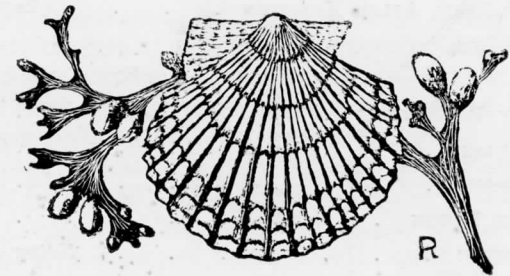


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Martha's Vineyard
by
Dorothy Cottle Poole

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PECTEN IRRADIANS

The Bay Scallop of
Martha's Vineyard

by

Dorothy Cottle Poole

The scallop has been known for thousands of years, practically all over the world. Its delicate fan-like shape was worn as an emblem by some of the Crusaders, and it has emblazoned coats of arms of many illustrious families, including those of Anthony Eden and Sir Winston Churchill.

There are four species of scallops found along the Atlantic Coast, but only two are of commercial importance in New England, the shallow water scallop, *Pecten Irradians*, and the giant sea scallop, *Pecten Tenuicostatus*; while several other of the forty species included in the family *Pectenidae* are used for food in other countries. The *Pecten Irradians*, or Bay Scallop, is the variety with which this article is concerned. This attractive bivalve is found all along the Atlantic Coast, from Massachusetts Bay to the Gulf of Mexico, wherever sheltered bays and inlets provide quiet waters and protection from storms and heavy winds.

It is known that the Indians of Martha's Vineyard were familiar with scallops, for many shells are found in their middens. Why the redmen did not introduce scallops to the white settlers is unknown but, although scallops were often mentioned by the colonial writers, they were not eaten to any extent until about a hundred years ago. Since then, the demand for this epicurean dish has increased greatly, and the scallop industry has become of prime importance to the island economy.

The anatomy of the scallop is of interest. Its shell consists of two valves of equal curvature; the right, or lower one, differs from the upper by having a byssal notch, or foot groove. In scallops less than a year old this notch is lined with several projecting teeth, which are absent in older animals. The adult scallop is slightly wider than high, averaging a little over two inches. On its outer surface are prominent ridges and furrows, which radiate from the back, giving the animal a fanlike appearance. Because a scallop's growth ceases in winter and resumes in the spring, a heavy, con-

centric line, comparable to the annual ring of a tree, is formed by the thickening of the edge of the shell. Lack of this identifies the "seed," or immature scallop. Other concentric lines indicate that unfavorable conditions have temporarily checked the shell-building process. In a scallop over fifteen months old, the upper valve is usually encrusted with various forms of life, such as worm tubes, barnacles, young oysters, quarter deckers and certain seaweed. These may be called the passive enemies of the scallop and many adults are doubtless killed by such an accumulation of foreign growth, which at times binds the valves together.

Within, the shell is smooth and pearly, lined with a thin mantle. Along the free edge are tentacles decorated with bead-like eyes of bright blue. These are specialized organs, which appear keenly sensitive to light and shade, and may observe the approach of an enemy by its shadow in the water. Other tentacles, called mantle tentacles, are armed with papillary projections and have a sensory, or tactile, function. The scallop has only one abductor muscle for closing its shell. This is called the "eye." Other retractor muscles are mantle gills, and foot.

A scallop has four pairs of gills with a delicate lace-like appearance. These gills strain the food, aid respiration, and aerate the bloodstream. On the border of the mouth are labial palps, which conduct food to the mouth. This food consists of microscopic plants, varied in size and shape, and more or less abundant in waters everywhere.

The retractor muscle of the foot is a small cylindrical organ with a deep groove on one side and a hollow sucker-like disc on the end. Only young scallops can crawl freely; adults lose their power of locomotion through degeneration or disuse. The byssal gland, near the body end of the foot, secretes a bundle of threads by which the scallop attaches itself to eelgrass and various other objects during its dissoconch stage.

The bay scallop is a hermaphrodite, having both male and female organs in the same individual. The scallop matures rapidly and spawns when one year old. Diverse conditions of environment and temperature define the limits of the spawning season, which is roughly from mid-June to mid-August. Farther south the season is earlier, as warmer water hastens spawning. In fact, temperature is the main factor determining spawning, although suitable locality, food, exposure, and other factors, all play a part in determining the spawning season.

Either eggs or spermatozoa may be discharged. The number of eggs extruded varies, but generally numbers high in the thousands and may exceed a million. A scallop can adapt itself to existing conditions and spawn only at favorable times, thus insuring a better chance of survival. There are many chances against the fertilization of the egg and the subsequent survival of the scallop larvae; so, if it were not for the abundant supply of spawn, the race would soon be exterminated.

The development of the egg after fertilization is by an unusual process of unequal cell division. The first noticeable change occurs in about half an hour and the cleavage continues until the single primitive ovum has become a compact mass of micromeres and macromeres, small and large cells. The animal now acquires the power of locomotion, which is important at this period to prevent its settling on unfavorable ground. The swimming period is reached about ten hours after fertilization, though there has been little change in the size of the mollusk. Three rapid phases of development follow; the cells are covered with cilia, the body elongates, and the cilia become confined to the anterior and unite to form the flagellum which guides the swimming embryo. In a few hours a thin transparent shell completely envelops the animal.

The next stage of the scallop is the veliger, deriving its name from the velum, or larval swimming organ, which can be thrust out of the shell or drawn quickly in by means of retractor fibers. The velum rapidly propels the young scallop through the water by the lashing of its cilia, like a man rowing a boat. Transition from veliger to footed larva takes place by atrophy of the velum and a simultaneous development of the foot. When the foot is fully developed, the animals become rapid swimmers; looking like white specks, they can be found in great numbers near the surface of the water.

Gills develop coincidentally with feet and the mantle becomes apparent at this time, though it is functional earlier.

Next is the dissoconch stage in which the scallop develops byssal fixation and crawling. The scallop attaches itself by a fine thread, called the byssus, to eelgrass, or some other favorable spot. This enables it to avoid unfavorable silt and to obtain a good food supply. Its power of crawling is of service when it wishes to change location, or is torn from its point of attachment by wind or wave. It can cast off the byssus at will and soon spin another. The scallop retains this power of byssal fixation through life, but seldom

uses it after the first year, as its size then prevents it from washing ashore.

At this time the shell changes and there are internal developments. This is the plicated, or transition period, before the scallop assumes the final characteristics of maturity. This transition is gradual. There appear radiating ridges and furrows which give the scallop its fanlike appearance. The color of the shell varies greatly from pure white to grayish black, to red, brown, or yellow, depending upon the color of the bottom, which may be brown or black mud, or yellow, sometimes rusty, sand.

Scallops may be found in sheltered spots along the coast, in water as deep as sixty feet, although usually between five and thirty feet. They are often abundant on high flats covered by only one or two feet of water at low tide. In fact, those exposed places with thick eelgrass seem to receive the heaviest sets, but the young often perish in the cold winters. Heavy sets are usually found in still waters or on the sides of a swift current, as at the entrance to harbors, where eelgrass flats line the channel.

Although the extent of the scallop area is large, only portions of it are productive at one time. A set may locate one place one year and the next that spot may be completely barren. The rough waters of the exposed coastline are a barrier to the natural distribution, but scallops attached to *Ulva*, sea lettuce, may be carried miles by the current and transferred from one locality to another.

Scallops, young and old, have periods of inactivity or rest. When attached to eelgrass by the byssus, they are usually in a feeding position and are extremely sensitive to outside stimuli, closing their valves at once if touched. Even when resting, the internal organs of the scallop are in constant motion. Unattached, the scallop rests on its right valve, often excavating a hole in the sand, in which it lies half buried. Tiny scallops also rest, drifting just below the surface of the water, the right valve uppermost and the foot extended to control its movement. If jostled, it sinks to the bottom and reverses its position.

The young scallop orients itself with its foot, while older scallops can flop from one side to the other by clapping their valves together. The animal adopts the swimming habit when it becomes less proficient with its foot, due to the increased weight of its body. It moves with zig-zag jerks by expelling water alternately from one "ear" and then the other. It can dart in any direction by

changing the point of expulsion of the water, carrying it away from danger.

However, scallop migrations are limited. A scallop may move to various parts of a small bay or harbor, especially if there are strong currents, but it never makes extended migrations. The average distance in a single move is ten feet, and usually hours elapse between each movement, although there may be a series in quick succession. In shallow water scallops are forced to slant upward to keep moving and they rise to the surface, shoot a jet of water into the air, close their shells, and sink to the bottom. This has given rise to the fallacy that they swim in schools on the surface of the water. Chance has much to do with the movement of scallops, opposing tides washing them back and forth and heavy winds rolling them along the bottom, where in shallow water they are unprotected by eelgrass. The one spawning season, with the great possibility of extermination of all scallops in an area by a severe winter, has also led to the mistaken idea that scallops migrate.

Scallops are subject to several kinds of mutilation. They are not as hardy as clams or quahogs, but are capable of repairing most accidents, and only succumb to severe injuries like a broken ligament, a cracked valve, or a strained abductor muscle. Besides the enemies mentioned earlier, the scallop is preyed upon by starfish, crabs, seafowl and other animals. Starfish surround the scallop with their long arms, exert pressure on the abductor muscle until it relaxes and then the starfish rolls out its stomach which flows into the interior of the scallop where it digests its meal and then withdraws, leaving gaping valves and a clean scallop shell. Small starfish seem most active in this work of destruction and seed scallops are most vulnerable. Seagulls, too, take great toll of the scallop crop. They swoop down from the air, grasp a scallop and then find a rock or other hard surface onto which they drop their prey. The shell breaks, the gull feasts, and repeats the process until he is replete. Man, too, could be classified as an enemy to scallops if he could overfish them as he does clams, quahogs and oysters. However, the short life of the scallop prevents this. Scallops die naturally before they are two years old, so if only scallops over a year old are taken, it is impossible for man to exterminate them by overfishing.

The limited life and active habits of the scallop require a rapid growth and a light shell. The variations in growth arise from differences in the natural environment, time of birth, whether the

beginning or end of the spawning season, and individual differences, which may be as great as two and a half inches in scallops of the same set. A scallop born in July ceases growth in December, but grows again in May and then stops growing the latter part of November, when the temperature falls below 45°F. Very few scallops live over two years. After a year and a half, there is a period of physical decline when old age is evidenced by slower growth, a slight thickening of the shell formation, degeneration of the large abductor muscle, which becomes flabby and often diminishes in size, and by the increasing amount of foreign growth on the shell. One or more signs may be absent from an individual scallop, but all are typical of old age. Old scallops are more susceptible to adverse conditions than scallops a year younger. It is possible that decline starts as soon as the first spawning season has passed, for only a few scallops spawn twice, though most live almost to the next spawning season.

A scallop under a year old is a seed scallop and should not be taken. Its growth line is quite pronounced, showing where the shell recommenced growth in May, after the edge had been thickened and blunted through the winter. Sometimes the shell shows a different color between the two parts, and at other times it is necessary to feel the ridge. Transplanted scallops always show change by the formation of a growth line, but spawning does not produce this effect. In open season, any scallop with a growth line is ready to catch for, although it cannot be said that every scallop with a growth line has spawned, everyone without it has not, and is seed.

Scallops spawn in the summer and are visible to the naked eye when very small. Except from December to May, a scallop increases in size until its death. Growth is affected by heredity and environment, but more by the latter, as current is essential for rapid development. Shallow water scallops are smaller, proportionately thicker, and do not have the large eye and fine appearance of channel scallops. This is due more to current than to depth of water however, for scallops in deeper water without current show no greater growth than the shallow water variety. The character of the bottom has little effect on the growth of scallops as they simply rest on the surface and are constantly shifting, but the best bottom seems to be tenacious sand, (sand with a light mixture of mud,) with thin eelgrass; thick grass cuts the circulation of water. Under-

standing these growth habits is of inestimable advantage to the scallop industry.

Ground favorable to the production and growth of scallops is called scallop ground, though not all areas so specified are productive at one season.

Every town on Martha's Vineyard, except West Tisbury, has at least one area favorable to the growth of scallops. Edgartown Harbor was the first ground fished commercially and it was considered almost ideal scallop ground, with protected bay, light rise and fall of tide, considerable eelgrass, and good circulation of water, and without alternate years of scarcity and over abundance. Recent hurricanes have changed the beds, but they are still good scallop ground. Katama Bay and Sengekontacket Pond nurture scallop sets and one or the other is fished each year. Oak Bluffs shares Sengekontacket, or Anthier's Pond, with Edgartown and shares Lagoon Pond with Vineyard Haven. The latter also has scallops in the harbor and in Tashmoo, one area at a time being opened for fishing, although occasionally one period overlaps the other. Chilmark and Gay Head both fish Menemsha Pond and Chilmark also has scallops in "Quitsa" and Stonewall ponds. The state sets the lines between the towns and they are marked with buoys or stakes, wooden or metal. If the season looks good, towns on both sides of the boundary start scalloping the same day, although it sometimes happens that one town's side of the line will have a good set of scallops and the other will be completely bare.

Scallops were first gathered by hand along the beaches after a heavy blow. Then scoop nets, about eight inches in diameter, with poles of varying lengths, were used and scallopers waded across the flats, pushing their dories ahead of them and emptying each netful into the boat. Later an iron frame about three feet long and half as wide, with a three foot net bag attached, was fastened to a wooden pole eight feet long. This was called a pusher and, at low tide, was shoved along the bottom among the eelgrass until the bag was full. Then it was emptied into the dory, and the process was repeated.

In the early days of scalloping, most of the boats were catboats under sail, and when the wind failed, the fishermen were obliged to push their boats along with oars. In Oak Bluffs and Vineyard Haven, an anchor rode was often used. Two anchors were set with a long rope between them, by means of which a skiff, towing a dredge, was hauled back and forth.

Later auxiliary engines, and occasionally power dories, were used, increasing the catch thirty to fifty per cent. Usually two men fished in one boat with their dredges held out by spreaders, or poles, from the side of the boat, so that they could cover more ground, not trail behind one another. At the end of the drift, the engine was stopped while the men culled their catch. Under sail, the culling was done while the dredges were overboard. Nowadays, a dredge consisting of an iron frame and a net bag, which will hold a bushel or two of scallops, is towed behind a boat. Each boat has from two to ten dredges, crossing and recrossing the scallop ground. A single run across the area is called a "drift." A few large boats have cranes to haul the dredges, but most are hauled by hand.



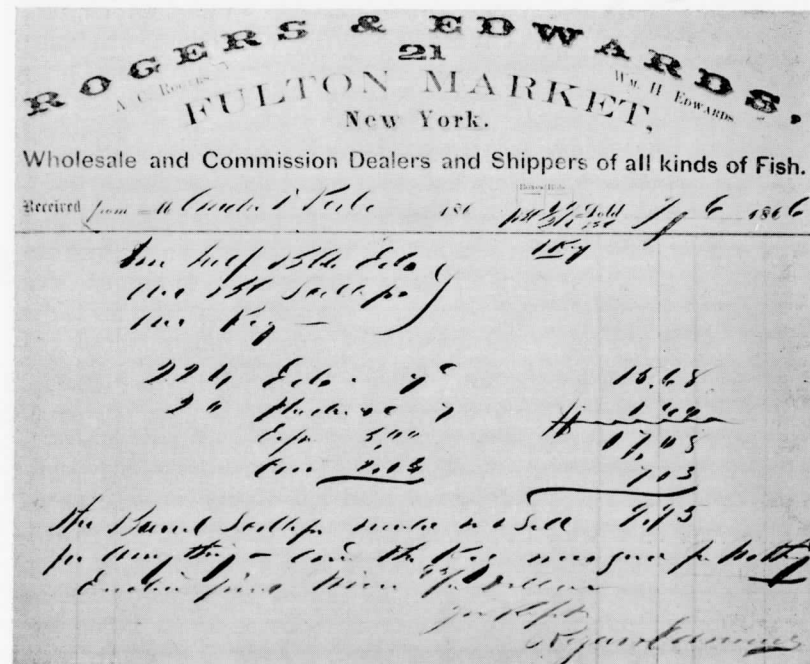
Benjamin C. Mayhew, ready to set. Showing dredges and culling board.

The catch is emptied onto a culling board, projecting slightly beyond the sides and fastened across the center of the boat. It is three feet wide and has a guard rail three inches high along two lengths, the ends being open. Scallops are separated from rubbish, (seaweed, shells, sand etc.). Then they are stowed in baskets and the trash is thrown overboard by being pushed off the ends of the board. Each catch is culled and the board is cleared while the dredges are being towed over the bottom on another drift.

There are several styles of dredges, but Vineyard fishermen

usually use bar dredges for hard, sandy bottom, and chain dredges for muddy and rocky bottoms.

Commercial scalloping began up-island around 1915 when Frank Manning and Linus Jeffers discovered that there were enough scallops on the Gay Head side in Menemsha Pond for such a venture. Chilmark started scalloping on its side of the pond a year later. His sons credit Charles Norton with introducing scallops into Chilmark by bringing a half-barrel of them from Edgartown, where he lived, and throwing them off Hariph's Creek Bridge into "Quitsa" Pond. However, a bill of lading from Fulton Market dated 1866, and other reports of such sales, testify to the fact that scallops had been present for at least fifty years before that and needed only the better circulation of water furnished by the dredging to stimulate their growth and expansion.



1866 Bill of Lading from Fulton Fish Market, New York.

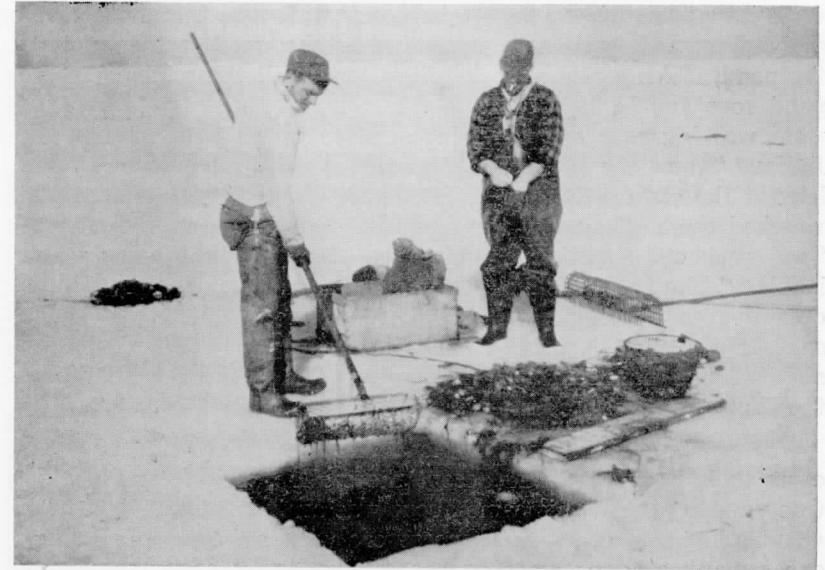
Catboats under sail were soon replaced by gasoline-powered boats, many of which were Nomansland boats. The state limit of ten bushels a day prevailed, but there were no wardens to check the day's catch. There were no well-defined roads to the pond either,

and scallops were carried by oxcart to Frank Manning's barn in Gay Head, and by sleds to their own homes by the Chilmark fishermen. In barn or kitchen, the men opened their catches each night, packed the eyes in eight gallon firkins and hauled them to Chilmark Center to be transported to the steamer by Bart Mayhew's stage. At the other end of the island, the fishermen themselves, or hired openers, shucked the scallops in shacks along the waterfront, or in their barns, basements, or kitchens. The eyes were sent to New York by freight, or by express in warm weather.

Official records state that scallops were shipped to market as early as 1875, but the bill of lading previously mentioned shows that Anderson Poole was shipping scallops as early as 1866.

These New York markets demanded large, white eyes. To meet this demand, the eyes were soaked in fresh water for several hours until their bulk increased about one third due to a complicated change, whose most important factor was osmosis, which caused the swelling of the tissues. There were two methods of accomplishing this. The first was to spread the eyes evenly in a shallow wooden sink with just enough fresh water to cover them, and leave them overnight. In the morning, the milky fluid was drawn off and the scallops were packed in kegs or butter tubs for shipment. The second method was to put four or five gallons of eyes into a seven gallon keg and then add water. By the time the shipment reached the market, the scallops had absorbed the water and filled the keg. Retail dealers subjected the scallops to this procedure if the fishermen did not, because the consumer demanded "large, nice-appearing eyes." The small yellow or pinkish eye of the freshly opened scallop took on a white, plump appearance, adding greatly to its salability. On the other hand, its fine flavor and freshness had disappeared and it had lost considerable of its nourishment value. It was really an inferior article, but was not detrimental to health as long as proper sanitary precautions were taken as to water and surroundings. However, this practice is now unlawful. Another practice, outlawed by the Pure Food Acts, was pickling, or salting, the scallops, which was done when the price and demand were low, to hold them for a more favorable market.

Severe winters did not deter scallopers. With the ponds encased in a twenty inch crust of ice, the men chopped holes in the ice large enough to insert a big rake, which they drew back and forth to gather up scallops. Then, with a smaller rake, they lifted the scallops up out of the hole. (One man known as "Hobo Gus" always chopped square holes.) When a sack was full, it would be carried to a big hole, ten to twelve feet in diameter, which had been chopped out for the purpose. The scallops were left here a day or two until there was a catch large enough to warrant driving the oxcart out onto the ice to collect it. An unusually high price of twelve to thirteen dollars a gallon made the extra work less burdensome.



Matthew Poole and James Morgan scalloping through the ice.

The marketable part of the scallop is the large abductor muscle. The rest is usually thrown away, though it can be used as fish bait, or as fertilizer. In many countries the entire scallop is considered edible, while here only the "eye," less than twenty per cent of the entire scallop by weight, is eaten.

An Indian legend reputedly told by Monohansett Joe, who lived on a little farm on the margin of Menemsha Pond, explains how the abductor muscle of the scallop came to be called the "eye." The story had been told him by his grandfather, who had heard it

from his grandfather, who had heard it from his forebears, and so on back to the time "when the Vineyard and Nomans were all one island." In those days scallops lay on the bottom like oysters and had no eyes, just watery bellies.

One year, at dusk of an autumn day, a big canoe with a mast, a red and white sail, and double banked oars, sailed into the pond and beached. The next morning Monohansett Joe's ancestor went out to interview the strange pink and white creatures with golden hair. All were men but one, a tall, good-looking woman who was the head of the group. These people cut down trees, made houses, fished with the Indians, and stayed all winter. The woman often walked around the shores of the pond, watching the shore birds and singing to herself. One afternoon, as she stood on the shore of the pond, looking across at the high land, "all the scallops in the pond rose and broke water." After that, every time the woman went walking near the pond, the scallops would rise; so then the Indians "knew the scallops had grown eyes on purpose to have a look at the stranger." The Indians took some scallops ashore and watched them. They saw the mollusks open and shut their shells "and peek out quick as a wink when they thought nobody was looking." The Indians shucked some and found the delicious, white, creamy eyes. Ever since, in the fall of the year, scallops rise to the surface and click open their shells in the hope that they'll "catch sight of that handsome woman again." And ever since that time the abductor muscle of the scallop has been known as the "eye."

The white people who settled our shores were slow to overcome their prejudices and accept the scallop as a desirable food. One version of how this came about was an incident that occurred about a hundred years ago. One severe winter, in a heavy gale, a great many scallops came ashore on the banks of the Acushnet River. Farmers gathered them to use as fertilizer. One old man filled a bucket and took it home, where he boiled and ate the scallops—and lived to tell the tale. Thus scallops were added to the list of edible seafoods in this section of the country. However, the demand was not great and it was some time before they were of commercial importance.

Many People still consider scallop rims poisonous and the story that eating them gives cats a kind of "leprosy," so that their tails paws, and ears shrivel up and drop off, is still given credence in some circles.

Scallops used to be opened in the fish shanties along the shore. Long benches, above waist high, were built across one or more sides of the building, with room beneath for barrels to catch the shells and refuse. Scallops were dumped onto the bench and the openers went to work with deft, sure movements, sometimes developing individual techniques. A special knife with a rounded blade was inserted between the valves on the right side, given a quick upward turn, with a cutting motion which severed the eye and, at the same time, threw back the upper shell. A second motion tore off the soft rim and visceral mass of the scallop and cast it into the barrel, while a third move separated the eye from the bottom of the shell and plopped it into a container on the bench. Often the last two moves were accomplished so quickly that they seemed like one. A bushel of scallops in the shell yields an average of two and a



Matthew Poole with scallops on the bench and with a shipping can.

half to three quarts of eyes. A good-sized scallop opens nine pounds or a gallon, per bushel.

Now a state regulation requires that scallops be opened in state approved, state-inspected shucking houses. Such opening sheds must have hot and cold running water, toilets, smooth, washable walls, cement floors, fiber-glass bench tops, and stainless steel knives and containers. But there are still barrels beneath the benches for the shells and the openers still vie with each other to see who can open the most scallops in a given time, and the gourmet of the group still pops an occasional scallop into his mouth, solemnly vowing that this morsel is even tastier than the much extolled cooked variety.

Years ago, scallops had no market value and were generally considered non-edible. With the development of the industry, the necessity for regulation arose and conservation measures were enacted. Previous to 1874 scallops were classed with clams, oysters, and quahogs as "shellfish" in the General Acts of Massachusetts. The Acts pertained to town regulations, permits, seizure of vessels,



Donald Poole, Wilhelmina Cook, and Matthew Poole opening scallops.

and protection of shellfish by limiting the catch, place, and time of taking. In 1874 the word "scallop" was first mentioned in a legislative act concerning licenses. In 1880 permits for cultivation gave to cities and towns their present oversight of the shellfisheries and full power to control and regulate them. The laws have changed, but are essentially the same. In 1885 special legislation limited the catch to twenty-five bushels per day. Another law authorized investigation of spawning and propagation of scallops, and in 1887 laws were passed concerning seed. The season was set from October to April, with towns authorized to issue licenses, limit the season, and restrict the catch.

In all the towns of Martha's Vineyard, the selectmen govern the scallop fishery within the limits of the state laws. In each town it is the custom for the officials to consult with the fishermen before making new laws or amending those in force. Sometimes this is done through consultation with the fish warden. Occasionally fishermen petition for some change in regulations. At present no town has an active fisherman's association, although there have been several on the island in times past. The Edgartown Fisherman's Association instigated the custom of having officially stamped bags in which to pack the scallops. Revenue from these bags largely supported the association until their distribution was taken over by the town. Now wooden bushel baskets have supplanted the official bags.

The regulations governing scalloping do not change much from year to year, although occasionally the daily limit is altered to correspond with supply and demand, and at times, certain areas are closed to protect seed scallops. In 1910 the state limit was changed from twenty-five bushels to ten bushels and has remained constant. Town limits, however, have been greatly curtailed. Through the 1920's the ten bushel limit was quite general, but the next decade found considerable retrenchment. The depression is credited with lowering the limit in Tisbury from ten to two or three bushels per day and licenses, which had previously been issued to about twenty-five fishermen were then issued to anyone, in the hope of easing the strain of unemployment.

Sometimes scallop regulations were deemed unfair and minor rebellions occurred. Such an event took place in Edgartown one year when it was decided to postpone the scallop season for two weeks in the hope that the price would improve. One old-timer said he had always gone scalloping the first of November, and always

would. So he did; not in some out-of-the-way cove, but right off the lighthouse bar, in plain sight of all the town, official and otherwise. The officials had to arrest him, but he remained defiant until they started up Main Street with him. Then tears coursed down his cheeks and he begged not to be taken to jail. The officers obliged and escorted him to the courthouse, where he was reprimanded, fined, and released.

Another year a male citizen of Gay Head objected to the regulations established by the selectmen, so he called together a group of townspeople and persuaded them to vote to take the authority over scalloping away from the selectmen. State laws required that when this authority was taken out of the hands of the selectmen, it reverted to the state. So this citizen went to Boston to consult with the state officials. They refused to have anything to do with the matter and sent him back to return the prerogative to the board of selectmen.

One regulation, which caused considerable furor in the up-island towns, sought to limit the right to go scalloping to males. The down-island towns occasionally had a few women scallopers, but they were never numerous, (except perhaps in Tisbury during the depression years,) and caused little controversy. In Gay Head and Chilmark, however, there developed a veritable battle of the sexes, with threats of law suits and exchange of maledictions.

The selectmen of Gay Head posted a ruling specifically prohibiting women from scalloping. One woman, in behalf of her sex, ignored the prohibition and obtained from the town clerk, by cajolery or threat, a scallop license. Backed by advice from legal counsel, she announced she would make use of it. The selectmen retaliated by threatening arrest. A court trial would be lengthy and costly, so though the final outcome would probably have been victory for the female scalloper, she withdrew and did not attempt to use the license granted her.

That was not the end of the matter, however, for other women took up the cause with such tenacity that the selectmen decided to withdraw their ruling, and now women as well as men, pursue the scallop in season.

The town clerk of Chilmark was also besieged by women who wished to go scalloping. There was no actual ruling against their going, but the fishermen were strongly opposed to it on numerous grounds, some valid and some strictly male prejudice. But they

were no match for the determined women and first one or two, and then "nearly all" the women prevailed. If their own husbands or sons would not take them, they hired others to do so.



Bringing in the loaded dredges. Ernest C. Mayhew and Benjamin C. Mayhew.

The women did not haul the dredges and many of them did not even cull the catch. Frequently they simply rode in the boat as passengers, thereby entitling the boat owner to catch an extra limit. As most boats could carry only two or three persons at one time, and as small children were often bundled up and taken along, one boat might make several runs a day. There was no doubt that this resulted in many extra bushels of scallops being taken per day, thus defeating the established limit whose purpose was to provide a reasonable daily catch, over as long a period as possible, for as many fishermen as were willing and able to put in an honest day's work for a moderate day's return.

Women, and a very large percentage of the men in most of the towns, are not commercial fishermen. They take a vacation from their regular work at the opening of the scallop season, fish a few days, or a week or two, while the scallops are plentiful, fishing is easy, and the price is high. Then they beach their equipment and return to their regular jobs. Usually the money made scalloping does not exceed what the man would have made at his regular work. Often his scallop season is a "vacation on pay," and the money he

puts in his pocket from the sale of his scallops leaves just that much less to go into the pockets of the commercial fishermen who, when the scallop season is over, have no other work to do. A few scratch out a meagre livelihood quahoging some years and occasionally there is a little oystering; but by and large, when the scalloping is over, the commercial fisherman is in for a long lean spell.

The commercial fisherman is the man on the Lagoon, on Sengekontacket, on "Quitsa" or Menemsha Pond, fishing from daylight to dark. He does not quit when he cannot catch his limit in an hour or two, but persists until a long hard day's work no longer produces even a minimal wage.

In Oak Bluffs and Vineyard Haven when scallops are scarce, the men fish with dip nets. They have a water-tight wooden box, a yard high with a glass two feet square on the bottom, and sides tapering to a rubber-rimmed nine inch square on top. This contraption is fastened to the side of the boat and the fisherman puts his face down against the rubber rim and looks through the glass below to locate scallops. He then uses a light dip net with a two-foot bag, which he maneuvers around on the bottom until it is full, when he hauls it in and empties the catch into his basket. This



Frank Fenner, the Chilmark fish warden, patrolling the ponds.

method is very slow and is only effective in shallow water, but it is used to prolong the season when power dredging is no longer feasible.

The 1964 scallop season has been a poor one. Gay Head had no scallops and Chilmark very few. The whole island produced about what Edgartown alone dredged up a few years ago. Tisbury (V.H.) has lengthened its season by opening one area at a time, but only about fifty men are fishing. Today the regulations in all towns are similar. Scallopers fish five days a week from eight A.M. (seven in Edgartown) to sunset. In the up-island towns there can be no fishing unless the temperature is thirty degrees (twenty-eight in Gay Head), but down-island towns do not usually set a minimum temperature. Edgartown allows a four bushel limit, Gay Head "three heaping bushels," and the rest of the towns three level



The day's catch
Matthew Poole.

bushels of scallops per day. The revenue which this industry brings into each town varies enormously, but there is no doubt of its importance. But scalloping does more than this, for it seems to supply a sort of avocation for the fishermen. The scallop season is eagerly anticipated, it is enjoyed for its duration, and it provides yarns for the rest of the winter.

In all towns some effort has been made to improve the conditions for scalloping. Protection of seed by prohibiting fishing on areas known to be heavily seeded, moving seed from poor locations to more favorable ones, and starfish extermination are measures used. Tisbury has the most active program and is the only town which, apparently, appropriates sufficient money for both major projects, transplanting seed and predator control. Designated seasons for fishing certain grounds, limited hours per day and days per week, and specified amounts per catch also tend to prevent the despoilment of the scallop areas. In each town the fish warden has the authority to see that these provisions are obeyed. To facilitate his work somewhat, there are sometimes specified points at which the catches must be landed, but this is only one small link.

The future of the scallop industry depends largely upon a respect for the preservation of seed. However, the scalloping could be improved if some areas were dredged to provide better circulation of water, and if scallops were introduced into ponds where none are now. More money needs to be appropriated for shellfish experimentation and propagation.

At present the Marine Research Foundation, Incorporated, is conducting a three-year program of shellfish experimentation and propagation at the State Lobster Hatchery at Oak Bluffs. George C. Matthiessen, Executive Director, is in charge of this project. Propagation of quahogs and oysters in large numbers has been successful and similar work with scallops will be undertaken in March.

Experiments have already been conducted to determine the effects of salinity, temperature, and current upon scallops at all stages of their development. It has been established that scallops grow best when they have an adequate circulation of water. Salinity can vary from an equal amount of fresh and salt water, such is found at a river's mouth, to extreme salinity. Scallops live equally well within those limits.

There are two methods of artificial propagation: raising young

from eggs and catching spat. The latter does not pay. Artificial fertilization of eggs and liberation of the young larvae when they first begin to swim is somewhat more beneficial as there is a great loss in nature through non-fertile eggs. But the method to be followed at the hatchery insures a greater percentage of new stock.

Mature scallops will be held in large tanks, in which the heat can be controlled, until they reach sexual maturity. Then the temperature will be raised quickly and sperm will be deposited in the tank, inducing the scallops to spawn. The fertile eggs will be placed in special containers, also under controlled heat. The water in these containers will be changed daily and food, microscopic plants grown by the scientists for the purpose, will be added. When it is time for the scallop to develop its byssal thread, it will be set on bottom with kelp or seaweed to which it can fasten itself. Thereafter the seed will be moved to larger and larger tanks, each more nearly approximating the conditions of pond or harbor. Finally it will be put in tanks out of doors until it is sufficiently acclimated to be released. Thousands and thousands of scallops can be produced in a very limited space by this method but, since putting the scallops on the beds does not insure a permanent supply, the program would have to be a continuing one. The men conducting these experiments feel certain that this is an economically sound plan for a commercial venture and, as such, it could provide a constant supply of scallops for Vineyard waters.

Stabilizing the scallop industry would be a boon to Martha's Vineyard, for in a good year, with four hundred or more fishermen in the various towns, the revenue from scallops exceeds a quarter of a million dollars. The Vineyard is abundantly supplied with sheltered bays suitable for scallop culture and only the extreme variability of the crop from year to year prevents it from being a great economic asset to the island.

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