

GASPÉ OF YESTERDAY

THE MACKEREL FISHERY

An account of the mackerel fishery
as practised by New Englanders and
links with Gaspé Basin as recalled
by Edith Arnold Mills (1843-1934)

KEN ANNETT

GASPÉ OF YESTERDAY

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FOREWORD

As a little girl growing up in the family home of her parents, the Rev. William and Ellen Boyle Arnold, Edith Arnold was witness to an era of mackerel fishing long past. At the age of 90 Edith Arnold Mills wrote a remarkable account of her life-story, "REMEMBRANCE". The following extract from her memories of childhood provides the theme for this issue of "GASPÉ OF YESTERDAY".

"THE GLOUCESTER FISHERMEN USED TO FISH FOR MACKEREL IN THE WATERS OF THE GULF BUT BEYOND THE THREE MILE LIMIT. THEY USED TO RUN INTO GASPÉ BASIN FOR SHELTER WHEN IT WAS STORMY OUTSIDE. THESE SCHOONERS WERE VERY FINE, A RAKISH BUILD WITH THE WHITEST OF WHITE SAILS AND THE VESSELS WERE BEAUTIFULLY KEPT, CLEAN, BRIGHT, PAINTED AND POLISHED. I HAVE OFTEN BEEN ABOARD THEM WITH MY FATHER. THESE VESSELS WITH THE SAME CAPTAINS AND CREWS WOULD COME SUMMER AFTER SUMMER. THEY WERE A FINE SET OF MEN THOSE GLOUCESTER FISHERMEN. SOMETIMES A FATHER AND HIS SONS WERE IN THE SHIP'S COMPANY. SOMETIMES THERE WOULD BE ONE SICK AMONG THEM OR ONE WOULD GET AN INFECTED HAND FROM A FISH BONE, IN WHICH CASE THE MAN WOULD BE LEFT AT "PARSON ARNOLD'S" AS THEY CALLED HIM. THE SCHOONER WOULD SAIL AWAY TO BE GONE SOMETIMES FOR FIVE OR SIX WEEKS OR LESS ACCORDING TO THE MAN'S CONDITION, THEN THEY WOULD TAKE HIM AGAIN IF HE WERE WELL. MY MOTHER AND FATHER NEVER CHARGED FOR THESE SERVICES AT ALL-IT CAME IN A DAY'S WORK. OCCASIONALLY ONE OF THEM WOULD GIVE ME A GOLD DOLLAR SO I COLLECTED QUITE A NUMBER OF THOSE COINS BUT AS I HAD NOWHERE TO SPEND THEM I DO NOT KNOW WHAT BECAME OF THEM. THE GLOUCESTER FISHERMEN WERE CHIEFLY METHODISTS SO IF IN PORT ON A SUNDAY AFTERNOON THEY WOULD COME AND SIT IN OUR KITCHEN AND SING THEIR HYMNS. THEY GAVE ME A HYMN BOOK. IT WAS CALLED "OCEAN MELODIES".

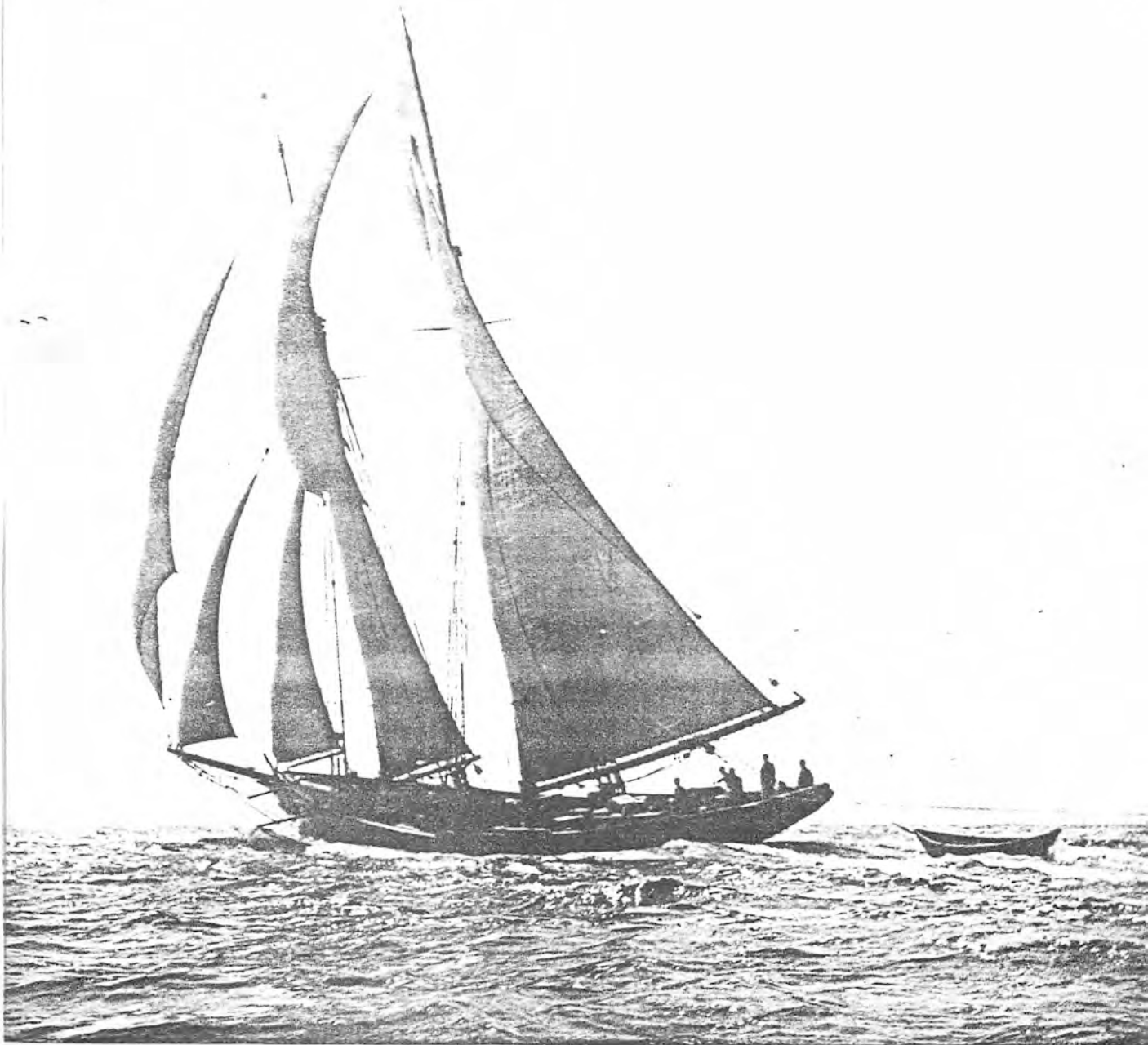
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FOREWORD

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"...ONE WOULD GO TO BED AT NIGHT, NOT A SHIP IN SIGHT, TO AWAKEN NEXT MORNING TO FIND THE HARBOUR FULL OF VESSELS. THEY HAD RUN IN FROM A STORM OUTSIDE AND VERY FINE THEY LOOKED, SOME DRYING THEIR SAILS AND OTHERS JUST READY TO DEPART AGAIN. MEMORY BRINGS ME NO FAIRER SCENE THAN TO STAND AT OUR FRONT DOOR AT "SPRING GROVE" AND WATCH THE MOONLIGHT SHIMMERING ON THE WATER TOWARD "LOBSTER COVE" AND TO LISTEN TO THE SAILORS SINGING THE CHANTEYS, WHILE THEY RAISED THEIR ANCHORS. DEAR OLD CHANTEYS, I CAN STILL GIVE THE NAMES AND REMEMBER THEM AS I USED TO HEAR THEM IN THOSE FAR OFF DAYS. "BLOW THE MAN DOWN", "WHAT SHALL WE DO WITH A DRUNKEN SAILOR", "HIGH HO, AND UP SHE RISES", "ABERDEEN, I LOVE YOUR DAUGHTER", AND OTHERS. THEY HAD SUCH PRETTY TUNES COMING AS THEY DID OVER THE WATERS FROM THOSE STRONG MALE VOICES..."

"...THERE WAS ONE OLD CAPTAIN IN PARTICULAR AND EACH SUMMER WHEN HE CAME HE WOULD COME TO THE HOUSE AND VISIT. HE WAS LOOKED UPON AS A REAL FRIEND. IN LATER YEARS AND AFTER I WAS MARRIED IT CAME MY WAY TO VISIT GLOUCESTER, MASSACHUSETTS, AND WHEN THERE I TRIED TO FIND HIM BUT HE HAD PASSED ON. I DID FIND HIS SON WHO SEEMED GLAD TO SEE ME AND SAID HE HAD OFTEN HEARD HIS FATHER SPEAK OF PARSON ARNOLD..."



OFF TO THE MACKEREL FISHING
GROUNDS

/ *The Mackerel Fishery*

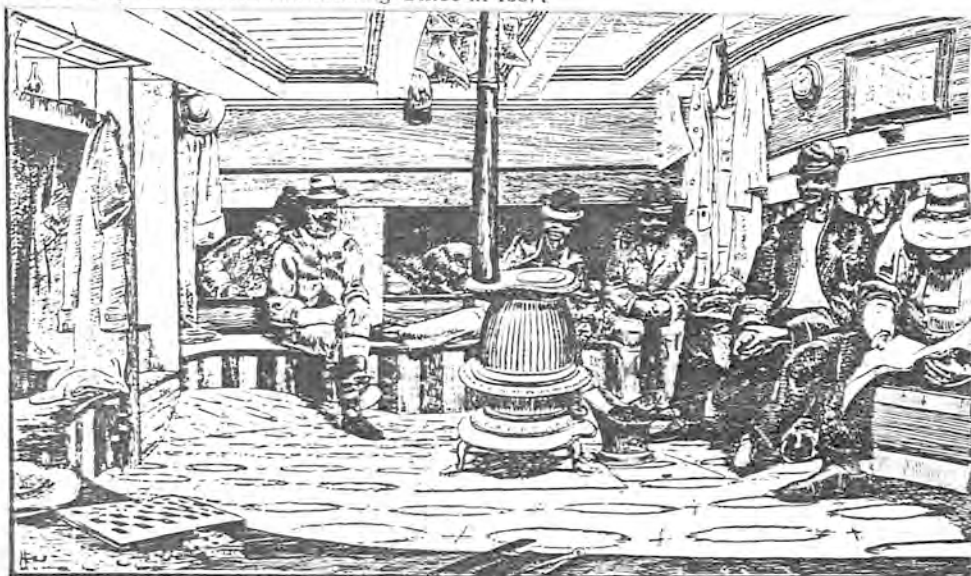
GEORGE BROWN GOODE

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.

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 Nantucket. 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 land, frequently approaching within 1 or 2 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, Boone Island, and Massachusetts Bay being favorite localities. Good catches of mackerel are frequently made in summer on Georges Bank, and, within the past few years, near Block Island.

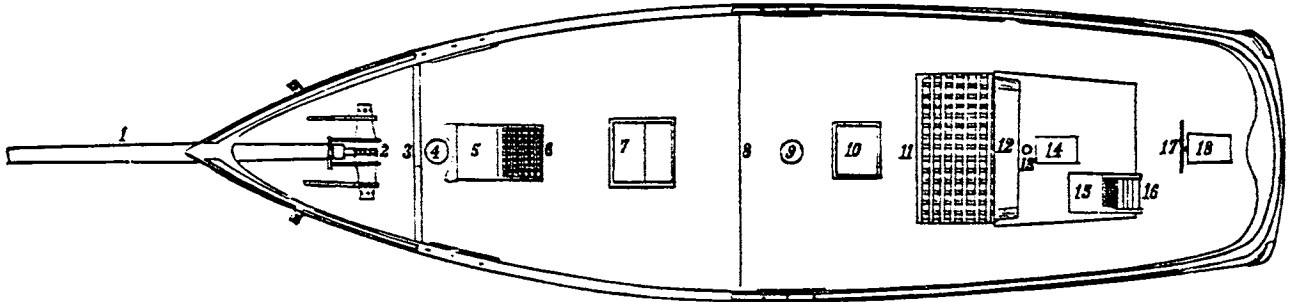
The mackerel fleet contains a larger percentage of American-born fishermen than any other. The 113 mackerel vessels from Gloucester in 1879 were manned

Excerpted from *The Fisheries and Fishery Industries of the United States*, by George Brown Goode. Taken from Section V, "History and Methods of the Fisheries," Volume I, Part 3, "The Mackerel Fishery of the United States," pages 247-269. This seven-volume work was published by the Government Printing Office in 1887.



The cabin of the mackerel schooner, John D. Long, of Gloucester. Drawing by H. W. Elliott.

THE MACKEREL FISHERY



Deck plan of schooner fitted for mackerel purse-seining: 1, bowsprit; 2, windlass; 3, jib sheet traveller; 4, foremast; 5, fore companion; 6, fore hatch grating; 7, main hatch; 8, break of quarterdeck; 9, mainmast; 10, after hatch; 11, grating for storing seines; 12, barrel-head box; 13, stove pipe; 14, skylight; 15, cabin companion slide; 16, companion stairs; 17, steering wheel; 18, wheel box. Drawing by Captain J. W. Collins.

by 1,438 men, of whom 821 were Americans; 322 Provincials; 24 British, most of whom were Irish; 39 Scandinavians; 6 French; and 13 Portuguese.

The mackerel fleet in 1880 was made up of four hundred and sixty-eight vessels, which pursued this fishery to a greater or less extent. Of these, two hundred and thirty-five vessels were employed exclusively in catching mackerel between March and November, though some of the fleet did 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.

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 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 $21\frac{1}{2}$ feet to 23 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 able to cope successfully with many 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.
- (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 almost invariably made of spruce, 6 inches in diameter, and 9 to 10 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. 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.

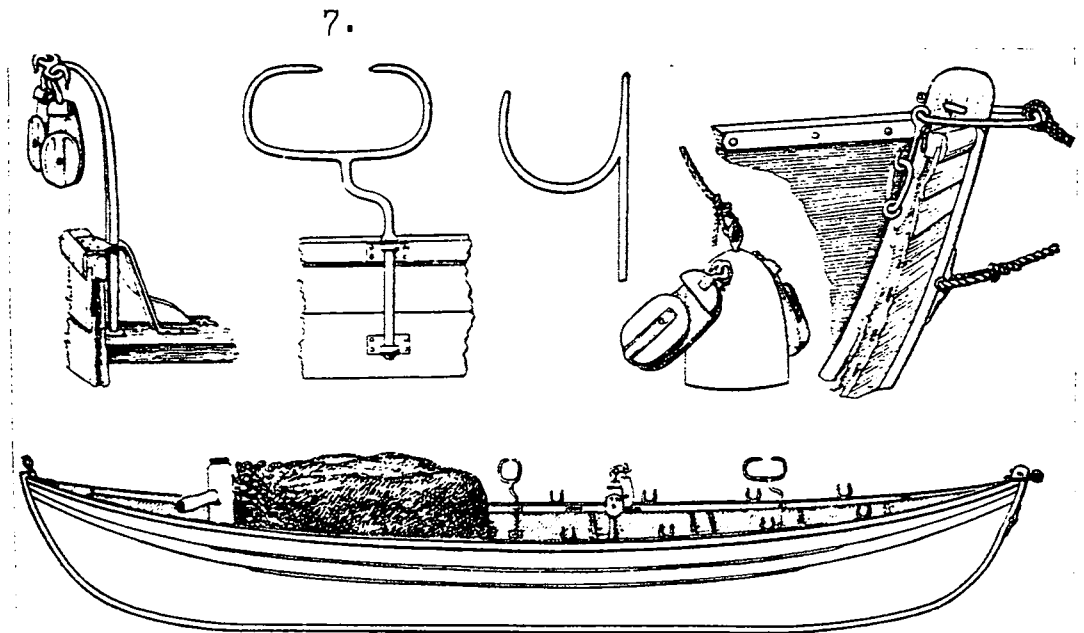
(10) By properly adjusting the quantity of ballast; if the vessel has been in the haddock or Georges fishery, ballast must be removed; if in the herring trade, ballast must be added; a mackerel schooner of 60 tons will carry from 15 to 20 tons of ballast, and in exceptional cases somewhat more.

(11) By constructing an ice-house on those vessels which intend to take their fish fresh to market, somewhat similar to that on board the halibut vessels.

(12) By taking on board the necessary supply 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.

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



Seine boat; purse davit and blocks; oar rests; purse weight and purse blocks; and bow fittings.

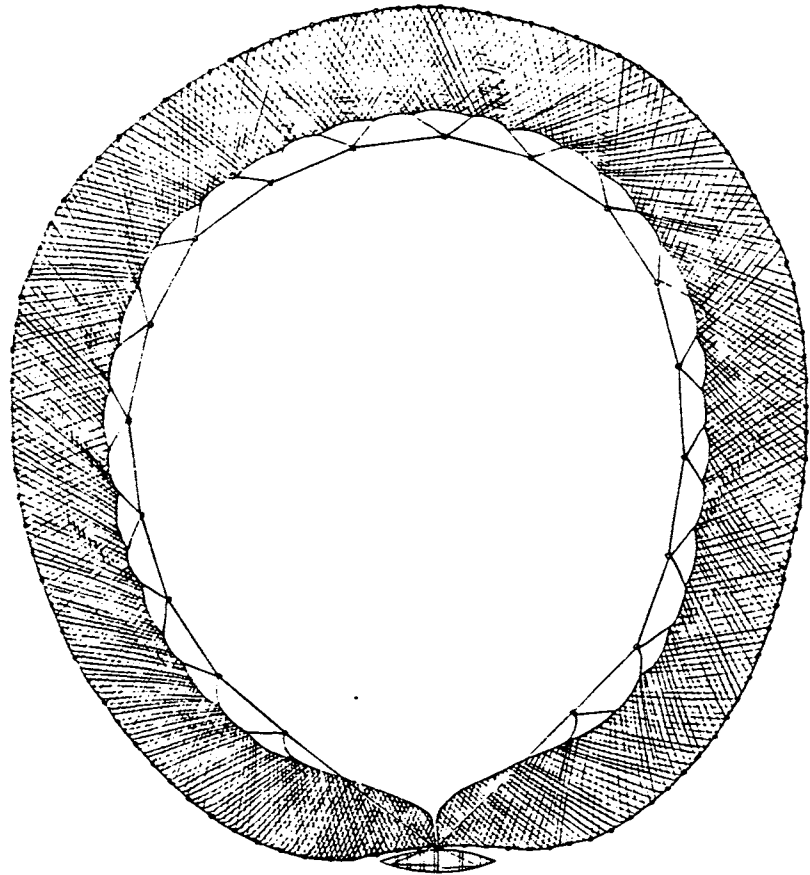
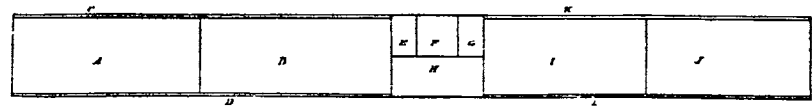
about 18 inches in height, to which are attached two iron snatch-blocks used in working the purse-ropes. Upon the opposite side of the boat, generally near the bow and stern, but with position varied according to the fancies of the fishermen, are fixed in the gunwale two staples, to which are attached 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.

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) increasing speed; (2) greater durability, on account of the more solid character of the woodwork 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 the same width, but in other respects is superior. 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-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. Most of the larger vessels carry two seine-boats and two seines. On 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 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.

Two kinds of seines are used. The large seine, used only in connection with



Top: Diagram showing the different sections of a purse seine: A and J, arms of net; B and I, wings; C, D, K, and L, border of stout twine; F, bailing piece or bunt; E and G, sides; and H, under.

*Bottom: Diagram showing the form of a purse seine when spread in the water.
Drawings by Captain J. W. Collins.*

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 1 to 10 fathoms deep, and the other, the "dory end," varies from about 7 to 15 fathoms in depth.

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. 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 to a barrel of salt 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.

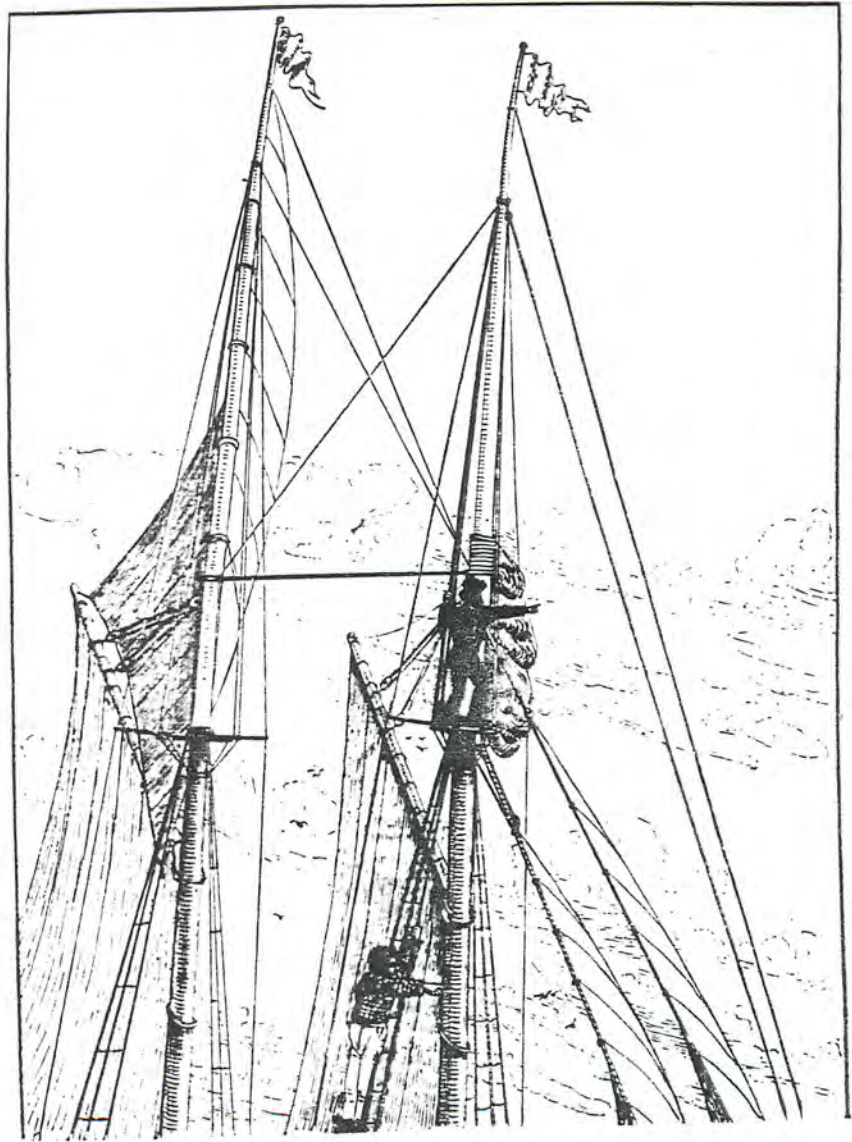
When looking out for mackerel the seines are generally stowed in the seine boats upon the platform arranged for that purpose between the two after thwarts. The cork-lines are stowed aft and the lead-lines forward, the seine always being set from the starboard side of the boat.

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 15 to 30 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.

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 alongside and spread the seine around the vessel, and after she sails over the cork-rope and away to leeward, the net is pursed up 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 enclosed in the big purse. Many good catches are obtained in this way. The favorite bait is slivered and salted menhaden, of which each vessel carries 5 to 10 barrels when they can be procured. Most of the vessels, however, at the present time, depend entirely upon small mackerel, which they catch and salt.

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 lookout, 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 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

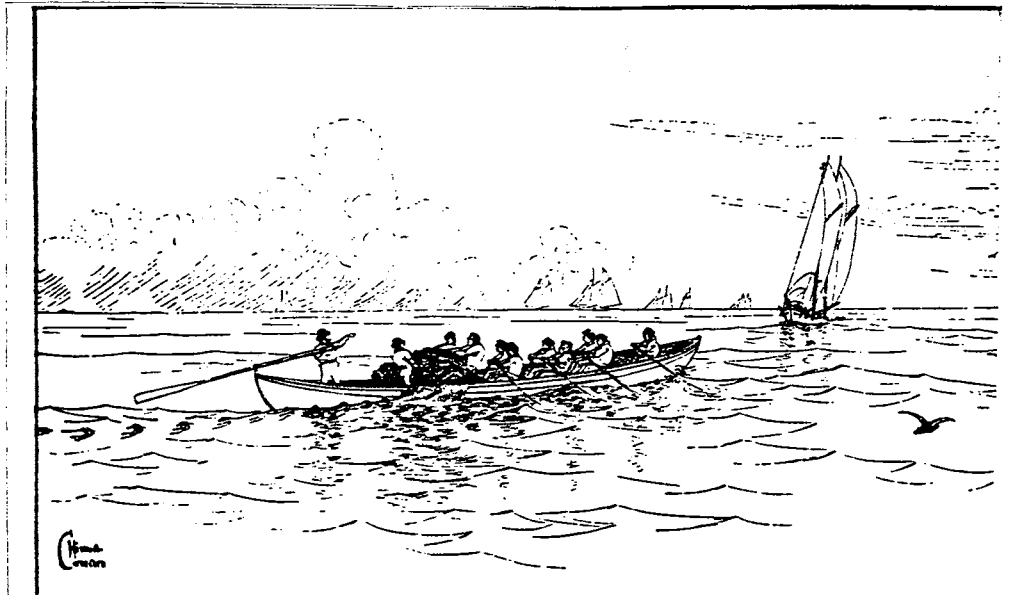


Lookouts aloft in a schooner on the watch for mackerel. Drawing by H. W. Elliott and Captain J. W. Collins.

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. Before beginning to put out his twine, he wants 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 around 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 Georges, 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 meantime 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.



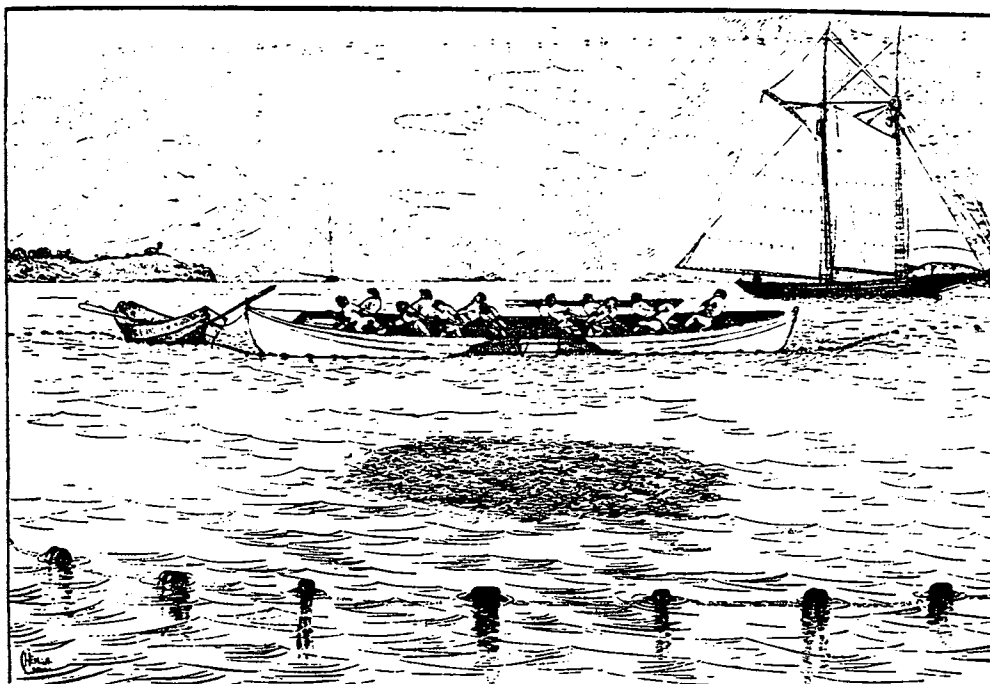
"Paying out" the seine. Drawing by H. W. Elliott and Captain J. W. Collins.

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.

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 frustum with a slit in its 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



"Pursing the seine." Drawing by H. W. Elliott and Captain J. W. Collins.

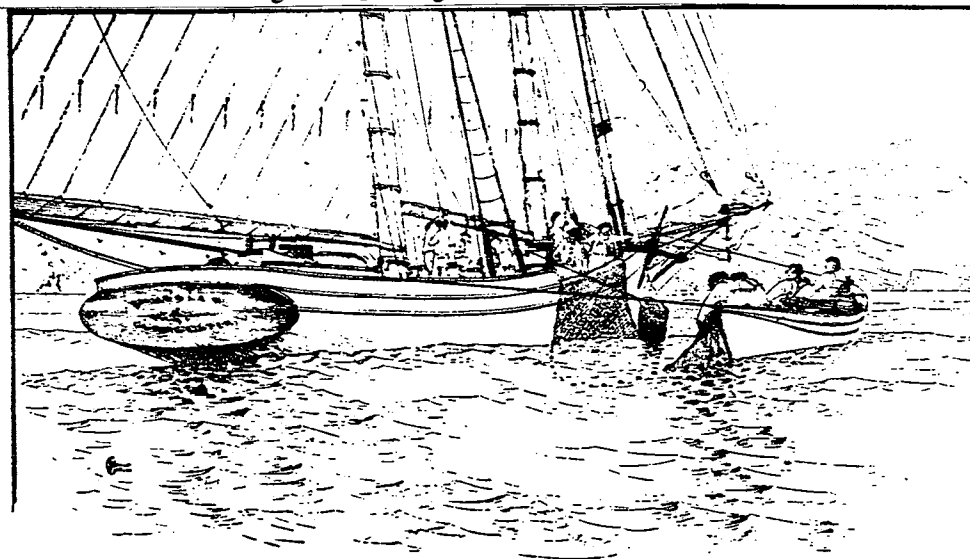
slit and destroying the frustum shape of the seine. If this were not done the fish might escape at the side as well as at the bottom.

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 do this 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 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 skipper and three or four men go in the dory 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 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.



Bailing mackerel from the purse seine. Drawing by H. W. Elliott and Captain J. W. Collins.

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 "bowed 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 forestaysail halyards; 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.

Very large 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 to 600 barrels, landing two or three cargoes during that time.

It sometimes happens that, when a large school of mackerel has been taken in a seine, 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 alongside 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.

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 fishermen, 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 cannot 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.

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 fore-castle 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 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 meantime 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 quite 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, may 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 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.

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.

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 alongside 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.

It is claimed that 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 it is believed that there is 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:

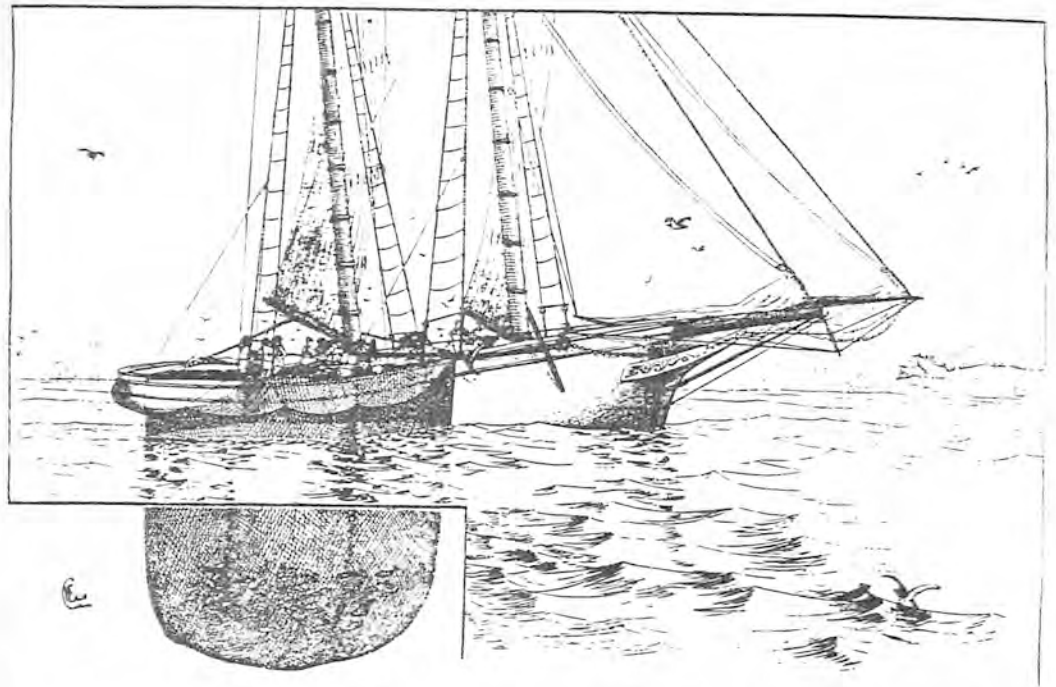
"It would not greatly surprise us if the mackerel fleet, next year, were supplied with powerful calcium lights, to be carried at the masthead, and that the fishery will be extensively prosecuted in the nighttime. Surely the signs of progression are manifest in almost every branch of the fisheries, and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

As may be readily inferred, this practice of night fishing is one which calls for great 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 home port, where the fish are landed, new supplies taken on board, and again the men go to sea without, in the meantime, 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 season. I know a number of cases where vessels have arrived in the morning with 300 barrels of mackerel, have landed the fish and gone out again the same night. The schooner *Fleetwing* caught 210 barrels of mackerel; came into Gloucester with them all on deck; hired twenty men who had 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,



Mackerel pocket, or spiller, shipped at sea. Drawing by H. W. Elliott and Captain J. W. Collins.

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."

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.

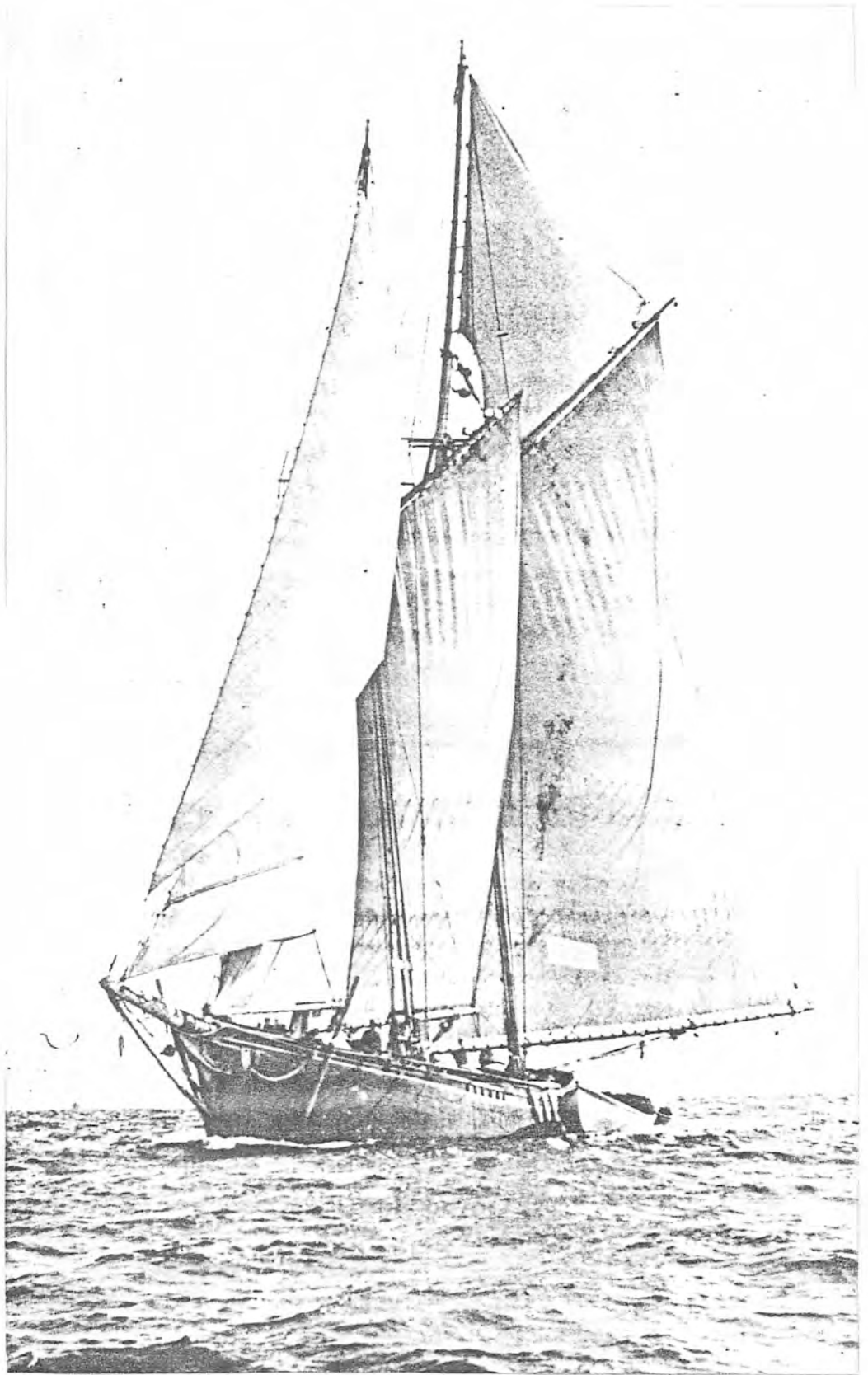
A development of this idea is the mackerel pocket or spiller, patented in April, 1880, by H. E. Willard, of Portland, Me., an article long needed in the mackerel seine-fishery, and which has received from the fishermen the name of "mackerel pocket" or "spiller." It was first used by the patentee in 1878; and Capt. George Merchant, Jr., of Gloucester, Mass., invented and put into practical operation an improved spiller in 1880, though it was not until the succeeding summer that the advantage of its use was known to the majority of the mackerel fishermen, who have hastened to adopt it, and now all of the mackerel vessels sailing from this port are 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. 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 in a single set of the net. The introduction of this simple net-bag undoubtedly saves to our fishing fleet many thousands of barrels of mackerel each season.

The common method of dressing on a seining schooner is as follows: 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.'

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 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 sides of the fish 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.

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.

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 shoresmen 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 meantime they may be fortunate enough to catch a fare of two or three hundred barrels of mackerel.