of fish, the contents of which he has not duly inspected, packed, salted, or coopered, or permits any other person to use his brands, in violation or evasion of the provisions of this chapter, he shall forfeit twenty dollars for each offense, and be liable to removal from office.

Quintal defined. Ibid., section 59.

When fish are sold by the quintal, it shall be understood to mean a quintal of one hundred pounds avoirdupois, and all contracts concerning fish sold in this manner shall be construed accordingly.

Packing of clam bait. Act of 1867, chap. 347, section 1.

When clam bait is sold by the barrel, it shall be construed to mean a fish-barrel of not more than twenty-nine, nor less than twenty-eight gallons of clams and not over three gallons of pickle. If a disagreement arises between the purchaser and seller respecting the quantity in a barrel, either party may call on an inspector of fish and have the barrel measured; and if it does not contain the aforesaid number of gallons of clams, the seller shall receive pay for the number of gallons it contains, and shall pay the expense of measuring and coopering, otherwise the purchaser shall pay such expense.

Right of inspectors to enter premises. Act of April 1, 1879, section 3.

The inspector-general of fish or some one deputy especially thereto authorized by him for that purpose, shall have the right to enter at all reasonable times, upon any wharf, and into any store, warehouse, or other place, where the packing of pickled fish is carried on in this State, for the purpose of inspecting, examining, and supervising the packing and inspecting of such fish, and to examine and weigh any package of such fish, for the purpose of ascertaining if the same are fit for exportation, in accordance with the requirements of the law.

RHODE ISLAND.

(General Statutes of Rhode Island, 1872.)

Election and qualification of packers of fish. Chapter 34, sections 1, 18; chapter 102, section 2.

The electors in each town shall, annually, on their town election days, choose and elect * * * one or more packers of fish, * * *.

Every packer shall give bond to the town treasurer of the town in which he shall be appointed, in the sum of one thousand dollars, with sufficient surety or sureties, to the satisfaction of such town treasurer, for the faithful performance of the duties of his office.

Duties of packers of fish. Chap. 102, section 1.

In every town in which pickled fish are packed up for sale or exportation from the State, the packers of such town shall see that the same have been properly pickled; that they are properly repacked in casks, in good shipping order, with good salt, sufficient in each cask to preserve such fish from damage to any foreign port.

Casks to contain only one kind of fish. Ibid., section 3.

Pickled fish, whether codfish, mackerel, menhaden, herrings, or other fish, shall be sorted, and one kind only be put into one cask.

Dimensions of casks; how filled; branding. Ibid., sections 4, 5.

Every cask shall be well seasoned and bound with twelve hoops; those of menhaden and herrings of the capacity to hold twenty-eight gallons; and those for other fish of the capacity, if a barrel, to hold two hundred pounds, and if a half barrel, one hundred pounds, weight of fish; each cask to be full, and the fish sound and well cured.

Every cask, being first searched, examined, and approved by a packer, shall, when packed or repacked for exportation, be branded legibly on one head with the kind of fish it contains, and the weight thereof; or the capacity of the cask, with the first letter of the Christian and the whole of the surname of the packer, with the name of the town, and with the words "Rhode Island," in letters not less than three-fourths of an inch long, to denote that the same is merchantable and in good order for exportation.

Qualities of fish. Ibid., section 6.

Every cask of pickled codfish and mackerel offered for sale, or for exportation from this State, shall also be branded No. 1, No. 2, or No. 3, to denote the quality of such fish.

Fish brought from other States, by fishermen, &c., excepted. Ibid., section 7.

Nothing in this chapter contained shall hinder any fisherman or owners of fish, coming to this State from their fishing trips, from selling or reshipping their fish to any other of the United States without being packed into barrels or half barrels.

Penalty for illegally selling fish. Ibid., section 8.

Every person who shall offer for sale in or attempt to export from this State any pickled fish which have not been approved by a sworn packer, or in casks which are not branded as aforesaid, shall forfeit fifty dollars for each offense.

Penalty for illegally packing or branding. Ibid., section 9.

Every person who shall shift any fish from any cask after the same has been branded by the packer, and shall offer to sell or export the same from this State, or shall brand any cask into which the same shall be shifted, or shall brand any cask with the branding-iron of a packer, or with any iron made in imitation thereof, shall forfeit not less than thirty dollars nor more than one hundred and sixty dollars for each offense.

Penalty for fraud. Ibid., section 10.

Every packer who shall be guilty of any fraud or neglect in packing any fish contrary to this chapter, or shall brand any cask not thoroughly examined according to the provisions thereof, shall forfeit fifty dollars for each offense.

Fees of packers of fish. Ibid., section 11.

The packers of fish shall be paid for opening, assorting, inspecting, weighing, pickling, packing, or repacking, heading up, nailing, and giving a certificate, if pickled codfish or mackerel, twenty cents for every barrel, and fifteen cents for every half barrel, by the owner thereof: *Provided*, That for all pickled codfish or mackerel which have been inspected in some one of the United States, and which shall not, in the judgment of the packer, require repacking, the said owner shall pay to the packer twenty cents only, for unheading, inspecting, reheading, branding, nailing, and giving a certificate thereof; and for all other except codfish and mackerel, the owner thereof shall pay the packer twenty-five cents for every cask.

CONNECTICUT.

(Revised Statutes of Connecticut, 1875.)

Appointment and qualification of inspectors. Title 16, Chapter XV, section 17.

The superior court in the several counties may appoint in each town therein not exceeding fifteen inspectors and packers of fish, and shall take a bond of every person so appointed, for the faithful discharge of his duty, in the sum of one hundred dollars, payable to the county treasurer; and the clerk of said court shall give a certificate of his appointment to each inspector, who may exercise the duties of his office in any town in such county.

Packing of pickled shad. Ibid., section 18.

All pickled shad intended for market shall be split and well cleansed and pickled in strong brine, and shall remain in such brine at least fifteen days before they shall be put up for market, and shall be put up in barrels or half barrels, the barrels containing two hundred pounds each, and the half barrels one hundred pounds each, of fish well packed, with a sufficient quantity of salt, and filled with strong brine; and shad so put up shall be of three denominations, to wit: Shad number one, to consist wholly of shad well saved, free from rust or any defect, with the head and tail cut off and the backbone taken out, each barrel to contain not more than eighty shad, and each half barrel not more than forty. The second denomination shall be shad number two, to consist wholly

of those well saved, trimmed, pickled, and prepared for packing, in the same manner as shad number one, each barrel to contain not more than ninety shad, and each half barrel not more than forty-five. The third denomination shall be shad number three, to consist of such as will not answer for either of the two former numbers, well saved, with the heads taken off; and every inspector, who shall inspect and brand the same, shall designate by each brand the quality, weight, and kind of fish contained in each barrel and half barrel branded by him, the year when it shall have been inspected, in figures, the word "Conn.," and his own name and the name of the town where said fish was put up.

Quality and size of fish barrels. Ibid., section 19.

All barrels and half barrels containing fish shall be well made, of good seasoned red oak, white oak, or chestnut timber, and each tierce made with twelve hoops; and each barrel shall be of the capacity of from twenty-eight to thirty gallons, and each half barrel of the capacity of fifteen gallons and a half.

Imported shad not to be inspected. Title 20, Chapter XII, section 10.

Any inspector of fish who shall inspect or brand any package of shad imported into this State shall forfeit five dollars to the State.

Inspection fees. Title 13, Chapter XXVIII.

Inspectors shall receive for packing, heading, flagging, pickling, and branding each barrel of fish, twenty cents, and for each half barrel, ten cents.

Penalty for fraud by inspectors. Title 20, Chapter XII, section 12.

Every legally-appointed inspector or packer of fish who shall be guilty of any fraud or neglect, for which no other penalty is specifically prescribed, shall forfeit six dollars for every offense; and every such inspector or packer who shall mark or brand any cask containing fish which has not been actually inspected by him, or shall put a false brand upon any cask inspected by him, shall forfeit ten dollars.

Penalties for illegally repacking or exporting. Ibid., sections 13, 14.

Evry person who, after the inspection and branding of any cask containing fish, shall fraudulently take out or change any part of the contents thereof, or put into it any fish not inspected, shall forfeit twenty dollars.

Every person who shall export, or ship for exportation, to any foreign port, any fish not put up, inspected, and branded according to law, and the master of every vessel, knowingly having on board his vessel any such fish not so put up, inspected, and branded, shall forfeit the follow-

ing sums: The owner, exporter, or shipper, shall forfeit six dollars for every cask containing fish; and every master of a vessel shall forfeit for every such cask on board, three dollars; but fish brought from another State, and inspected and branded in the State in which they were put up for market, conformably to its laws, and accompanied with such evidence thereof as such laws require, may be exported from this State without any reinspection.

53. REPEALED LAWS.

MAINE.

Until the year 1820, Maine was a province of Massachusetts and subject to the same laws, but in that year the province became a separate State and made its own laws. The fish inspection laws enacted by the State of Maine were very similar to those of the mother State. The first law was approved March 22, 1821, and is entitled "An act to provide for the packing of pickled and smoked fish." It reads as follows:

Appointment and qualification of inspectors.

Be it enacted by the Senate and House of Representatives in Legislature assembled, That the governor, with the advice of council, is hereby authorized and directed to appoint and commission, during his pleasure, in each town and plantation in this State where pickled fish or smoked alewives and herrings are cured or packed for the purpose of exportation, one or more suitable person or persons inspector or inspectors of pickled fish and smoked alewives and herrings, who shall be well skilled in the quality of the same, and who, before he enters on the duties of his office, shall be sworn to the faithful discharge thereof, and shall give bond with sufficient sureties to the treasurer of the town or plantation in which he is appointed, in the penal sum of not less than five hundred nor more than one thousand dollars, for the faithful performance of the duties of his office. And the selectmen of towns and assessors of plantations, in which such inspectors shall be appointed, shall annually examine the bonds given as aforesaid, and if the bond of any such inspector shall by them be considered insufficient, they shall forthwith notify such inspector of the same, and if any inspector shall for thirty days after such notice neglect to give bond as aforesaid to the satisfaction of such selectmen or assessors, it shall be their duty to give information thereof to the governor, who shall remove such inspector and appoint some other person to such office. And any person injured by the neglect or misdoings of any such inspector shall be entitled to a copy of such bond, and shall have a right to bring an action thereon in the name of such treasurer for his own use and benefit; and on producing the original in court and obtaining judgment thereon, execution shall issue for such sum only as shall be found due in damages to the person for whose use any such action shall be brought; and

the amount thereof being entered by the clerk of the court on the original bond, the same may be delivered back (by leaving a copy) to the treasurer from whom the same was received.

Material and sizes of casks for pickled fish.

2. *Be it further enacted*, That all barrels, half barrels and tierces which shall be made or used for the purpose of packing, or containing pickled fish, shall be made sound of well-seasoned white oak, ash, red oak, spruce, pine, or chestnut staves, of rift timber, with heading of either of the said kinds of wood, sound, well-seasoned and the pine heads free from sap: eaid heading to be well planed; the barrels, half-barrels and tierces to be well hooped, with at least three hoops on each bilge and three hoops on each chime, all of which shall be good hoops of sufficient substance, the barrel staves to be twenty-eight inches in length, and the heads to be seventeen inches between the chimes; and to contain not less than twenty-nine nor more than thirty gallons; and barrels, half-barrels and tierces shall be branded on the side of the cask near the bung with the name of the maker or owner of said cask, and shall be made, in a workmanlike manner, to hold pickle; the half barrels to contain not less than fifteen gallons, and the tierces to contain not less than forty-five nor more than forty-six gallons: *Provided, however*, That nothing contained in this act, shall extend to fish packed in kegs of less than ten gallons.

Material and size of boxes for smoked fish.

3. *Be it further enacted*, That all boxes which shall be made for the purpose of packing smoked alewives or herrings and containing the same, shall be made of good sound boards, sawed and well seasoned, the sides, top, and bottom of not less than half-inch boards, and the ends not less than three-quarters of inch boards, securely nailed with not less than eight sixpenny nails, and sixteen fourpenny nails to each box, and the top of each box to be planed, and shall be seventeen inches in length, eleven inches in breadth, and six inches in depth in the clear, inside. And all alewives or herrings intended to be smoked and packed shall be sufficiently salted and smoked to cure and preserve the same; and afterwards closely packed in the boxes, in clear and dry weather.

Qualities of pickled fish. Branding.

4. *Be it further enacted*, That it shall be the duty of the inspector to see the salmon, mackerel, shad, and all other kinds of split pickled fish, or fish for barrelling, have been well struck with salt or pickle in the first instance, and preserved sweet, free from rust, taint or damage. And such fish as are in good order, and are of a good quality, shall be packed in tierces, barrels or half barrels; the tierces shall contain three hundred pounds, the barrels shall contain two hundred pounds, and the

halfbarrels one hundred pounds of fish each; and the same shall be packed with thirty-five pounds of good and clean coarse salt, suitable for the purpose, to each barrel; and said casks after being packed and headed up with the fish and sufficient salt to preserve the same, shall be filled up with a clear strong pickle, and shall be branded salmon, mackerel, shad (or as the case may be); those of the best quality, caught in the right season, to be most approved and free from damage, shall be branded Cargo No. 1; those which remain after the best have been selected, being sweet and free from taint, rust or damage, shall be branded Cargo No. 2; and there shall be a third quality, which shall consist of the thinnest and poorest of those that are sweet and wholesome, which shall be branded Cargo No. 3. And the inspector shall also brand in plain legible letters on the head of each and every cask, in which inspected merchantable fish or whole fish are packed or repacked, the weight, and initials of his Christian name, with his surname at large, the name of the town for which he is appointed, and the word "Maine" annexed; and each cask shall be filled with fish of one and the same kind; and if any person shall intermix, take out or shift any inspected fish which are packed and branded as aforesaid, or put in other fish for sale or exportation contrary to the true intent and meaning of this act, he or they shall forfeit and pay fifteen dollars for each and every package so altered: *Provided, however*, if any casualty shall render it necessary to repack a cask of inspected fish, it may in all cases be done by an inspector of such fish. And if any person shall sell or export or cause to be sold or exported, within or from this State, any tainted or damaged fish, he shall forfeit and pay ten dollars for every hundred weight that shall be thus sold or exported.

Packing and branding of codfish, halibut, &c.

5. *Be it further enacted*, That all codfish, haddock, hake, pollock, and halibut, pickled, and hereafter offered for sale, shall be packed in casks of the contents required by the second section of this act, each barrel to contain two hundred and twenty-five pounds, and each half barrel to contain one huadred and twelve and a half pounds, agreeably to the rules of packing in the fourth section of this act, with sufficient salt to preserve the same. And it shall be the duty of the inspectors to brand with plain and legible figures, the weight of the aforesaid five kinds of fish, in addition to the brands required by the fourth section of this act.

Packing and branding of small fish.

6. *Be it further enacted*, That all small fish which are usually packed whole with dry salt, shall be put in good casks of the size and materials mentioned in the second section of this act; said fish shall be packed close in the cask, and well salted; the casks shall be filled full with the fish and salt, putting no more salt with the fish than is neces-

sary for their preservation; and the inspector shall brand all casks containing such inspected whole fish with the name of the fish, and the quality as described in the fourth section of this act.

Inspection of smoked alewives or herring.

7. *Be it further enacted,* That all smoked alewives or herrings shall be divided and sorted by the inspector, and denominated, according to their quality, first sort and second sort; the first sort shall consist of all the largest and best cured fish, of not less than eight inches long; second sort, of the smaller but well cured fish, of not less than seven inches long; and in all cases the following shall be taken out as refuse: all those which are belly-broken, tainted, scorched, or burnt, slack-salted, or not sufficiently smoked. And each box of alewives or herrings so inspected shall be branded on the top, by the inspecting officer, with the first letter of the Christian name and the surname at length of the inspector who inspected the same; and in like manner the name of the owner thereof, with the name of the town where it was inspected, with the addition of "Maine," and also with the quality of first sort or second sort.

Certificate required for shipment of pickled and smoked fish.

8. *Be it further enacted,* That no pickled fish in casks, and no smoked alewives or herrings in boxes, shall be exported from this State by water, unless the master or owner of the vessel shall produce to the collector or other officer authorized by the United States to clear out vessels, a certificate from the inspector that the same has been inspected, packed, and branded according to the directions of this act; and the certificate shall express the number of barrels, half barrels, and tierces, and the number of boxes thus shipped, the kind and quality of the fish they contain, with the name of the master and owner, and the name of the vessel in which such fish are received for exportation. And such master or owner of every vessel shall take and subscribe the following oath or affirmation before the officer authorized as aforesaid:

I, A B, do swear, (or affirm as the case may be), according to the best of my knowledge and belief, that the certificate hereunto annexed, contains the whole quantity of pickled and barreled fish and smoked alewives and herrings on board the ——, —— master; and that no fish, smoked alewives or herrings are shipped on board said vessel, for the ship's company, or on freight or cargo, but what are inspected and branded according to the laws of this State. So help me God: or this I do under the pains and penalties of perjury (as the case may be).

Shipment of uninspected fish.

9. *Be it further enacted,* That if any pickled or barreled fish, or any smoked fish shall be put on board of any boat, vessel, or carriage of con

veyance, within this State, with intent to sell or export the same, unless said fish shall have been inspected and the casks and boxes containing the same shall have been branded agreeably to the provisions of this act, it shall be lawful for any justice of the peace in the same county, upon complaint made to him, to issue his warrant to the sheriff or his deputy, or to any constable of the town where such boat, vessel, or carriage of conveyance may be, requiring them respectively to seize and secure said fish, and carry the same to the inspector nearest the place where said boat, vessel, or carriage may be; and said inspector is hereby authorized and required to open and inspect and to pack and brand the same in the same manner as is prescribed in this act. And it shall be lawful for said inspector to detain the said fish until the expenses and charges of seizure, inspection, packing, and all other charges arising from such seizure, shall be paid. And it shall be the duty of every person, when required, to give necessary aid to the officer having such war rant, on pain of forfeiting five dollars for his refusal, to be recovered by action of debt, or on the case, before any court proper to try the same; and by any person who will prosecute therefor.

Inspection of imported pickled and smoked fish.

10. *Be it further enacted*, That no pickled or smoked fish, which shall be brought into this State from any other State or government, shall be sold or offered for sale before the same shall have been regularly inspected according to the provisions of this act; and each and every person who buy or sell, or offer for sale [any] pickled or smoked fish which shall be brought into this State from any other State or government, before the same is regularly inspected as aforesaid, shall severally forfeit and pay five dollars for each and every hundred pounds' weight so bought or sold; to be recovered by any person who shall prosecute for the same, by action of debt, or on the case, before any court proper to try the same.

Penalty for handling uninspected fish.

11. *Be it further enacted*, That if any master of a vessel, or other person, shall put or receive on board any vessel or other carriage or conveyance to transport the same from this State, any pickled or whole fish packed in casks which are not inspected or branded in manner by this act prescribed, he or they, on conviction, shall forfeit and pay not less than five dollars nor more than ten dollars for each and every hundred pounds of such uninspected fish.

Penalty for exporting uninspected smoked fish.

12. *Be it further enacted*, That no smoked alewives or herrings which shall not have been inspected and branded agreeably to the provisions of this act shall be exported from this State, under a penalty of two

dollars for each box so exported; nor shall any alewives or herrings be taken from any box so inspected and branded and others of an inferior quality be put in their place, with intent to deceive or defraud any person in the sale of the same, under a penalty of five dollars for each box so changed.

Penalty for illegal branding.

13. *Be it further enacted*, That if the inspector shall brand any cask, the contents of which he has not inspected, packed, salted, and coopered, or any boxes of smoked alewives or herrings which he has not inspected, packed, and nailed, according to the true intent and meaning of this act, or if he shall permit other persons to use his brands in violation or evasion thereof, he or they so offending, shall forfeit and pay, for every cask and box so branded, the sum of twenty dollars.

Branding-irons. Fish for home consumption, etc.

14. *Be it further enacted*, That all persons within this State who shall have fish for packing and pickling, either in bulk or in casks, to the amount of twenty barrels in one season, shall furnish the inspector with a branding-iron, containing the first letter of the owner's Christian name and his surname at large, and the inspector shall cause the names of such owners to be fairly branded on the head of every cask of their inspected fish; and if any such owner of fish shall refuse or neglect to furnish such brand he shall forfeit and pay for such neglect and refusal not less than five dollars nor more than twenty dollars; and all kinds of pickled fish which are packed in tierces, barrels, or half barrels for consumption within this State, and which are not subject to be inspected and branded as provided for exportation, shall, however, be packed with only one kind of fish in each cask, and there shall be the same weight in each cask as is provided by the fourth section of this act; and for intermixing different kinds of fish in the same cask, or for short weight in any cask, the owners or venders shall be subjected to the same penalties and forfeitures as are provided by this act for the like offense in the inspected pickled fish.

Disposition of penalties.

15. *Be it further enacted*, That all penalties and forfeitures arising by force and virtue of this act, except the penalties of five dollars mentioned in the ninth and tenth sections of this act, shall be recovered by action of debt in any court proper to try the same; one moiety thereof for the use of the town or plantation wherein the offense shall be committed, and the other moiety to him or them who shall sue for the same.

Payment of fees.

16. *Be it further enacted*, That the charges for certificates, inspecting, and branding shall be paid by the exporter or purchaser, in addition to

the purchase or cost of the fish; and bills for the legal fees of inspection and certificates shall, in the first instance, be paid by the original owner of said fish, or by the person employing the inspector; and all such owners or employers are hereby empowered to demand and recover the amount of said bills from the subsequent purchaser or exporter.

Inspectors now in office.

17. *Be it further enacted*, That the inspector and his deputies, legally appointed and now in office, shall continue to hold and enjoy their respective offices until the tenth day of April next.

Inspectors to give bonds.

18. *Be it further enacted*, That every inspector of fish appointed in this State shall, on being qualified for such office, pay to the treasurer of the town or plantation in which he shall reside five dollars; and it shall be the duty of such treasurers to pay over all moneys so received to the treasurer of this State on or before the twentieth day of January annually.

Inspection fees.

19. *Be it further enacted*, That the inspectors shall be paid for each certificate for exportation seventeen cents, and for inspecting and branding each and every cask of fish, as directed by this act; for each tierce ten cents, for each barrel seven cents, for each half barrel four cents, for each box of smoked herrings or alewives two cents, exclusive of the labor and expense of packing and coopering; and the fees for inspecting and the expense for packing and coopering shall be paid by the seller.

The following act additional to the preceding law was passed January 29, 1822:

Inspection of smoked herrings.

Be it enacted, &c., That, from and after the passing of this act, the several inspectors of fish in this State shall be authorized to inspect smoked herrings, scaled and cured in a superior manner, and packed in boxes eighteen inches long, nine inches wide, and seven inches deep in the clear, which boxes shall be made and branded on the cover, in the same manner as other boxes for herring are now made and branded, excepting that, instead of *first* or *second sort*, the word *scaled* shall be inserted. And the inspection and exportation of said herrings shall be subject to the same laws and regulations as are prescribed by law for other herrings.

On February 8, 1822, the following law was passed:

Inspection in places where no inspector resides.

Be it enacted, &c., That where it shall be necessary to have fish inspected in any town or plantation where no inspector resides, it shall

be lawful for any inspector within the county to inspect and brand the same in such town or plantation.

The following law was passed February 25, 1824:

Inspection of imported fish.

SEC. 1. *Be it enacted, &c.*, That all butter, lard; pickled, dry, or smoked fish, beef, and pork, or other salted provisions that may have been inspected in any other of the United States, may be exported from any port in this State to any foreign port without its being subject to reinspection, any law to the contrary notwithstanding.

The following law passed February 2, 1828:

Inspection of shad.

Be it enacted by the senate and house of representatives, in legislature assembled, That, from and after the passing of this act, it shall be the duty of the several inspectors of fish in this state to brand shad barrelled as specified in the fourth section of an act, passed the twenty-second day of March, one thousand eight hundred and twenty-one, as follows, viz: Those of the best quality, caught in the right season, to be most approved and free from damage, having their tails cut off and back bones out, shall be branded "*Cargo Mess*"; those which remain after the best have been selected, being sweet and free from taint, rust, or damage, with their back bones in, and tails on, shall be branded "Cargo No. 1"; and there shall be a third quality, which shall consist of the thinnest and poorest of those that are sweet and wholesome, which shall be branded "Cargo No. 2"; anything contained in any act to which this is additional, to the contrary notwithstanding.

The following additional law regulating the inspection of smoked herring was passed February 12, 1831:

1. *Be it enacted, &c.*, That from and after the passage of this act, the several inspectors of fish in this state shall be authorized to inspect smoked herring scaled and packed in boxes eighteen inches long, nine inches wide, and seven inches deep in the clear, which boxes shall be made (except as to dimensions) in the manner provided by law for pickled and smoked fish, and in addition to the brand now required by law, there shall be branded upon the cover of said boxes, *first sort, or second sort scaled herring* (as the quality may require), *first sort* to be not less than eight inches long, and second sort not less than six inches and a half long, and cured in a superior manner.

2. *Be it further enacted*, That the inspection and exportation of said herrings shall be subject to the same regulations as are prescribed by law for pickled and smoked fish, and that the act passed January twenty-ninth, in the year of our Lord one thousand eight hundred and twenty-two, entitled "An act in addition to an act to provide for the packing

and inspection of pickled and smoked fish," be and the same is hereby repealed.

The Massachusetts inspection laws passed in 1810, provided for the appointment of an inspector-general of pickled and smoked fish. This law applied to the province of Maine until the separation in 1820. The new law then passed by Maine did not require an inspector-general, but provided for the appointment of inspectors in the several fishing towns of the State. This method of inspection continued until March 14, 1862, when the following law was passed:

Appointment and duties of inspector-general and deputies.

1. The governor with advice of the council shall appoint an inspector-general of fish, removable at pleasure, who shall be commissioned for a period not exceeding two years, and he shall be sworn and give bond with sufficient sureties in the sum of six thousand dollars to the treasurer of state for the faithful discharge of his duties before entering thereon.

2. The inspector-general shall appoint one or more deputies in every town in this state where pickled fish or smoked herrings and alewives are cured or packed for exportation, who shall be responsible for their neglect or misconduct while acting under him, and when the office of inspector-general becomes vacant, they may continue to discharge the duties of the office until a successor is appointed, and they shall be accountable to the state.

3. Every deputy shall be sworn by the inspector-general or by a justice of the peace, and give bond to the inspector-general with sureties to his satisfaction for the faithful performance of his duty, and the bond shall be so expressed as to enure to the use of the state for the time the deputy exercises his duties during a vacancy in the office of inspector-general.

4. Each deputy shall pay to the inspector-general one dollar, as an excise fee for his bond and commission, and the inspector-general may receive from each of his deputies for every cask of pickled fish inspected by him the following fees: For each tierce, four cents; for each barrel, one cent; and every smaller package, one-half cent.

5. The inspector-general shall, in the month of January annually, make a return into the office of secretary of state, of all the fish inspected by him and his deputies during the year preceding the first day of said January, designating the quantities, kinds, and qualities of pickled and smoked fish respectively, and the secretary shall publish the same, as soon after as may be, in the state paper, and the inspector-general may require returns of his deputies as often as he sees fit.

6. All acts and parts of acts inconsistent herewith are hereby repealed.

On March 24, 1864, the following amendment to the fish inspection laws was approved:

Inspection of mackerel.

1. Chapter forty, section five, of the Revised Statutes is hereby amended by striking out all in said section after the word "therein" in the thirteenth line, and inserting mackerel of the best quality, not mutilated, measuring not less than thirteen inches from the extremity of the head to the crotch of or fork of the tail, free from rust, taint, or damage, shall be branded number one. The next best quality, being not less than eleven inches, measuring as aforesaid, free from rust, taint, or damage, shall be branded number two. Those that remain after the above selections, free from taint or damage, and not less than thirteen inches, measuring as aforesaid, shall be branded number three large. Those of the next inferior quality, free from taint or damage, not less than ten inches in length, as aforesaid, shall be branded number three. All other mackerel free from taint or damage shall be branded number three small. The inspectors shall also brand in plain letters on the head of every such cask the weight, the initials of his Christian and the whole of his surname, the name of his town, and the letters Me., an abridgement of the month, and the year, in figures when packed. The inspector-general of fish shall have no interest, directly or indirectly, in the cure or packing of pickled fish.

Term of office of inspector-general lengthened.

2. Chapter ninety-nine, section one, of the public laws of eighteen hundred and sixty-two is hereby amended by striking out the word "two" and *and* inserting *five.*

3. This act shall take effect when approved by the governor.

The present fish inspection laws of Maine were passed February 10, 1875, and abolish the office of inspector-general, which was created in 1862. Each fishing port is now provided with its own inspectors.

MASSACHUSETTS.

Various inspection laws regulating the packing of pickled fish have been in force in Massachusetts since early colonial days. The following law was passed in May, 1651:

Att a Gennerall Courte of Elecc̃ons, held at Boston, 7th May, 1651.

For preventing the deceipt of any person in packing of fish, beife and porke to be putt to salie in this and other jurisdictions, itt is therefore ordered by this Courte and the authoritje thereof, that in every towne wthin this jurisdic̃on where any such goods are packed up for sale, the gager of that toune, or of the toune wherein it is putt to sale, or shipt, shall see that it be well and orderly performed, that is to say, beife and porke, the whole halfe or quarter together, and so proportionably, and the best be not left out; and for fish, that they be packt

all of one kind, and that all caske so packt, be full, and sound and well seasoned setting his seale on all caske so packt, for which he shall receive of the owners, for so packing and sealing, fower shillings p tunne; but if the gager do only veiw them, and find them good and sufficjent, he shall set his seale vppon them, and have one shilling p tunne for so doing; and if such goods so packt shall be put to sale packt vp in caske without the gagers marke, he shall forfeite the said goods so put to sale, one-half to the informer, the other to the countje treasury, and whereas notw^{ith}standing the former law provided, *tit.* caske and coopers, page the sixth, much damage is still sustained by marchants and men of trade, through insufficiencie and vendue assize of caske, itt is therefore further ordered by the authorytie of this courte, that wheresoever any new caske are found put to sale being defective either in workmanship, timber, or assize, as in that law is provided vppon due proofe made before any one magistrate, the said caske shall be forfeited to the informer, and the workmen for his default shall pay tenn shillings a tunn forthwith, to the use of the countye and so proportionable to any greater or lesser caske; and becawse there may be no neglect in the choice of a gager to prevent the abuses in this or any other lawe exprest, itt is further ordered by the authorytie aforesajd, the every toune within this jurisdiccon wherein any caske are made shall yeerely make choice of one fitt man for that worke and imploiment, who, being presented by the constable within one weeke after the choice made, before any one magistrate, shall take the oath belonging to his place, which if he shall refuse, he shall pay the some of forty shillings, and another to be chosen in his roome; as also the toune or constable shall either of them suffer the like poenaltie for the neglect of this order, any other lawe, custome or order to the contrary notwithstanding.—(Records of Massachusetts, Vol. IV, Part I, p. 39.)

In 1652 another law was passed as follows:

Att the second Sessions of the Generall Court, held at Boston, the 19th of Oct. 1652.

Vppon sundry information of sundry abuses which may arise, and thereby reproach redound to the countrje, by packing of beife, porke in caske that is not full gage, although the packer doe carefully fill the same, as the lawe provides, it is therefore ordered by this Courte: that henceforth every packer shall see that all caske he packs any beife, pork mackerill, fish or any other goods in comitted to his care, be of true and full asize and gage, and that he packes the same in no other caske whatsoever on penaltie of tenn shillings for every caske by him packed that is or shall be defective in that respect, one halfe to the informer, and the other half to the countrie. This order to be the next day published, and posted vp in Boston and Charles Toune, and, by the first opportunitie, in Salem and Ipswich.

The oath for packers of beife &c—

Whereas, you A B, are chosen a packer of beife porke and other

things for the toune of B:, you doe here sweare by the living God that you will well and truely packe, all beife, porke, and other things when you shall be thereunto required; you shall packe no kinde of goods but such as are good and sound nor any goods in any caske that is not of a just and full gage; you shall also sett your particular marke vpon all caske packed by you; and in all things propper to the place of a packer you shall faithfully discharge the same, from tjme to tjme, according to your best judgment & conscjence, So helpe you God.—(Records of Massachusetts, Vol. IV, Part I, page 105.)

The following law was passed November 8, 1692:

AN ACT for regulating the assize of cask, and preventing deceit in packing of fish, beef, and pork for sale.

Be it ordained and enacted by the Governour, Council and Representatives in General Court assembled, and by the authority of the same.

SEC. I. That from and after the first day of December next, all sorts and kinds of tight cask used for any liquor, fish, beef, pork, or any other commodities within this, their majesties' province, shall be of London assize; puncheons, eighty-four gallons; hogsheads, sixty-three gallons; tearses, forty-two gallons; barrels, thirty-one gallons and a half; and made of sound, well-seasoned timber, and free from sap. And that fit persons be appointed, from time to time, in all places needful to view and gage all such cask; and such as shall be found of due assize shall be marked with the gager's mark, who shall have for his pains four pence per tunn; and every cooper shall set his distinct brand-mark on his own cask, on penalty of forty shillings. And whosoever shall put to sale any new cask, being defective either in workmanship, timber, or assize, as aforesaid, upon proof thereof, made before one justice of the peace, he shall forfeit such cask and be fined forty shillings.

And be it further enacted [Sect. 2], That the justices of the peace, at their first general quarter sessions, to be holden in each respective county within this province, shall yearly, in every town needful thereof, choose and appoint a fit person or persons to be gagers and packers, and then to swear to the due execution of their office; which, if any person so appointed shall refuse, he shall pay the sum of forty shillings, and another shall be chosen and appointed in his stead. And every gager and packer shall take care that all cask in which he packs beef, pork, mackerel, fish, or other goods committed to his care, be of true and full assize, and that he pack the same in no other cask whatsoever, on penalty of ten shillings for every cask by him packed, that is or shall be defective in that respect. And if any of the before mentioned provisions shall be packed into half barrels or firkins, the same shall be made in proportion to the assize aforesaid, and be marked by the packer.

And for the preventing of fraud and deceit in the packing of pickled fish, beef, and pork to be put for sale,

Be it further enacted [Sect. 3], That in every town where such goods are packed up for sale, the gager or packer of such town, or of the town wherein they are put to sale or shipped, shall see that it be well and orderly performed; that is to say, beef and pork, the whole half and quarter, and so proportionably that the best be not left out; and so fish and mackerel, that they be packed all of one kind; and that all casks so packed be full, and the fish sound and well seasoned, setting his seal on all casks so packed; and he shall receive of the owners for so packing and sealing, four shillings per ton. And if any such provisions be put to sale or shipped off without the packer's mark, they shall be forfeited.

[Sect. 4.] *And it is further enacted*, That all sorts of green or pickled fish, sturgeon, or flesh that shall be put up for transportation to a foreign market shall be searched, surveyed, and approved by a sworn packer, who shall take strict care that the same be put in tight cask of full gage, salted with suitable salt. And such as shall be so saved, and for its condition found merchantable and full, the packer shall seal with such brand-mark as shall be assigned to the town, and such other cut-mark added as may denote the sort of provision and the time when packed. And all such other provisions as the packer shall find wholesome and useful, though for its quality it be not merchantable, he shall cause to be well packed, salted, filled, and sealed with the letter R, and such other letters as may signifie the town, specie, and time of packing. And if any master of a ship or other vessel, or any officers or mariners belonging thereto, shall receive such provisions not marked and sealed, as aforesaid, aboard any of their ships or vessels, he or they who shall offend therein, shall forfeit double the value of all such provisions; and he that owns the provisions shall forfeit the same. And if any cooper or other person shall shift any fish or flesh, either on board or on shore, after the same has been so sealed and marked by the packer, and ship and export the same, the packer having not allowed thereof, and anew sealed and marked the cask whereinto such provisions are shifted, all persons acting, ordering or assisting therein, shall be set in the pillory, not exceeding one hour, and shall likewise pay double damages to persons wronged thereby.

And it is further enacted [Sec. 5], That when any such provisions have lain above three months under the packer's mark, betwixt the months of May and October, they shall again, upon exportation or sale, be viewed or searched by the packer; that is to say, so many of them as may probably discover the condition of the whole; and if any be decayed or deceitfully dealt with, the packer shall cull and repack the same, so as to distinguish and mark them for merchantable or refuse, according to their condition. And if those who ship or export any such provision shall neglect or refuse such second search or survey, the packer is hereby ordered and impowered to deface his former mark, and for so doing shall be paid as if he had repackt the same. And if the

owner refuse to satisfie the packer, such packer shall have redress on complaint to any justice of the peace, who is hereby impowered to compel the payment thereof by distress.

[Sec. 7.*] That all fines, penalties, and forfeitures, arising by force and virtue of this act, shall be the one-half to their majesties toward the support of the government of this province, and the other half to him or them that shall inform and sue for the same in any of their majestie's courts of record within this province.

Be it further enacted [Sec. 8], That there be a measurer of salt and culler of fish in every seaport town within this province, to be appointed as aforesaid, who being likewise sworn for the faithful discharge of that office, shall cull all merchantable fish and measure all salt that shall be imported and sold out of any ship or other vessel, and shall have three half-pence for every hogshead of salt by him so measured, to be paid, the one-half by the buyer, the other half by the seller. And one penny per quintal for every quintal of merchantable fish by him culled, to be paid, one-half by the buyer and the other half by the seller. (Acts and resolves of the Province of Massachusetts Bay, Vol. I, 1692–1714, p. 49.)

Between the years 1692 and 1784 various other laws similar to the preceding were enacted. A comprehensive law was passed on November 9, 1784, by which the selectmen of the town, in the commonwealth of Massachusetts, were authorized to choose and appoint searchers and packers of dry and pickled fish designed for exportation from the State. In this law it is provided that each barrel of pickled fish must contain a sufficient quantity of salt for their preservation; that mackerel and other barrelled fish be packed all of one kind and in casks well seasoned, containing not less than thirty gallons, and the casks be full and properly branded with the name of the fish therein.

The law of March 6, 1810, which repealed all previous enactments on the same subject is a very minute and important one. It provides for the appointment of an inspector-general and deputy inspectors. The former is required to give bonds to the treasurer of the State for the faithful discharge of his duties. The deputies must give bonds to the inspector-general, and he is held responsible for them. In this law we find the qualities of fish more definitely described than in earlier laws. The section on this subject requires that barrels containing pickled fish "shall be branded salmon, mackerel, shad (or as the case may be); those of the best quality, caught in the right season, to be most approved and free from damage, shall be branded *Cargo No.* 1; those which remain after the best have been selected, being sweet and free from taint, rust, or damage, shall be branded, *Cargo No.* 2; and there shall be a third quality, which shall consist of the thinnest and poorest of those that are sweet and wholesome, shall be branded, *Cargo No.* 3; and the inspector shall also brand in plain, legible letters, on the head

* Section 6 refers to the packing of tar.

of each and every cask in which inspected, merchantable fish, or whole fish are packed, or repacked, the initials of his Christian name, with his surname at large, the name of the town for which he is appointed, and *Mass.* annexed for *Massachusetts.* * * *."

The act passed by the Massachusetts legislature March 28, 1834, says:

SEC. 1. *Be it enacted, etc.*, That the inspector-general, or his deputies, shall not be required to brand upon the casks in which mackerel may hereafter be packed, the owner's name, nor the word "cargo."

SEC. 2. That the second and fifth sections of the act passed *March fourteenth, one thousand eight hundred and thirty-one*, entitled "An act in addition to several acts regulating the inspection of pickled fish," are hereby repealed.

SEC. 3. That the inspector-general, or his deputies, shall brand upon every cask of mackerel inspected by him or them the year in which the same is packed; and upon all No. 3 mackerel, that are usually denominated southern or Block Island mackerel, and all others of a similar quality and description the word "South"; and upon all other No. 3 mackerel, the word "North." Provided, however, that the inspectors shall receive no additional compensation therefor.

SEC. 4. That it shall be the duty of the inspector-general, or his deputies, when mackerel are presented to him or them for inspection, to select those of the best quality, and such as are fit for family use, for No. 1; those of the next best quality, being fat, free from damage, of suitable size, and not cut or mutilated in any manner for the purpose of deception, for No. 2; and all others for No. 3, and to brand the casks in which they are packed, accordingly.

SEC. 5. That all acts or parts of acts inconsistent with the provisions of this act, are hereby repealed.

The Revised Statutes of 1835, in defining the qualities of pickled fish, say:

"There shall be four qualities of mackerel, three of salmon and shad, and two of other kinds of pickled fish; those mackerel of best quality for family use, not mutilated, of suitable size, free from rust or damage, shall be number one and number two, the best of those selected and branded *number one*, the residue *number two;* those remaining after this selection, of usual size, free from taint, and sound, shall be branded *number three;* and those of this number that are of the description called Block Island mackerel shall also be branded with the word *south;* all small-size mackerel, free from taint, and sound, remaining after the above selections, shall be branded *number four;* those salmon and shad which are of the best quality for family use, free from rust or damage, shall be selected for number one and number two, the best of them selected and branded *number one*, the residue *number two;* all that remain, free from taint and sound, shall be branded *number three;* of all other pickled fish the best, such as are free of taint and damage,

shall be branded *number one;* those that remain free from taint, and sound, *number two.*"

The act of March 31, 1846, defines the grades of mackerel under four numbers, and reads as follows:

"SEC. 1. From and after the passing of this act there shall be four numbers of mackerel: Those of the best quality, not mutilated, measuring not less than thirteen inches from the extremity of the head to the crotch or fork of the tail, free from rust, taint, or damage, shall be branded number one. The next best quality, being not less than eleven inches, measuring as aforesaid, free from rust, taint, or damage, shall be branded number two. Those that remain after the above selections, if free from taint or damage, and not less than thirteen inches, measuring as aforesaid, shall be branded number three large. Those of the next inferior quality, free from taint or damage, not less than ten inches in length, as aforesaid, shall be branded number three. All other mackerel, free from taint or damage, shall be branded number four.

"SEC. 2. The inspector-general shall not have any interest, directly or indirectly, in the cure or packing of any pickled fish, except so far as a faithful performance of his duty requires.

"SEC. 3. The act in addition to an act regulating the inspection of pickled fish, being the one hundred and fifty-fourth chapter of the statutes of the year one thousand eight hundred and thirty-six; the act concerning the manufacture of barrels for pickled fish, being the forty-second chapter of the statutes of the year one thousand eight hundred and fifty-four; and also so much of the third section of the twenty-eighth chapter of the Revised Statutes; as is inconsistent with this act, are hereby repealed."

In 1850 the following law was enacted in Massachusetts, requiring that dutiable imported pickled fish be branded with the word "foreign." This law was repealed by act April 1,1879. It had become quite unimportant, since nearly all fish requiring such branding were those from the British provinces, which, by the treaty of Washington, had been admitted free of duty for several years. The law reads as follows:

"Pickled fish of foreign catch, on which an import duty is laid by the laws of the United States, which is brought into this State and here inspected or reinspected, shall, in addition to the brand mentioned in the preceding sections, be branded with the word 'foreign' on the head of each cask, barrel, or package, in letters not less than one inch in length, and separate and distinct from the other brands.

"If an inspector of fish inspects or reinspects any fish of foreign catch so imported and brought into this State, and refuses or neglects to comply with the requirements of the preceding section, he shall forfeit and pay for such refusal or neglect fifteen dollars for every cask, barrel, or package so neglected."

CONNECTICUT.

The following fish-inspection law was enacted in Connecticut May 31, 1822, and appears in the Revised Statutes of 1849:

"*Be it enacted, &c.*, All pickled shad, codfish, or mackerel, intended for market, shall be split and well cleansed, and pickled in strong brine. Shad and codfish shall be in such brine at least fifteen days, and mackerel at least forty-eight hours, before they are put up for market, and shall be put in barrels or half-barrels, the barrels containing two hundred pounds each, and the half-barrels one hundred pounds each, of fish well packed, with a sufficient quantity of salt, and filled with strong brine. And shad so put up shall be of three denominations, viz: Shad No. 1 to consist wholly of shad well saved, free from rust or any defect, and the head and tail cut off, and the backbone taken out; each barrel containing not more than seventy-two shad, and each half-barrel not more than thirty-six shad. The second denomination shall be shad number 2, to consist wholly of well saved, trimmed, pickled, and prepared for packing, in the same manner as shad number 1; each barrel containing not more than eighty-two shad, and each half-barrel not more than forty-one shad. The third denomination shall be shad number 3, to consist of shad that will not answer for either of the two former numbers, well saved, with the head taken off; and said barrels and half-barrels of fish shall be inspected and branded in the manner hereinbefore prescribed for inspecting beef and pork; and the inspector who shall inspect or who shall brand the same shall designate by each brand the quality, weight, and kind of fish contained in each barrel and half-barrel branded by him, and also his own name, and the name of the town where said fish was put up.

"All barrels and half-barrels containing fish for market or exportation shall be well made of good seasoned red oak, white oak, or chestnut timber; and each tierce made with twelve hoops; and each barrel shall be of the capacity of from twenty-eight to thirty gallons, and each half-barrel of the capacity of fifteen gallons and a half."

PENNSYLVANIA.

Laws regulating the inspection of pickled fish were enacted in Pennsylvania in 1835, and, with subsequent amendments, were in force until 1874, when they were repealed by the adoption of a new constitution that abolished the office of State inspector, and left the regulation of the trade to the several cities and towns. Philadelphia has for many years been a large market for pickled mackerel and other fish. Large quantities are received here from the North, and, after being repacked, are distributed over the State, especially in the mining regions.

A leading fish-dealer of Philadelphia writes as follows:

"Fish-inspection laws were in force in Pennsylvania until the adoption of the new constitution in 1874, since which time we have had no

law governing the same. Two different bills have been before the legislature, both of which failed; we remonstrated against both, as they discriminated against us. Under one section of the law as it existed until 1874 any man in a bordering State could pack goods any weight he saw fit and sell them in Pennsylvania. No local law will remedy the defect. The only way to correct the abuse is by a general law requiring the weight and grade stamped on each package, and failure thereof to be punished by penalty. This would require no inspector, as a violation could be tried and determined before a justice or United States commissioner, the same as any misdemeanor. Such a law would be hailed with delight by every honest dealer, and leave no argument for the dishonest ones. From the passage of the law, in 1860, until the repeal of the same, in 1868, our house had their smaller packages put up down East, rather than encourage the inspector, which was only in name, no inspecting being done. He would walk into the counting-house, ask how many packages had been made, take what you gave him, and move on. In conversation with a merchant on this subject he told me of an instance where the inspector collected $3.50 fees, and the firm afterward admitted to packing 2,700 packages."

We give below the law as it stood on the statute-books of Pennsylvania at the time of the abolishment of inspection laws, in 1874:

Appointment and qualification of inspector and his deputies. Act of March 27, 1860, sections 1, 2.

1. The governor shall appoint, for the term of one year, an inspector of pickled fish in and for this commonwealth, who shall give a bond, with sufficient sureties, to the treasurer of the State of Pennsylvania, in the penal sum of ten thousand dollars, who shall have all and singular the powers and authorities and be subject to all and singular the duties and liabilities of such office.

2. Said inspector may appoint deputy inspectors for the city and county of Philadelphia, and in such other cities or towns in this commonwealth where pickled fish is packed or repacked, and shall be answerable for their official conduct, and shall take bonds from each of them, with sufficient surety, in such sum as shall be judged sufficient, and the said deputies shall be sworn, either before the said inspector or some alderman or justice of the peace, to the faithful discharge of their duty.

When pickled fish need not be reinspected. Ibid., section 3.

3. Pickled fish which shall have been duly inspected in the State or country in which they were packed shall not be subject to reinspection in this State: *Provided*, That such fish are sold or exported in the original packages, without being repacked.

Duties of inspectors. Penalties for intermixing. Ibid., section 4.

4. From and after this act shall go into effect the inspector or his deputies shall see that all kinds of split pickled fish for barreling or repacking, intended for sale or export, except herring, haddock, pollock, or codfish, have been well struck with salt or pickle in the first instance, and preserved sweet, free from rust, taint, or damage; and such fish as shall be found in good order, and of a good quality, shall be packed or repacked in tierces containing each three hundred pounds of fish, or in barrels containing each two hundred pounds, or in half-barrels containing each one hundred pounds, or in quarter-barrels containing each fifty pounds, or in eighths of a barrel or kids, twenty-five pounds; each cask shall be filled with fish of one and the same kind; and if any person shall intermix, take out, or shift any inspected fish which have been packed or branded agreeably to the provisions of this act, or put in other fish for sale or exportation, contrary to the true intent and meaning of the provisions of the same, such person shall forfeit fifteen dollars for each package so altered: *Provided, however*, That if any casualty shall render it necessary to repack a cask of inspected fish, it shall in all cases be done by an inspector of such fish.

Packing and repacking. Ibid., section 5.

5. All fish that shall be packed or repacked in accordance with the fourth section of this act shall be so packed or repacked with good and clean salt, suitable for the purpose; and after packing said fish with sufficient salt to preserve them, and heading said casks, they shall be filled up with a clear, strong pickle.

Qualities of fish. Ibid., section 6.

6. There shall be four qualities of mackerel, three of salmon and shad, and two of other kinds of pickled fish; those mackerel of best quality, for family use, not mutilated, measuring not less than thirteen inches from the extremity of the head to the crotch or fork of the tail, free from rust, taint, or damage, shall be branded number one; the next best quality, being not less than eleven inches, measuring as aforesaid, free from rust, taint, or damage, shall be branded number two; those that remain after the above selections, that are free from rust, taint, or damage, shall be branded number three large; those of the next inferior quality, free from taint or damage, not less than ten inches in length, as aforesaid, shall be branded number three. All other mackerel, free from taint or damage, shall be branded number four.

Salmon and shad. Ibid., section 7.

7. Those salmon and shad which are of the best quality, for family use, free from rust, taint, or damage, shall be selected from number one and number two; the best of them selected and branded number one,

the residue number two; all that remain, free from taint, and sound, shall be branded number three.

Quality and size of casks. Ibid., section 8.

8. All casks used for packing or repacking pickled fish intended for sale or exportation shall be made of sound, well-seasoned white oak, ash, red oak, spruce pine, or chestnut staves, of rift timber, with heading of either of said kinds of wood, and if of pine, shall also be free from sap and knots, and shall be planed; the barrels, half-barrels, and tierces shall be well hooped, with at least three good hoops of sufficient substance on each bilge, and three hoops of the like quality on each chime; the barrel staves shall be twenty-eight inches in length, and the heads shall be seventeen inches between the chimes; the barrels shall contain not less than twenty-eight gallons nor more than thirty gallons each; the half-barrels not less than fifteen gallons each, and the tierces not less than forty-five nor more than forty-six gallons; and each cask shall be made in a workmanlike manner.

Inspection of casks. Act of March 27, 1860, chapter 289, section 9.

9. The inspector or his deputies shall strictly examine and inspect all casks in which he or they may be required to pack any fish, and they shall reject all such as are not made in a substantial manner and according to the provisions of this act.

Branding of casks. Ibid., section 10.

10. The inspector or his deputies shall brand, in plain, legible letters, on the head of each cask of fish inspected by them, or either of them, respectively, the denomination of the fish packed or repacked therein, the initials of the Christian name, and the whole of the surname of the inspector or his deputy, as the case may be, the name of the city or town for which such deputy is appointed, the letters "Penn." (for Pennsylvania), and the year in which the fish were packed. All fish of foreign catch which shall be brought into this State, and which shall be repacked, shall be inspected or reinspected, and in addition to the brand as required by this act, shall be branded with the word foreign on the head of each cask containing such inspected or reinspected fish, in letters not less than one inch in length, and separate and distinct from the other brands.

Inspection fees. Ibid., section 11.

11. The fees for inspecting and branding, exclusive of cooperage, shall be, for each tierce, twelve cents; each barrel, eight cents; each half-barrel, five cents; each cask of any smaller denomination, three cents; and in addition to the fees aforesaid, one cent for each cask that

shall be nailed, which shall be done in a suitable manner, when in their judgment it may be necessary.

Seizure of uninspected fish. Appropriation of proceeds. Ibid., section 12.

12. If any pickled fish which have been repacked, and not inspected or reinspected and branded according to the provisions of this act, shall be put on board of any boat or vessel, or into any carriage of conveyance, with intent that the same shall be sold within or exported from this State, the inspector, or any deputy, may seize and libel the same; and if upon trial it shall appear that such seizure was lawful, the fish so seized shall be decreed to be forfeited, and shall be sold and disposed of at public sale to the highest bidder; and the net proceeds, after paying the necessary expenses, shall be paid as follows: One-half to the overseers or guardians of the poor in the county where seized, and the other one-half to the inspector, or his deputy, who shall have caused the same to have been seized.

Penalty for illegal selling or branding. Ibid., section 13.

13. If any person or persons shall sell within this State, or shall export therefrom, any pickled fish which have been packed or repacked therein, and not duly inspected according to the provisions of this act, shall forfeit the sum of ten dollars for every hundred pounds of such fish thus sold or exported, to be recovered in any court of this State having competent jurisdiction. Any person using a brand for the purpose of branding casks of fish in imitation of those used by the inspector or his deputies, or in imitation of those used by the inspectors or their deputies in other States or foreign countries, or who shall counterfeit, forge, or fraudulently impress, or make the brand-mark, or any number or other mark of any such inspection, upon any cask of fish subject to inspection, or shall fraudulently alter, deface, conceal or erase any inspection mark duly made, shall, for every such offence, be deemed guilty of a misdemeanor, and be punishable by a fine not exceeding one hundred dollars, at the discretion of the court having jurisdiction of the offence.

Repealing clause. Ibid., section 14.

14. All the acts heretofore in force, regulating the inspection of salted or pickled fish, which are inconsistent herewith, be, and the same are hereby, repealed.—(Approved, March 27, 1860.)

*Name of packer to be branded.** Act of April 15, 1835, section 70.

SEC. 70. Every brand and half-barrel of salted fish, liable to inspec-

* This section and several of the following ones are only partially repealed by the act of March 27, 1860, from which the preceding sections are quoted.

tion as aforesaid, shall be branded with the initial letter of the Christian name, and surname at full length, of the person or persons putting up the same, or the person selling the same, under penalty of seventy-five cents for every such cask.

Mode of inspection. Ibid., section 72.

15. Every cask containing salted fish, liable to inspection as aforesaid, shall be inspected by opening, and, if necessary, by unpacking and repacking the same, so that the inspector may judge of the soundness and true package of the fish, as well as of the contents of the cask.

Branding of unmerchantable fish. Ibid., section 74.

16. If the inspector shall, upon examination find any barrel or half-barrel, containing salted fish, not to be of the proper description, or if he shall find the fish not to be merchantable as aforesaid, he shall erase and effectually deface therefrom the brand-marks; and if the same cannot be made merchantable, as aforesaid, by salting, pickling, repacking, and coopering, it shall be the duty of the inspector to impress distinctly, upon each barrel or half-barrel, a mark of condemnation, in the manner following: 1. If such fish shall be inspected at Philadelphia, the inspector shall impress upon one of the heads of such cask the mark of a cross (thus, X), each stroke of which cross shall be at least two inches and a half in length; 2. If such fish shall be inspected at the city of Pittsburg, or the borough of Columbia aforesaid, the inspector shall cause the casks to be marked on the bilge with a broad arrow (thus, ↑), or, if required, secure them for future examination, which examination the owner or person selling the same shall procure to be made within four days.

Fish may be branded after penalty incurred. Ibid., section 76.

17. *Provided*, That if any fish shall be laden for exportation, or shall be sold and delivered as aforesaid, without being so branded, the inspector may, after the penalty for such neglect shall have been paid, brand the same with his own name, and he may demand and receive therefor, from the person so lading or selling and delivering the same, the sum of six cents for every such cask.

Penalty for fraudulent packing. Ibid., section 78.

18. If any salted fish, liable to inspection as aforesaid, shall be found, upon the examination thereof by the inspector, to be fraudulently packed, either by the use of improper or unfit substance, or by the intermixture or use of fish of different qualities, the owner thereof or his agent shall forfeit and pay for each and every such cask the sum of five dollars.

When fish must be reinspected. Ibid., section 79.

19. Salted fish liable to inspection, as aforesaid, shall, if they have remained on hand unsold or not exported during six months after the inspecting and branding thereof, as aforesaid, be again examined by the inspector, and if found to be unsound shall be subject to the regulations provided for the case of salted fish which have not been inspected.

Casks must be filled. Ibid., section 80.

20. Every cask of salted fish liable to inspection shall be filled up by the owner thereof or by persons employed by him for that purpose, and be packed or repacked by him or them, as the case may be, and in all respects completed in such manner as the inspector shall require or direct, under penalty of one dollar for each and every cask.

Fees for cooperage. Ibid., section 83.

21. The inspectors aforesaid may also demand and receive such other and further allowance and compensation as shall be reasonable and customary to allow for the expense and trouble of cooperage in putting each cask of salted provisions into good and perfect order and condition.

Cooperage may be done by owners. Ibid., section 84.

22. *Provided,* That the owner of any salted provisions, as aforesaid, or his agent, may employ any person, other than the said inspector, to do the cooperage necessary to put the same in good merchantable order and condition, as aforesaid, and in such case the said inspector shall not be entitled to any allowance on account of such cooperage.

Fees for unmerchantable fish. Ibid., section 85.

23. The inspectors aforesaid may demand and receive from the owner, possessor, or person selling any salted provisions, as aforesaid, which shall be adjudged to be unmerchantable, or not in the condition required by law for sale or exportation, the same fees as if the same had been adjudged to be merchantable and fit for sale or exportation.

On April 13, 1868, a law was approved which repealed the inspection laws theretofore in force.

On June 2, 1871, the repealing act of April 13, 1868, was repealed, and the inspection laws of 1860 thereby re-enacted.

In 1874 the new State constitution was adopted, which abolished all inspection laws in Pennsylvania.

54. INSPECTION LAWS OF THE BRITISH PROVINCES.

DOMINION OF CANADA.

[37 Victoria, Chapter XLV; Assented to 26th May, 1874.]

AN ACT to make better provisions, extending to the whole Dominion of Canada, respecting the inspection of certain staple articles of Canadian produce.

GENERAL PROVISIONS.

Governor may appoint inspectors of certain articles, and at what places.

1. The governor in council may, from time to time, designate the several cities, towns, and other places, or inspection divisions in Canada at and for which, respectively, it is expedient to appoint inspectors of the several articles hereinafter mentioned, or any of them; and the governor may, from time to time, determine the limits of such inspection divisions, and appoint, at and for such cities, counties, towns, places, or divisions, an inspector of any of the following articles, that is to say: Flour and meal; wheat and other grain; beef and pork; pot ashes and pearl ashes; pickled fish and fish oil; butter; leather and raw hides. Such inspectors shall hold office during pleasure, and shall act, respectively, within such local limits as the governor in council may assign to them; and they and their deputies shall be appointed only from and among duly qualified persons, certified as such by the examiners hereinafter mentioned.

Boards of examiners of inspectors.

2. The board of trade at each of the cities of Quebec, Montreal, Toronto, Kingston, Hamilton, London, Ottawa, and St. John, N. B., and the chamber of commerce at the city of Halifax, shall annually appoint, in the said cities, respectively, and the governor may from time to time appoint in any county in the Dominion, or for any inspection division, five fit and skilful persons, any three of whom shall be a quorum, for each class of articles to be inspected at such city or county, to examine and test the ability and fitness of applicants for the office of inspector or deputy inspector of such articles; and no person shall be appointed such inspector or deputy inspector who has not been examined by and received a certificate of qualification from the proper board of examiners: *Provided always*, That the governor may, in his discretion, appoint as an inspector under this act, without a new examination, any person who has been an inspector of the same article under any act hereby repealed. And the board may, at any such examination, permit the attendance of any person or persons of experience and skill in the subject of such examination, and allow them to propose questions pertinent thereto to the examinee, in order to test his knowledge and skill.

It shall be the duty of every such board to grant such certificates,

and such only, as to the qualification of the candidates who present themselves for examination as the knowledge and proficiency of such candidates may require or justify.

Examiners to take oath.

3. Each such examiner shall, before acting as such, take, before some justice of the peace, an oath in the following form, or to the same effect:

"I, A B, do swear that I will not, directly or indirectly, personally or by means of any person or persons in my behalf, receive any fee, reward, or gratuity whatsoever, by reason of any function of my office of examiner of applicants for the office of inspector or deputy inspector of ———, except such as I may be entitled to receive by law, and that I will therein well and truly, in all things, act without partiality and to the best of my knowledge and understanding. So help me God."

Which oath shall remain in the custody of the justice administering it.

Inspector not to trade in articles which he inspects.

4. No inspector shall deal or trade in, or have any interest, directly or indirectly, in the production of any article subject to inspection by him, or sell or buy any such article (except for the consumption of himself and family), under a penalty of two hundred dollars for any offence against this section and the forfeiture of his office.

Inspector to take oath of office.

5. Each inspector shall, before acting as such, take and subscribe, before some justice of peace, an oath of office in the form or to the effect following:

"I, A B, do solemnly swear that I will faithfully, truly, and impartially, to the best of my judgment, skill, and understanding, execute and perform the office of an inspector; and that I will not, directly or indirectly, by myself or by any other person or persons whomsoever, manufacture or prepare, deal, trade in, or sell, or buy, except only for the consumption of myself and family, and (*insert the description of the articles he is to inspect*) on my account, or upon the account of any other person or persons whomsoever, while I continue such inspector. So help me God."

Deputy inspector to have no interest in articles he inspects.—Oath of office.

No deputy inspector shall have any direct or indirect interest by himself or by any person whomsoever, in any article inspected by him.

Deputy inspector to take oath of office.

Every deputy inspector shall, before acting as such, take and subscribe before some justice of the peace, the following oath:

"I, A B, do solemnly swear that I will faithfully, truly, and impar-

tially, to the best of my judgment and skill and understanding, execute and perform the office of a deputy inspector of ———, and that I will not inspect, brand, or certify to the quality of any article or thing in which I have any direct or indirect interest on my own account, or upon the account of any person whomsoever, while I continue to hold office as a deputy inspector. So help me God."

Such oaths shall remain in the custody of the justice administering them, and any copy thereof certified by the said justice shall be *prima facie* evidence of such oaths.

Security to be given by inspector or deputy.

6. Each inspector or deputy inspector shall, before acting as such, give security for the due performance of the duties of his office, in such sum as the governor may direct, by bond to Her Majesty, with two sureties to the satisfaction of the governor, to be bound jointly and severally with them, in the form and subject to the provisions prescribed by law relative to the security to be given by persons appointed to offices of trust in Canada, and such bond shall avail to the Crown, and to all persons aggrieved by any breach of the conditions thereof, and such bond shall remain in the custody of the secretary of state of Canada; and any copy thereof certified by him shall be *prima facie* evidence of such bond, and of the contents and tenor thereof, and such copy shall be furnished when required, on payment of a fee of one dollar.

Appointment of deputy inspectors when required.

7. Each inspector may, and shall, when thereunto required by the governor, in any inspection division, or by the boards of trade in any of the before-named cities, appoint a deputy, or so many deputies as may be necessary, for the speedy and efficient performance of the duties of his office; such assistants being duly examined and sworn and giving security, as above provided; and they shall be held to be deputies of the inspector for all the duties of his office, and their official acts shall be held to be official acts of the inspector, and he shall be responsible for them as if done by himself; and each deputy inspector shall make such returns and reports of his official acts as shall be required of him by the inspector whose deputy he is.

Duties and tenure of office of deputy inspector.

8. The said deputies shall respectively be paid by, and shall hold their offices at the pleasure of the inspector; and no such inspector shall allow any person whomsoever to act for him about the duties of his office, excepting only his sworn deputy or deputies, appointed as aforesaid.

Deputy to act on death of inspector.

9. In the event of the death of any inspector, his senior deputy inspector shall perform all the duties of the inspector until his successor is appointed.

Returns or reports of official acts, under regulations to be made by governor in council.

10. The governor in council may, from time to time, require any and every inspector to make such returns or reports of his or their official acts to any public department or officer, board of trade or municipal authority, and in such form and containing such particulars and information as he may deem expedient, and may, from time to time, by order in council, make such regulations for the governance of inspectors under this act, or any of them, and of parties employing them as such, as he may think proper, and may, by such regulations, impose penalties not exceeding fifty dollars to any person offending against them; and any copy of such regulations printed in the Canada Gazette shall be *prima facie* evidence of any such regulations, and that they are then in force; and such regulations not being contrary to or inconsistent with this act shall be obeyed by such inspectors and parties employing them as if embodied in this act; and any offence against them shall be deemed an offence against this act and punishable as such.

Disputes touching inspection, how settled, where there is no board of trade or chamber of commerce.

11. If any dispute arises between any inspector or deputy inspector and the owner or possessor of any article by him inspected, with regard to quality and condition thereof, or relating in any respect to the same, then, upon application by either of the parties in difference, to any justice of the peace for the place in which such inspector or deputy inspector acts, such justice of the peace shall issue a summons to three persons of skill and integrity, one to be named by the inspector or deputy inspector, another by the owner or possessor of the article in question, and the third by such justice of the peace (who, failing the attendance of either of the parties in difference, shall name for him), requiring such three persons forthwith to examine such article and report their opinion of the quality and condition thereof under oath (which oath the justice of the peace shall administer), and the determination, or that of the majority of them, made in writing, shall be final and conclusive, whether approving or disapproving the judgment of the inspector or deputy inspector, who shall immediately conform thereto, and brand or mark such article, or the package containing the same (as the case may be) of the qualities or condition directed by the determination aforesaid; and if the opinion of the inspector or deputy inspector be thereby confirmed, the reasonable cost or charges of re-examination (to be ascertained by the said justice of the peace) shall be paid by the said owner or possessor of the article in question, and, if otherwise, by the inspector or deputy inspector: [Proviso, for the re-examination of flour and meal in cities where there is a board of trade or chamber of commerce.]

Whenever any difference arises between inspectors as to the true

quality or grade of any article inspected by one of them and re-inspected by another, such difference shall be definately determined by reference to such board of arbitration or other authority as the governor in council may appoint for that purpose.

Fees for re-examination, how to be fixed.

12. The council of the board of trade, or chamber of commerce, if there be one, for each of the said cities or places where inspectors are appointed, and, if not (or in case such council fails to make such tariff, the governor in council) shall, from time to time, make a tariff of the fees and charges to be allowed for such re-examination and all services and matters connected therewith, and may also establish rules and regulations for the government of the persons re-examining any article on appeal from the decision of the inspector or deputy inspector; and all such fees shall be payable before the delivery of the bill of inspection, or the re-delivery by the inspector of the articles inspected, on which he shall have a special lien for such fees.

Penalty in case of neglect or refusal of inspector to act.

13. If any inspector or deputy inspector refuses or neglects on application to him, made personally or by writing, left at his dwelling-house, store, office, or ware-house, on any lawful day, between sunrise and sunset, by any owner or possessor of any article which such inspector or deputy inspector is appointed to inspect (such inspector or deputy inspector not being at the time of such application employed inspecting elsewhere) forthwith, or within two hours thereafter, to proceed to such inspection, he shall, for every such neglect or refusal, forfeit and pay to the person so applying, twenty dollars over and above all the damage occasioned by such refusal or neglect to the party complaining, recoverable in a summary way before any one justice of the peace, on the oath of one credible witness other than such complainant.

As to fraudulent alteration or imitation or use of, &c., of inspector's marks, &c.

14. Any person who, with a fraudulent intention, alters, effaces, or obliterates wholly or partially, or causes to be altered, effaced, or obliterated any inspector's brands or marks on any article having undergone inspection, or on any package containing any such article, or counterfeits any such brand or mark, or brands, impresses, or otherwise marks thereon any mark purporting to be the mark of any inspector or of the manufacturer or packer of such article, either with the proper marking instruments of such inspector, manufacturer or packer, or with counterfeit imitations thereof, or empties, or partially empties, any such package marked, after inspection, in order to put into the same any other article (of the same or any other kind), not contained therein at

the time of such inspection, or uses for the purpose of packing any article, any old package bearing inspection marks, or (not being an inspector or deputy inspector of any article) brands or marks any package containing it, with the inspector's marks, or gives any certificate purporting to be a certificate of inspection of any article; and any person who being in the employ of any inspector or deputy inspector, or of any manufacturer or packer of any article subject to inspection, hires or lends the marks or marking instruments of his employer to any person whatever, or connives at, or is privy to any fraudulent evasion of this act with respect to any such marks as aforesaid, shall, for such offence, incur a penalty of forty dollars; and any inspector or deputy inspector who inspects or brands or marks any article out of the local limits for which he is appointed, or hires out or lends his marking instruments to any person whomsoever, or gives any certificate of inspection without having personally performed the inspection, or any willfully false or untrue certificate, or connives at or is privy to any fraudulent evasion of this act, shall, for each such offence, incur a penalty of one hundred dollars, and shall forfeit his office, and shall be disqualified from ever after holding the same.

Assuming title of inspector or deputy inspector without authority.

15. Any person not thereunto duly authorized under this act, who in in any manner whatever assumes the title of inspector or deputy inspector, or issues any bill, certificate, or declaration purporting to establish the quality of any pot-ashes or pearl-ashes, flour or meal, beef or pork, grain, pickled fish or fish oil, butter, leather, or raw hides, shall, for such offence, incur a penalty not exceeding one hundred dollars.

Penalties, how recovered and applied.

16. Every penalty and forfeiture imposed by this act, or by any regulation made under it, not exceeding forty dollars, shall, except when it is otherwise herein provided, be recoveable by any inspector or deputy inspector, or by any other person suing for the same, in a summary way before any two justices of the peace for the place, in their ordinary or other sessions, and shall, in default of payment, be levied by warrant of distress, to be issued by such justices against the goods and chattels of the offender; and where such penalty or forfeiture exceeds forty dollars it may be sued for and recovered by any such inspector, deputy inspector, or any other person, by bill, plaint, information, or civil action, in any recorder's court, or in any court having jurisdiction in civil cases to the amount, and may be levied by execution as in case of debt. And the moiety of all such penalties (except such as may be herein otherwise applied) when recovered shall belong to the Crown for the public uses of the Dominion, and the other moiety shall belong to and be paid to the inspector, or deputy inspector, or other person suing for the same.

Limitation of time for commencing suits under this act.

17. Any action or suit against any person for anything done in pursuance of this act, or contrary to its provisions, shall be commenced within six months next after the matter or thing done or omitted to be done, and not afterwards; and the defendant therein may plead the general issue, and give this act and the special matter in evidence, and at any trial therein, and that the same was done under this act; and if it appears so to have been done, then the judgment shall be for the defendant; and if the plaintiff is non-suited or discontinues his action after the defendant has appeared, or if judgment is given against the plaintiff the defendant shall recover treble costs and have the like remedy for the same as defendants have in other cases.

Payment of cost of inspection, when article is sold subject to inspection.

18. In all cases where any article is sold subject to inspection, the person applying to the inspector shall be entitled to reimbursement of the cost of inspection from the vendor, if such applicant be not himself the vendor, unless an express stipulation to the contrary is made at the time of the sale, or of the agreement to submit to inspection; and such agreement to submit to inspection shall imply a warranty that the article in question is of the quality for which it is sold, and that all the requirements of this act have been complied with as to such article and the packages in which it is contained, unless it be otherwise expressly stipulated.

Inspection not always compulsory.—Lien for fees.

19. Nothing in this act shall oblige any person to cause any article to be inspected, unless such inspection is expressly declared to be compulsory, but if inspected, it shall be subject to the provisions of this act, and shall not be branded or marked as inspected unless the said provisions have been in all respects complied with, with respect to such article and the packages in which it is contained. Inspectors and their deputies shall be paid their fees upon the articles inspected by them by privilege and preference over all other creditors, and may retain possession of the articles inspected until the fees to which they are entitled under this act shall have been paid.

The governor in council may make regulations whenever he deems it necessary to do so, for the apportionment of the fees paid under this act between the inspectors and their deputies, and for providing for the payment of fees to the examiners appointed under this act by parties who present themselves for examination; and every such regulation may be rescinded or varied from time to time.

Inspection law of 1873 *repealed.*

20. The act passed in the session held in the thirty-sixth year of Her Majesty's reign, intituled "*An act to amend and to consolidate and to ex-*

tend to the whole Dominion of Canada, the laws respecting the inspection of certain staple articles of Canadian produce," is hereby repealed, except that such repeal shall not effect the repeal of any former act or provision of law, any liability incurred, any bond or security given, any action, suit, or proceeding pending, any penalty, forfeiture, or punishment incurred for any offence committed, any appointment made in council, regulation, or order made or given and not inconsistent with this act, or anything lawfully done before this act comes into force; and if, in any contract made before the coming into force of this act, it has been stipulated that any article therein mentioned, shall be subject to inspection, then, unless the contrary be clearly expressed, the intended standard of quality of such article shall be understood to be that established by the laws in force at the date of such contract; and if the inspection is made after this act is in force, it shall be made according to standard established.

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SPECIAL PROVISIONS RESPECTING THE INSPECTION OF PICKLED FISH AND FISH OILS.

Inspector to provide branding irons.

61. Every inspector shall provide himself with proper branding irons, or stencil plates, for the purpose of branding or marking such casks, barrels and boxes as may by him be inspected pursuant to this act; and it shall be the duty of each inspector to know that all his deputies are duly provided in this respect.

Inspecting must be in presence of inspector.

62. The inspecting, culling, classing, weighing, packing and branding or marking of any fish or oil shall be done in the immediate presence and sight of an inspector or deputy inspector.

Duty of inspector.—Size and material of packages.

63. It shall be the duty of the inspector or deputy inspector to see that all kinds of split, whole, pickled or salted fish, intending for packing or barrelling, and submitted to him for inspection, have been well struck with pickle and salt, in the first instance, and preserved sweet, free from taint, rust, salt-burn, oil or damage of any kind; and all fish or oil intended for market or exportation, and branded or marked as inspected and merchantable, shall be well and properly packed, in good tight and substantial packages or casks—except green codfish packed without pickle, which may be packed in barrels or packages which are not tight; and all other packages shall be made of the materials and in the manner following:

Tierces, barrels, and half-barrels shall be made of sound, well-seasoned

split or sawed staves, free from sap, and in no case to be of hemlock, and the heading shall be of hardwood, pine, fir, or spruce, free from sap, and planed on the outside, and shall be at least three-quarters of an inch in thickness. Staves for salmon and mackerel barrels shall be twenty-nine inches in length, and the heads between the chimes seventeen inches. Staves for barrels for herring shall be twenty-seven inches in length, and the heads between the chimes shall be sixteen inches; and the bung staves of all such barrels shall be of hardwood. All casks shall be hooped with not less than twelve sound, good hoops, of not less than one inch in width at the large end for all tierces and barrels, and in no case to be of alder. The makers of all tierces, barrels, and half-barrels, shall brand the initials of their Christian names and their whole surnames, and also the letters S. M. or H., according as the package may be intended for salmon, mackerel or herrings, at or near the bung staves, under a penalty of twenty cents for every package not so branded.

All empty packages shall be subject to the inspection and approval of the inspector or his deputies, who shall brand or mark the word "condemned" immediately after the maker's name on all packages that will not pass inspection.

In what cases and places inspection shall be compulsory.

64. The inspection of all pickled fish cured for market or exportation, and of all fish-oils, codfish tongues, or codfish sounds, cured for such purpose, and contained in any such packages as are hereinafter mentioned, shall be compulsory in every province of the Dominion, except Manitoba and British Columbia, at any place where an inspector is appointed by law; and if any such pickled fish, fish-oils, or other articles aforesaid, in any such package as aforesaid, is sold, or offered for sale, or exported, or shipped, or laden in any vehicle for exportation, or otherwise offered to be exported in or from any place within any province of Canada, except British Columbia or Manitoba, for which an inspector or deputy inspector has been appointed, without being inspected under this act, the person so selling or offering it for sale, or exporting it, or offering it for exportation, shall incur a penalty of not less than one dollar and not more than five dollars for each such offence.

Inspection to be in accordance with this act.

65. All Pickled fish cured for market or exportation, and all fish-oils, codfish tongues and codfish sounds, shall be inspected, weighed, or gauged, and branded or marked, only in accordance with this act; and all green codfish, in boxes or packages, shall be inspected and culled, and a certificate of inspection for the latter, stating the quality and quantity thereof so inspected, and shipped on board any vessel, shall be granted by any inspector or deputy inspector.

Qualities of fish.—Manner of branding.

66. The various kinds of fish to be inspected under this act, shall be branded or marked of the following denominations respectively:

1. *Salmon* to be branded or marked "No. 1," shall consist of the largest or best and choicest kind, being well split, the blood being well washed out before being salted, well cured, in the best condition, and in every respect free from taint, rust, or damage of any kind.

Those to be branded or marked "No. 2," shall comprehend the best salmon that remain after the selection of the first quality, and shall be good, sound, well split and cured fish, in the best condition, and in every respect free from taint, rust, or damage of any kind.

Those to be branded or marked "No. 3," shall consist of those that remain after the selection of the first two qualities, but must be good, sound fish, and in every respect free from taint, rust, or damage of any kind.

2. *Mackerel* to be branded or marked "mess mackerel," shall consist of the best and fattest mackerel, being well split, having the blood well washed out before being salted, well cured, in the best condition, and free from taint, or rust, or damage of any kind, and shall be such as would have measured not less than fourteen inches, from the extremity of the head to the crotch or fork of the tail, and shall have the head and tails taken off.

Those to be branded or marked "Extra No. 1" shall consist of the best and fattest mackerel, being well split, having the blood well washed out before being salted, well cured, in the best condition, and free from taint or rust or damage of any kind, and shall measure not less than fourteen inches from the extremity of the head to the crotch or fork of the tail.

Those to be branded or marked "No. 1" shall consist of the best and fattest mackerel, being well split, having the blood well washed out before being salted, well cured, in the best condition, and free from taint, rust, or damage of any kind, and shall measure not less than thirteen inches from the extremity of the head to the crotch or fork of the tail.

Those to be branded or marked "No. 2" shall comprehend the best mackerel that remain after the selection of the first qualities, and shall be properly split and washed, well cured, and in every respect free from taint, rust, or damage of any kind, and shall be divided into two qualities, those from thirteen inches and upwards, not being sufficiently fat to make No. 1, being branded No. 2 large, and those from eleven inches up to thirteen inches shall be branded No. 2.

Those to be branded or marked "Large No. 3" shall consist of good, sound mackerel, properly washed, well cured, and free from taint, rust, or damage of any kind, and shall measure not less than thirteen inches from the extremity of the head to the crotch or fork of the tail.

Those to be branded or marked "No. 3" shall consist of good, sound

mackerel, properly washed, well cured, and free from taint, rust, or damage of any kind, and shall measure eleven inches and upwards from the extremity of the head to the crotch of the tail.

All mackerel under eleven inches in length, of good, sound quality, and free from taint and rust, or damage of any kind, shall be branded or marked with the words "Small Spring" or "Small Fall" in the place of a number.

All short, sunburnt, or ragged mackerel, of whatever class and not otherwise defective, shall be branded and marked "No. 4."

3. *Herrings*, *Gaspereaux*, and *Alewives* to be branded or marked "No. 1" shall consist of the largest and best fish, well struck with salt, thoroughly cured and clean, and bright in colour; and those to be branded or marked "No. 2" shall comprehend the best herrings that remain after the selection of the first quality.

All undersized herrings to be branded or marked "No. 3" with the word "Small" in addition to the other brands or marks.

All ripped herrings shall be branded or marked with the word "Round" in addition to other brands or marks.

All herrings that are not gibbed or ripped shall be branded or marked with the word "Gross" in addition to other brands or marks.

All spring-caught herrings shall be branded or marked with the word "Spring" in addition to other brands or marks.

The above shall be well cleaned and cured, and in every respect free from rust, taint, or damage.

Herrings that are caught at the Magdalen Islands, Baie des Chaleurs, Labrador, or Newfoundland, and brought into port in Canada in bulk and packed in Canada, shall be branded or marked "Magdalen Islands," "Bay des Chaleurs," "Newfoundland," or "Labrador," respectively, in addition to other brands or marks.

Herrings packed and inspected in Newfoundland and imported into Canada shall be marked or branded "Newfoundland" without further inspection:

4. *Smoked herrings* to be branded or marked "No. 1" shall comprehend the best and fattest fish; and those to be branded or marked "No. 2" shall consist of the poorer, smaller, and inferior fish; both of these qualities shall be well smoked, free from taint, and not burnt or scorched; and no red or smoked herrings shall be so branded or marked, unless they be well and sufficiently saved and cured, and carefully packed in good and substantial barrels, or half-barrels; and if in kegs or boxes, the same shall be of well-seasoned boards, the sides, top and bottom of not less than half an inch in thickness, and the ends at least three-quarters of an inch thick; and the inside measurement of each box shall be eighteen inches long, and nine inches broad, and eight inches deep, well nailed, and the tops or covers smoothed; tainted, burnt, scorched and badly smoked herrings, shall be considered "refuse," and may be branded or marked as such without any character.

5. *Sea trout* to be branded or marked "No. 1" shall consist of the largest, best, and fattest kind, being well split, and in every respect free from taint, rust, or damage of any kind.

Those to be branded or marked "No. 2" shall comprehend the best trout that remain after the selection of the first quality, and shall be good sound fish, free from taint, rust, or damage of any kind.

6. *Lake and salmon trout* to be branded or marked "No. 1, Lake" shall consist of the largest and fattest fish, and be free from taint, rust, or damage.

Those to be branded or marked "No. 2, Lake" to be the next best fish, free from taint, rust, or damage.

7. *White fish* to be branded or marked "No. 1" shall consist of the largest and fattest kind, cured in good condition, and be in every respect free from taint, rust, or damage; "No. 2" shall consist of those that remain after the selection of the first quality, and be free from taint, rust, or damage.

8. *Green codfish* in barrels, with or without pickle, to be classed "No. 1" shall consist of the best and fattest, being well split and cleansed, well cured, in first-rate condition; and in every respect free from taint, salt-burn, rust, or damage of any kind, and shall measure at least fifteen inches to the crotch of the tail.

Those remaining after the selection of the first quality, to class "No. 2," shall be sound, well-cured fish, and free from taint, salt-burn, rust, or damage of any kind.

9. *All other kinds of fish* not enumerated herein, and belonging to denominations specified by this act, such as ling, hake, haddock, pollock, catfish, halibut, shad, bass, eels, codfish tongues and codfish sounds, in casks or barrels, shall be branded or marked as such, and must be sound and well cured, free from taint, salt-burn, rust, or damage of any kind.

10. *Small fish*, which are usually packed whole, with dry salt or pickle, shall be put into good casks of the size and materials required by this act for the packing of split, pickled fish, and shall be packed close, edgeways in the casks, and properly salted with good, coarse, wholesome, dry salt, and the casks shall be filled full with the fish and salt, and no more salt shall be put with the fish than is necessary for their preservation; and the casks containing such whole fish shall be branded or marked with the denomination of the fish, and a like designation as is prescribed by this act in respect of the qualities, &c., of other pickled fish.

11. *All rusty or sour fish*, of whatever kind or class, shall be branded or marked with with the word "rusty" or "sour" in addition to other brands or marks.

12. No foul or tainted fish, or fish mutilated for the purpose of concealing marks and appearances of illegal capture, or unsizeable, shall pass inspection; and it shall be the duty of every inspector or deputy

inspector to seize, and any magistrate may confiscate to Her Majesty, all fish found or exposed for sale having been killed or captured during prohibited seasons or by unlawful means, and all fish at any time offered for sale or barter, or attempted to be exported, whilst in an unwholesome condition.

13. Fish known as pickled fish, that may be cured in bulk, if not inspected and certified as aforesaid, and afterwards packed in barrels, shall be branded or marked with the word "bulk" in addition to other brands or marks.

14. Each cask or package of fish shall contain fish of the same kind, or parts of the same kind and quality, properly packed in separate layers, and on every layer of fish so packed in the cask, a sufficient quantity of good, clean, suitable salt, free from lime, shall be properly placed, and in like proportion for other packages, at the discretion of an inspector or deputy inspector; and after the cask shall have been properly packed and headed it shall be filled with clean pickle, strong enough to float a fish of the kind so packed.

15. Should it appear to any inspector, or deputy inspector, that a portion of the fish inspected by him is sound, and another portion unsound, he shall separate the sound from the unsound, repack the sound fish, and mark or brand the same according to its quality; and such portion as the inspector judges incapable of preservation he shall condemn as bad, and mark "refuse," in addition to other marks.

16. If any casualty renders it necessary to repack inspected fish it shall in all cases be done by and in the presence of an inspector or deputy inspector; and any other person attempting to repack or brand or mark the same shall be liable to a penalty of not more than twenty dollars for every such offense.

17. When any fish, branded or marked by a deputy inspector, proves unequal in quantity or quality to that which may be indicated by the brand or mark, or deficient in any way of the requisites prescribed by this act, the inspector may cause the same to be reinspected; and if it appear that the defect arose from the condition of the fish, or the bad quality of the cask, or the bad packing or pickling of the fish at the time of the inspection, he may recover the cost and charges of such reinspection from the deputy who branded or marked the same.

18. Pickled fish, duly inspected, packed and branded or marked, and oils, inspected and branded or marked under this act, at any place in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario, or British Columbia, shall not be subject to reinspection within the Dominion, except only in cases already provided for in this act.

19. Each tierce shall be three hundred pounds, and each half tierce one hundred and fifty pounds; each barrel shall be two hundred pounds, and each half-barrel one hundred pounds; each quintal shall be one hundred pounds; each draft shall mean two hundred pounds; and each box of herrings shall contain twenty-five pounds. In each of the above

instances the weight shall be clear avoirdupois, exclusive of salt and pickle.

20. There shall be branded or marked on the head or butt of each cask of pickled or dry-salted fish, in plain, legible letters after the same has been inspected, culled, classed, weighed, and packed, in accordance with this act, the description of the fish, the weight and quality contained in the package, the initials of the Christian name or names, and the whole surname of the inspector or deputy inspector by whom the fish was inspected, and the name of the place where he acts as inspector, and the month and the year of inspection.

Standards of fish oils, how fixed and kept.

67. The boards of examiners of inspectors of fish and fish oils shall fix and have in charge the standard of fish oils in Nova Scotia, New Brunswick, Quebec and Ontario, respectively; and the same shall be classified and branded or marked according to such standards, as follows:

1. *Whale oil* shall be free from adulteration of every kind, and shall be branded as such with the class according to quality appointed by standard—if No. 1, "Pale"; if No. 2, "Straw"; if No. 3, "Brown."

2. *Seal oil* shall be free from adulteration of every kind, and shall be branded as such, with the quality per standard—if No. 1, "Strictly Pale"; if No. 2, "Pale"; if No. 3, "Straw"; if No. 4, "Brown"; if No. 5, "Dark Brown."

3. *Porpoise oil* shall be free from adulteration of every kind, and shall be branded as such, with the quality per standard—if No. 1, "Pale"; if No. 2, "Straw"; if No. 3, "Brown."

4. *Cod oil* shall be free from adulteration, and be branded as such—first quality, "A"; second quality, "B."

5. *Herring, hake, pollock, and dog-fish oil*, and all other oils, shall be branded as such—first quality, "A"; second quality, "B."

6. An inspector or deputy inspector shall determine the gauge of each cask, and the outs thereof, and shall mark the same on the cask; and the barrels shall be in good order and condition, sound and staunch, and shall be made of hard wood, and if any cask or casks be found to contain water or other adulteration, such shall be scribed or branded by the inspector or deputy inspector on the cask.

7. Casks containing fish oils shall be scribed or branded with such quality, the month and the last two figures of the year when inspected, the initials of the Christian name or names, and the entire surname of the inspector, and also the place of inspection, and the initial letters of the name of the province in which it was inspected.

8. The designation "Fish oils" in this act shall include whale, seal, porpoise, cod, herring, sturgeon, siskawitz, and all other kinds of oil derived from fish and marine animals.

Fees for inspection.

68. Every inspector or deputy inspector who shall inspect and brand or mark any cask or package of pickled fish, in bulk, or any fish oil, in accordance with the provisions of this act, shall be entitled to fees at the following rates, which shall be paid by the original owner, or the person who employed him in the first instance:

1. For each tierce of salmon, salmon-trout, or sea-trout, fifteen cents;
2. For each half-tierce of salmon, salmon-trout, or sea-trout, ten cents;
5. For each barrel of mackerel, ten cents;
6. For each half-barrel of mackerel, five cents;
7. For each barrel of herring, five cents;
8. For each half-barrel of herring, three cents;
9. For each barrel of shad, ten cents;
10. For each half-barrel of shad, seven cents;
11. For each barrel of whitefish, ten cents;
12. For each half-barrel of whitefish, seven cents;
13. For each barrel of pickled codfish, hake, haddock, or catfish, five cents;
14. For each half-barrel of pickled codfish, hake, haddock, or catfish, three cents;
15. For each barrel of dry-salted codfish, hake, haddock, catfish, ling, or pollock, five cents;
16. For each half-barrel of dry-salted codfish, hake, haddock, catfish, ling, or pollock, three cents;
17. For each barrel of bass, ten cents;
18. For each half-barrel of bass, seven cents;
19. For each barrel of cod tongues, cod sounds, halibut, or eels, ten cents;
20. For each half-barrel of cod tongues, cod sounds, halibut, or eels, seven cents;
21. For inspecting, gauging, and branding each puncheon of oil, twenty cents;
22. For inspecting, gauging, and branding each hogshead of oil, fifteen cents;
23. For inspecting, gauging, and branding each tierce of oil, twenty cents;
24. For inspecting, gauging, and branding each barrel of oil, fifteen cents;
25. The foregoing rates shall be reckoned exclusive of salt, pickle, cooperage, storage, and labour, employed in washing, rinsing, cleaning, nailing, screwing, or repacking and pickling any fish;
26. For branding or marking Newfoundland fish which have been inspected in Newfoundland, two cents per barrel;
27. For inspecting empty packages, one cent:

Provided, always, that any person causing his fish or oil to be in-

spected, may employ at his cost and charge a cooper to attend upon and assist the inspector or deputy inspector in the performance of his duty, in which case the inspector or deputy inspector shall not be allowed any charge for cooperage, and the cooper so employed shall be governed and guided solely by the directions which he receives from the inspector or deputy inspector, with respect to any fish or oil by him inspected, and not by any other person whomsoever.

Where inspections shall be effected.

69. Fish and fish oil may be inspected either at the place where they are packed or manufactured, or at the place of sale within the Dominion.

When not inspected at place of packing and when at place of sale.

70. When fish are not inspected at the place of packing, the packer's name and the quality of the fish must be marked in paint on each barrel, half-barrel or package; and when they are inspected at the place of sale, the inspector shall empty out ten packages in each hundred of the lot submitted to him for inspection, and such inspection of ten out of every hundred shall regulate the grade of fish so submitted for inspection.

Bill of inspection.

71. So soon as any fish is inspected, a bill of inspection shall be furnished by the inspector or deputy inspector, specifiying the quality as ascertained by inspection, and whether each package contains the weight prescribed by this act, with the name of the packer and of the inspector at the place of packing.

As to fish landed from United States vessels for reshipment there.

72. This act shall not apply to fish landed at any port of the Dominion from United States fishing vessels for the purpose reshipment to the United States, unless the owners of such fish wish them to be inspected: Provided always, that such fish, if so reshipped without being inspected, shall not be branded or marked.

[39 Victoria, 1876, Chapter XXXIII.]

AN ACT to amend the act to make better provision, extending to the whole Dominion of Canada, respecting the inspection of certain staple articles of Canadian produce.

[Assented to 12th April, 1876.]

Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

1. Section sixty-three of the act of thirty-seventh Victoria, chapter forty-five, cited in the title of this act, is hereby amended by striking

out the words "one inch in width at the large end," and inserting in place thereof the words "five-eights of an inch at the small end."

2. Section sixty-four of the act cited in the title of this act is hereby repealed, and the following is substituted in place thereof:

"64. The inspection of all pickled fish cured for market or exportation, and of all fish oils, codfish tongues, or codfish sounds, cured for such purpose and contained in any such packages as are hereinafter mentioned shall, whenever such pickled fish, fish oils, or other articles as aforesaid, are removed beyond the limits of the inspection district in which they are pickled or packed, be compulsory in every province of the Dominion (except British Columbia and Manitoba), where an inspector is appointed by law: and if any such pickled fish, fish oil, or other article as aforesaid be sold or removed for sale beyond the limits of such district, or shipped or laden in any vehicle for removal, or offered to be removed from any district or place within the Dominion, except Manitoba and British Columbia, without being inspected under this act, the person so selling or removing the same, or offering the same for sale or removal, shall incur a penalty of not less than one dollar and not more than five dollars for each and every such package."

3. Subsection four of section sixty-six of the said act shall be amended by adding the following words to the first paragraph:

"And every such box of smoked herrings shall contain at least twenty pounds of fish, and half-boxes shall be twenty-two inches long, four inches deep and eight inches wide, and to contain not less than ten pounds of fish."

4. Subsection eight of the said sixty-sixth section shall be amended by adding the following:

"Every barrel of pickled codfish shall contain two hundred pounds of fish, and every half-barrel one hundred pounds of fish." * * * *

43 Victoria, 1880, chapter XX.

AN ACT to amend "The general inspection act, 1874," and the act amending it.

[Assented to 7th May, 1880.]

In amendment of "*The general inspection act*, 1874," and the act amending it, passed in the thirty-ninth year of Her Majesty's reign, and chaptered thirty-three: Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:

1. The sixth section of the act first above cited is hereby amended by striking out the word "governor" in the fourth line, and inserting in lieu thereof the words "minister of inland revenue."

2. The sixty-fifth section of the said act first above cited is hereby amended by inserting after the word "pickled" in the first line thereof, the words "and smoked."

3. The sixty-eighth section of the act first above cited is hereby amended by inserting after sub-section eight the following paragraphs:

"(*a*) For each box of smoked herrings, two cents;

"(*b*) For each half-box of smoked herrings, one cent;

"(*c*) For each quarter-box of smoked herrings, one-half cent."

4. The sixty-third section of the act first above cited is hereby amended by inserting the following paragraph, following the second paragraph of the said section:

"Barrels of the following dimensions may also be used for a special quality of fish, that is to say: The stave shall be twenty-eight inches long, the head seventeen between the chimes; the chimes to be one and a quarter inches; the head three-fourths of an inch in thickness, and the bung stave shall be of hard wood. Every such barrel shall be branded with the words '*special size.*'" * * *

[44 Victoria, 1881, chapter 52.]

AN ACT to amend "The general inspection act, 1874," and the acts amending it.

[Assented to 21st March, 1881.]

Her Majesty, by and with the advice and consent of the Senate and House of Commons, enacts as follows:

1. The act passed in the forty-third year of Her Majesty's reign intituled "An act to amend 'the general inspection act, 1874,' and the act amending it," is hereby amended by repealing the tariff of fees to be collected for the inspection of smoked herring, contained in the third section of the said act, and substituting the following:

(*a*) For each box of smoked herrings, one cent;

(*b*) For each half-box of smoked herrings, one-half cent;

(*c*) For each quarter-box of smoked herrings, one-quarter cent.

NOVA SCOTIA.

(Revised Statutes of Nova Scotia, 1851, chapter 85.)

On the regulation and inspection of provisions, lumber, fuel, and other merchandise.

FISH.

Appointment of inspectors.

1. The governor in council shall appoint in every county a chief inspector of pickled fish therein, who shall be sworn into office and shall give a bond, with two sureties, in five hundred pounds, to Her Majesty, for the faithful discharge of his duty. He shall not engage nor have any interest, direct or indirect, in the curing or packing or the sale of pickled fish, under a penalty of one hundred pounds and forfeiture of his office; and any person who shall act as inspector or deputy inspector

without having been duly appointed and sworn, shall forfeit five pounds for each offence.

Chief inspector to appoint deputies.

2. Every chief inspector shall appoint a sufficient number of deputies to act under him during pleasure, and shall be responsible for their official conduct, and shall take a bond from each of them in fifty pounds, with sureties; and every such deputy shall be sworn to the faithful discharge of his duty in the same manner as the chief inspector.

Qualities of fish.

3. There shall be three qualities of mackerel, three of salmon, two of other kinds of pickled fish, and two of smoked herrings.

Mackerel of the quality number one shall consist of the best and fattest fall mackerel, having had the blood well washed out previous to being salted, and being properly soaked, well cured in every respect, free from taint, rust, or damage, well split, and being of the best kind and in the best condition, and measuring not less than fifteen inches from the extremity of the head to the crotch of the tail; such mackerel shall be branded "mackerel number one," and if scraped shall be branded "mackerel number one, extra."

Mackerel of the quality number two shall consist of the best fall mackerel which shall remain after the selection of the first quality, being properly soaked, the blood washed out, well cured, and in every respect free from taint, rust, or damage, well split, and measuring not less than twelve inches from the extremity of the head to the crotch of the tail; and such mackerel shall be branded "mackerel number two," and if scraped shall be branded "mackerel number two, extra."

The quality to be branded number three shall consist of good, sound mackerel, properly soaked, the blood washed out, well cured, well split, and in every respect free from taint, rust, or damage; and all mackerel less than ten inches in length shall be branded "small," and all rusty fish, without reference to quality, shall be branded "rusty."

Salmon to be branded "No. 1" shall consist of the best and fattest kind, having all the blood well washed out previous to its being salted, and being well cured, well split, and in every respect free from taint, rust, or damage, being fish of the best kind and in the best condition. Those to be branded "No. 2" shall comprehend the best salmon that remain after the selection of the first quality; and those to be branded "No. 3" shall consist of other salmon; but both of the last-mentioned qualities shall be, nevertheless, sound, good fish, blood well washed out, well cured, well split, and in every respect free from rust, taint, or damage.

The quality of herrings, alewives, or other pickled fish to be branded "No. 1" shall consist of the fattest and best fish; and the quality to be branded "No. 2" of the poorer, thinner, and inferior fish, and both of

the qualities shall be carefully cured and cleansed, and in every respect free from taint, rust, or damage.

Smoked herrings branded "No. 1" shall comprehend the fattest and best fish; and those branded "No. 2" the poorer, thinner, and smaller fish. They shall be sweet and well-cured and smoked.

Quality, dimensions, and capacities of casks and boxes.

4. Barrels and half-barrels in which pickled fish is intended to be packed shall be made of sound, well-seasoned staves, free from sap, and the heading shall be of hard wood, pine, or spruce, smooth on the outside, and shall, as well as the staves, be at least three-quarters of an inch in thickness, but if hardwood the staves may be five-eighths of an inch in thickness. Staves for mackerel and salmon shall be twenty-eight inches in length, and the heads, between the chimes, sixteen inches; and the bung-stave shall always be of hard wood; the casks shall be well-hooped with at least four hoops on each bilge and four on each chime. Mackerel and salmon barrels shall contain not less than twenty-eight nor more than twenty-nine gallons, and barrels for herring and alewives not less than twenty-six nor more than twenty-seven gallons, and the tierces and half-barrels shall contain a quantity proportionate thereto. The makers shall brand their names on every barrel and half-barrel under a penalty of five shillings for each cask.

Boxes for smoked herring shall measure on the inside eighteen inches in length, twelve in breadth, and six in depth; or eighteen inches in length, nine in breadth, and eight in depth; and shall be strong, well-made, sufficiently seasoned, and the covers well-planed or shaved.

Casks to contain certain quantities of fish and salt.

5. Casks shall contain the quantity of fish hereinafter prescribed for each, respectively, over and above the salt and pickle necessary to preserve the same, that is to say: a tierce, three hundred pounds; a barrel, two hundred pounds; a half-barrel, one hundred pounds. Each barrel shall contain two pecks of salt, clean and suitable for the purpose; and every tierce and half-barrel shall contain a like proportion.

Pickled and smoked fish to be inspected before exportation.

6. All pickled fish intended for exportation in tierces, barrels, and half barrels, and all smoked herrings intended for exportation or sale, shall be first inspected, and the cask or box branded on the head thereof by an inspector in plain legible characters, with the description of the fish, the number of the quality and the weight, the initials of the Christian names and the whole surname of the actual inspector, the name of the town or place where he acts as inspector, the capital letters "N. S." for Nova Scotia, and the year of the inspection.

Certificates of inspection; fine for exportation without.

7. The person who shall have actually inspected any pickled fish shall grant a certificate of such inspection, which shall be given to the proper officer before any vessel on board which the fish may be laden shall be cleared out. Any person exporting pickled fish in tierces, barrels, or half-barrels, contrary to this section, shall forfeit five shillings for every such cask.

Smoked herrings liable to seizure if not inspected.

8. Smoked herrings shipped or sold without having been duly inspected and branded may be seized under a warrant of a justice of the peace, to be given upon information under oath.

Instructions for curing and packing fish.

9. All inspected pickled fish, whether split or otherwise, shall be well struck or salted in the first instance, and the qualities shall be those prescribed in the third section. Each cask shall be filled up with fish of the same kind and quality, properly packed and headed up, with the requisite number of hoops thereon. The fish shall be very carefully sorted and classed, according to their respective numbers and qualities, and then weighed, and on every layer of fish, as packed in the barrel, the quantity of salt hereinbefore prescribed shall be regularly placed. Herrings and alewives, whether split or round, and all number three mackerel, shall be packed with coarse salt. Smoked herrings shall be carefully packed, each box with fish as nearly as possible of the same size, laid in the same direction, and not across one another, and so stored as to completely fill the package.

Damaged fish not to be inspected.

10. Tainted or damaged pickled fish, or smoked herrings, shall on no account be permitted to pass inspection.

Fish to be sorted, inspected, and branded in inspector's presence.

11. The sorting, weighing, inspecting, and branding of any package of pickled fish or smoked herrings shall be done by or in the sight of an inspector thereof, and if any casualty render it necessary to repack a cask of inspected pickled fish in any place, it shall in all cases be done by an inspector of pickled fish, if one be resident within five miles thereof.

Inspectors, when to attend; manner of inspection.

12. Every chief inspector, by himself or his deputy, shall inspect all pickel fish under the provisions of this chapter when ten casks are ready for his inspection, and he is required so to do under a penalty of twenty pounds for every default, unless his residence be more than five

miles from the place where his attendance may be required; and shall likewise inspect all tierces, barrels, and half-barrels which are intended to contain pickled fish, and condemn all such as shall not be conformable to these provisions, and brand those he shall approve upon the bung-stave with the initials of his name.

Smoked herrings, how inspected.

13. Inspectors of smoked herrings shall inspect, and, when necessary, shall cull and repack every box thereof which is intended for sale or exportation, and shall for that purpose open, and, after inspecting, reclose and brand the same as hereinbefore directed.

Fees of inspectors, and how paid.

14. Every inspector actually performing the duty shall be entitled to receive the following fees for inspecting and branding, viz: For every tierce, nine pence; for every barrel, five pence; and for every half-barrel, two pence half penny; to be paid one-half by the buyer and the other by the seller; and for each empty cask, one penny, to be paid by the seller. For every box of smoked herrings, one penny-half-penny; and for culling and repacking the same, when necessary, two pence-half-penny in addition.

Returns of chief inspectors, how made.

15. Every chief inspector shall make a return to the provincial secretary of all the pickled fish inspected by him or his deputies; the same to be made up to the last days of March, June, September, and December, in each year, and delivered within one month thereafter.

Deputy inspectors to account to chief inspectors.

16. The deputy inspectors shall account to the chief inspector under whom they act once in every three months, or oftener if required, for all fish inspected and the fees received by them therefor; and shall pay over to him one-fifth of the same.

Fine for allowing unauthorized parties to inspect fish, and for lending branding irons.

17. No person other than an inspector shall sort, weigh, inspect, brand, or alter any tierce, barrel, or half barrel of pickled fish intended for exportation, unless in the presence and sight, and by the authority of an inspector; and any inspector who shall suffer any person so to act, or shall lend his branding irons in violation or evasion of this section, shall forfeit ten pounds for every offence.

Fine for acting without authority.

18. If any person not duly appointed and sworn shall act as an inspector of pickled fish, he shall for every offence forfeit twenty pounds.

Counterfeiting brands, or shifting fish improperly, punishable by fine and imprisonment.

19. Any person counterfeiting or using the brand of an inspector of smoked herrings, or being accessory thereto, or shifting any smoked herrings which shall have been packed and branded, or putting in other fish, contrary to or in evasion of these provisions, shall be punished by fine or imprisonment, at the discretion of the court before whom he may be convicted.

Fine for intermixing or improperly exporting pickled fish.

20. If any person shall take out, shift, or intermix any inspected pickled fish which have been duly packed or branded, or shall cause to be exported, in tierces, barrels, and half barrels, pickled fish not duly inspected and branded, or any such cask not duly inspected and branded he shall forfeit five shillings for every such cask.

Forfeiture upon masters of vessels for receiving on board uninspected smoked herrings.

21. If any master or commander shall receive on board his vessel any smoked herrings which have not been duly inspected and branded, for the purpose of conveying the same out of the township wherein they were cured, he shall forfeit the value thereof; but no such forfeiture shall exceed fifty pounds for any one offence.

Actions for misconduct of deputies; liability of inspector in such cases, and his redress.

22. All actions for the recovery of penalties or damages on account of the misconduct or neglect of any deputy inspector may be prosecuted either against such deputy or the chief inspector under whom he acts, who shall have his remedy against the deputy, either upon the bond given by him or by action on the case for damages; and in every such action the judgment recovered against the chief inspector shall be evidence of damages against such deputy or his sureties, if the deputy shall have had due notice of the action brought against the chief inspector.

Inspected casks may be reinspected; deficiencies, how supplied.

23. When any cask of pickled fish branded by a deputy inspector shall prove unequal in quantity or quality to that which may be indicated by the brand on the cask, or deficient in any of the requisites hereby prescribed, the chief inspector may cause the same to be reinspected; and if it appear that the defect arose from the condition of the fish or the bad quality of the cask, or the bad packing or pickling of the fish at the time of the inspection, he may recover the costs and charges of such reinspection from the deputy who branded the same.

FISH OIL.

Casks of fish oil, how branded.

24. On every cask of fish oil gauged shall be branded or cut with a double iron the initial letters of the Christian name of the gauger, and the whole of his surname, and the word "cod," "dog," "whale," "seal," or whatever word will express the description of the contents.

Gauger's duty and fees.

25. No gauger shall be compelled to leave his residence to gauge a less quantity than five barrels; and the fees for gauging shall be at the rate of one shilling a puncheon or ninepence a barrel.

Fine upon gauger for misconduct.

26. Any gauger who shall falsely brand any cask of fish oil shall, for every gallon, forfeit sixpence.

Fine for acting as a gauger without authority.

27. If any person shall act as a public gauger of fish oil without having been duly appointed and sworn, he shall, for every offence, forfeit five pounds.

X. APPENDIX.—THE MACKEREL FLEET.

55. VESSELS ENGAGED IN THE MACKEREL FISHERY IN 1880.

The following alphabetical list shows the vessels engaged in the mackerel fishery in 1880; the rig, tonnage, number of crew, apparatus of capture, fishing grounds frequented, and the home port of each vessel being shown separately. The list includes 468 vessels, valued at $1,027,910, or an average of $2,196 each. To this quantity should be added $1,094,450, or $2,339 per vessel, which represents the value of the provisions, boats, nets, salt, barrels, and other necessary apparatus and outfit. This brings the total capital invested in the mackerel-fishing fleet up to $2,122,360, exclusive of the shore property for packing and storing the catch. The total tonnage of the fleet is 23,551.64, or an average of 50.32 to the vessel. The regular seining vessels carry from 12 to 16 men, while the crews of the smaller craft range from 2 to 6; the total number of persons employed on the vessels is 5,043.

Of the entire fleet, 235 sail are employed exclusively in the mackerel fishery, while 233 fish for cod and other species in the spring and fall, engaging in the mackerel fishery during the height of the season only. Three-fourths of all the vessels, or 343 sail, are provided with purse-

seines, 5 of them carrying, in addition, a supply of jigs for occasional use. Of the remainder, 81 fish with hook and line, and 44 are provided with gill-nets.

The principal fishing grounds are the off-shore waters between Cape Hatteras and Sandy Hook, the Block Island region, the Gulf of Maine, and the Gulf of Saint Lawrence. According to the list, 64 vessels fished along various portions of the coast between Cape Hatteras and Mount Desert Island, on the coast of Maine, 6 of them going to the Gulf of Saint Lawrence for a few weeks. Twelve small craft fished regularly in the waters about Block Island, 343 remained constantly in the Gulf of Maine, 31 others divided their time between the Gulf of Maine and the Gulf of Saint Lawrence, and the remaining 18 fished wholly in British waters. As the fleet for a few of the Massachusetts ports is shown for 1879, the above facts do not represent the actual condition of affairs in 1880; for during the last-named year not over 25 American vessels entered provincial waters.

Massachusetts furnishes over half of the entire mackerel fleet, heading the list with 279 sail, valued at $750,895. Maine comes next with 176 vessels, worth $233,715. New Hampshire has 11 sail, valued at 29,300; while the Connecticut fleet consists of 2 large schooners, worth $14,000. The four principal mackerel-fishing ports are Gloucester, Portland, Wellfleet, and Boston, these sending 113, 46, 34, and 25 vessels, respectively.

56. LIST OF AMERICAN VESSELS ENGAGED IN THE MACKEREL FISHERY IN 1880.

[For a number of the Massachusetts ports the fleet is shown for 1879; but the facts differ only slightly from those of the following season. Vessels marked with a * devote considerable time to the capture of cod and other species, fishing for mackerel during the length of the season only.]

Name of vessel.	Description of rig.	Tonnage	No. of crew.	Mode of fishing.	Where fishing.	Where owned.
Abbie Frankfort	Schooner	70.50	12	Purse-seine	Gulf of Maine	Wellfleet, Mass.
*Aberdeen	do	70.12	12	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
*Actress	do	30.28	12	do	Gulf of Maine	Boston, Mass.
Ada R. Terry	do	69.29	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Addie	do	12.38	5	Hand-line	Block Island	Dennis, Mass.
Addie F. Cole	do	76.30	15	Purse-seine	Gulf of Maine	Wellfleet, Mass.
*Adelia Hartwell	do	60.29	14	Hand-line	Gulf of Saint Lawrence	Gloucester, Mass.
*Agnes Belle	do	29.76	11	Purse-seine	Gulf of Maine	Cranberry Islands, Me.
A. H. Lennox	do	72.51	15	do	do	Portland, Me.
*Alabama	do	26.16	10	do	do	Marblehead, Mass.
*Alaska	do	52.42	14	do	do	Southport, Me.
Albert H. Harding	do	64.33	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Alfarata	do	55.02	12	do	Gulf of Maine	Do.
Alice	do	89.54	16	do	Cape Hatteras to Gulf of Maine, inclusive	Swan's Island, Me.
Alice	do	88.81	16	do	Gulf of Maine	Boston, Mass.
Alice C. Fox	do	62.21	14	do	Cape Hatteras to Gulf of Maine, inclusive	Booth Bay, Me.
Alice M. Gould	do	60.71	12	do	Gulf of Saint Lawrence	Portland, Me.
Alice P. Higgins	do	91.93	15	do	Gulf of Maine	Wellfleet, Mass.
*Alice S. Hawkes	do	63.62	12	do	do	Swampscott, Mass.
Allen H. Jones	do	47.00	10	do	do	Duxbury, Mass.
*Allie Cook	do	5.35	2	Hand-line	Block Island	Harwich, Mass.
*Amelia	do	12.83	4	do	Coast of Maine	Saint George, Me.
*Amos Cutter	do	60.55	12	Purse-seine	Gulf of Maine	Gloucester, Mass.
Amy Wixon	do	47.43	13	do	do	Dennis, Mass.
Anna H. Frye	do	67.40	15	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Anna M. Nash	do	80.61	14	do	Gulf of Maine	Portsmouth, N. H.
Annie Lewis	do	52.01	12	do	Cape Hatteras to Gulf of Maine, inclusive	Portland, Me.
*Annie Sargent	do	66.66	14	do	Gulf of Maine	Do.
*Annie V. Thomas	do	10.21	3	Hand-line	Coast of Maine	North Haven, Me.
*Annis	do	13.64	3	do	Block Island	Dennis, Mass.
*Ann Maria	do	22.04	2	Gill-net	Coast of Maine and Massachusetts	Friendship, Me.
Arrow	do	53.27	14	Purse-seine	Gulf of Maine	Boston, Mass.
Asa H. Pervere	do	98.31	15	do	do	Wellfleet, Mass.
A. S. Wiley	do	81.10	16	do	do	Boston, Mass.
*Atlas	do	13.87	5	Hand-line	Coast of Maine	Isle au Haut, Me.
Augusta E. Herrick	do	99.56	15	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Swan's Island, Me.
*Baldora	do	13.88	3	Hand-line	Coast of Maine	Do.
*Banner	do	17.46	3	do	do	Deer Isle, Me.
Bertie Pierce	do	94.89	16	Purse-seine	Gulf of Maine	Boston, Mass.
B. D. Haskins	do	56.69	12	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.

B. D. Prince	do	62.46	14	do	Gulf of Maine	Camden, Me.
Benjamin Oliver	do	78.06	15	do	do	Wellfleet, Mass.
*Bloomer	do	48.31	13	do	do	Dennis, Mass.
*Bloomer	do	50.64	14	do	do	Gloucester, Mass.
*Bonita	do	18.67	7	Gill-net	Coast of Maine and Massachusetts	Do.
Boquet	do	6.88	2	do	do	Kennebunkport, Me.
Bounding Billow	do	57.18	12	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Brunette	do	1.94	3	Hand-line	Coast of Maine	Matinicus Island, Me.
*Bunker Hill	do	100.77	14	Purse-seine	Gulf of Maine	Gloucester, Mass.
*Cadet	do	18.68	2	Hand-line	Coast of Maine	Swan's Island, Me.
*Caleb	do	17.42	2	Gill-net	do	Friendship, Me.
*Can't Come It	do	10.28	5	Purse-seine	Gulf of Maine	Portsmouth, N. H.
*Canton	do	11.99	2	Gill-net	Coast of Maine and Massachusetts	Friendship, Me.
*Caroline	do	12.17	2	do	Coast of Maine	Do.
Carrie D. Allen	Three-masted schooner.	151.65	16	Purse-seine	Gulf of Maine	Wellfleet, Mass.
*Carrie F. Roberts	Schooner	42.16	10	do	do	Swampscott, Mass
Carrie G. Crosby	do	58.31	15	do	do	Orleans, Mass.
*Carrie L. Payson	do	11.10	5	Gill-net	Coast of Maine	Portland, Me.
*Carroll	do	9.68	4	Hand-line	do	Vinal Haven, Me.
Cayenne	do	87.94	14	Purse-seine	Gulf of Saint Lawrence	Salem, Mass.
*C. B. Manning	do	72.25	12	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
*C. C. Davis	do	52.75	10	do	Gulf of Saint Lawrence	Boston, Mass.
*C. E. Morris	do	13.62	4	Gill-net	Coast of Maine	Portland, Me.
*Chameleon	do	47.56	13	Purse-seine	Gulf of Maine	Boston, Mass.
*Champion	do	48.40	13	do	do	Swampscott, Mas
*Champion	do	68.41	12	do	do	Gloucester, Mass.
*Chaparel	do	41.04	11	do	do	Saint George, Me.
*Charles	do	18.46	3	Gill-net	Coast of Maine and Massachusetts	Cushing, Me.
*Charles A. Dyer	do	16.23	5	do	Coast of Maine	Portland, Me.
Charles F. Atwood	do	69.82	15	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Wellfleet, Mass.
Charles Haskell	do	65.62	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Charles H. Killey	do	68.71	17	do	Gulf of Maine	Harwich, Mass.
*Charles McDonald	do	67.71	16	do	do	Dennis, Mass.
Charles R. Washington	do	75.04	15	do	Gulf of Saint Lawrence and Gulf of Maine	Wellfleet, Mass.
Charlotte	do	71.66	15	do	Gulf of Maine	Cohasset, Mass.
Charlotte Brown	do	83.51	19	do	do	Dennis, Mass.
*Christena L	do	44.33	11	do	do	Duxbury, Mass.
Chonconra	do	62.87	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass,
*Cinderella	do	17.03	5	do	Coast of Maine	Bristol, Me.
Clara L. Dyer	do	77.32	15	do	Gulf of Saint Lawrence	Portland, Me.
*Col. Cook	do	64.75	11	do	Gulf of Maine	Gloucester, Me.
Col. J. H. French	do	83.19	15	do	Cape Hatteras to Gulf of Maine, inclusive	Do.
*Commonwealth	do	85.57	14	do	Gulf of Maine	Do.
*Constitution	do	12.32	4	Gill-net	Coast of Maine	Portland, Me.
*Constitution	do	28.21	10	Purse-seine	Gulf of Maine	Gloucester, Mass.
*Cora	do	48.50	14	do	Gulf of Saint Lawrence	Boston, Mass.
*Cora Ella	do	8.07	3	Gill-net	Coast of Maine and Massachusetts	Friendship, Me.
Cora E. Smith	do	49.24	12	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	North Haven, Me.
*Cora Lee	do	47.30	12	do	Gulf of Maine	Rockport, Mass.
Cora Louise	do	78.42	18	do	do	Dennis, Mass.
Cora Morrison	do	88.89	15	do	do	Wellfleet, Mass.

List of American vessels engaged in the mackerel fishery in 1880—Continued.

Name of vessel.	Description of rig.	Tonnage.	No. of crew.	Mode of fishing.	Where fishing.	Where owned.
Corporal Trim	Schooner	58.96	13	Purse-seine	Cape Hatteras to Gulf of Saint Lawrence, inclusive	Swan's Island, Me.
Cosmopolitan	do	41.58	11	do	Cape Hatteras to Gulf of Maine, inclusive	Saint George, Me.
Cosmopolitan	do	51.38	12	do	Gulf of Maine	Portland, Me.
*Cosmos	do	47.19	12	do	do	Swampscott, Mass.
*Cottage Girl	do	16.74	4	Gill-net	Coast of Maine	Portland, Me.
Crest of the Wave	do	71.38	15	Purse-seine	do	Gloucester, Mass.
*Crown	do	6.08	3	Hand-line	Coast of Maine	Vinal Haven, Me.
Crown Point	do	103.20	15	Hand-line and purse-seine	Gulf of Saint Lawrence	Newburyport, Mass.
Cynosure	do	72.74	15	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Booth Bay, Me.
*Cyrena Ann	do	60.02	12	do	Gulf of Maine	Do.
Dacotah	do	60.44	12	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Daniel Marcy	do	115.28	17	do	Gulf of Maine	Portsmouth, N. H.
*Daniel McPhee	do	55.56	15	do	do	Harwich, Mass.
Daniel Simmons	do	69.76	16	do	do	Do.
*David A. Osier	do	95.84	10	do	do	Gloucester, Mass.
David Brown, jr	do	62.69	12	do	do	North Haven, Me.
David F. Lowe	do	60.72	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*David J. Adams	do	60.86	14	do	do	Do.
*David Sprague	do	29.23	3	Hand-line	Coast of Maine and Massachusetts	Harwich, Mass.
*Davy Crockett	do	84.97	14	Purse-seine	Gulf of Maine	Gloucester, Mass.
D. B. Webb	do	76.53	15	do	do	Deer Isle, Me.
D. D. Geyer	do	54.92	12	do	do	Portland, Me.
*Defiance	do	18.97	8	Hand-line	Coast of Maine and Massachusetts	Gloucester, Mass.
*Delaware	do	11.48	3	Gill-net	Coast of Maine	Portland, Me.
Delia Maria	do	55.75	12	Purse-seine	Gulf of Maine	Gloucester, Mass.
Dictator	do	90.92	16	do	do	Harwich, Mass.
*Dreadnaught	do	42.29	13	do	do	Portland, Me.
Dreadnaught	do	12.63	5	Gill-net	Coast of Maine	Do.
*D. W. Hammond	do	59.44	12	Purse-seine	Gulf of Maine	Barnstable, Mass.
*Eagle	do	21.75	3	Hand-line	Coast of Maine	Swan's Island, Me.
*E. A. Horton	do	66.46	13	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
E. A. Lombard	do	65.40	14	do	Gulf of Maine	Truro, Mass.
*Eastern State	do	19.27	7	do	Coast of Maine	Bristol, Me.
*E. A. Williams	do	33.92	11	do	Gulf of Maine	Marblehead, Mass.
Eben Dale	do	57.99	12	do	do	North Haven, Me.
Eclipse	do	49.69	12	do	do	Gloucester, Mass.
*Eddie A. Minot	do	15.39	4	Gill-net	Coast of Maine	Portland, Me.
*Edith Bean	do	17.22	5	Hand-line	do	North Haven, Me.
Edith L. Couly	do	58.90	14	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Rockport, Mass.
Edmund Burke	do	41.41	10	Hand-line and purse-seine	Gulf of Saint Lawrence	Newburyport, Mass.
Edward Everett	do	57.84	14	Purse-seine	Cape Hatteras to Gulf of Saint Lawrence, inclusive	Gloucester, Mass.
Edward H. Norton	do	56.51	15	do	Gulf of Maine	Wellfleet, Mass.
Edward Rich	do	74.10	15	do	do	Do.
Effie T Kemp	do	62.94	15	do	do	Do.

*E. K. Dresser	do	62.85	14	do	do	Booth Bay, Me.
*E. K. Kane	do	52.29	10	do	do	Gloucester, Mass.
Electric Flash	do	82.19	14	do	Gulf of Saint Lawrence and Gulf of Maine	Do.
*Eliza	do	47.05	10	do	Gulf of Maine	Marblehead, Mass.
Eliza Abby	do	49.29	12	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Eliza May	do	10.71	2	Hand-line	Coast of Maine	Swan's Island, Me.
*Ella Nash	do	14.61	4	Gill-net	do	Portland, Me.
*Ellen Adams	do	10.50	3	Hand-line	do	Bluehill, Me.
Ellen M. Adams	do	90.33	16	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Elnora	do	13.45	5	Gill-net	Coast of Maine	Portland, Me.
*E. L. Rowe	do	68.78	13	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Emily Holden	do	22.48	12	do	Gulf of Maine	Portland, Me.
Emma A. Higgins	do	94.18	15	do	do	Wellfleet, Mass.
Emma Ann	do	12.84	2	Gill-net	Coast of Maine and Massachusetts	Waldoborough, Me.
Emma Jane	do	42.15	12	Purse-seine	Gulf of Maine	Gloucester, Mass.
Emma J. Gott	do	59.29	14	do	do	Provincetown, Mass.
*Emma S. Osier	do	23.41	7	Hand-line	Coast of Maine and Massachusetts	Gloucester, Mass.
*Eola	do	12.76	3	Gill-net	Coast of Maine	Friendship, Me.
*Ernest F. Norwood	do	74.50	12	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
Esperanza	do	43.96	10	do	Gulf of Maine	Matinicus Island, Me.
*Etta M. Storey	do	55.03	12	Hand-line	Block Island	Fairhaven, Mass.
*Ettie	do	46.73	12	Purse-seine	Gulf of Maine	Swampscott, Mass.
*Eureka	do	51.96	14	do	do	Gloucester, Mass.
*Eva May	do	27.50	9	Gill-net	Coast of Maine and Massachusetts	Do.
E. W. Merchant	do	47.82	12	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Do.
Excelsior	do	38.30	8	do	Gulf of Maine	Do.
*Fairy Queen	do	8.52	3	Hand-line	Coast of Maine	Belfast, Me.
*Fairy Queen	do	46.29	12	Purse-seine	Gulf of Maine	Portland, Me.
Falcon	do	71.67	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Fannie L. Nye	do	70.08	14	do	Gulf of Maine	Cohasset, Mass.
F. A. Smith	do	77.10	14	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
*Favorite	do	7.13	3	Hand-line	Coast of Maine	Deer Isle, Me.
*Fish Hawk	do	50.01	10	do	Coast of Maine and Massachusetts	Harwich, Mass.
Fleetwing	do	59.29	14	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Fleetwood	do	55.99	12	do	Gulf of Maine	North Haven, Mass.
Flora A. Newcomb	do	69.49	14	do	do	Wellfleet, Mass.
Flora Temple	do	52.59	10	do	Gulf of Saint Lawrence	Gloucester, Mass.
*Florence Nightingale	do	40.96	12	do	Gulf of Maine	Swampscott, Mass.
Florine F. Nickerson	do	55.58	15	do	do	Chatham, Mass.
Flying Cloud	do	59.59	14	do	Gulf of Saint Lawrence	Boston, Mass.
*Flying Dart	do	47.17	12	do	Gulf of Maine	Swampscott, Mass.
*Forest Girl	do	11.60	3	Hand-line	Coast of Maine	Swan's Island, Me.
Francis M. Loring	do	77.05	14	Purse-seine	Gulf of Maine	Cohasset, Mass.
Frank Butler	do	74.55	16	do	Coast of New England and Gulf of Saint Lawrence	New London, Conn.
*Frank Skillings	do	49.81	13	do	Gulf of Maine	Portland, Me.
*Fred. L. Webb	do	54.92	12	do	do	Gloucester, Mass.
Fred. P. Frye	do	85.37	14	do	do	Do.
Garabaldi	do	51.99	14	do	Cape Hatteras to Gulf of Maine, inclusive	Do.
*Garland	do	22.10	7	Hand-line	Coast of Maine	Portland, Me.
*Gazel	do	37.62	8	do	Coast of Maine and Massachusetts	Gloucester, Mass.
General Lyon	do	61.65	15	Purse-seine	Gulf of Maine	Harwich, Mass.
*Geneva Mertis	do	44.94	10	do	do	Chatham, Mass.

List of American vessels engaged in the mackerel fishery in 1880—Continued.

Name of vessel.	Description of rig.	Tonnage.	No. of crew.	Mode of fishing.	Where fishing.	Where owned.
*Gen. Grant	Schooner	50.28	13	Purse seine	Gulf of Maine	Booth Bay, Me.
*Gentilo	do	15.66	5	Hand-line	Coast of Maine	Deer Isle, Me.
George S. Low	do	61.69	14	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
George T. Littlefield	do	111.28	15	do	Gulf of Maine	Wellfleet, Mass.
Georgiana	do	52.01	14	do	do	Gloucester, Mass.
*Georgiana Young	do	22.93	5	do	Coast of Maine	Bristol, Me.
*Georgie Willard	do	55.48	12	do	Gulf of Maine	Portland, Me.
*Gertie Lewis	do	72.24	14	do	do	Do.
Gertrude Summers	do	64.41	14	do	do	Wellfleet, Mass.
*Gipsey Girl	do	37.50	12	do	do	Swampscott, Mass.
Glad Tidings	do	50.78	14	do	Cape Hatteras to Gulf of Maine, inclusive	Swan's Island, Me.
G. N. Hopkins	do	73.61	14	do	Gulf of Maine	Hingham, Mass.
*Golden Eagle	do	14.20	4	Hand-line	Coast of Maine	North Haven, Me.
Golden Hind	do	74.60	14	Purse-seine	Gulf of Maine	Gloucester, Mass.
*Golden Rule	do	41.67	10	do	do	Rockport, Mass.
Goldsmith Maid	do	51.24	13	do	do	Gloucester, Mass.
Governor Goodwin	do	98.20	16	do	do	Portsmouth, N. H.
*Grace Choate	do	41.64	10	do	do	Do.
Gray Eagle	do	51.06	12	do	do	Portland, Me.
Greyhound	do	50.22	12	Hand-line and purse-seine	Gulf of Saint Lawrence	Newburyport, Mass.
*Greyhound	do	66.25	10	Hand-line	do	Gloucester, Mass.
*Guess	do	15.48	6	do	Coast of Maine	Matinicus Island, Me.
G. W. Bentley	do	113.13	18	Purse-seine	Coast of New England and Gulf of Saint Lawrence.	New London, Conn.
G. W. Brown	do	63.05	14	do	Gulf of Saint Lawrence and Gulf of Maine	Newburyport, Mass.
G. W. Reed	do	55.24	14	do	Gulf of Maine	Swan's Island, Me.
*Harrison	do	18.80	3	Hand-line	Coast of Maine	Deer Isle, Me.
Harvest Home	do	56.88	12	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
Hattie B. West	do	58.56	12	do	Cape Hatteras to Gulf of Maine, inclusive	Do.
Hattie Chester	do	73.82	16	Hand-line	Gulf of Saint Lawrence	Essex, Mass.
*Hattie L. Gray	do	6.71	2	do	Coast of Maine	Deer Isle, Me.
*Helen F. Tredick	do	38.59	8	Purse-seine	Gulf of Maine	Portsmouth, N. H.
Helen M. Crosby	do	66.62	14	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
*Helen M. Macomber	do	14.75	4	Hand-line	Coast of Maine	Deer Isle, Me.
Helen Tree	do	9.06	2	Gill-net	do	Cushing, Me.
*Henry Cole	do	16.91	4	Hand-line	Black Island	Dennis, Mass.
*Henry Friend	do	67.39	14	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
Henry Nickerson	do	73.84	17	do	Gulf of Maine	Harwich, Mass.
Herald of the Morning	do	71.63	14	do	do	Gloucester, Mass.
Hereward	do	90.11	16	do	do	Do.
H. E. Willard	do	103.52	15	do	Cape Hatteras to Gulf of Maine, inclusive	Portland, Me.
*Highflyer	do	55.73	14	do	do	Gloucester, Mass.
Highland Queen	do	57.51	13	do	Gulf of Maine	Swan's Island, Me.
*Hope	do	8.89	3	Hand-line	Coast of Maine and Massachusetts	Gloucester, Mass.

*H. S. Rowe	do	59.47	14	Purse-seine	Gulf of Maine	Portland, Me.
Humboldt	do	57.53	14	do	do	Booth Bay, Me.
*Hurricane	Steamer	20.84	11	do	do	Rockland, Me.
H. W. Pierce	Schooner	73.71	14	do	do	Wellfleet, Mass.
*Ida Grover	do	20.26	7	do	do	Matinicus Island, Me.
*Ida May	do	45.17	9	Hand-line	Coast of Maine and Massachusetts	Gloucester, Mass.
Idella Small	do	62.70	13	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Deer Isle, Me.
Isaac A. Chapman	do	85.06	14	do	Gulf of Maine	Gloucester, Mass.
Isaac Rich	do	92.18	14	do	do	Do.
Isaac Somes	do	68.31	15	do	do	Harwich, Mass.
Isabella	do	50.61	12	Hand-line	Gulf of Saint Lawrence	Gloucester, Mass.
*Island Queen	do	11.13	4	do	Coast of Maine	Vinal Haven, Me.
Island Queen	do	64.18	14	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Portland, Me.
*Israel Washburne	do	25.16	8	Hand-line	Coast of Maine	Deer Isle, Me.
James A. Stetson	do	65.18	14	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Jamestown	do	69.00	12	do	Gulf of Saint Lawrence	Do.
*Jennie and Julia	do	14.27	8	do	Coast of Maine and Massachusetts	Do.
*Jenny Armstrong	do	69.55	14	do	Gulf of Maine	Southport, Me.
Jennie B. Thomas	do	50.95	12	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Jennie P. Phillips	do	55.63	9	do	Gulf of Maine	Swampscott, Mass.
*J. G. Craig	do	77.03	13	do	do	Portland, Me.
*J. H. G. Perkins	do	59.23	13	do	Cape Hatteras to Gulf of Saint Lawrence, inclusive	Gloucester, Mass.
*J. J. Clark	do	69.68	14	do	Gulf of Saint Lawrence and Gulf of Maine	Do.
Joe Hooker	do	71.03	15	do	Gulf of Maine	Harwich, Mass.
John James	do	51.03	14	do	do	Camden, Me.
John M. Ball	do	86.54	15	do	Block Island and Gulf of Maine	Boston, Mass.
John M. Fisk	do	80.76	15	do	Gulf of Maine	Provincetown, Mass.
John Nye	do	66.92	14	do	do	Hingham, Mass.
John S. McQuinn	do	81.76	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
John Somes	do	65.65	13	do	do	Swan's Island, Me.
John W. Bray	do	83.41	16	do	do	Gloucester, Mass.
*John W. Smart	do	18.41	8	do	Gulf of Maine	Portsmouth, N. H.
Joseph Garland	do	51.44	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Josephine	do	38.68	10	do	Gulf of Maine	Rockport, Mass.
*Josie Johnson	do	27.60	8	do	Gulf of Saint Lawrence and Gulf of Maine	Newburyport, Mass.
*Julia Ellen	do	45.55	10	do	Gulf of Maine	Friendship, Me.
*Jupiter	Sloop	8.32	2	Hand-line	Coast of Maine	North Haven, Me.
*J. W. Bradley	Schooner	46.36	12	Purse-seine	Gulf of Maine	Rockport, Mass.
J. W. Sawyer	do	115.77	15	do	do	Portland, Me.
Kate Florence	do	102.04	17	do	do	Harwich, Mass.
*Kate McClintock	do	71.68	15	do	do	Boothbay, Me.
Katie Hall	do	74.69	15	do	do	Cohasset, Mass.
*Kingfisher	do	10.00	3	Hand-line	Coast of Maine	Bristol, Me.
*Kingfisher	do	64.59	14	Purse-seine	Gulf of Maine	Booth Bay, Me.
*Laughing Water	do	31.00	12	do	do	Swampscott, Mass.
Lelia Linwood	do	69.90	15	do	do	Chatham, Mass.
Lettie Linwood	do	68.29	15	do	do	Do.
Lettie S. Reed	do	58.22	13	do	Cape Hatteras to Gulf of Maine, inclusive	Booth Bay, Me.
Lewis and Rosa	do	77.61	16	do	Gulf of Maine	Do.
*Light Wing	do	33.84	8	Hand-line	Coast of Maine and Massachusetts	Gloucester, Mass.
*Lillian Estelle	do	13.15	3	Gill-net	do	Friendship, Me.
Lillian M. Warren	do	89.05	14	Purse-seine	Cape Hatteras to Gulf of Saint Lawrence, inclusive	Deer Isle, Me.

List of American vessels engaged in the mackerel fishery in 1880—Continued.

Name of vessel.	Description of rig.	Tonnage.	No. of crew.	Mode of fishing.	Where fishing.	Where owned.
*Little Annie	Schooner	18.87	4	Hand-line	Coast of Maine	Deer Isle.
*Little Lizzie	do	60.04	14	do	Coast of Maine and Massachusetts	Harwich, Mass.
*Little Nellie	do	14.90	3	Gill-net	Coast of Maine	Portland, Me.
Lizzie	do	13.75	5	Hand-line	Block Island	Dennis, Mass.
*Lizzie Bradley	do	17.00	5	Gill-net	Coast of Maine	Portland, Me.
Lizzie D. Baker	do	75.93	14	Purse-seine	Gulf of Maine	Wellfleet, Mass.
*Lizzie D. Saunders	do	43.54	12	do	do	Rockport, Mass.
*Lizzie May	do	13.71	4	Gill-net	Coast of Maine	Portland, Me.
Lizzie Poor	do	51.50	14	Purse-seine	Gulf of Maine	Do.
Lizzie Smith	do	77.21	15	do	do	Wellfleet, Mass.
Lizzie Thompson	do	70.89	15	do	Cape Hatteras to Gulf of Maine, inclusive	Newburyport, Mass.
Longwood	do	65.79	15	do	Gulf of Maine	Boston, Mass.
Lottie	do	5.74	2	Hand-line	Coast of Maine	Deer Isle, Me.
*Lucy Devlin	do	46.79	14	Purse-seine	Gulf of Maine	Swampscott, Mass.
Lucy J. Keeler	do	94.35	13	do	do	Wellfleet, Mass.
Lucy J. Warren	do	59.00	14	do	do	Swan's Island, Me.
Lucy N. Jenkings	do	73.33	15	do	do	Wellfleet, Mass.
*Lucy R. Day	do	57.90	14	do	do	Boston, Mass.
*Luther	do	19.73	3	Hand-line	Coast of Maine	Vinal Haven, Me.
Lydia	do	12.66	4	do	Block Island	Dennis, Mass.
*Lydia A. Davis	do	14.68	7	Purse-seine	Gulf of Maine	Newburyport, Mass.
Madawaska Maid	do	63.06	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Magellan Cloud	do	15.10	6	do	Coast of Maine and Massachusetts	Do.
Maggie Power	do	60.92	12	do	Cape Hatteras to Gulf of Maine, inclusive	Portland, Me.
Maggie W. Willard	do	46.44	12	do	do	Do.
*Margaret Leonard	do	33.31	12	do	Gulf of Maine	Boston, Mass.
*Margie Smith	do	61.13	15	do	do	Gloucester, Mass.
Maria Webster	do	58.15	13	do	do	Wellfleet, Mass.
*Marion	do	23.24	5	Hand-line	Coast of Maine	Deer Isle, Me.
Marion Grimes	do	61.36	14	Purse-seine	Cape Hatteras to Gulf of Saint Lawrence, inclusive	Gloucester, Mass.
*Martha C	do	79.16	14	do	Gulf of Maine	Do.
*Martha D. McLain	do	46.97	12	do	Gulf of Saint Lawrence and Gulf of Maine	Portland, Me.
*Martha Emma	do	22.08	6	Hand-line	Coast of Maine	Belfast, Me.
*Martha Jane	do	16.89	6	Purse-seine	Coast of Maine and Massachusetts	Gloucester, Mass.
Mary and Emma	do	18.01	6	Hand-line	Block Island	Dennis, Mass.
Mary Doane	do	72.10	16	Purse-seine	Gulf of Maine	Harwich, Mass.
*Mary Elizabeth	do	22.51	8	Gill-net	Coast of Maine and Massachusetts	Gloucester, Mass.
*Mary Ellen	do	54.11	12	Purse-seine	Gulf of Maine	Rockport, Mass.
*Mary E. Smith	do	33.74	9	do	do	Newburyport, Mass.
*Mary Etta	Sloop	6.00	2	Hand-line	Coast of Maine	Bristol, Me.
Mary Eva	Schooner	61.11	15	Purse-seine	Gulf of Maine	Provincetown, Mass.
Mary E. Wharf	do	64.33	13	do	do	Wellfleet, Mass.
Mary Fernald	do	89.27	14	do	Gulf of Saint Lawrence and Gulf of Maine	Rockport, Mass.
*Mary Jane	do	13.54	3	Gill-net	Coast of Maine and Massachusetts	Friendship, Me.

Mary J. Elliott	do	53.15	14	Purse-seine	Gulf of Maine and Gulf of Saint Lawrence	Booth Bay, Me.
*Mary Odell	do	42.47	14	do	Gulf of Maine	Gloucester, Mass.
Mary Snow	do	70.80	15	do	do	Provincetown, Mass.
*Mary S. Roundy	do	11.16	4	Hand-line	Coast of Maine and Massachusetts	Gloucester, Mass.
Mary Steel	do	62.96	14	Purse-seine	Gulf of Maine	Wellfleet, Mass.
*Maud Whitmore	do	11.43	4	Gill-net	Coast of Maine	Bucksport, Me.
*May Queen	do	5.66	3	do	do	Portland, Me.
McCloud	do	51.81	12	Hand-line and purse-seine	Gulf of Saint Lawrence	Boston, Mass.
*Mechanic	do	21.36	6	Hand-line	Coast of Maine	North Haven, Me.
*Meridian	Sloop	25.85	6	do	do	Isle au Haut, Me.
Merrimac	Schooner	54.43	13	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Wellfleet, Mass.
M. E. Torrey	do	57.85	13	do	Cape Hatteras to Gulf of Maine, inclusive	Sedgwick, Me.
*Miantonomah	do	77.45	14	do	Gulf of Saint Lawrence and Gulf of Maine	Newburyport, Mass.
*Millie Florence	do	16.90	5	Gill-net	Coast of Maine	Portland, Me.
Millie Washburn	do	74.23	15	Purse-seine	Gulf of Maine	Provincetown, Mass.
*Minnehaha	do	52.70	12	do	do	Swampscott, Mass.
Minnie Davis	do	14.16	2	Gill-net and purse-seine	Coast of Maine and Massachusetts	Friendship, Me.
*M. L. Rogers	do	64.00	12	Purse-seine	Gulf of Maine	Cranberry Island, Me.
M. L. Wetherell	do	69.42	12	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
M. M. Chase	do	93.14	14	do	Cape Hatteras to Gulf of Maine, inclusive	Portland, Me.
*Moneda	do	21.06	4	Gill-net	Coast of Maine	Do.
Morning Star	do	80.45	14	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Cohasset, Mass.
*Mystery	do	11.00	3	Hand-line and purse-seine	Gulf of Maine	Boston, Mass.
Mystic	do	83.09	14	Hand-line	Gulf of Saint Lawrence	Essex, Mass.
Nannie E. Waterman	do	79.75	13	Purse-seine	Gulf of Maine	Wellfleet, Mass.
Nathan Cleaves	do	69.89	14	do	do	Do.
Nathaniel Chase	do	69.37	16	do	do	Dennis, Mass.
Nellie Burns	do	57.65	14	do	Gulf of Saint Lawrence and Gulf of Maine	Portland, Me.
Nellie M. Snow	do	64.56	13	do	Gulf of Maine	Wellfleet, Mass.
Nellie T. Campbell	do	57.58	15	do	do	Harwich, Mass.
Neponset	do	73.51	15	do	do	Boston, Mass.
Nettie Moore	do	108.47	19	do	do	Chatham, Mass.
Newell B. Hawes	do	89.31	14	do	do	Wellfleet, Mass.
Nil Desperandum	do	79.37	13	do	do	Do.
*Northern Eagle	do	36.97	10	do	do	Gloucester, Mass.
*Nymph	do	6.44	3	Hand-line	Coast of Maine	Deer Isle, Me.
Oasis	do	56.24	12	Purse-seine	Cape Hatteras to Gulf of Maine, inclusive	North Haven, Mass.
*Oceanus	do	47.44	14	do	do	Gloucester, Mass.
Old Chad	do	71.07	13	do	Gulf of Maine	Booth Bay, Me.
*Olive A. Lewis	do	22.96	4	Hand-line	Coast of Maine and Massachusetts	Dennis, Mass.
Olive G. Tower	do	63.98	13	Purse-seine	Gulf of Maine	Boston, Mass.
*Onward	do	13.12	4	Hand-line	Coast of Maine	Isle au Haut, Me.
Ossipee	do	72.58	14	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
Pamet	do	21.19	4	do	do	Newburyport, Mass.
Pathfinder	do	67.26	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Phantom	do	30.05	8	do	Gulf of Maine	Do.
Phœbe and Emma Small	do	64.57	15	do	do	Harwich, Mass.
*Phœnix	do	60.33	13	do	do	Gloucester, Mass.
Pontiac	do	9.93	4	Gill-net	Coast of Maine and Massachusetts	Barnstable, Mass.
Queen of the West	do	51.54	12	Purse-seine	Gulf of Maine	Swan's Island, Me.
Quivet	do	70.77	16	do	do	Dennis, Mass.
Racer	do	53.05	13	do	do	Gloucester, Mass.

List of American vessels engaged in the mackerel fishery in 1880—Continued.

Name of vessel.	Description of rig.	Tonnage.	No. of crew.	Mode of fishing.	Where fishing.	Where owned.
*Ralph E. Eaton	Schooner	68.96	15	Purse-seine	Gulf of Maine	Gloucester, Mass.
Rambler	do	66.91	14	do	Cape Hatteras to Gulf of Maine, inclusive	Do.
Rattler	do	82.72	14	do	Gulf of Saint Lawrence and Gulf of Maine	Do.
Rebecca J. Evans	do	78.29	17	do	Gulf of Maine	Harwich, Mass.
Redwing	do	17.13	5	Hand-line	Block Island	Dennis, Mass.
*Reform	do	16.73	4	Gill-net	Coast of Maine	Bremen, Me.
*Reporter	do	83.61	14	Purse-seine	Gulf of Maine	Gloucester, Mass.
*Reserve	do	5.60	2	Hand-line	Coast of Maine	Vinal Haven, Me.
*Rhoda Ann	do	10.70	5	do	do	North Haven, Me.
Richard S. Newcomb	do	69.66	14	Purse-seine	Gulf of Maine	Boston, Mass.
Right Bower	do	59.10	14	do	do	Do.
*Rising Star	do	29.48	7	do	do	Duxbury, Mass.
Robert D. Rhodes	do	60.91	13	do	Gulf of Maine, inclusive	Southport, Me.
Robert Pettis	do	65.58	13	do	Gulf of Maine	Wellfleet, Mass.
Robert Ripley	do	48.05	13	do	do	Camden, Me.
Rodger Williams	do	58.03	12	do	Cape Hatteras to Gulf of Maine, inclusive	North Haven, Me.
Rosedale	do	83.69	14	do	Gulf of Maine	Boston, Mass.
*Rozella	do	36.53	10	do	do	Cranberry Islands, Me.
*Rover's Bride	do	20.13	6	do	do	Portsmouth, N. H.
*Royal Tiger	do	11.34	4	Gill-net	Coast of Maine	Booth Bay, Me.
Rushlight	do	66.98	14	Purse-seine	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
S. A. Parkhurst	do	53.35	12	do	Gulf of Saint Lawrence	Salem, Mass.
*Saragossa	do	30.95	10	do	Gulf of Maine	Portland, Me.
*Sarah B. Harris	do	54.21	13	do	do	Boston, Mass.
*Sarah C. Wharff	do	51.43	13	do	do	Gloucester, Mass.
*Sarah E. Babson	do	49.10	15	do	Gulf of Saint Lawrence and Gulf of Maine	Newburyport, Mass.
Sarah E. Smith	do	56.15	13	do	Gulf of Maine	Wellfleet, Mass.
Sarah M. Jacobs	do	80.04	15	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
*Satellite	do	22.25	8	do	Gulf of Maine	Rockport, Mass.
*Sea Flower	do	36.13	8	Hand-line	Coast of Maine	Belfast, Me.
*Sea Foam	do	73.19	12	Purse-seine	Gulf of Maine	Barnstable, Mass.
Sea Spray	do	62.49	13	do	Gulf of Saint Lawrence and Gulf of Maine	Eastport, Me.
*Sea Queen	do	18.44	4	Gill-net	Coast of Maine	Cushing, Me.
*Senator	do	17.60	5	Hand-line	do	Brooklyn, Me.
*Silk Worm	do	13.26	4	Gill-net	do	Cushing, Me.
*Siloam	do	9.56	5	Hand-line	Block Island	Harwich, Mass.
*S. L. Foster	do	48.14	12	Purse-seine	Gulf of Maine	Cranberry Islands, Me.
Starlight	do	10.38	3	Hand-line	Massachusetts Bay	Wellfleet, Mass.
*Star of the East	do	56.13	11	Purse-seine	Gulf of Maine	Gloucester, Mass.
Stella Sherman	do	92.49	14	do	do	Boston, Mass.
*Storm King	do	36.46	8	do	do	Duxbury, Mass.
Stowell Sherman	do	92.49	14	do	do	Orleans, Mass.
*Sunbeam	do	27.68	10	do	do	Tremont, Me.
*Susan	do	15.04	4	Hand-line	Coast of Maine	North Haven, Me.

*Susan	do	16.75	8	Gill-net	do	Waldoborough, Me.
Tanniscott	do	22.59	10	Purse-seine	Gulf of Maine	Deer Isle, Me.
*Talcola	do	13.82	4	Hand-line	Block Island	Dennis, Mass.
*Three Sisters	do	17.40	6	do	Coast of Maine	Deer Isle, Me.
*Tiger	do	11.67	3	do	do	Bristol, Me.
Titmouse	do	70.72	16	Purse-seine	Gulf of Maine	Dennis, Mass.
T. S. Mayo	do	62.46	12	do	Gulf of Saint Lawrence and Gulf of Maine	Gloucester, Mass.
*Traveler	do	16.17	3	Gill-net	Coast of Maine	Friendship, Me.
*Treaty	do	30.56	6	Hand-line	do	Brooklyn, Me.
*Trifle	do	8.56	2	do	do	Deer Isle, Me.
*Triumph	do	16.16	6	do	do	North Haven, Me.
*Trumpet	do	20.48	4	do	do	Lincolnville, Me.
*Two Brothers	do	19.07	3	Gill-net	do	Portland, Me.
*Una	do	41.24	8	Purse-seine	Gulf of Maine	Portsmouth, N. H.
*Uncle Joe	do	63.25	15	do	do	Southport, Me.
*Valiant	do	14.96	3	Gill-net	Coast of Maine	Friendship, Me.
*Velocipede	do	67.91	13	Purse-seine	Gulf of Maine	Portsmouth, N. H.
Venilia	do	67.66	14	do	Cape Hatteras to Gulf of Saint Lawrence, inclusive	Brooklyn, Me.
*Venus	do	12.44	5	Hand line	Coast of Maine and Massachusetts	Gloucester, Mass.
Vidette	do	58.07	13	Purse-seine	Gulf of Maine	Do.
Volunteer	do	69.58	14	do	Cape Hatteras to Gulf of Maine, inclusive	Do.
Walter L. Rich	do	78.75	14	do	Gulf of Maine	Wellfleet, Mass.
*Washington	do	13.11	4	Gill-net	Coast of Maine	Hancock, Me.
*Washington	do	14.11	4	Hand-line	do	Tremont, Me.
*Wasp	do	14.74	3	Gill-net	Coast of Maine and Massachusetts	Friendship, Me.
*Water Lily	do	37.24	8	Purse-seine	Gulf of Maine	Portsmouth, N. H.
Waverly	do	52.09	12	do	do	Rockport, Mass.
*Western Belle	do	11.22	3	Hand-line	Coast of Maine	Deer Isle, Me.
Wide Awake	do	63.41	13	Purse-seine	Gulf of Maine	Gloucester, Mass.
Wide Awake	do	68.63	14	do	Cape Hatteras to Gulf of Maine, inclusive	Cohasset, Mass.
Wildfire	do	103.90	14	do	Gulf of Maine	Gloucester, Mass.
William D. Paisley	do	98.09	14	do	do	Boston, Mass.
William H. West	do	67.80	15	do	Coast of Maine and Massachusetts	Do.
William M. Gaffney	do	74.65	14	do	Cape Hatteras to Gulf of Maine, inclusive	Gloucester, Mass.
William S. Baker	do	103.85	16	do	do	Do.
*William V. Hutchings	do	62.68	12	do	Gulf of Maine	Do.
*Willie G	do	59.00	12	do	do	Southport, Me.
Willie Irving	do	74.59	15	do	do	Chatham, Mass.
Willie Parkman	do	77.74	18	do	do	Dennis, Mass.
*Willie Smith	do	32.00	6	Hand-line	Coast of Maine	Portland, Me.
*Willow	do	12.98	4	do	Block Island	Harwich, Mass.
*Winifred J. King	do	63.61	11	Purse-seine	Gulf of Maine	Gloucester, Mass.
Winnie Weston	do	47.84	12	do	Cape Hatteras to Gulf of Maine, inclusive	Portland, Me.
*Yankee Lass	do	5.33	2	Gill-net	Coast of Maine	Cushing, Me.
Yankee Lass	do	78.65	14	Purse-seine	Gulf of Maine	Boston, Mass.
Young Sultan	do	53.59	13	do	do	Wiscasset, Me.

XI. APPENDIX.—STATISTICS OF THE MACKEREL FISHERY IN THE GULF OF SAINT LAWRENCE.

56. THE CATCH OF MACKEREL BY AMERICAN SCHOONERS IN CANADIAN WATERS, 1873–1882.

The following statement, prepared by Colonel David W. Low, of Gloucester, shows the extent of the mackerel fishery as pursued by American vessels in the Gulf of Saint Lawrence since the year 1873. The number of vessels and their catch in the years 1873 to 1877, inclusive, is compiled from the reports of the collector of customs at Port Mulgrave, Nova Scotia; the number of vessels in 1878 and 1879 is from the same authority; the catch for 1878 and subsequent years and the number of vessels in 1880 and 1881 is from reports of the Boston Fish Bureau. The estimates of value and the catch within the three mile limit are from authentic sources. The value includes the labor of crews "messing" some of the fish by soaking, scraping, and cutting off their heads, thus increasing their market value. The quantity of mackerel caught within the three-mile limit, one-third of the total catch, is considered by competent authorities to be a very liberal estimate. The unusual number of vessels in the gulf in 1878 was caused by false reports and telegrams of great quantities of mackerel there. American vessels in the gulf mackerel fishery must average four hundred barrels of mackerel each at ten dollars per barrel to pay the expenses of outfit, insurance, depreciation of vessel, crew's share, and master's commission.

The mackerel fishery by American vessels in the Gulf of Saint Lawrence for the years from 1873 to 1881, inclusive.

[Compiled by Col. David W. Low.]

Year.	Number of vessels in Gulf.	Catch in sea-packed barrels.	Shrinkage in same one-eighth.	Packed barrels.	Value when sold in United States per barrel, packing off.	Total value in United States of whole catch when sold.	Number of barrels caught inside three-mile limit, liberal.	Value in United States of mackerel caught within three-mile limit, liberal estimate.
1873	254	88,012	11,001	77,011	$10 46	$805,535	25,670	$268,508
1874	164	63,078	7,885	55,193	6 25	344,956	18,398	114,987
1875	95	13,006	1,626	11,380	14 18	161,368	3,793	53,785
1876	64	5,495	687	4,808	11 60	55,773	1,603	18,594
1877	60	8,365	1,046	7,319	11 10	81,241	2,439	27,072
1878	273	.....	.....	61,923	4 15	256,980	20,041	85,660
1879	44	.....	.....	10,796	2 50	26,990	3,599	8,997
1880	34	.....	.....	7,301	7 72	56,364	2,433	18,783
1881	3	.....	.....	470	8 50	3,995	156	1,326
1882	1	.....	.....	275	8 50	2,125	95	717
Total	992	.....	.....	236,476	.....	1,795,327	78,827	598,429
Average per barrel	.....	.....	.....	.....	7 59	.....	.....	.....

Yearly average catch per vessel, 238.

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