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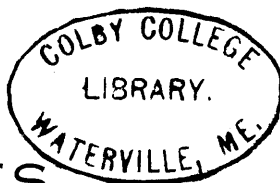
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PUBLIC DOCUMENTS

OF THE

STATE OF MAINE

BEING THE



REPORTS

OF THE VARIOUS

PUBLIC OFFICERS, DEPARTMENTS
AND INSTITUTIONS

FOR THE YEAR 1914

VOLUME II.



Lobster Hatchery at Boothbay Harbor, Maine

THIRTY-THIRD REPORT OF

Commissioner of Sea and
Shore Fisheries

STATE OF MAINE

1913 and 1914

HENRY D. S. WOODBURY, Commissioner,
Portland, Maine.



WATERVILLE
SENTINEL PUBLISHING COMPANY

1915

STATE OF MAINE.

DEPARTMENT OF SEA AND SHORE FISHERIES.

PORTLAND, MAINE, December 28th, 1914.

To His Excellency, William T. Haines, Governor of Maine:

I herewith submit as required by law, the thirty-third report of Commissioner of Sea and Shore Fisheries, for the two years ending November 30, 1914.

Respectfully,
HENRY D. S. WOODBURY,
Commissioner.



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PRESENT AND COMPARATIVE VALUE TO THE
STATE OF MAINE OF THE SEA AND
SHORE FISHERIES.

1900	.....	\$2,784,000
1904	.....	3,380,000
1908	.....	3,850,000
1909	.....	4,595,000
1910	.....	5,864,000
1911	.....	5,863,000
1912	.....	5,954,000
1913	.....	5,128,000
1914	.....	5,786,000

The above shows the value of the catch of the raw material as taken from the water by the fishermen year by year; and the comparison shows that the industry decreased in the year 1913 but in 1914 there is an increase over 1913.

1914.

Valuation and amount paid for Labor.	
Value of plants, boats, gear, etc.....	\$3,112,309
Amount paid for labor in handling, curing, and packing fish, not including amount paid for labor in sardine factories	235,665
Number of men employed	8,937
Number of persons dependent on this industry, approximately	50,000

GENERAL REMARKS.

The Department of Sea and Shore Fisheries controls one of the largest and most beneficial industries of the State. Very few people realize what an important industry it is and what it means in the way of livelihood to the people of this State.

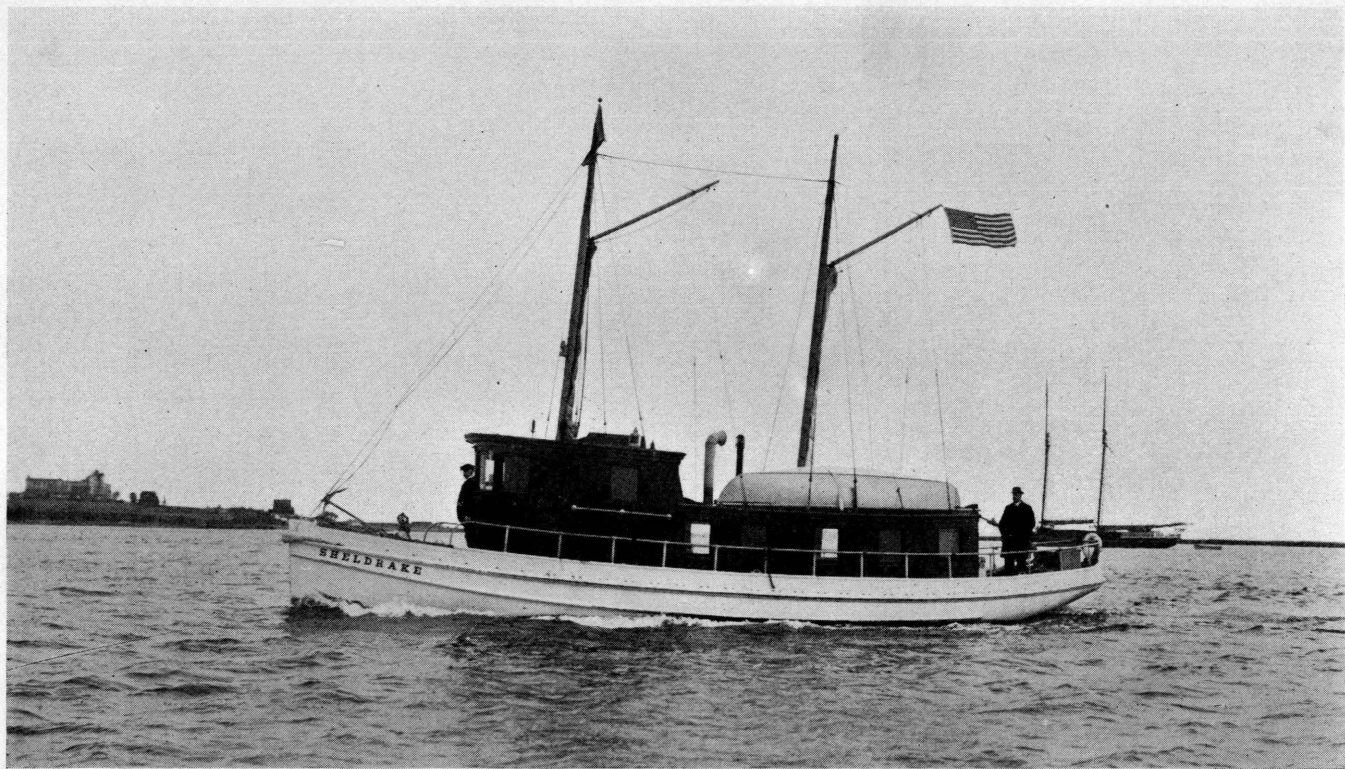
The first and foremost of my remarks is some advice to our fishermen regarding our laws. If, when in the process of taking fish from the water, they should respect the laws that are made for the respective fish, it would save much trouble and be of much benefit to the industry. The fish to which I most particularly refer are the lobster and herring, of which I will mention more fully under their titles. It is a well known fact that many of our fishermen do not observe the laws pertaining to this Department and in my opinion unless a better support and coöperation be given by them, this industry will suffer greatly.

The demands are so great for our sea food that it tempts our fishermen to save almost any fish taken from the water regardless of the law.

We have in our State 12,000 men fishing on our Coast with many thousand people depending upon the produce. Our Coast covers 2,000 miles, including bays, rivers and tributaries and with only from 24 to 30 Wardens to see that the laws are respected, you can readily see that unless the fishermen coöperate and observe our laws it will not only make the duties of the Wardens harder but be detrimental to both the industry and the fishermen themselves.

The Department of Sea and Shore Fisheries consists of one Commissioner appointed by the Governor for a term of three years and about twenty-four Wardens, who are recommended by the Commissioner, appointed by the Governor and confirmed by the Council.

During the summer months it is essential to appoint several Deputy Wardens in various sections of the State, who are responsible directly to the Commissioner and since the Legislature of 1913 transferred to this Department the protection of deer and other game and birds found on all islands in the sea within the jurisdiction of the State and also the enforcement of the laws relating to all ducks, shore and other birds on the sea coast of the State one mile inland, including all bays and inlets so far as the tide ebbs and flows, except the Kennebec above the City of Bath, it will be readily seen that in order to enforce these laws it will be necessary to increase the number of Wardens and thus necessitate a larger appropriation.



Maine Seed Lobster Boat, Sheldrake

The present system of the Wardens consists of an annual, monthly and weekly report which gives the Department a record of their work and of the various branches of the fisheries. In some cases I find the fishermen either over or under estimate the valuation of their output making it almost impossible for the Wardens to obtain the exact figures which they forward to the Commissioner at the end of each month. The daily reports sent to the Commissioner on the first of each week are one of the most essential duties of the Wardens as it not only informs the Commissioner just where each Warden may be located but also keeps the Department well informed of just what is going on, thus by this method the Commissioner is in constant touch with the whole sea coast through the warden service.

The tables in this report are made up from the reports of the Wardens and for reasons above mentioned the totals given are no doubt below the exact estimate. The value of product as taken from the water in the years 1913 and 1914 is \$11,000,000 approximately.

ALEWIFE.

The alewife is a member of the herring family sometimes known as a branch or river herring and belongs to that class of fish which ascends the tidal waters for the purpose of spawning in fresh water. They can be found in nearly all of the rivers along our Coast. In the fresh waters, the young increase rapidly in size and soon descend from their breeding grounds to the ocean.

In the early spring, which is the spawning season, it is the nature of the alewife to seek fresh waters near the source of the rivers. In a great many of our rivers it becomes necessary to assist the fish in their course by the building of fishways.

Under our law the management of alewife fishery has been given to the towns in which are located ponds, where the fish breed. Towns having control of this fishery may appoint at their annual town meeting a fish committee to look after the interest of this Department and to see that the fish have proper access to and from their breeding grounds. Much attention

should be given by this committee to see that proper care is taken in their respective towns regarding the repair of their fishways.

In spite of the law private persons have placed numerous obstructions in various parts of the streams which have greatly hindered the progress of the alewife to its spawning ground.

The fish is used fresh and smoked by people of our State and the remainder salted and packed in barrels and shipped to southern and foreign markets.

The total value of the alewife fishery for the past two years is \$60,594.

BASS.

The bass is an uncommonly nice food fish but the amount caught each year is comparatively small. The demand is increasing yearly but as yet they are not plentiful enough to warrant a regular business of catching.

CLAMS.

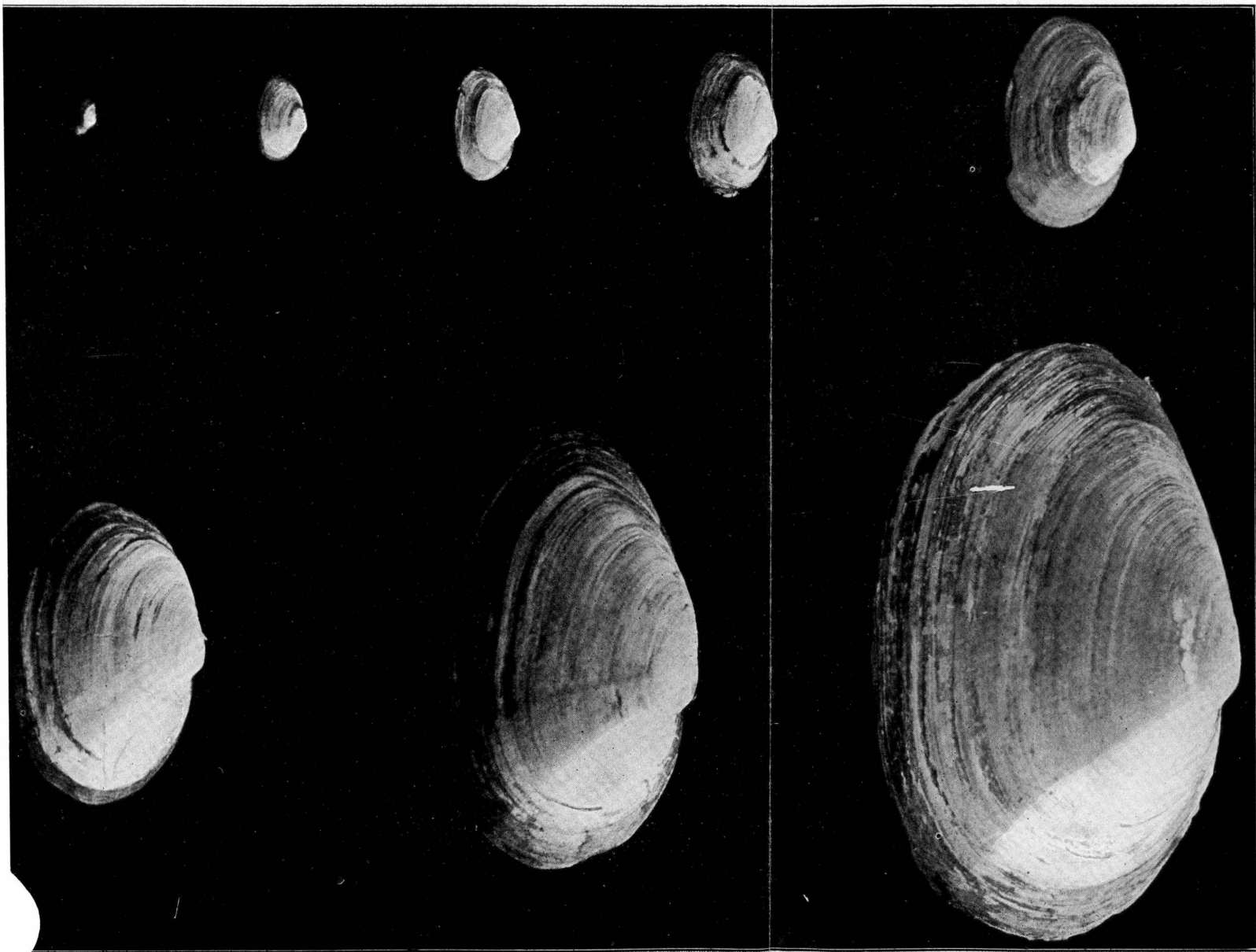
One of the greatest growing industries in our State is the Clam industry. Each year we find a greater demand for them. This must necessarily compel us to take some precaution to prevent the destruction of its source, namely: by taking only clams that are marketable when digging, leaving the smaller undeveloped species to attain their full growth. As there are two crops taken from the beds yearly it is well to observe this precaution.

Each year the State spends quite a sum of money for the improvement of its clam reservations. These State Clam Reservations are places chosen where clams once grew naturally in abundance. Here new seed is planted, no one being allowed to take clams therefrom until the expiration of three years, which is the allotted time placed upon these reservations. I find we have such reservations in various sections of our State. When this time, which is near at hand, expires, this Department will direct the same to be opened for digging. Realizing that our clams are fast decreasing it is the intention of this Department to reserve more flats in 1915 for like purposes.

In Virginia they realize that the clam has become one of their most desirable shell fish and for the clam protection they

Growth in four months from five-sixteenths of an inch to one and

one-half inches in length



Growth in sixteen months from two inches to four

inches in length

have made what is called a cull law. This protects the small clams and obtains good results thus avoiding the expense of clam cultivation. It is doubtful with a cull law if they will ever be obliged to cultivate clams.

There is no question but Maine produces some of the finest clams in this country. We have a great number of men, both winter and summer, taking clams from our flats. However, with a little protection we will again be able to produce clams in abundance.

The clam multiplies very fast, their spawning season extending through May, June and July. At the end of this time, which is called the free swimming season, the spawn or eggs adhere to almost anything which they come in contact with and after they cease swimming settle upon the flats and burrow.

The clam flats should be protected from detrimental and polluted waters if possible. Manufacturers in cities and towns should take great care and see that no dangerous waste products are allowed to empty into the water that run over our clam flats.

One of the greatest known enemies to the clam is the clam worm or borer. It may be well for the individual who is interested in the clam propagation and cultivation to know that under the law of 1911, Chapter 69 he may be allowed to take one-fourth of the flats and creeks of his respective city or town for this purpose.

Clams may be planted in furrows one foot apart, the most essential conditions to observe being kind of soil and size and condition of clam seed. The best time for planting is early morning at low tide as the incoming tide may wash the dirt into the furrows and cover the clams.

The total value of the clams taken in the State in 1913 and 1914 is \$771,857.

The following is the report of Mr. C. M. Kennedy, employed as Culturist on clam investigation for 1914, all of which I sincerely indorse as very profitable to the industry.

"Upon investigation of the several clam grounds or flats from Portland to St. George I find many places where clams once grew in abundance, now wholly depleted. The cause of this has not yet been discovered but as it has happened in other States we will have to look for it in Maine. Naturally as the

demand increases the supply will decrease, as in many other industries. Since the canning of clams has come about and the large call for "steamers" in the market, we can see why the flats have become barren so rapidly and the only remedy is to encourage clam cultivation, either private or public. It is not difficult farming and can be done at a good profit as shown in Massachusetts report on clam culture which comes from a very reliable source. It has heretofore been left to towns to regulate and take care of this industry but not much interest seems to be taken in that direction.

There has been a radical change in the condition of clam flats in the past decade or two where conditions were most favorable. The flats now are covered with very soft mud from two to four inches deep, hence the clam seed settling on this kind of flats will not develop. The State has territory reserved for clams for seeding purposes. One of these reservations in the Town of Cumberland and two others in the Town of Yarmouth (taken by our late Commissioner, James Donahue) have been thoroughly examined, as to number and quality. The Cumberland reservation seems to have been the most thrifty of the three, producing as many as twenty clams to a square foot in many places. This reservation has seeded the near by flats to a great extent while the two in Yarmouth seem to be doing about half as well. Without doubt these reservations are valuable to the surrounding territory."

QUAHOG.

I find in other States that Quahogs have become a valuable shell food fish and while the value is but little known in our State I find upon investigation that we have grounds suitable for producing same and it is my intention to experiment in this line, thus adding another product to the Industry.

The following is a report from Mr. C. M. Kennedy, Culturist,

"The Quahog has never been thought to be of much consequence in Maine waters and has never been worked extensively. However we have a considerable amount of territory suitable for their cultivation and the natural quahog is a high grade of shell fish and a very valuable product.

There is no reason why this part of the shell fish interest can not become a paying business if attended to.

I would say in conclusion that our shell fish interest of the Maine Coast should be looked after more closely than in the past."

EELS.

Eels are caught most successfully by means of traps although quantities are also caught with spears from boats, and also with spears through the ice in the winter time.

Until recently only a few men were engaged in this business but at the present time the number has greatly increased. In Washington, Lincoln, Sagadahoc and Cumberland Counties are taken the largest number of eels, the total value of 1913 and 1914 being \$54,001.

GROUND FISH.

The principal varieties of ground fish are cod, haddock, hake, pollock and cusk. These total one of the largest of the catches taken on our coast. As the demand for ground fish is ever increasing this industry gives employment to many people.

The catch varies from year to year owing principally to the weather conditions and the havoc caused by the dogfish. While at Vinalhaven I had brought to my notice a boat load of ground fish in which many were mutilated by the ravenous dogfish.

Haddock is now considered one of the best fresh fish on the market, and when smoked as finan haddie is much in demand. Pollock and hake are both slack and dry salted, hake being considered by many the best variety from which to make corned fish. The cod is used not only fresh but is used extensively as boneless fish packed in boxes after skin and bones have been removed. The value of the ground fish catch these last two years was \$3,713,817.

HALIBUT AND FLOUNDER.

The common species of halibut grows to a length of from 3 to 6 feet varying in weight from 100 to 500 pounds. Its flesh is coarse and dry but esteemed by some when boiled or fried;

the fins are considered a delicacy. Large quantities of the flesh are dried, salted and smoked. It sells for a higher price than cod. The total catch for these two years was 2,200,166 pounds with a value of \$198,671.

In this same family is included the flounder which unlike the halibut is taken in shallow water. It is considered excellent for table in summer and autumn and is caught in numbers from wharves and bridges.

The catch in 1913 and 1914 is 1,135,765 lbs., the value of which amounted to \$36,711.

HERRING.

The herring frequents our Coast in enormous schools mostly during the warm months and are caught by two classes of fishermen known as weirmen and seiners. Immense catches are taken by these fishermen which keep the sardine factories fairly well supplied. This is the chief use for the small herring and when cured and packed in tins are shipped on the market as sardines. Large herring are used for pickling and smoking. Many are put in cold storage during the summer months and used by the fishermen who depend greatly upon them in winter for bait in catching both the lobster and ground fish. Thus it is easily seen of what great value the herring is to our State.

The run varies in different years and as seen by the 1913 report the catch was some smaller than the year previous. While there is no definite explanation of this, some think that the constant use of the motor boat disturbs the fish. Also as quantities of herring are smothered in the nets and thrown overboard and left to decompose it undoubtedly sends the fish to other sections for herring do not return to polluted ground.

The catch for 1914 was much better than 1913 and factories that were obliged to close last year were opened this year. Domestic sardines are being consumed in greater quantities than ever before and as long as the present conditions exist abroad we will be obliged to depend for a greater part upon our own supply.

When the catch is light the burden of the fisherman is greater as he is obliged to secure bait which takes more of his time and is not as suitable, thus the proceeds of his work is much smaller.

The catch for 1913 is valued at \$470,125 and for 1914 \$1,400,044 showing an increase of \$929,919.

LOBSTERS.

It has become a recognized fact that the State of Maine produces more lobsters than any other State in the Union. It is one of our most valuable industries and one in which the fishermen may keep at work the entire year as there is always a demand for the lobster.

At the present time the fishermen use traps baited with fish to catch the lobsters. When the lobster becomes imprisoned in the trap it is almost impossible for him to gain his freedom hence this process is used by all of our lobster fishermen.

It is the policy of this Department to do all in its power to increase this industry by protecting the mother lobster with eggs attached and also the small lobster while it is growing to its legal size.

As I have already said under my general remarks much depends upon the coöperation of the fishermen, for it is the fishermen who set the lobster traps, the fishermen who pull them, and the fishermen who know without doubt what is legal to take and what should be returned to the waters. If all small lobsters should be put back in the water to remain until their legal growth was completed, it would be very beneficial to this industry. One of the most detrimental practices of our lobster fishermen known to the industry is the housing of short lobsters in blinds or sunken hides, to be sold to smacks coming from nearby States, where the law allows a shorter measure than in our State.

It is almost impossible to check this illegal practice as the fishermen who have these lobsters in hides carry on this traffic with the smacks when anchored beyond the State jurisdiction, in face of all opposition.

To try to check this evil I put into Commission two patrol boats. It required much time to secure search warrants from the Courts but it was found that when smacks which were within the State jurisdiction were boarded, a legal business was being carried on. However, sunken hides containing many hundred illegal lobsters were discovered and these were

liberated and cars destroyed. This showed that an illegal business was being carried on when the smacks were beyond the State jurisdiction.

The only remedy I can suggest is that which I proposed to Dr. Hugh M. Smith, Commissioner of the U. S. Bureau of Fisheries when he called upon me in July, 1913. That is, that there be a uniform law in the nearby states regarding lobster measure, otherwise this industry will in a few years be depleted. Our Maine law, which is 4 3-4 inches from end of the bone of the nose to the center of the rear end of the body shell, protects the female lobster until it becomes egg bearing, thus such a uniform law would insure an increasing lobster industry.

Under the laws of this State the Commissioner is given power to purchase at a rate not exceeding twenty-five per cent above the market price, lobsters with eggs attached, caught along the coast of this state.

Whoever catches any such lobsters with eggs attached, may safely store the same in lobster cars or sections of cars used for that purpose only, and may keep them separate from other lobsters until such time as the Commissioner or some person or persons designated by him can gather and pay for them. The Commissioner or his agent shall liberate them in the vicinity of the location where they were caught or said Commissioner may at his discretion sell any portion or all of them to the officer in charge of the United States fish hatchery for artificial propagation, the proceeds to be applied to the appropriation made for carrying out the provisions of this section.

Without doubt my predecessors have mentioned the good that has been derived from this hatchery which is now under the instructions of Dr. Hugh M. Smith, Commissioner of U. S. Bureau of Fisheries, with Supt. E. E. Hahn in charge. These lobsters are bought and collected by means of two boats, one the State boat Sheldrake commanded by Capt. Clarence A. Packard, collecting from Eastport to Rockland and the other the U. S. boat Gannett, commanded by Capt. G. W. Greenleaf, collecting from Kittery to Rockland.

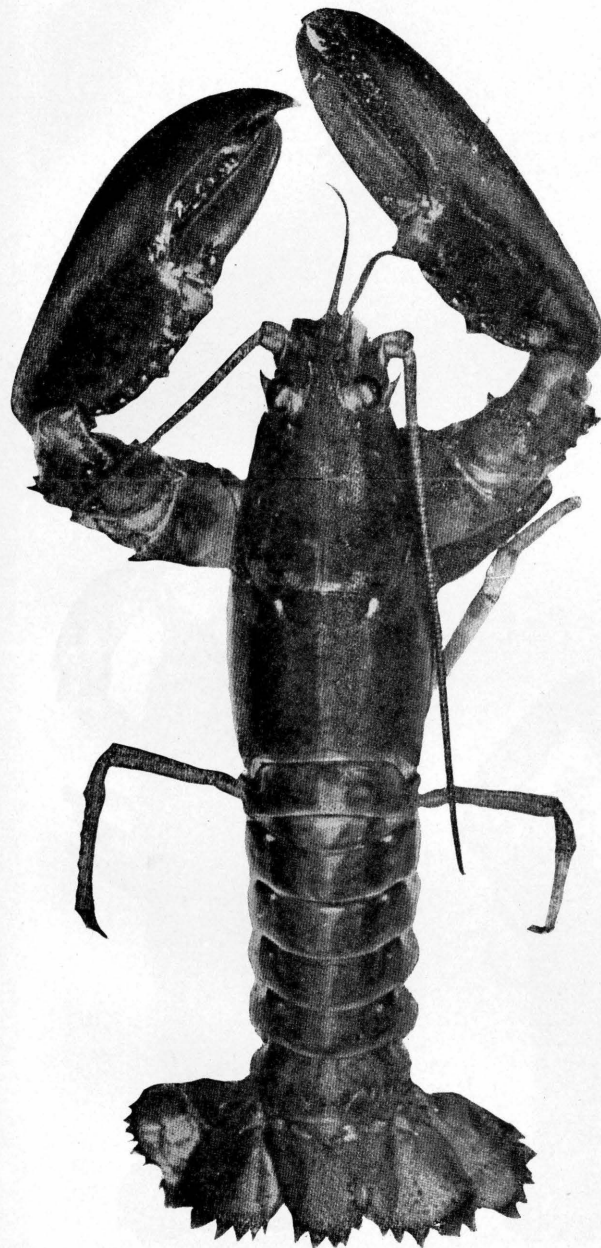
After the eggs have been removed for artificial propagation, which takes place during the months of May and June, the fry



Mother Lobster

An adult female lobster in "berry," so called, or bearing the egg-clusters under the tail
(Photograph from life)





Three lobsters of the same age, illustrating the differences in the rate
photographed alive October 23, 1902. Age about one

of growth. They were hatched in the summer of 1901, and
year and four months. Life size

or small lobsters are returned to the water in shoal places and in eel grass, away from other fish and left to care for themselves.

Upon my first visit to the Boothbay Hatchery, in company with Governor Haines, while this propagation was taking place, the Governor mentioned that a rearing plant where the young lobsters could be reared to the size of 1 1-2 inches would be very beneficial to the industry. A lobster reared to that size would be better able to protect itself from prey. So in the near future I hope to see a lobster rearing plant located in our State.

Heretofore it has been the custom of the U. S. Bureau of Fisheries to liberate the mother lobster after the eggs had been removed for propagation purposes, in waters near the place from which it was originally taken. These, if not caught by our fishermen, would again become an egg bearing lobster.

In July 1913 the Commissioner of the U. S. Bureau of Fisheries recommended that an exchange of the stripped lobsters be made with the dealers, for the egg bearing ones, allowing the dealers the difference in weight for the eggs. The U. S. Government allows 20,000 egg bearing lobsters impounded and in October, 1913, I received information from Supt. Hahn that the limit was reached and as he had no authority to purchase more, would notify the fishermen and others accordingly. This being the largest number of egg bearing lobsters ever taken at the hatchery and my funds for the seed lobster department being low and with no available way for me to obtain more money, it looked as though it would necessitate a discontinuance of collecting seed lobsters. I then took the matter up with the Commissioner at Washington, D. C. and it was placed before the Governor of our State and our State Representatives at Washington. Soon after I received a copy of the communication sent by the Commissioner of U. S. Bureau of Fisheries to Supt. Hahn under the date of October 16th, 1914, saying, "After giving the matter careful consideration the Bureau has decided to continue the collection of seed lobsters during the fall and winter months. With the view of conducting the operations on the most economical basis, it is proposed to purchase green eggs only from the lobster dealers at a fixed rate per pound returning the stripped lobsters to the dealers to be disposed of in any manner they may see fit."

A meeting of the dealers was called to ascertain if they would enter into such a proposition and I found while a few were willing, others were not. Supt. Hahn informed me he had heard nothing definite regarding the collection of seed lobsters so I wrote the U. S. Bureau of Fisheries at Washington on October 31st asking them to kindly advise me of the decision of the Government regarding the taking of seed lobsters.

After this a meeting was arranged by the Governor with the Bureau of Fisheries, our state representatives and the lobster dealers to take place in Washington in January, 1914, in behalf of the interests of the seed lobster department and the following method was proposed by the Bureau and adopted by the dealers. "In order to assist in maintaining the lobster supply on the coast of Maine and to cooperate with the Federal Government and the State of Maine in the work of artificial propagation, the lobster dealers and owners of lobster pounds will hereafter furnish to agents of the Bureau of Fisheries as heretofore any seed lobsters which may come into their possession, weighing the same and computing their value at the current market prices and taking in exchange therefor lobsters which have been stripped of their eggs by the Bureau of Fisheries, due allowance being made for difference in price."

At a glance a person can readily see that under this method the dealers received 20,000 stripped female lobsters and placed them upon the market, which heretofore had been returned to the water to breed again. Consequently I have asked for \$5,000 additional in my report for estimates for the purpose of buying these stripped female lobsters from the agents of the Bureau of Fisheries and having same liberated in our waters and thus aid in the protection and furtherance of our lobster industry.

The total value of the catch to the fishermen for the years 1913 and 1914 is \$3,277,806.

MACKEREL.

The mackerel which is one of our choicest fish appears on our Coast during the spring months. While as yet we have never been able to ascertain where this fish migrates during the winter months, we know that it must be to the warmer waters

of the South. This can be partially proved by the fact that the mackerel is first reported off Cape Hatteras where the first large catches by the seiners usually occur.

When these fish are caught in southern waters, it can be noticed upon examination, that they are heavily laden with spawn. These early catches, in a way, have a great deal to do with the ever decreasing supply of this fish, for these mackerel do not have a chance to deposit their eggs. Some people have brought forward the theory, which may be well founded, that the increasing of seiners and the decreasing of hook and line fishing is responsible for the shortage. However at the best we can only say that this theory of decrease is wholly problematical.

As the mackerel is apparently not confined to any special section a National and not a State law would undoubtedly be the only means by which we can aid this industry as there has been a noticeable decrease for the past 20 years.

This year we are able to show that 1,616,900 pounds of mackerel were taken during 1914 an increase over the previous year of 387,040 pounds and giving a commercial value of \$76,499.

MENHADDEEN OR PORGY.

This variety of fish, until within the last ten years was very numerous on our Maine Coast. It was used principally for making oil, the value of which was a great benefit to the State. Of late years these fish have not frequented Maine waters as in former years but have been extensively caught in waters farther South. In 1914 we have not one report made of any catch of porgy and it would look as if they had forsaken our Coast this year.

Wherever these fish are taken and utilized along the Atlantic Coast we find no fish product of so high a commercial value. A high grade of fish oil and a fertilizer are produced from them which has amounted to one million and a half dollars.

OYSTER.

Experiments have been made by this Department in previous years to cultivate oysters, but with disappointing results. As the oyster is so valuable and desirable a food product I

still thought it advisable to experiment still farther. Maine has produced oysters in abundance in the past showing that conditions here were favorable. Discussing this with Mr. Kennedy, whom I employed as culturist, we concluded after an examination of water temperature and bottom condition in several localities that oysters could be grown plentifully in our waters. Accordingly I instructed Mr. Kennedy to prepare the bottoms and plant oyster seed.

The following is the report of his work up to the present time; "Experimental work and shellfish investigation has been carried on to some extent this year (1914) on the Maine Coast between Mt. Desert and Portland. The first work done was to make examinations in the Damariscotta River for oyster planting and ground made suitable for same. Temperatures and bottom condition being found favorable, this work began the middle of July and lasted until the first part of August. A research of the ground was made the first of November and about fifty thousand (50,000) oyster seed was planted. Results will be looked for from them not earlier than June, 1915."

SALMON.

There has been a vast change for the betterment of this esteemed fish in the way of law restrictions during the past few years. During the spring months the male and female salmon together enter the rivers to reach their spawning ground. Years ago our rivers abounded in salmon but of late years many rivers have been filled with mill waste and obstructed by the building of dams, oftentimes without fishways, so that the salmon have been prevented from reaching their spawning ground. This has seriously affected the propagation of this specialty so much that within the past twenty years but few salmon have been taken.

This difficulty is being overcome by the building of better fishways, more law restrictions, also by artificial propagation which is being carried on now at the East Orland Hatchery. During the years 1913 and 1914 the catch of salmon for this purpose was 1,620 from which were taken 5,070,700 eggs. In all probability these will produce 4,528,417 young salmon. The number liberated in 1913 was nearly 2,600,000. It is hoped by these methods that this species may be brought to its former production.

REPORT FOR YEAR ENDING NOV. 30, 1913.

FISHERY AND PRODUCT.	WASHINGTON COUNTY.		HANCOCK COUNTY.		PENOBSCOT COUNTY.		WALDO COUNTY.		KNOX COUNTY.		LINCOLN COUNTY.		SAGADAHOC COUNTY.		CUMBERLAND COUNTY.		YORK COUNTY.		TOTALS.			
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.		
Alewife.....	188,000	\$2,215	220,000	\$3,250	180,000	\$2,250			200,120	\$4,251	1,900,000	\$11,000							2,688,120	Alewife.....	\$22,966	
Bass.....					1,300	145					5,000	1,500							6,300	Bass.....	1,645	
Clam.....	1,474,492	45,451	5,396,200	113,920					355,200	3,555	2,554,000	22,151	1,582,500	8,583	7,186,860	61,251	2,400,000	36,000	20,947,252	Clam.....	290,911	
Halibut.....	12,665	1,316	54,700	5,470					7,200	648	296	21		1,003,555	91,512			1,079,081	Halibut.....	99,046		
Eel.....	17,100	1,710	1,800	410	26,700	2,355						36,000	3,390	142,850	11,428	39,470	3,826	10,000	1,000	273,820	Eel.....	24,119
Flounder.....			344,000	11,275					30,000	600	5,000	700			29,085	940				408,085	Flounder.....	13,515
Ground fish.....	1,473,391	23,663	19,379,160	1,171,702	197,520	15,802	105,155	1,905	5,907,083	223,741	1,843,756	46,184	1,514,770	36,951	13,703,705	472,803	5,573,000	149,120	49,697,440	Ground fish.....	2,141,871	
Ground fish oil.....	1,425	369	51,000	2,214					72,328	2,177	121,400	3,232	11,680	830	141,500	4,146	2,000	200	401,333	Ground fish oil.....	13,168	
Fish glue.....									250,000	39,364									250,000	Fish glue.....	39,364	
Herring, (fresh, salted and smoked).....	21,495,000	229,753	2,130,000	169,625	236,400	9,456	20,000	1,500	1,000,000	750	8,114,000	17,027	1,290,000	9,350	5,150,200	32,664				39,435,600	Herring.....	470,125
Herring oil.....																					Herring oil.....	
Porgy.....																					Porgy.....	
Lobster.....	1,161,220	188,542	1,958,590	391,718			37,500	7,500	879,188	134,180	1,080,560	247,694	334,370	75,385	2,087,548	431,511	577,500	140,375	8,116,776	Lobster.....	1,616,905	
Mackerel (fresh and salted).....			151,000	1,840					54,000	3,000	62,200	4,759	145,000	4,945	727,600	36,279	90,000	6,300	1,229,860	Mackerel.....	57,123	
Oyster.....																					Oyster.....	
Salmon.....	3,000	300	38,400	8,832	37,560	10,865	3,000	610					2,355	435						84,315	Salmon.....	21,042
Shad.....			592,000	17,760	1,200	120					372,200	9,807	571,000	12,865	552,000	10,700				2,088,400	Shad.....	51,252
Scallop.....			400,640	61,452					376,800	70,650										777,440	Scallop.....	132,102
Smelt.....	27,300	2,144	84,650	8,775	21,000	1,866			30,000	1,800	185,300	2,800	46,810	5,399	169,075	17,992				563,135	Smelt.....	40,776
Sword fish.....											800	80			976,300	77,552	425	51	977,525	Sword fish.....	77,683	
Sounds, hake.....	600	186	31,500	3,650					40,525	1,690	6,891	1,329	2,550	765	74,600	3,573				156,666	Sounds, hake.....	11,193
Sturgeon.....					7,500	1,300											600	102		8,100	Sturgeon.....	1,402
Tongues and sounds.....	100	10	400	32							1,284	100					600	60		2,384	Tongues and sounds.....	202
Tomcod.....	4,000	180	12,500	625	7,500	750			1,000	30										25,000	Tomcod.....	1,585
County totals.....	25,858,293	\$495,839	30,846,540	\$1,972,550	717,345	\$44,988	165,655	\$11,515	9,203,444	\$486,436	16,288,687	\$371,774	5,644,385	\$166,936	31,841,498	\$1,244,749	8,654,125	\$333,208				
Grand totals yield and value.....																				129,017,032		\$5,128,095
Value of plants, boats, gear, etc.....		\$516,820		\$593,686		\$535		\$25,425		\$445,697		\$376,155		\$75,909		\$430,919		\$31,870				\$2,497,016
Number of men employed.....		1,340		2,111		90		49		674		1,799		660		1,310		400				8,433
Amount paid for labor by fish stands, factories, etc. (not including sardine factories).....		\$22,530		\$27,890		\$36,128		\$400		\$48,520		\$17,565		\$4,750		\$38,759		\$5,000				\$201,542
Number of persons held for violations:																						
Lobster.....		9		20				2		5		15		3		37						96
Seining.....		2														1						2
Clams.....																						1
Amount collected for violations:																						
Lobster.....		\$379		\$234				\$22		\$99		\$171.50		\$9		\$439.96		\$122				\$1,511.46
Seining.....		10																				
Clams.....																25.00						
Total amount collected for violations.....		\$389		\$234				\$22		\$99		\$171.50		\$9		\$464.96		\$122				

*This indicates that these violations were sent in by wardens residing in said counties, but includes violations from other counties in which they had permits to work.

REPORT FOR YEAR ENDING NOV. 30, 1914.

FISHERY AND PRODUCTS.	WASHINGTON COUNTY.		HANCOCK COUNTY.		PENOBSCOT COUNTY.		WALDO COUNTY.		KNOX COUNTY.		LINCOLN COUNTY.		SAGADAHOE COUNTY.		CUMBERLAND COUNTY.		YORK COUNTY.		TOTALS.			
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.		
Alewife.....	486,000	\$2,793	623,000	\$10,070	190,000	\$2,325			269,827	\$5,830	2,494,000	\$16,610							3,862,827	Alewife.....	\$37,628	
Bass.....					1,000	120					8,000	2,000							9,000	Bass.....	2,120	
Clam.....	6,062,200	153,273	6,657,820	133,157			260,000	1,900	4,949,780	84,187	1,486,600	26,420	737,000	6,289	4,638,400	59,540	1,080,000	16,200	25,871,800	Clam.....	480,946	
Halibut.....	22,000	2,289	51,500	4,870					79,600	7,570	18,700	1,830			854,085	73,546	95,200	9,520	1,121,085	Halibut.....	99,625	
Eel.....	14,860	1,188	2,500	250	37,700	3,730			12,400	1,385	87,800	7,090	165,875	13,270	35,675	3,429	5,400	540	352,210	Eel.....	29,882	
Flounder.....	2,900	98	398,000	11,940					195,000	5,560	98,600	4,602			23,180	696	10,000	300	727,860	Flounder.....	23,196	
Ground fish.....	3,253,568	92,366	8,028,600	299,025	201,430	9,637	3,222,056	64,442	16,644,050	337,314	4,750,150	82,147	2,109,630	42,412	19,804,055	556,755	2,695,100	92,848	60,708,639	Ground fish.....	1,571,946	
Ground fish oil.....	160,000	2,707	64,000	2,385	3,400	250			84,352	2,453	40,800	1,650			42,000	1,575			394,552	Ground fish oil.....	11,020	
Fish glue.....									174,800	42,000									174,800	Fish glue.....	42,000	
Herring (fresh, salted and smoked).....	91,693,650	969,485	14,756,000	233,655	249,200	9,968	373,200	5,598	4,250,200	34,352	7,770,320	47,893	1,387,000	12,138	7,451,000	53,955	4,400,000	33,000	132,330,570	Herring.....	1,400,044	
Herring oil.....											4,000	108							4,000	Herring oil.....	108	
Porgy.....																				Porgy.....		
Lobster.....	1,388,036	277,021	1,533,250	304,462				81,500	12,225	2,150,300	471,042	1,638,334	256,748	486,427	92,320	749,918	136,053	555,150	111,030	8,632,915	Lobster.....	1,600,901
Mackerel (fresh and salted).....			25,000	750					272,000	13,600	410,000	25,516	214,000	5,840	642,400	23,193	76,000	7,600	1,616,900	Mackerel.....	76,499	
Oyster.....																				Oyster.....		
Salmon.....	26,550	5,318	25,600	5,888	25,906	7,786	2,500	500					2,590	522					83,146	Salmon.....	20,014	
Shad.....	10,000	600	166,000	5,100	1,000	100			75,000	1,550	555,400	20,116	718,000	7,580	560,800	8,806			2,086,200	Shad.....	43,852	
Scallop.....	1,248	271	350,800	63,468					496,000	93,000					2,336	438			850,384	Scallop.....	157,177	
Smelt.....	78,390	10,715	76,300	7,970	19,500	2,535			11,300	1,360	101,000	19,899	26,000	3,928	197,045	18,162			509,535	Smelt.....	64,569	
Sword fish.....									200	28	28,400	4,860			236,500	26,897	112,000	16,800	377,100	Sword fish.....	48,585	
Sounds, hake.....	1,000	300	6,000	1,150					32,574	2,811	51,365	6,276	1,550	186	44,875	2,267			137,364	Sounds, hake.....	12,990	
Sturgeon.....					2,000	285													2,000	Sturgeon.....	285	
Tongues and sounds.....			6,000	600					6,410	681	8,325	420							20,735	Tongues and sounds.....	1,701	
Tomcod.....	4,900	415			65,000	650			7,300	125									77,200	Tomcod.....	1,190	
County totals.....	103,205,302	\$1,518,839	32,770,370	\$1,085,740	796,136	\$37,386	3,939,256	\$84,665	29,711,093	\$1,104,828	19,601,694	\$524,185	5,848,072	\$174,485	35,282,169	\$960,312	9,028,850	\$287,838				
Grand total yields and values.....																			239,450,642		\$5,786,278	
Value of plants, boat, etc.....		\$638,670		\$624,486		\$45,230		\$40,191		\$482,298		\$574,603		\$64,530		\$515,182		\$127,120			\$3,112,309	
Number of men employed.....		2,034		2,279		57		73		805		1,387		651		1,241		410		8,937		
Amount paid for labor by fish stands, factories, etc. (not including sardine factories).....		\$30,883		\$27,723		\$38,428		\$763		\$75,601		\$11,218		\$4,500		\$41,424		\$5,125			\$235,665	
Number persons held for violations:																						
Lobster.....		*13		33				13		21		141		22		30		10		272		
Seining.....		20		17												10				47		
Clam.....																4				4		
Bird.....				4																4		
Game.....																						
Amount collected for violations:																						
Lobster.....		\$151		\$456				\$57		\$758.77		\$1,274.95		\$380.15		\$294.22		\$162				
Seining.....		100		855												13						
Clam.....																						
Bird.....																						
Game.....																						
Total amount collected for violations.....		\$251		\$1,311				\$57		\$758.77		\$1,274.95		\$380.15		\$352.22		\$162			\$4,547.09	

*This indicates that these violations were sent in by wardens residing in said counties, but includes violations from other counties in which they had permits to work.

Notice has been given that the U. S. Bureau of Fisheries is about to begin the propagation of hump back salmon on the Atlantic Coast with a view of restocking Maine rivers. Although this is an inferior species, still should success attend this propagation in rivers of Maine the result would benefit the people residing near, especially if the Chinook or red salmon species is made use of.

The total catch in 1913 and 1914 was 167,461 pounds, of a cash value of \$41,128. This shows a marked increase in price paid for these fish.

SCALLOPS.

The scallop fishery employs a large number of men during the season. The demand for them is steadily increasing but the supply does not equal the demand. As this is a valuable product I considered it advisable to have the cause investigated and for this purpose employed Mr. C. M. Kennedy, who made an examination of the beds. The following is his report:

"The next work taken up was an investigation of the scallop situation which was begun in August in Penobscot Bay, near Rockland, during the last of the scallop spawning season. They were found to be in good condition, but not plentiful and only a small percentage of female scallops were discovered. The scallop grounds have been worked on for the past eight years by a large fleet of boats using very heavy dredges and it is reported that as many as three thousand gallons of scallop meat have been taken from the ground in one day. The grounds have become quite badly depleted notwithstanding the fact that we have a close season from April 15th to November 1st. (P. L., 1911, Chap. 2). It has always been the custom of the scallop fishermen to shell on the same ground, which no doubt is a convenience to them but by so doing, I consider it very detrimental to the scallop beds. It is also the case on other fish grounds and the only remedy I see for the scallop industry is to discontinue shelling on the grounds, that is to stop throwing refuse back on beds. Some fishermen say that they have found this refuse in a bad state of decomposition in the spring of the year after fishing all winter. This waste calls every kind of urchin and scavenger onto the grounds which may be very disturbing to the scallop.

I think that the very small percentage of female scallops accounts for the beds being so slowly replenished and that conditions are not favorable for rapid breeding. Also the scallop can come to the surface and migrate to other grounds and have been seen in this act many times on "Georges Bank." Also in the Bay of St. Lawrence, making as much commotion as some other surface fish.

Casco Bay scallop grounds were examined next and found to be in about the same condition as to percentage of female scallops. These grounds are limited as to number of fish and are in shallow water but of a high grade and very desirable in the market.

As this is an important and valuable industry it should be looked after for its good, by all concerned, with much interest.

At a later date in October a research of these grounds as far as Blue Hill Bay was made in search of the seed or young scallop which attaches itself to any substance on the bottom suitable to receive it, but at this time slight indications of any were found. However many more scallops could be taken at one dredge than earlier in the season. In conclusion I would advise from a practical and scientific standpoint to discontinue shelling on the grounds."

SHAD.

This fish is in great demand in the early spring months and will bring exorbitant prices for the early catches. Later on as the supply increases they are generally put in cold storage as the demand naturally decreases. This supply is later taken out as demand requires and because of the increase in this sort of business nearly all of the large catches by seiners on our Coast are taken to cold storage.

The spawning grounds of the Kennebec River are perhaps the best on our Coast and the catches there are the largest on record. There seems to be no great or serious obstructions to interfere with the propagation of this fish and indications now point to a greater supply than has been previously recorded.

The value of the shad industry is \$95,104 and nearly 5,000,000 pounds have been taken in the past two years.

SMELTS.

The smelt, while one of our smallest fish, is one of the most popular food fish and is in great demand as soon as it appears in our waters.

During the spawning season the smelts seek the small rivers and bays in which to breed their young. Owing to the fact that there are so many laws governing the taking of these fish and no one suitable law, there is a great danger that in time this species will be entirely destroyed.

Fishermen frequently change from place to place and as various laws govern these different sections, it is almost impossible for them to know exactly wherein they are complying with the law.

As the smelt may be caught by hook and line, weirs or nets through the ice, in some sections, one may easily see that in small and narrow rivers, by the use of weirs or nets, almost the entire school of fish can be caught that enter these streams.

I firmly believe that in order to protect and further this industry a general state law should be passed that will regulate this matter in a satisfactory way.

As a suggestion I would offer to overcome this abuse that smelt fishing in rivers and bays, other than with hook and line, be abolished.

In the past two years the catch amounted to \$142,252. This is somewhat smaller than for the past few years owing to the fact that there are restrictions on some of the waters where smelts are taken.

BIRDS AND GAME.

The Legislature of 1913 transferred to this Department the protection of deer and game and birds found on all islands in the sea within the jurisdiction of this State; also the enforcement of the laws relating to all ducks, shore and other birds on the Coast of the State, one mile inland including all bays and inlets so far as the tide ebbs and flows except the Kennebec above the City of Bath.

While there have not been many violations of these laws it has added to the duties of the Wardens.

SUMMARY.

The summary tables in this report show in a condensed form all the valuable data pertaining to the fisheries.

These figures are furnished by the Wardens, who send to the Commissioner, monthly and yearly reports giving the catch of the different kinds of fish caught in the territory over which they have jurisdiction. These figures have been tabulated by the Department so that the catch and value for any separate county or combined counties may be readily ascertained.

In this summary the Department has shown all violations and amounts of fines collected for same.

As several Wardens have been permitted to work in more than one county, the violations reported by them have been tabulated under the county in which they reside.

The Department is always willing to give any information regarding the fisheries that may be desired.

LIST OF FISH WARDENS NOW IN COMMISSION.

YORK.

Obed F. Stackpole	Biddeford
Fred A. Tarbox	Biddeford

CUMBERLAND.

George A. Dow	Portland
Isaac H. Snow	Brunswick
Joseph R. Wallace	Long Island

SAGADAHOE.

Abner C. Johnson	Ashdale
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LINCOLN.

John W. Dearborn	Boothbay Harbor
Edwin E. Bailey	New Harbor
Ruel T. York	Damariscotta Mills
Nathaniel J. Hanna	New Harbor

KNOX.

Charles S. Coughlin	Rockland
Frank A. Crockett	Ash Point
George B. Alley	Tenants Harbor

PENOBSCOT.

Thomas E. Sullivan	Bangor
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HANCOCK.

James A. Hill	West Gouldsboro
Frank L. Hodgkins	Lamoine
Stephen S. Sellers	Stonington

WASHINGTON.

Daniel O. French	Jonesport
William A. Henderson	Cutler
James H. Kerr	Calais
John W. Spear	Eastport
Hernando E. Allen	Machias

LIST OF INSPECTORS OF PICKLED FISH.

Name.	Residence.	Date of Commission.
William Teel,	Long Island Pl.	November 18th, 1909.
Clarence E. McIntire,	Long Island Pl.	April 29th, 1910.
William H. Shurtleff,	Portland,	November 29th, 1910.
Lyman H. Merry,	Boothbay Harbor,	June 16th, 1911.
William E. Durgan,	Lubec,	June 16th, 1911.
William Brennan,	Port Clyde,	August 16th, 1911.
Thomas E. Raye,	Eastport,	December 26th, 1911.
James E. Brennan	Port Clyde,	July 23rd, 1912.
Thomas M. Nicholson,	Bucksport,	February 12th, 1913.
Ernest R. Holmes,	Eastport,	January 21st, 1914.

REPORTS OF INSPECTORS OF PICKLED FISH FOR YEARS
1913 AND 1914.

Lyman H. Merry,	
1913	369 Barrels of Split salt herring. 15 Barrels of Alewives. 35 Barrels of Round salt herring.
1914	350 Barrels of split herring.
W. H. Shurtleff,	
1913	252 Barrels of Cod
1914	107 Barrels of Cod.
Thomas E. Raye,	
1913	400 Barrels of pickled herring.
1914	100 Barrels of pickled herring.
Ernest R. Holmes,	
1914	85 Barrels of herring. 3 Barrels of tongues and sounds.
William M. Teel,	
1913	None.
1914	None.
No reports from the other inspectors.	

BOOTHBAY HARBOR (MAINE) STATION.

RECORD OF LOBSTER PROPAGATION—1914.

Date 1914.	Number of Fry.	Where Planted.
June 3,	500,000	Fox Island Thorough Fare, North Haven, Maine.
3,	2,250,000	East Penobscot Bay, Maine.
3,	1,500,000	Blue Hill Bay, Swans Island, Maine.
3,	250,000	Blue Hill Bay, Duck Cove, Maine.
3,	2,000,000	Blue Hill Bay, Bass Harbor, Maine.
4,	1,000,000	Delanos Cove, Lawry, Maine.
4,	2,000,000	Friendship Harbor, Maine.
4,	7,000,000	Pleasant Pt. Gut. St. George, Maine.
6,	8,000,000	Mosher Island Harbor, Yarmouth, Maine.
6,	3,000,000	Cundy Harbor, New Meadows The Basin, Maine.
6,	4,000,000	Burntcoat Harbor, Phippsburg, Maine.
8,	3,000,000	Boothbay Harbor, Maine.
8,	1,500,000	Jonesport Harbor, Maine.
8,	3,000,000	Pond Cove, Rogue Bluff, Maine.
8,	5,000,000	Broad Cove, Eastport, Maine.
9,	500,000	Passamaquoddy Bay, Robbinston, Maine.
9,	2,000,000	Christmas Cove, Bristol, Maine.
10,	3,500,000	Ebenecook Harbor, Southport, Maine.
11,	3,000,000	Somes Sound, S. W. Harbor, Maine.
11,	7,000,000	Skillings River, South Hancock, Maine.
12,	2,000,000	Union River Bay, Ellsworth, Maine.
12,	2,000,000	Linekins Bay, Boothbay Harbor, Maine.
12,	5,000,000	Cape Porpoise Harbor, Maine.
12,	1,000,000	The Creek, Kennebunkport, Maine.
12,	6,000,000	Biddeford Pool, Biddeford, Maine.
13,	1,000,000	Hodgkins Cove, Boothbay Harbor, Maine.
13,	1,000,000	Indian Town Har, Boothbay Harbor, Maine.
13,	3,000,000	The Mill Pond, Boothbay, Maine.
15,	1,000,000	Johns Bay, Bristol, Maine.
15,	2,000,000	Robinson's Cove, Bristol, Maine.
15,	2,000,000	Pemaquid Harbor, Bristol, Maine.
16,	3,000,000	Long Cove, Vinal Haven, Maine.
16,	3,000,000	Pigeon Hill Bay, Milbridge, Maine.
16,	4,000,000	Dyers Bay, East Steuben, Maine.
16,	4,000,000	Prospect Harbor, Maine.
17,	3,000,000	Cape Newagen Harbor, Southport, Maine.

	17,	15,000,000	Sands Cove, Vinalhaven, Maine.
	18,	8,000,000	Rockland Harbor, Rockland, Maine.
	18,	250,000	Penobscot Bay, Rockport, Maine.
	18,	500,000	Penobscot Bay, Eagle, Maine.
	18,	500,000	Castine, East Penobscot Bay, Maine.
	18,	250,000	Little Deer Isle, E. Penobscot Bay, Maine.
	18,	250,000	Sunset, East Penobscot Bay, Maine.
	18,	250,000	Isle au Haut Bay, Maine.
	20,	10,000,000	Mussel Ridge Channel, Maine.
	22,	2,000,000	Kennebunkport, Wells Bay, Maine.
	22,	1,000,000	Wells, Wells Bay, Maine.
	22,	1,000,000	Ogunquit, Wells Bay, Maine.
	22,	2,000,000	York River, York Harbor, Maine.
	22,	2,000,000	Little Harbor, New Castle, N. H.
	22,	4,000,000	Pepperell Cove, Kittery, Maine.
	25,	2,000,000	Muscongus Sound, Round Pond, Maine.
	25,	3,000,000	Muscongus Sound, New Harbor, Maine.
	27,	1,000,000	Five Islands Harbor, Georgetown, Maine.
	27,	500,000	The Eddy, Edgecomb, Maine.
	27,	500,000	Sheepscot River, Wiscasset, Maine.
	29,	3,000,000	Portland Harbor, Portland, Maine.
	30,	500,000	Cape Newagen Harbor, Southport, Maine.
July	1,	1,000,000	South Portland Harbor, South Portland, Maine.
	3,	1,000,000	Pig Cove, Southport, Maine.
	8,	1,500,000	Rockland Harbor, Rockland, Maine.
	9,	3,500,000	Portsmouth Harbor, Portsmouth, N. H.
	15,	3,000,000	Casco Bay, Sebasco, Maine.
	17,	3,000,000	Portland Harbor, Portland, Maine.
	20,	2,000,000	Pepperell Cove, Kittery, Maine.
	22,	500,000	Owls Head Bay, South Thomaston, Maine.
	27,	500,000	Rockland Harbor, Rockland, Maine.
	30,	1,000,000	Boothbay Harbor, Maine.
Aug.	1,	1,000,000	Linekin's Bay, Boothbay, Maine.
	3,	2,000,000	Boothbay Harbor, Maine.
		<hr/>	
		180,500,000	

There was also hatched and planted in the waters of the State in 1914 nearly 6,000,000 cod fry, 894,000 haddock fry and 556,000,000 flat-fish or flounder fry.