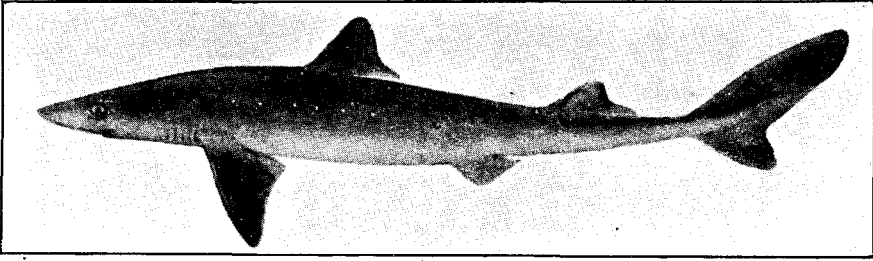


MAINE STATE LEGISLATURE

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GRAY FISH *nee* DOG FISH

First Bi-Annual Report

of the

Executive Secretary

of the

Maine State Sea Food Protective Commission

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To the Honorable Senate and House of Representatives:

GENTLEMEN—At the request of the Honorable Luther Maddocks, I have the honor to herewith transmit the First Bi-Annual Report of the Executive Secretary of the Maine State Sea Food Protective Commission.

Very respectfully yours,

JOHN E. BUNKER,

Secretary of State.

SEVENTY-EIGHTH LEGISLATURE

SENATE

NO. 155

STATE OF MAINE

IN THE YEAR OF OUR LORD ONE THOUSAND NINE
HUNDRED AND SEVENTEEN

In Senate, Jan. 31, 1917.

*Read and passed and ordered that one thousand copies of the
First Biennial Report of the Maine State Sea Food Protective
Commission be printed.*

W. E. LAWRY, Secretary.

A true copy.

ATTEST:

W. E. LAWRY, Secretary.

Presented by Mr. Peacock of Washington.

PREFACE.

In writing this report which was authorized by the last Legislature of the State of Maine, I will ask my readers to excuse the frequent use of my name, or as I may refer to myself as "the writer." For many years—not less than 30—the dogfish question among the fishermen, who have been so terribly annoyed by them, has been revolving in my mind. Thirty years ago I attempted to utilize them in a commercial way. I bought many thousand, and even millions of them, during the four years that I was actively interested in making them into oil and fertilizer. At that time with the low price of oil and

ammoniates which existed, I was unable to make it a profitable venture. The market which I relied upon gave out. The company going out of business made it difficult to find another market for the scrap. The oil was always in demand, but the price was much less than it is today.

Since that time I have kept up my investigations in a limited way, knowing well that the time was coming when the State or Government would take notice of this matter and adopt some plan to regulate the capture and utilization of the dogfish that have year by year been becoming more numerous along our entire length of coast.

The supply of dogfish has greatly increased within the past few years, as they have no enemies and breed six or eight young annually. The increase in these fishes along our immediate coast, according to the unanimous opinion of the fishermen is something wonderful. They seem to be on the bottom, and from the bottom to the top of the water in such immense quantities that it is impossible for any other class of food fish to exist. Not only do they devour the ground fish and harass them in many ways, but they attack the surface swimming fish of migratory habits and drive them off shore, or on, as the case may be, and keep after them in such droves that they are either annihilated or frightened away from the coast, and in some cases are driven into coves and inlets and upon the beaches in such quantities that they have become a nuisance, and the Boards of Health in some places have been obliged to carry them away and bury them to prevent them from becoming offensive.

To the casual observer these extreme conditions do not appear. To get at the true facts and obtain a clear understanding of this situation I deemed it of the greatest importance that the State should take some action, and appoint a Commission to investigate this matter thoroughly, and to that end I asked the Legislature of 1912 to enact the following bill:

NEW DRAFT

SEVENTY-SEVENTH LEGISLATURE

HOUSE

No. 900

STATE OF MAINE.

IN THE YEAR OF OUR LORD ONE THOUSAND NINE
HUNDRED AND FIFTEEN

House of Representatives, March 18, 1915.

*Introduced out of order under suspension of rules by Mr.
Mulligan of Nobleboro, and ordered printed without reference
to any committee.*

C. C. HARVEY, Clerk.

AN ACT to provide for the destruction of dog fish and other
members of the shark species.

Be it enacted by the People of the State of Maine, as follows:

Section 1. That the governor and council be hereby
2 authorized to appoint a commission of three practical men
3 who shall thoroughly investigate the question of the de-
4 struction of dog fish and other members of the shark family
5 in the waters of Maine, and report to the next legislature
6 some feasible plan for the extermination of this very de-
7 structive fish.

Sect. 2. That this said commission shall be empowered
2 to ask Congress and other states to take this matter in hand
3 and pass such legislation as will enable said commissioners
4 with such other commissioners as may be appointed to suc-
5 cessfully co-operate on this question.

Sect. 3. That the sum of one thousand dollars is hereby
2 appropriated annually for the next two years to defray the
3 expenses of said commission having this matter in charge.

Sect. 4. Whereas it appears that an emergency exists for
2 the carrying into effect, the provisions in Section one, this
3 act shall take effect when approved.

The necessity for such action did not appeal to everyone, although it passed the Legislature with very little opposition. Because of the fact that few realize what is going on in the ocean so far as relates to marine life, and the many kinds of marine animals, or fishes, and it becomes a matter of ridicule and criticism when any new venture is made, or any new step is taken to throw light upon any great subject. For this purpose this bill was intended, that it might be somebody's business to investigate and report our findings to the next Legislature. In pursuance to that bill, which conveyed authority to the Governor and Council to appoint a Commission of three, Charles E. Davis of Portland, Luther Maddocks of Boothbay Harbor, and Charles L. Donovan of Jonesport, were appointed. Said commissioners held their first meeting in Portland. Mr. Davis was chosen chairman, Luther Maddocks, executive secretary, Captain Donovan, treasurer, name chosen and by-laws were

accepted defining their duties, and the executive secretary was charged with the work of investigation and the management of Congressional matters, which we were authorized to take up with the Congress.

At a subsequent meeting the executive secretary was authorized to appeal to Congress for assistance to further investigate this whole subject, and the second year's appropriation was set aside to pay the expenses. I will further state that the first year's appropriation was expended by the different commissioners mostly in local investigation. The writer took various trips which covered the ground quite thoroughly from Nova Scotia to Virginia. What was not done by personal investigation south or New York was done by correspondence with the different fishing interests along the coast.

It seemed to us advisable to investigate what the Dominion of Canada had done along the line of utilization of dogfish for oil and fertilizer. It was decided that Captain Donovan and myself should make a trip to Clark's Harbor (Mr. Davis could not leave home at that time) to inform ourselves of what was being done.

The Government has located on its water front an extensive plant at Clark's Harbor, and one at Port Mulgrave, and one at Shippigan for the purpose of manufacturing dogfish into commercial fertilizer and oil for carrying purposes. At Clark's Harbor we found a two-story building, about sixty by eighty feet, at the head of a wharf which is four hundred feet long, on which they land the dogfish. In the second story of this build-

ing is located a steam cooker of three feet in diameter, and twenty-five feet long, with a hopper on the upper, highest end, in which the dogfish after they are livered are conveyed from the wharf by a bucket conveyor, and dropped into automatic continuous digester or cooker. Here the material comes at once in contact with the moving steam jets of the conveyor shaft and digesting begins. The material is slowly moved towards discharge, meanwhile being cut up and thoroughly digested, and finally falls into conveyor at discharge and thence to discharge tank. There is no separation of liquids and solid matter in the digester, these being discharged together.

There are many paddles attached to this revolving shaft that thoroughly break up and agitate the fish as they pass through, and when they arrive at the lower end they are thoroughly cooked and dropped into a screw conveyor which carries them to a cylinder press which is made of many slats of heavy iron beveled from the inside out, to create a drainage channel and bolted together and strapped in a very strong manner. The central hollow shaft of the press carries a tapered pressing screw mounted on same, which rotates inside of a heavy, close-fitting, slatted steel curb or casing. An adjustable cone, capable of longitudinal movement on the hollow shaft but rotating with same, is located at the discharge end of the curb. The setting of this cone controls the opening through which the pressed material is discharged and thus regulates the pressure exerted on the material in the machine.

The hollow screw shaft, within the length of the slatted curb,

is provided with special conical perforations which, together with suitable stuffing boxes and steam connections at the end of the press, permit the introduction of steam into the material while it is being pressed. The tank water and oil pass out between the slats of the press and are collected in oil separating tanks where the oil is separated from the water and barreled. From the press, the material is delivered by an elevator or conveyor to the direct heat dryer. The wet material and the furnace gases enter the shell at the higher end. The wet material falls to the bottom of the dryer, is caught by a shelf, elevated to almost the highest point of the rotation, and is then showered through the furnace gases. This cycle of operations is repeated until the material, in a dried condition, is discharged from the lower end of the dryer. The motion of the material towards the discharge is because of the slope of the dryer and of the draft. The material and furnace gases travel in the same direction with the highest temperature in contact with the wettest material, which procedure is theoretically and practically essential to high fuel economy. This dryer is supplied with heat from a brick furnace about six feet wide and eight feet long, in which is used cord wood, and it takes about two cords a day to keep up the heat. This heat and blaze enters the upper end of the dryer and is kept at an even, intense heat.

The time absorbed from the time the fish are put into the hopper on the wharf until they come out through the cooker, through the press, and through the dryer is forty minutes. When the scrap comes out of the dryer it is in condition to be

packed in bags and presents a very attractive appearance as a fish fertilizer.

The writer was very much surprised at the following analysis which was furnished by the agricultural department at Orono. The quantity of oil which the scrap contained after it had dried (as shown by the analysis) is certainly remarkable. This would, of course, increase the percentage of ammonia proportionately, and improve it as a fertilizer, as oil is worthless as a fertilizer, but for other purposes the oil is valuable, but its general use is for adulteration and for currying purposes.

There are about ten and a half gallons of oil in the livers of a ton of dogfish, if the dogfish run large. Small dogfish would yield considerably less.

At Clark's Harbor they have sold their oil for the past two years, according to the information I gained from the superintendent (who, by the way, was very obliging to us and seemed to be pleased with the object of our visit), for thirty-three cents (33c) per gallon and less, which is much below the market price. Their scrap has been sold to the Canadian farmers (and none of it is allowed to go beyond Canada), for twenty dollars (\$20) per ton, and the quantity limited to each farmer is five tons. This scrap, if the oil could be extracted, would be worth double that price. It takes about two cords of wood, which costs \$6.00 per cord, to run the dryer ten hours. It takes a ton of coal to run the boiler which furnishes the power, and does the cooking. They pay \$4.00 per ton for their fish as caught. They go down the coast in a vessel with power and gather up the fish from the fishermen all along the shore.

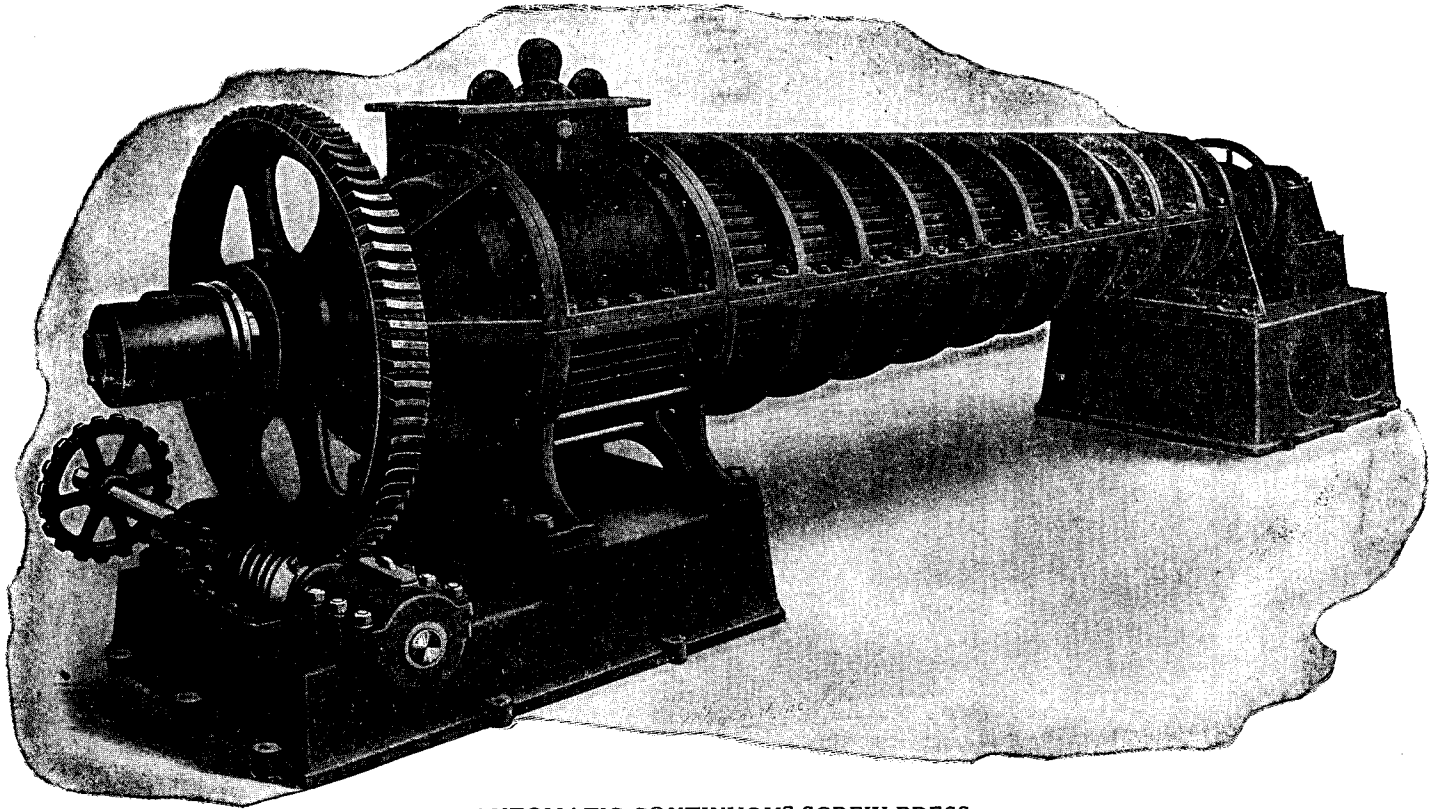
It strikes me that this is done to distribute the money among the largest number of persons possible, and the low price of the scrap is for the benefit of Canadian farmers. But it would seem better if the work were carried on for a profit to employ the local fishermen, of which there are a great number, at a higher price. It costs a large sum of money to gather these fish. The gathering boat costing about \$30.00 a day, and the shrinkage is something large, which they would not suffer if the local fishermen were to catch their fish and deliver them each day; and it is my impression that the fishermen would engage in the business if a satisfactory price were offered them. Owing to the wear and tear of their boats and fishing gear they claim they cannot make reasonable wages at \$4.00 per ton. (Owing to the high cost of gear, gasolene and food, coal, etc., the price ought to be \$8.00 to \$10.00 per ton in the United States.)

It was difficult for the writer to form a correct estimate of the cost of the plant at Clark's Harbor, as it had been changed over so many times with the addition of new machinery and the first machinery used was discarded, that no one seemed to have any correct idea of the cost, but the superintendent was of the opinion that nearly \$70,000 had been expended. But a careful estimate of what it might be reproduced for today would not exceed \$30,000. As to the question of labor in the operation of this plant, it is very apparent that it would not exceed \$4.00 per ton, as all the material when once put into the hopper is handled automatically until it is dropped ready for

the bag. The work of taking out the livers on the wharf before they are put into the hopper is the most tedious of the whole arrangement. It takes about 220 pounds of fish to make a bucket (which is the common way of measuring) livers. These buckets of livers taken from the mature fish will give about a gallon and a half of oil if they can be rendered by the use of jacket kettles, and bag presses. This part of their plant was not up to date and can be greatly improved upon.

On our way home we called at Eastport and found a similar set of machinery converting the refuse from the sardine factories into fertilizer and oil. They have a much larger plant than at Clark's Harbor, and they have in addition a spray condenser which condenses all the steam and gas from the dryers and it throws off no objectionable odor. We felt pleased to make sure of this fact, because of the complaint which seems to exist of fertilizer plants being objectionable on account of the smell, and which we feel sure under this modern process can be entirely overcome.

The writer kept up the investigation, and visited all of the seaport towns along the coast from Maine to New Jersey. He discussed this whole subject matter with the fishermen and the fish dealers, who seemed to be very much interested, and were willing to contribute what information and influence they might have to help matters before congressional committees, if we were fortunate enough to get a hearing at the next coming session. The writer held numerous meetings with the Boards of Trade and the Fish Exchange and Fish Bureaus along the coast,

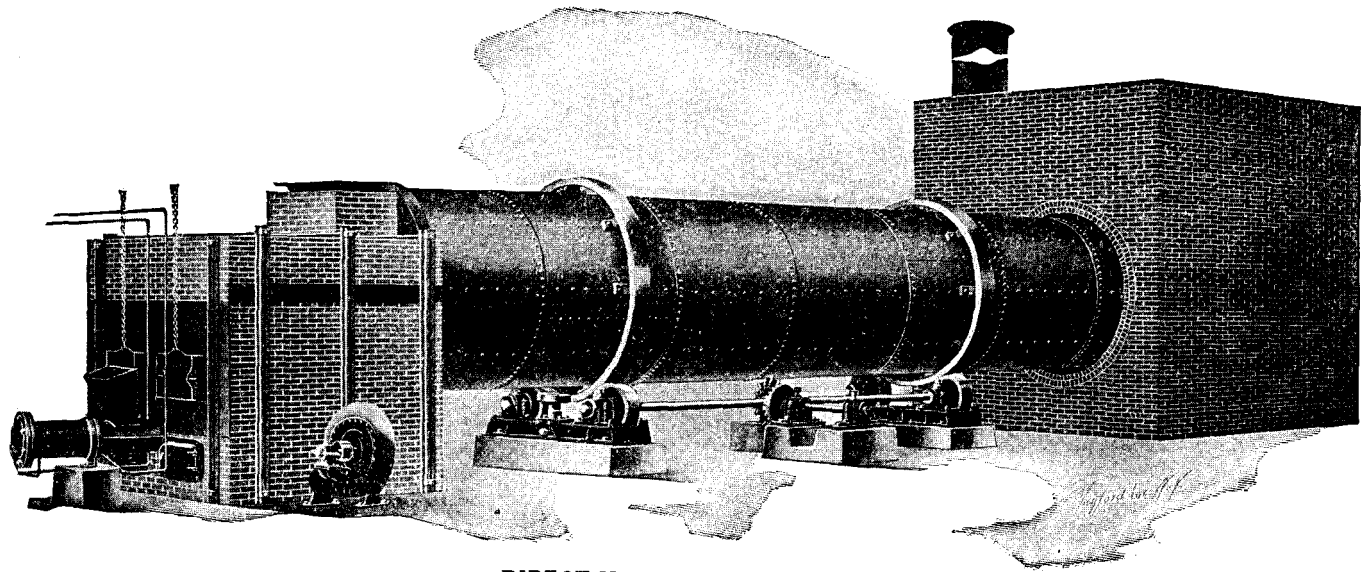


AUTOMATIC CONTINUOUS SCREW PRESS

and felt assured of a hearty cooperation not only of the dealers but of the fishermen, especially of that class that is engaged in trawl or hand line fishing. My object in these interviews with the fish associations was to get a delegation that would pay its own expenses and attend committee hearings at Washington. I got many promises but when the time arrived these delegations were conspicuous by their absence. As our appropriation was only a thousand dollars a year, three commissioners could not travel and be under expense for a long time without exhausting it. By December first we found that our account for the year past had absorbed the thousand-dollar appropriation.

We met the Governor and Council and the writer made the statement to that body that it was important to have our bill presented in the early days of the Congress which was soon to convene as it was to be an important and busy session and unless we got an early start we might get left for want of time for the consideration of our bill. I had previously interviewed all the main delegation on this question and they agreed with me that delays might be dangerous.

For the next year we had only one thousand dollars to our credit. Previous to this December meeting with the Governor and Council, the commission had authorized the executive secretary to prepare a campaign and look after the case in Washington. Some discussions arose in the commission; Mr. Davis did not agree with Captain Donovan and the writer as to the policy to be pursued in this matter. The Governor and Council being aware that there was a difference of opinion as to policy, passed

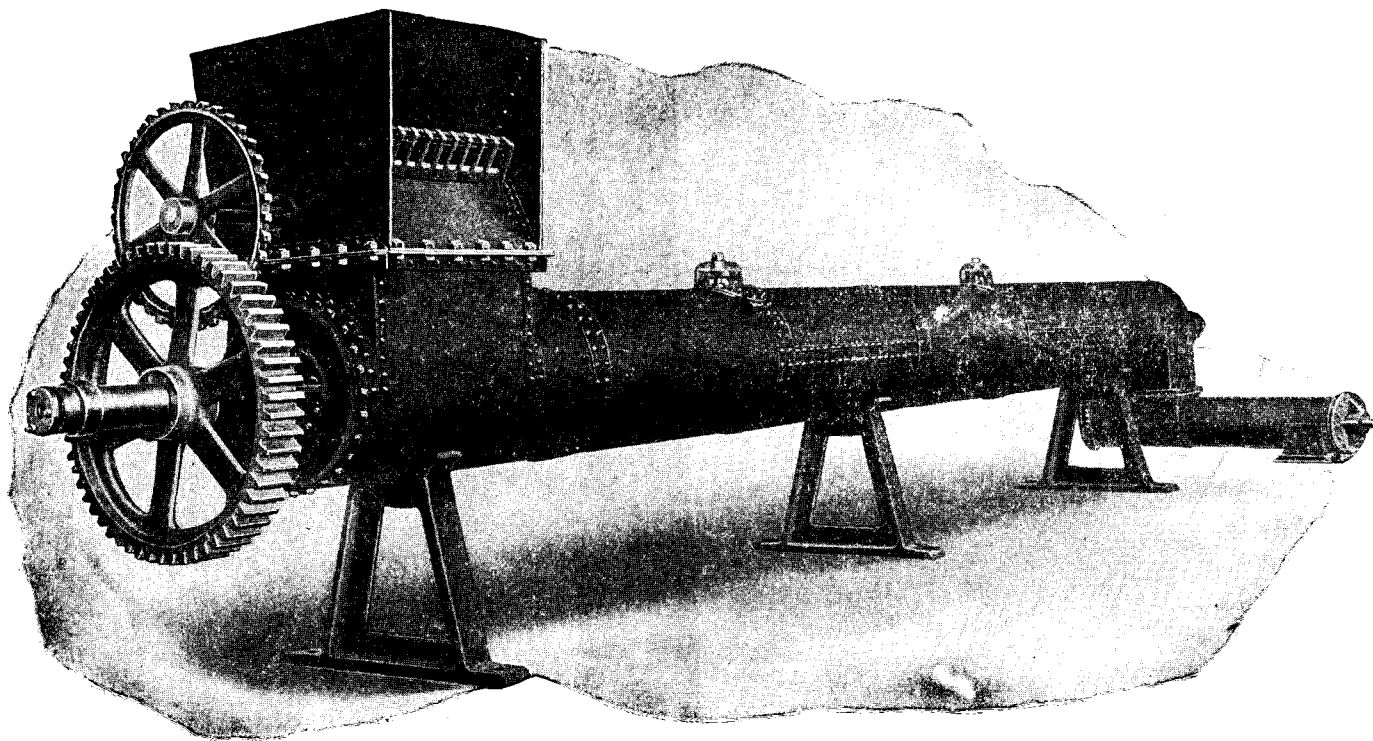


DIRECT HEAT ROTARY DRYER

a Council order withholding the funds until we made it a unanimous agreement. This condition was not changed all the month of December and prevented any progress. Captain Donovan and the writer could not agree with Mr. Davis on the policy to be pursued while at Washington, and it was decided that the matter should be left with the executive secretary in accordance with previous rote, and the appropriation for next year was to be applied toward paying the expenses at Washington. The sum being so small the Commission deemed it unwise for Mr. Davis and Mr. Maddocks both to go before Congress and ask for assistance. This Council order was rescinded about the first of January and that left the matter in the hands of the Commission to carry out its original program as per the vote of the Commission taken at their meeting in Portland, October 21st, 1915.

The writer felt assured that the remaining funds in the treasury which could be applied to the expenses of the case were available. This was the opinion of the Governor and Council as I understood it, and I was so assured by members of the Council. With this understanding I proceeded to Washington, calling along the way to find whom I could depend on for assistance and get the assurances of support from the various fish associations. I went over the ground quite thoroughly from New York to Baltimore and found the same favorable feeling existing. The fish associations of Philadelphia and Baltimore took favorable action by resolution which the writer appreciated.

On arriving at Washington the writer surveyed the ground, which was discouraging,—extremely so. I depended on the



AUTOMATIC CONTINUOUS COOKER OR DIGESTER

Maine and Massachusetts delegations for assistance and advice. They were mostly absent, not having returned from the holiday vacation. Senator Johnson, on whom I relied greatly for the introduction of the bill and the management of it in his committee, of which he was chairman, was confined to his hotel for nearly three weeks after my arrival. Senator Burleigh was too sick to attend to business but expressed himself very favorably towards us. Mr. Gurnsey and Mr. Peters were away. Mr. Hinds was very anxious to help us and did render great service, and to him is due a great amount of credit considering his condition of health. He certainly overtaxed himself in our behalf. Mr. McGillicuddy also rendered valuable service and did all he possibly could to help us.

It was the unanimous opinion of our Maine delegation that our bill should be presented by Senator Johnson and be referred to his committee. The first three weeks of my tarry in Washington was improved by making the acquaintance of the members of the different fishery committees of Congress and I think I made our position clear and our case, when it went before the Committee for final action, was pretty well understood. As soon as Senator Johnson was able to attend to business we first considered what kind of a bill should be presented. As this great question was so little understood there was good ground for believing that we should ask the Department of Commerce and Bureau of Fisheries to endorse whatever plan or bill might be agreed upon. With this end in view Senator Johnson and myself visited the Commission of Fisheries and discussed the mat-

ter from different angles, but without any agreement, as there were two propositions under consideration. One was for producing food from dogfish and the other was for producing fertilizer and oil on the same lines as pursued by the Canadian Government. After discussing this matter for some time we thought it advisable to confer with Secretary Redfield. Senator Johnson arranged for an interview which took place at the Department of Commerce with the Commissioner of Fisheries present. Secretary Redfield discussed the matter from his standpoint, which was for the utilization of dogfish for food purposes, and was very emphatic as to the manner in which we should proceed and expressed opposition to the fertilizer proposition and wrote me the following letter explaining his position:

DEPARTMENT OF COMMERCE

Office of the Secretary

Washington, February 9th, 1916.

My dear Mr. Maddocks:

In response to your request for information as to the methods proposed by the Bureau of Fisheries to deal with the dogfish problem, I beg to advise you as follows:

We asked in the 63d Congress authority to make a special study of this subject, including an appropriation of \$15,000, with the view of determining whether the dogfish could be introduced as food and whether it had any other economic values that could be made available. The bill failed of passage in such form as to give us the requisite funds and authority. We have asked Senator Johnson to consider with the Chairman of the

House Committee on Merchant Marine and Fisheries the introduction of this measure at the present Congress with a view to an appropriation of \$20,000. If this bill shall pass we will undertake immediately upon its passage to put a force of trained experts upon the problem and to use all our powers toward its early and satisfactory solution.

We are strongly hopeful that a demand would be created for the fish for use as several varieties of food and possibly for other purposes. In any event we think the experiment should be thoroughly tried and shall be very glad to try it. I have assured Senator Johnson that I will appear before his Committee or the House Committee on Fisheries and do anything in my power to get the thing started.

We doubt the lawful power of the government to enter into the fertilizer end of the matter and think it quite possible that the study we propose to make, if given the authority and the funds, may be quite as efficacious if not more so.

Yours very truly,

WILLIAM C. REDFIELD,

Secretary.

Mr. Luther Maddocks,

St. James Hotel,

Washington, D. C.

After this interview we called a meeting of the Maine delegation who had returned to Washington, to meet at Senator Johnson's office, and we discussed this matter thoroughly and concluded, considering all the circumstances, that it would be

better to agree upon a bill in accord with Secretary Redfield's views. Senator Johnson undertook the drafting of a bill to be presented at the earliest possible date, which he did very promptly, and it was referred to his committee for hearing. The report of that hearing is herewith submitted, and for it we beg the reader's careful perusal. At this committee meeting there were present the Maine delegation, Gov. Curtis and a number of Congressmen who felt interested enough to attend. No official stenographer was present and the only report was made by that able Washington correspondent, Mrs. M. W. Richardson, who writes over the non de plume of "Morgan" for many of the leading newspapers and who was attending the hearing for the Portland Evening Express-Advertiser.

SENATORS HAVE DOGFISH BANQUET—SMOKED
HERRING NO BETTER, THEY DECLARE.

Why Exterminate so Good a Food? One Asks—Maine Men Urge Passage of the Johnson Bill and \$25,000 for Experimental Purposes Seems Likely.

Washington, Feb. 21.—(Special to the Express-Advertiser.)
—The hearing before the Senate Committee on Fisheries on the Johnson dogfish bill introduced last week by Senator Johnson, was attended by Governor Curtis, Secretary of Commerce Redfield, United States Fish Commissioner Hugh M. Smith, Hon. Luther Maddox, members of the Maine Congressional delegation and others interested in the question. Governor Curtis is in favor of the Johnson bill, believing although it does not go as

far as Maine might desire, it has the co-operation of the Government and will be a splendid starter for the work of extermination and utilization of the dogfish off the Maine coast. The Governor hopes it will in time be of more extended scope but that it is well to take the present bill as a beginning and lose no time in starting the work under Government management. The Johnson bill calls for an appropriation of \$25,000, for experimental purposes and with a slight amendment to meet the views of the committee regarding portions of the second clause, is likely to get a favorable committee report. The Bureau of Fisheries furnished samples of smoked and canned dogfish and urged forcefully the passage of the Johnson bill. The hearing lasted two hours. Although the statement to that effect was not made, it is apparently by using dogfish as smoked, salted and canned that the greatest food value would be obtained for inland use in much the same way that herring are used. The edible part of the fish is firm, white and flaked, and when smoked and salted it looks like canned halibut and is as palatable, or more so, than smoked herring.

EAT DOGFISH.

“Here, John, just pass ’round that dogfish, and we’ll all have a taste,” said Senator Johnson of Maine at the close of the fisheries hearing Saturday, and in a jiffy the eight staid and dignified senators seated at the long mahogany committee table, Secretary of Commerce Redfield, Commissioner of Fisheries Hugh Smith and a dozen or more members of Congress and

newspaper men were spreading white flakes of smoked and salted dogfish out of small tin cans, as John "passed it 'round!" The committee room isn't fitted out for a free lunch counter, so a box of wooden toothpicks was brought on a hurry call and served as fish forks.

Secretary Redfield and others had been urging an appropriation of \$25,000 as carried in the Johnson Bill, to experiment as to the best way of utilizing the flesh of dogfish as a food, and the oil and skin for other purposes. They had stated that the fish was excellent food, and under another name would meet with a ready market. Senator Johnson hadn't forgotten that the proof of the pudding is in the eating, so he had a supply of finely canned goods on hand, to serve to the somewhat skeptical western members of the committee, who didn't quite relish anything with the name of dog attached. But they all said it tasted as good as kippered herring or smoked fish, and took the Johnson bill under consideration. The Maine men urging that the dogfish, which is a menace to smaller fish, lobsters and seines—can be caught and utilized for food and other purposes if the Government will lend a helping hand till the industry gets started.

IS GOOD FOOD, SAYS REDFIELD.

Secretary Redfield presented the matter to the committee forcefully and with a personal knowledge of conditions as he is a summer resident of Maine, and told the committee he felt that he was a "real Maine man."

Mr. Redfield said in substance:

That the Department of Commerce is completely in accord with the State of Maine in its desire to mitigate the evils of the dogfish pest which interferes with the legitimate fishing interests. It eats the bait, breaks into seines, destroys edible fish and is a serious menace. Nothing is too bad to say about it and nothing in the mother tongue is too strong to describe its destructive work. Dogfish has food value but how it may best be developed can be known only by extended experiments. Its name has prejudiced the public against it as a food fish, but one of its scientific names can be adopted and that prejudice easily done away with. The work should be pursued along the line of least resistance and might well be begun in inland cities where no prejudice exists and the fish is practically unknown. In time, it could be developed into a desirable food fish and at the same time the sale of such fish at a reasonable price would induce the fishermen to catch them and so aid in reducing the number and incident damage to other fishing interests. Food despised locally is often found to be highly valued in other sections. Sometimes a name will create a demand or an aversion to certain food fishes. The secretary referred to the mussel and its food value. While thousands of pounds a year are sold in France, only 60 shops in Boston carry it as a food. "It is not only edible, but very good," said the secretary. "I often eat them, and there are enough to be gathered from the wharves and docks on the Maine coast to furnish a big supply." Ten thousand tons were used in Europe when very few were sold

in this country. The use of mussels, dogfish and other excellent food fish, now but little or not at all used, would do much towards reducing the cost of living, and the poor of the country should be given the chance to benefit by the utilization of such material.

Secretary Redfield told how the sale of tile fish had been developed into one of the most important of the newly marketed fish. Last October it was practically unknown, but through the efforts of the Government large catches had been made by vessels especially sent out for the purpose and in February of this year 20,000 a day had been sold in New York city, and over a million pounds since the first sale in October. Without Government co-operation the fish could not have been made marketable to any considerable extent. The first month of the experiment the fish had to be given away, the second month it was sold and the third month went so quickly that the demand was scarcely met. Six vessels are in the tile fish industry and are now making as much money each week as the department guaranteed them for a month. Ten tons of tile fish are sold each day in one city.

It was practically the same experience in introducing mussels as food. They found no market until the Government took a hand in the matter. Mr. Redfield, at the request of the committee, briefly outlined the way it was done. The Government got into touch with the Chef's Club of New York, gathered quantities of mussels and gave them to the club, to restaurants and hotels and to police stations with full instructions how they

should be prepared for the table, sending them around by the barrel. Then little push carts were sent out on the streets of Boston in charge of a White-Wing squad, the carts bearing labels that the mussels were recommended by the U. S. Bureau of Fisheries. A demand followed and now mussels are supplied by markets and there is a good demand for them.

TO CREATE DEMAND.

Mr. Redfield believes the dogfish under one of its legitimate but less offensive names, could be made a valuable and popular food by putting it before the public in proper form. Secretary Redfield called attention to the fact that extended experiments would be necessary to learn just what methods should be pursued as to marketing the fish as a food; as to its value as a glue producer, as a fertilizer, and the use of its peculiarly scaled skin as a polisher. It is known that it has value in all these ways but will need experiments to develop its best and most economic uses. Mr. Redfield cited the great value that unexpectedly has been developed in the seal bone fertilizer now obtained from the Pribilofs by Government experiments. In order to develop an industry out of dogfish it will be necessary to have a sufficient appropriation and authority to do the work. The small experiments already made were permissible without additional authority, but to take the matter with the thoroughness and zeal that will be necessary, added money and authority must both be obtained. He recommended the Johnson bill, but would consent to certain amendments if the committee felt

them necessary. This referred especially to the clause of the Government selling the fish and which had brought out objections from members of the committee. It is probable that Senator Johnson will at once cut out that portion of Section 2 of the bill and put it in shape to meet the committee views without changing the tenor of the bill otherwise. Some one suggested that if the Government made dogfish a profitable fish no one would want to destroy it, to which Mr. Redfield replied with a laugh, that he did not foresee "a demand for dogfish hatcheries at present!"

IS NATIONAL QUESTION.

Secretary Redfield expressed the conviction that the extermination or utilization of the dogfish was a national question and not confined to the coast of Maine and that he fully believed the Government should take the matter in hand, as if it could be developed into a food fish, the whole country would benefit. "Any blow to the fishing interests of Maine strikes a blow to the entire country," said the secretary of commerce, "Instead of letting anything interfere with the fishing interests of Maine the overnment should give its aid in bringing prosperity to the great sea coast of Maine with its hundreds of fishermen."

Senator Johnson spoke in favor of the measure, Dr. Hugh M. Smith, U. S. commissioner of fisheries testified as to the damage done by dogfish and to the food value which he believed them to possess. He urged the committee to help the New

England coast interests, especially those of Maine, by giving congressional aid to the measures proposed.

Dr. Moore, of the bureau of fisheries, gave strong testimony regarding the valuable work done by the tile fish experiments and gave interesting figures to back up the statements. He said local fishermen were often very obtuse in realizing the value of new food fish, and cited the instance of the tile fish, showing that Boston markets did not believe it saleable until long after New York was selling 50,000 pounds a day of the fish. Dr. Moore also showed that dogfish were found in the tile fish grounds and that returning vessels had brought them to the markets where they found a limited sale. Dr. Moore described the average dogfish as about three feet long, weighing eight pounds. "They are clipper built pirates," said he. Dr. Moore spoke strongly of the value of their skins in place of fine sandpaper for polishing. In summing up the evidence against dogfish of the good use they could be put to as food and other purposes it was shown that the refuse could be used for many purposes such as the currying of leather, in the same way that spoiled eggs are now used. That they keep off the New England coast in deep water all the year round and come towards shore and shallower water six summer months; that the work should begin at once, and not wait until the next report of the commissioners; that experiments made now may lead to a development of a great industry, but of just what sort cannot be determined until after full experiments are made by the Government.

HON. LUTHER MADDOCKS.

Hon. Luther Maddocks made a strong and admirable plea for federal assistance in the matter of reducing the damage done by dogfish on the Maine coast. Mr. Maddocks said he agreed with the statement of the secretary of commerce and the commissioner of fisheries that the subject was of greatest importance not only to Maine but to the entire coast. As a member of the commission appointed from Maine to investigate the best way to deal with the subject and obtain Congressional aid, Mr. Maddocks felt that the Johnson bill, which has the approval of the Department of Commerce, should be adopted, and expressed hope that it might lead to better methods later on. Mr. Maddocks said dealers could not alone induce the people to purchase dogfish as a food fish, but that he believed the government, with its greater opportunities, could make the fish salable by using another name for the fish and so doing away with the existing prejudice. Mr. Maddocks believes the fertilizer proposition could be carried out, but not on a paying basis by itself. He urged, however, that the oil from the liver and the dried skins could be utilized for other purposes. He thought Canada had done good work with its fertilizer plants, but that they were insufficient in size and number, only three plants being located on the coast of 700 miles. He declared the dogfish to be the greatest pest of recent years. In answer to questions by the committee Mr. Maddocks stated he believed dogfish were increasing rapidly, even to the extent of 200 per cent. in the past five years. That formerly they had not come

near the shores, but lately had not only driven food fish into shallow water where they died, but dogfish had come into Maine harbors and become a menace to bathers. Mr. Maddocks believes that about 50 per cent. of the fish is edible and that the remainder can all be utilized. Glue can be made from the back bone, oil from the liver and the skin, properly prepared, is a fine polisher, better than sandpaper for some purposes. He believed the time had come for federal action and urged that the Bureau of Fisheries be authorized to act. Mr. Maddocks said he had handled 4,500,000 dogfish in reducing plants and knew by experience what he was talking about. The committee listened to him with marked attention.

A hearing on the Hinds bill—which is in duplicate with the Johnson bill—will be held Monday before the House Committee on Fisheries and at which the entire Maine delegation will be present to urge the passage of the bill.

MORGAN.

This committee granted us a unanimous favorable report. Senator Johnson made the report to the Senate and it went through without any objections. This gave us courage. The following Monday the same bill was under discussion before the Committee of Merchant Marine and Fisheries. The same interested parties, notably the Maine delegation and some visitors from Maine whom the writer invited to attend and speak in our behalf, were present, but owing to a cabinet meeting, Secretary Redfield was not able to attend, although his testimony at the previous meetings and his correspondence with the chairman of the committee was of valuable assistance to us.

THE DOGFISH BILL
Hearings Before the
COMMITTEE ON THE MERCHANT MARINE
AND FISHERIES

House of Representatives

Sixty-fourth Congress

First Session

On

H. R. 11254

A Bill to Conduct Investigations and Experiments for
Ameliorating the Damage Wrought to the Fisheries
by Predaceous Fishes and Aquatic Animals.

February 21, 1916

DOGFISH BILL,

Committee on Merchant Marine and Fisheries

House of Representatives,

Washington, D. C., Monday, February 21, 1916.

The committee met at 10.30 a. m., Hon. Joshua W. Alexander, chairman, presiding.

Mr. Hardy. Mr. Chairman, I would like to be reported as present and to have the stenographer take down a statement from me; then to be excused. I would like to say that this bill, I believe, ought to be reported, and I think that this committee ought to report a number of reasonable and needed fishery bills, as we have done heretofore. I think this is one of the useful bills introduced, and I think also that some bills looking to the purpose of taking care of the oyster industry at

Galveston and some other bills of like kind ought to be introduced and insisted on.

The Chairman. To accommodate our colleague, Mr. Hinds, of Maine, we sent down H. R. 11254 for hearing this morning, as the gentlemen are here who represent the commission appointed by the Legislature of Maine. It was to accommodate one of the members of that commission who did not care to remain in the city indefinitely that the hearing was set for this morning. That gentlemen is present; also the Commissioner and Deputy Commissioner of Fisheries. The Secretary of Commerce was invited to be present, but was unavoidably detained, but I think later on he will communicate with the committee by personal letter, giving his views on the bill. I believe he did appear before the Senate Committee on Fisheries last Saturday. The Solicitor for the Department of Commerce is here and wishes to make some suggestions with reference to the form of the bill, which I will have inserted in the record at this point.

A BILL, to conduct investigations and experiments ameliorating the damage wrought to the fisheries by predaceous fishes and aquatic animals.

(PUBLIC—No. 100—64TH CONGRESS)

(S. 4401.)

AN ACT to conduct investigations and experiments for ameliorating the damage wrought to the fisheries by predaceous fishes and aquatic animals.

Be it enacted by the Senate and House of Representatives of

the United States of America in Congress assembled, That the Commissioner of Fisheries be, and he is hereby, authorized and directed to conduct investigations and experiments for the purpose of ameliorating the damage wrought to the fisheries by dogfish and other predaceous fishes and aquatic animals.

Sect. 2. That the said investigations and experiments shall be such as to develop the best and cheapest means of taking such fishes and aquatic animals, of utilizing them for economic purposes, especially for food and to encourage the establishment of fisheries and markets for them.

Sect. 3. That the sum of \$25,000, or so much thereof as may be necessary, is hereby appropriated, out of any money in the Treasury not otherwise appropriated, to enable the Commissioner of Fisheries to carry out the provisions of this Act, the same to be immediately available.

Approved, June 21, 1916.

STATEMENT OF MR. ALBERT LEE THURMAN,
SOLICITOR OF THE DEPARTMENT OF COMMERCE.

Mr. Thurman. Secretary Redfield has asked me to convey to the committee his regrets for his inability to be present this morning on account of a very sudden and important matter requiring his immediate attention. Otherwise he would have been here.

Both Dr. Smith and Dr. Moore, the Commissioner and Assistant Commissioner of Fisheries, are here and will give you the facts as to the merits of the bill in reply to any questions that may be asked. As a matter of fact I assume they will be

perfectly neutral and treat you gentlemen as they treated the members of the committee of the Senate last Saturday, and give you a taste of canned dogfish, should any of you care to try it.

There is, gentlemen, one matter to which I desire to call your attention, and that is in the shape of an amendment to the proposed bill. At the hearing of the Senate Committee on Fisheries last Saturday Senator Jones, of Washington, while, I think I can safely say, favoring the purposes of the bill, did object to the phraseology of the latter part of Section 2, beginning in the middle of line 12. After some discussion Senator Johnson, of Maine, suggested that the following change be made in line 11: After the word "and," that the word "to" be stricken out and the word "of" inserted and the word "establishing" substituted instead of the word "established," so as to make it read:

* * * economic purposes, especially for food and of establishing fisheries and markets for the.

He also suggested making that the end of Section 2 and striking out all of the balance. And I wish to say to the members of this committee that that amendment would be perfectly satisfactory to the department. We believe that that will give us all of the necessary authority that is set out in detail in the balance of Section 2. I believe that the bill, as amended, is going to be reported favorably by the Committee on Fisheries of the Senate; and we have no objection whatever to that amendment if this committee sees fit to adopt it.

The Chairman. It would read then, "and of establishing fisheries and markets for them."

Mr. Thurman. Yes, sir. It would read, "especially for food and of establishing fisheries and markets for them."

STATEMENT OF DR. HUGH M. SMITH, COMMIS-
SIONER OF FISHERIES, UNITED STATES
DEPARTMENT OF COMMERCE.

Dr. Smith. I have no special argument to make on this bill, Mr. Chairman and gentlemen of the committee, and will simply say that the department realizes the great damage done to the fishing industry of our entire Atlantic coast, and, to some extent the fishing industry of the Pacific coast, by these small sharks; and that we have been desirous for a number of years of doing something that would ameliorate the great losses which the fishermen have sustained. And we feel that this is a proper matter for congressional attention.

The general purpose of the bill which is before you is highly commendable, and we think that with the authority and the appropriation carried by this bill we may be able to do something that will alleviate the situation.

The Chairman. The suggestion was made in the last Congress, and I think at that time a bill was introduced providing that factories should be established under Government control and these fish converted into fertilizer.

Dr. Smith. The feature of the proposed legislation has been eliminated from this bill, as you see. We were under the impression that such treatment of the case would not meet the

situation. In the first place, we were not assured that Congress would want to go into the business of establishing fertilizer factories along the coast and operating them at Government expense; and, in the second place, there was no assurance that we could produce any material diminution of the abundance of the dogfish by any such means. The history of similar fishes in all parts of the world is that man can have practically no influence on their general abundance; and for that reason we are glad that feature was not included in the bill that is now before you.

Mr. Chairman. It was further the view of the committee and of the department that it would not be commercially feasible to convert these fish into fertilizer, was it not?

Dr. Smith. It could be done, of course.

The Chairman. But it would cost too much money?

Dr. Smith. They have fertilizer value; but it has been amply demonstrated in Canada, where Government fertilizer plants have been established, that the manufacture of fertilizer from dogfish under existing circumstances would have to be carried on at a certain loss.

The Chairman. Your conclusion is that the best way to dispose of them is to eat them?

Dr. Smith. We realize that these are fishes causing great damage, and it is our view that the best way to handle them is to convert them into an economic resource rather than to continue to regard them as a pure and unadulterated nuisance.

Mr. Rodenberg. What is the department doing now in the way of exterminating this dogfish?

Dr. Smith. We are doing nothing whatever with the dogfish. We have had some experience in investigating the food value of other neglected fishes; and we expect to adopt the same general methods for the dogfish that have been successful with other recent cases, of which the committee may like to hear.

Mr. Rodenberg. Yes, I would really like to hear that.

The Chairman. First, we would like to know what kind of fish there are and why they are not wholesome and eatable?

Dr. Smith. The dogfish has an unfortunate name, and that, as much as anything else, has prevented its utilization in our country up to this time. The dogfish is eaten in other countries. It is eaten all over western Europe, and efforts have been made to introduce it to the American public, but without much success.

Mr. Lazaro. Why is it called "dogfish?"

Dr. Smith. It goes in enormous droves or packs, like wild dogs, and makes ravages on the coast, coming and going very suddenly.

Mr. Rodenberg. It has a sort of a bark, too; a peculiar noise?

Dr. Smith. It is a fact that it has a bark. I myself have heard it.

Mr. Rodenberg. I have heard it many a time.

Mr. Hadley. It has another name, has it not?

Dr. Smith. The only common name in this country is "dogfish." They have other names in other countries.

Mr. Lazaro. You say it is used in other countries?

Dr. Smith. Yes; it is quite extensively eaten in England.

Mr. Lazaro. What is it called there?

Dr. Smith. "Houndfish," I think, and also "dogfish."

Dr. Moore. It is called "plaice" also, I think.

Dr. Smith. That name, however, can not be adopted in this country because that would be tabooed by the pure-food board.

Mr. Van Dyke. Is the dogfish you have on the coast the same that we have in the small lakes in the interior?

Dr. Smith. It is peculiar to the sea. It is a small shark, averaging 7 to 8 pounds and weighing up to 15 pounds.

Mr. Van Dyke. We have a small fish called the dogfish in the small lakes in the interior which run from 2 pounds up to 7, 8, 9, or 10 pounds?

Dr. Smith. Yes, sir.

Mr. Van Dyke. But this is a different fish entirely?

Dr. Smith. Absolutely.

Mr. Curry. I would suggest that you might get the assistance of the pure-food board in this matter. This is not a dog, and you might have them taboo the name of "dogfish." That is a wonderful board, that pure-food board.

Dr. Moore. They might require us to call it "a fish in the dog style," or something of that kind, which would not help us so much.

Dr. Smith. We may be able to suggest a name which will not be objectionable or distasteful to the consuming public and which will still be in conformity to the law.

Mr. Curry. I think you will have more trouble in getting a name that will not be distasteful to the pure-food bureau.

Mr. Hadley. Is this dogfish that you have on the Atlantic coast similar to the dogfish that we have on the Pacific coast around Puget Sound?

Dr. Smith. There is a similar fish on the Pacific coast. It has the same habits and does the same damage as on the Atlantic coast, but it is not the same species.

Mr. Hadley. I want to know if there is any material difference in the fish?

Dr. Smith. No. In 1913 there were five and a half million pounds of this fish sold by the British fishermen for food. In the following year, 1914 (which is the latest year for which we have any figures), there were seven and a half million pounds sold for food.

The Chairman. What other fish are tabooed like dogfish as a food fish?

Dr. Smith. The most advertised fish, not excluding dogfish, in recent months has been the tilefish, which we took up because we were satisfied of its food value, and we have converted it into a marketable product of great value. This fish has a very interesting history, which is set forth in a little document issued by us recently.

The Chairman. This is not very long and it might be incorporated in the record, might it not? If there is no objection, it will be inserted in the record as a part of the hearings.

(The pamphlet referred to is as follows:)

(Department of Commerce, Bureau of Fisheries. Economic Circular No. 10. Issued Sept. 30, 1915.)

Of the tragedies which occur in the sea and the great disasters which befall the lowly dwellers therein we know but little, and the brief but tragic history of the tilefish therefore has peculiar interest. The discovery, the almost complete extermination, and the rapid re-establishment of this large, handsome, and potentially valuable species, all within the space of less than 15 years, is one of the remarkable stories of marine biology.

So far as is known, man had never seen this fish until May, 1879, when Capt. Kirby, of the fishing schooner William V. Hutchins, while fishing near the hundred-fathom curve, south of Nantucket, caught several thousand pounds of a "strange and handsomely colored fish." He sent a specimen to the United States Fish Commission, where it was found to be new and was described and named *Lopholatilus chamæleonticeps*. This name, which means the crested tilus with a head like a chamelon, may be used, after a little practice, with more or less facility by men of science, but for everyday use something shorter was needed, so the describer exercised the Adamite privilege of a discoverer and perpetrating a pun on the fourth syllable of the first name, called it "tile" fish. The fact that the fish was new was interesting, but what excited most attention was that it existed in enormous numbers within a short distance of the coast and that its edible qualities were of a high order.

Prof. Baird, the Commissioner of Fisheries, at once appreciated the economic opportunity afforded by the discovery and

began investigations to determine the location of the fishing grounds and the feasibility of establishing a fishery, but before much could be done the tilefish was apparently practically exterminated by a mysterious disturbance along the edge of the costal slope. The first news of this disaster came in March, 1882, when the master of a vessel reported that he had sailed for 69 miles through a mass of dead and dying fish floating at the surface. His first statement was that they covered a distance of 15 miles, explaining later that he feared to put his reputation for veracity in jeopardy if he stated the whole truth. Other vessels in March and April of the same year reported similar experiences, and from the various accounts it was estimated that the dead fish covered an area 170 miles long and 25 miles wide and that upward of 1,400,000,000 tilefish had perished. What killed them is not certain, but investigations of the water temperatures at the bottom, made by the bureau both before and since the occurrence, indicate that it may have been due to a sudden chilling of the water. The tilefish, like the cod, is a bottom dweller; but, unlike the cod, it is of a family accustomed to the warmer waters of the Tropics. It finds a congenial temperature where the edge of the Gulf Stream touches the sea bottom, on a slope as steep as a mountain side, and there is, therefore, but a narrow strip on which the water is neither too shallow nor too deep. The Gulf Stream is a great, warm oceanic river flowing between banks of cold water, not fixed like the solid banks of land streams, but pushed one way or the other as the path of the stream approaches or recedes from the coast. There is

evidence that about the time of the decimation of the tilefish the Gulf Stream was receding, and as it moved offshore its warmth no longer reached the bottom and the fish and other animals dwelling there were left in the chilly waters which took its place.

It is reasonable to suppose that being habituated to a warm and equable submarine climate they were killed by the cold wave which enveloped them. A few years afterwards, while the Gulf Stream was still "off soundings," investigations showed that it was again gradually approaching the coast, and it was predicted that in 1892 it would be flowing over a depth in which its deep stratum would again bathe the bottom of the New England coast, on which the tilefish had formerly abounded. The prediction came true, and the fisheries schooner *Grampus*, in the summer of that year, caught a few fish on the old grounds, although persistent search in the preceding 10 years had failed to reveal a single specimen. Evidently the return of congenial conditions caused the fish to immigrate from areas in which the mortality had not been so complete, probably farther south along the coast.

Whether the straying of the Gulf Stream was or was not responsible for the mortality suffered 10 years before, the return of the current to its old course was coincident with the recurrence of the tilefish, which has yearly increased in numbers in its old haunts until now it is apparently as numerous as ever. The Bureau of Fisheries believes it to be capable of supporting a great fishery and adding a desirable fish to the market. It is a

large, beautifully colored fish of excellent food qualities; and as it is easily caught and is found in great abundance, probably at all seasons of the year, within 100 miles of the coast, it can be placed on the markets of the New England and North Atlantic States in excellent condition.

Two things appear essential to give it the place which its economic and edible qualities entitle it to—the acquaintance of the fishermen with its abundance, ease to capture, and the accessibility of its habitat, and the appreciation by the public of its excellence as food.

To the fishermen the bureau is demonstrating, by actual trial, the economic possibilities of the fishery and the results will be made public through the press. It is also furnishing in this circular a sketch map showing the location of the grounds on which the fish are known to exist in commercial quantities.

Though the qualities of the tilefish and the accessibility of the grounds make it especially adapted to the fresh-fish trade, it is also excellent lightly salted and smoked like finnan haddie, and a temporary glut in the market may be relieved by preparing the surplus in that way. As a by-product the sounds are valuable, for they are of large size, and analysis has shown them to be equal to those of the hake for the production of gelatin or isinglass.

To the consumer the bureau is bringing the fish at a reasonable price through the regular market channels, with the recommendation that it be given a trial.

Mr. Van Dyke. I would like to ask one more question. Is

it your opinion that this bill will not have anything to do with any fresh-water fish at all? Is this a matter of the salt-water fish entirely?

Dr. Smith. It is not intended to be limited to salt-water fish, but the greatest need for an investigation of this kind now is in the costal districts.

Mr. Van Dyke. If it is not restricted to salt-water fish, just what sort of fish in fresh-water lakes will come under this bill?

Dr. Smith. The dogfish of which you spoke a moment ago.

Mr. Van Dyke. And the red-horse suckers?

Dr. Smith. That dogfish is predaceous and does damage, but it is now being utilized for food all over the Great Lakes, and several millions of pounds are offered for sale every year.

Mr. Van Dyke. In the state I come from, we have Rainy Lake and Lake of the Woods, and, in fact, most of the international border between Minnesota and Canada is water; and we have a great number of dogfish, red-horse suckers, and carp in those lakes. Now, is it your idea that that class of fish would come under this bill?

Dr. Smith. All the fish you mention are now being consumed rather extensively.

Mr. Van Dyke. I know they are up there. There is a ready market for them and they sell readily for 5 and 10 cents a pound.

Dr. Smith. None of those fish would receive any attention from our hands, because the public knows about their food value.

Mr. Curry. You would not have any idea of changing the name of "catfish" would you?

Dr. Smith. No, sir; that name is generally used and is not particularly obnoxious.

I will say just a word about this tilefish. It was discovered in 1879 and was supposed to have been exterminated by natural causes in 1882. In that year vessels coming in from the other side of the Atlantic and engaged in the coastwise trade went through hundreds of square miles of dead tilefish, floating at the surface. This fish was discovered and described by us, and it was the idea of the first Commissioner of Fisheries, Prof. Baird, that it would become a very valuable food fish inasmuch as the grounds on which it was found were very conveniently located on the seaboard, convenient, for instance, to the Boston, New York and Philadelphia markets. As a matter of fact, however, before this catastrophe occurred there were no tilefish used, and for many years after the catastrophe there were no tilefish to be found. But we made investigations and sent vessels to the grounds formerly resorted to by the tilefish, and finally found them in small numbers. These numbers have increased from year to year until now the fish has re-established itself over the comparatively large area in which it was originally found.

We undertook to create a demand for this fish and to supply the demand at the same time, and we engaged in what we conceived to be a legitimate and rather attractive advertising campaign through the press and by means of circulars and placards

such as this (exhibiting) ; and we chartered a vessel and guaranteed the captain and owners a certain amount for one month's work. This vessel went into the fishery and found the fish in abundance, and at the end of the month we abandoned the experiment. For six to nine vessels have now gone into the fishery, and they are landing their catch in New York. Upwards of a million and a quarter pounds have been caught and sold since we gave up the work in the late fall. About 20,000 pounds a day are now being sold in the New York market, and the fishery may be regarded as established. This was a fish for which there was no demand up to last October. •

Mr. Lazaro. In what year was that that you made this investigation?

Dr. Smith. The investigation to establish a fishery?

Mr. Lazaro. No; that you discovered this fish and introduced it.

Dr. Smith. In October, 1915.

Mr. Rodenberg. That is very interesting. When I was in New York some time ago a gentleman took me to dinner and recommended the tilefish, and I thought it a most delicious fish I thought it something very rare.

The Chairman. How far along the Atlantic coast are these dogfish abundant?

Dr. Smith. The dogfish are abundant on practically the whole Atlantic coast; but farther south the fish are in deeper water. It is chiefly in the New England States that the fish comes close inshore and does the greatest damage to the fishing

operations. Farther south it has the same predatory instincts, preying on the fishes of greater commercial value, but not coming in actual contact with fishing to such an extent.

Mr. Byrnes. It is not found down on the South Carolina coast, then?

Dr. Smith. Pretty far offshore, at Cape Hatteras.

Mr. Byrnes. How do you propose to create a market for them?

Dr. Smith. That will be a very difficult thing, and we do not know just what method of procedure we ought to adopt. We are approaching the subject with open minds.

Mr. Byrnes. You have no plan in mind.

Dr. Smith. A general plan to prepare the fish in every possible way and to go into the country with these products and try to create a demand.

Mr. Lazaro. Have you not that authority already?

Dr. Smith. We are not sure we have the authority; and the work that we have been doing recently has caused us some little concern because we were fearful we might be exceeding our authority.

Mr. Byrnes. You mean this tilefish work that you refer to?

Dr. Smith. Yes.

Mr. Byrnes. I suppose if you do have the authority you do not have the funds, anyway?

Dr. Smith. That is true; and the funds are quite as important as the authority.

Mr. Hadley. As I understand, the bill is not designed to

establish the fish on the market, but only to make investigations with a view of establishing them?

Dr. Smith. The purpose of this bill is to show how this fish can be utilized. No state and no private individual can go into this matter. It is for the Federal Government to assume the expense of the investigations that will be necessary.

Dr. Moore. Mr. Commissioner, excuse me a moment, but I think that possibly either you or I misunderstood the question. I think the question was whether it is our purpose to establish the market.

Mr. Hadley. Yes; and I ask this question by reason of the amendment proposed by the Senate committee. As I understand Mr. Thurman's statement of that amendment, and from a brief analysis of the bill it would seem the amendment goes to the form and not to the substance of the bill. In other words, that it proposes a prosecution of means to the end of an ascertainment of what can be done, but not to the doing of the thing itself until further authorization.

Dr. Moore. I think it is our purpose and our desire, and it seems to me to be a very essential feature of the work, that we should establish a market. That is a very essential matter, to establish a market and to induce people to eat the fish and thereby to induce the fishermen to catch them.

Mr. Hadley. I was just asking for information, because the amendment I do not think materially changes the substance, and yet it is a change of form.

Dr. Moore. Yes.

Mr. Hadley. But I do not think the substance of this bill, as I read it, really goes to the point of authorizing the establishment of fisheries and markets. As I read it it would be "to develop the best and cheapest means of taking such fishes and of utilizing them for economic purposes and establishing them."

Dr. Smith. It does not mean establishing market houses, but the creation of a market demand.

Dr. Moore. The actual establishing of a market is the important thing we wish to accomplish. That is the crux of the whole matter.

Mr. Byrnes. As I understand, your question is directed to the establishment of a Fishery?

Mr. Hadley. Yes, whether it was intended that subsequent to this legislation there should be further authorization going to the establishment, or whether it was intended that the commissioner should have authority, if this bill passed, to establish the fish in the markets under this bill.

There is a material distinction, if that is the intention, between that and the amendment proposed in the Senate.

Mr. Moore. It is certainly our desire to have authority to actually establish a market, and to go at it in the most practicable way that we can devise to actually put the fish into the hands of the consumer. The success of the entire project hinges upon our ability to do that.

Dr. Smith. If agreeable to the committee, Mr. Chairman, I would like to have you ask Dr. Moore to tell you something about the economic possibilities of the dogfish which is some-

thing to which he has given attention. And he has some samples here which I think some of you might wish to try.

The Chairman. Very well, Dr. Moore.

STATEMENT OF DR. H. F. MOORE, DEPUTY COMMISSIONER BUREAU OF FISHERIES, UNITED STATES DEPARTMENT OF COMMERCE.

Dr. Moore, Mr. Chairman and gentlemen, I will be very brief in what I have to say on this subject. The matter is treated to some extent in the report which the department made on this bill and in the memorandum submitted with it.

The economic possibilities of the dogfish are quite various, and there have been various projects for dealing with this matter. Some of them have proposed that the fish should be utilized for fertilizer, which is a perfectly good use for the fish, but, as the commissioner has already said the difficulty is that you have to compete in the market with a fish which can be handled very much more economically—that is the menhaden. The cost of producing fertilizer from the menhaden, to a considerable extent, fixes the price which can be obtained for fish scrap in the market, which normally is about \$30 a ton, although it is a little higher now on account of peculiar conditions. The price of the oil, which is extracted more or less incidentally in the production of fertilizer, is about 30 cents per gallon.

Menhaden, in 1908, sold for an average of about \$4.00 per ton. As a matter of fact the menhaden is sold by count, but I have reduced the cost to the ton unit in order to be able to compare it with the dogfish, which, of course, is quite a differ-

ent size. The fertilizer factories which are established in Canada and are operated by the Canadian Government, give practically the same price per ton for dogfish that is obtained by the fishermen for menhaden on our coast. The result of the operations in Canada has shown that the dogfish is very much more expensive to handle. There are certain peculiarities in its flesh and certain peculiarities in regard to other of its structures, which make it more expensive to handle in the production of fertilizer than is the menhaden. For instance, it can not be subjected to what is known as the continuous cooking and pressing process on account of the rather spongy character of the flesh when steamed; and the oil has to be expressed in a more expensive way. Moreover there is a large amount of oil left in the fertilizer, to the detriment of the fertilizer and to a reduction of its value on the market.

The operations of the Canadian reduction works have shown that for raw material, for dogfish, for fuel, for wear and tear on their plants, and allowing no interest on the investment—that for every dollar they expend for these items—they are able to recover but 40 cents. That is an indication and an index of what we would have to expect if we undertook the production of fertilizer from dogfish.

The Chairman. That would be a 60 per cent loss.

Dr. Moore. A 60 per cent loss. That is, in the last six or seven years that two of these reduction works have been in continuous operation, their gross expenses, making no allowance for interest on the original investment, were something

like \$150,000; and they recovered in the way of proceeds from sales, \$56,000. That loss might be justified in view of the character of the dogfish and the damage that it causes to fisheries if there were any possibility that it could be materially reduced in numbers, if it could be exterminated, or practically exterminated, or if you could bring about any great amelioration of the damage they do, by reducing their numbers. But that we regard as absolutely out of the question. We believe any attempt of that kind to be futile, for the reason that the dogfish swims over the entire north Atlantic. It is found on both the European and American shores, and it spreads itself over and wanders throughout the ocean which lies between them. A school which may come on to our shores today may be 100 miles away next week, or a thousand miles away, for all we know, and it may never come back. And the fish you would be able to catch from that school would have very little effect on reducing the number which would appear next week or next season or in following seasons. I believe, however, that the proper way, as the commissioner has expressed it, is to transform the fish from a nuisance into an economic resource and to make the fishermen desire to catch it because they can make something out of it. It appears to us that that can be brought about only by reason of a high value to the fishermen—the price that the fisherman receives. The highest price which can be brought by fish is for food purposes. You might sell these fish for \$4 or \$8 a ton for fertilizer, and you would have to sell them for not more than \$4 a ton to

compete with the menhaden; but there is no practical limit to the price which they might bring for food. The price depends on the light in which they are regarded by the public. If they were sold for but a cent a pound that would be \$20 a ton for the fish instead of \$4 or \$6 which they might bring for fertilizer purposes.

We believe that it is perfectly feasible to introduce this fish on the market. Other despised fish have found their place. The sturgeon was one of them. The sturgeon was formerly thrown away. And we believe that the dogfish can be brought into use the same way that it has recently been brought into use on the coasts of England and Wales. Last year, notwithstanding the interruption of the fishing operations by reason of the war, there were about 5,000,000 pounds of dogfish consumed in the English market; whereas a few years ago there were none. The fish is eaten quite extensively by all the people that live along the Mediterranean Sea and the Greeks and Italians especially consume it in large numbers. The Norwegians and Swedes also eat it. I had a letter from a Norwegian resident in this country just a day or two ago. He had seen some account in the newspaper press of the proposed propaganda to introduce this fish on the market, and he had written to say that he had eaten it in Norway and it was a common article of diet there; that it was slack-salted overnight and boiled the next day, and was regarded much more highly than the cod. He wound up his letter by saying that the greatest difficulty we would have to contend with was the

name of this fish; that its quality was all right but its name was **bad**.

Mr. Lazaro. Do you know anything about the price of this fish in those foreign countries where it is used so extensively?

Dr. Moore. In the markets of England the fishermen of England receive $1\frac{1}{2}$ cents a pound for it. The 5,000,000 pounds which they caught last year sold for a little over £16,000 sterling. That is about \$80,000, which would make the price a little over a cent and a half a pound, about 1.6 cents per pound. Of course, all fishes are sold cheaper in England than they are here, and probably it would bring a higher price here.

This fish has been eaten here to some extent. When I was in New York in October—I had a talk with the master of the fishing vessel that we had engaged for carrying on fishing operations for tilefish. He is a practical man and one who has had wide experience; one of the leading fishermen of Boston and Gloucester. He was catching dogfish on the tilefish fishing grounds, and he said they were a nuisance, and he was driven away from the fishing grounds on account of them. I said to him, "Why don't you try to sell them here in New York?" He said he doubted if he could. I told him a good many people in New York, Italians, Greeks, and others, who were accustomed to eating this fish in their own countries, knew what it was, and it ought not to be hard to induce them to buy in their adopted city.

I had a letter from him just last week in which he said he had brought in some fish, and he had sold one barrel of 150

pounds, net weight, for \$8.75, which is pretty nearly 6 cents a pound; and that he sold two half barrels of 75 pounds each for \$4.75 for each half barrel. He said that had exhausted his supply. In order to carry on some experiments in the preparation of the fish there, the results of which are shown on that table (indicating), we arranged with him to ship some to us at East Gloucester. On his next trip he brought in all the dogfish he could catch, and he sold upward of a thousand pounds of them for prices ranging from a cent and a half up to 5 cents a pound. Now there is a limited demand, but I believe a market can be found in New York at once for a small supply. We will have to coax that demand very carefully. We will have to bring it along gently so that we will be able to keep the supply and demand more or less on an equilibrium. Otherwise if we get a glut on the market the dealers will become disgusted and we will ruin the whole affair; or on the other hand, if the quantity brought in is too limited and they ask too high a price, we will ruin the demand. The two will have to be kept properly correlated and the matter will have to be dealt with skillfully, and for that reason we are asking rather broad authority to proceed in this matter.

We can not map out this project entirely in advance; it will be a campaign of opportunity; it will be a campaign of development as it goes along. And therefore we are asking that we be given sufficient authority to enable us to meet the conditions as they arise.

Mr. Byrnes. What is the English name for these dogfish?

Dr. Moore. The English call it dogfish or houndfish. It is also known as "hound." There are various local names in Cornwall and Wales, which, however, I do not recall.

Mr. Byrnes. What do they call it? What I am anxious to know is if you can not find some other name for it.

Dr. Moore. We can find a name for it, but the difficulty is to find a name which will meet the requirements of the Bureau of Chemistry, which administers the pure-food laws. It already has a name, which the ordinary man does not hear of.

Mr. Byrnes. What is the name for brim on our coast?

Dr. Moore. We probably will endeavor to introduce it under the name "Acanthias," which is the specific scientific name of this fish.

Mr. Byrnes. It is almost as bad as dogfish, is it not?

Dr. Moore. It is not ideal, I will admit.

Mr. Byrnes. What we know as brim down in our country, on the south Atlantic coast, in the interior are called "sunfish"; is not that right?

Dr. Moore. Yes.

Mr. Byrnes. And as you have two names for all fish, and it seems in different localities they have different names, why could you not give some other name to this fish to make it more attractive in the market?

Dr. Moore. The trouble is that accursed fish has the same bad name everywhere. You can not get away from the dogfish idea—dog or hound or an equivalent—in every place.

Mr. Greene. Your investigations were with regard to the dogfish, were they not?

Dr. Moore. Yes.

Mr. Greene. And in this investigation you arrived at the point where you thought they would be useful for food fish?

Dr. Moore. Yes.

Mr. Greene. I was wondering—of course, I came in a little late—that Boston being the great fish market of the East, why they could not be developed there to better advantage than even for the Government to take hold of it.

Dr. Moore. The dealers of their own initiative would not take hold of the tilefish. We had to go to the dealers and educate them to take hold of the tilefish.

Mr. Greene. If you showed them that there was money in it for them, I do not think you would have any trouble.

Dr. Moore. We had to show them actual money; we had to see that they were put in a position where they actually got 6 cents per pound; in effect it was guaranteed to them. It was not an actual guaranty, but we took such steps to introduce the sale of this fish as to make it a practical guaranty.

Boston is a great fish market—the greatest fresh fish market in the world. It is also the most conservative fish market in the world.

Mr. Greene. They are all conservative in Boston.

Dr. Moore. And we have not been able to get the dealers there to take up the tilefish; and yet there is a market for it right along. New England is being supplied today with tilefish

from New York. Now, we will have to go to the dealers with the dogfish; we are not going to ignore the dealers; we are going to act in cooperation with them, and that is the secret of our method. Without such cooperation we would never have been able to put the tilefish propaganda through. We could not undertake to put them on the market direct, but we undertook to see that the regular avenues through which they are usually distributed were not blind avenues or cul-de-sacs, but that they have an outlet at the end.

Mr. Burke. Is there any noticeable or substantial difference between the flesh of the fresh-water dogfish and the salt-water dogfish?

Dr. Moore. I am not personally familiar with the flesh of the fresh-water dogfish. I know the salt-water dogfish quite well.

Mr. Burke. You are aware that in our northwestern streams, and I presume in other parts of the country and in some of our lakes, that there is a fish called the dogfish?

Dr. Moore. Yes, sir.

Mr. Burke. Do you know of any country in which the dogfish is used as an article of human food?

Dr. Moore. You mean the fresh-water dogfish or the salt-water dogfish?

Mr. Burke. The fresh-water dogfish.

Dr. Moore. No, sir.

Mr. Burke. If you will pardon me, Mr. Commissioner, I would like to make this statement, that in my home town, Beaver

Dam, we have an artificial lake there of 14 miles long by about 3 wide. We have about 100 Hungarian families there. They are really Germans in the same sense that a person born of German parentage in this country is an American. Their parents drifted from Germany over into Hungary. And in that lake there are numerous dogfish. These Hungarians eat those dogfish in the same manner and with the same relish as we eat our ordinary fish, and they say there is not any difference in them, and they simply laugh at the balance of us because we do not eat the dogfish.

Dr. Moore. They learned that after they came to this country, however. The dogfish is not found in their country. That fresh-water dogfish is an American fish, and they learned to eat them after they came to this country, which indicates in a way the possibility of educating especially our foreign populations, which are more open to education in this respect than are Americans—more willing to take up a new food than are the Americans—and your story illustrates the possibility on which we are counting—of inducing people to take up something new.

As far as salt-water dogfish is concerned, I was saying before you came in, that it is quite extensively used in Europe. It is used along the Mediterranean, and to some extent in France, especially in the Mediterranean ports of France. It recently has come into use in England and Wales; that is, within the last six or eight years; and an average of 6,000,000 pounds a year are consumed there now. And it has been used for a

great many years in Norway and Sweden. Now, we have in our country an immense Italian population. I do not know how big it is but I suppose the Italian population of New York is at least a third as large as the population of Naples, the biggest city in Italy. We have a great Italian population scattered all along our coast, and there is in the Northwest a very large Scandinavian population. Now, we have, ready made in a way, a population which will be ready to accept this dogfish because they know something about it in their own country.

Mr. Loud. There is no similarity between the dogfish of the fresh water and the catfish, is there?

Dr. Moore. None whatever. The dogfish of the fresh water belongs to a very peculiar type of fish. It is more nearly related to the gar fish.

Mr. Loud. And to the long, cylindrical, bluefish?

Dr. Moore. Yes; it is a long, cylindrical fish.

Mr. Loud. And the catfish is more stocky?

Dr. Moore. Yes; and the catfish is more nearly related to the rest of our fish. The dogfish is more nearly related to the gar.

Mr. Burke. As illustrated in the course of your remarks about finding a population that might patronize this class of fish, I desire to say that in the same lake I am speaking of, we have what is called the carp, and our native population will not use it at all. But in the fall of the year, in fishing with nets on the fishing grounds they catch as high as 30 tons in a net, and they have devised a method now by which they can ship them

alive to Chicago and New York, and there are a certain class of people there, I believe, of Jewish extraction, who in certain seasons eat these fish, and pay as high as 8, 9, and 10 cents a pound for them alive; whereas the people in our section of the country won't touch them at all.

Dr. Moore. That is the case. They sometimes pay as high as 30 cents a pound for this fish in New York; and at certain seasons it is one of the highest-priced fish in New York; and yet it is despised in many parts of our country. It is selling in Washington for 15 cents.

The Chairman. The carp?

Dr. Moore. The carp.

Mr. Burke. I rather believe ours is the buffalo dog. It grows to be a fish with a large scale.

Dr. Moore. That is probably the carp. The buffalo is really a better fish than the carp, I think. It may be the buffalo.

Mr. Burke. I have heard it disputed as to whether it was the carp or the buffalo.

Dr. Moore. The carp gets to be a huge fish, you know.

Mr. Burke. Yes; and sometimes these fish will lay up on the shore and they look like young hogs.

Dr. Moore. Yes.

Mr. Curry. This dogfish destroys a lot of the better class of fish, does it not?

Dr. Moore. It destroys fish, but the chief damage which it wrecks is to the fisheries themselves. It is not so much the fish it destroys as it is the fact that it makes fishing absolutely im-

possible. When the dogfish comes on a foray on the coast the fishermen have to give up business. Their trawl lines, which are long lines with hooks attached at intervals, stretched over the bottom, become gorged with dogfish, every hook is taken by a dogfish; and the fish for which the fishermen have a market are either driven away or the bait taken before they get to it.

In the case of the nets, the fish are eaten right from the nets, and as the dogfish has very sharp teeth and a strong mouth, they tear the nets to pieces. And the only thing for the fishermen to do is to quit in order to save their gear and time.

Mr. Curry. One of the great outrages in this country is the retail price of fish. The fisherman gets from 1 to 3 cents a pound for his fish, and when we go down to buy it we have to pay from 15 to 30 cents a pound. If you could do something so as to let the people get fish at the price at which it ought to sell, you would do a whole lot of good.

Dr. Moore. We had a case of this kind with this tilefish. It happened right in Boston. There were two catches brought in which sold for from $3\frac{1}{2}$ to 4 cents a pound, the dealers there being very reluctant to handle them. The day after the fishermen got that low price, they were selling at the retail shops in the town for 22 cents a pound. They had appreciated in value 18 cents in one day.

The Chairman. I got a letter the other day from some gentleman in New York who has been interested in the welfare of the fishermen on the coast for years past, who called attention to that fact, that the fishermen get a very small part of the cost of

the fish to the consumer, and that the trade is monopolized in a way that he is robbed of the profit of his catch. And this gentleman insisted that the Government ought to purchase and operate a number of fishing schooners or other craft along the New England coast to take the catch of a fisherman and bring it to market and give him a chance to get a reasonable price for his catch.

Dr. Moore. That would not, however, solve the problem in this case, because the question of transportation was not involved at all. The fishermen brought their fish right into the fish wharf and sold them there for between 3 and 4 cents a pound, and they were resold right in the same city, the only transportation involved being the trucks to carry the fish from the wharf to the retailer.

Mr. Greene. We will have to have an investigation of the fish trade.

Mr. Curry. Are the fishermen in New York permitted to sell to the consumer?

Dr. Moore. I do not know of any regulation against it. As a matter of fact, I do not believe there are many of them who do.

Mr. Curry. It would not be any law. I am just talking about whether they are permitted to do that by the dealers.

Dr. Moore. I suppose if the fishermen anywhere would attempt to sell directly to the consumer, they would come into conflict more or less with the dealer, and the dealer would be quite likely to remember that fact when the fisherman wanted to dispose of some fish to him in a pinch.

Mr. Curry. We had a condition of that kind out in California. We reached it through State legislation. The fishermen was receiving from 1 to 3 or 4 cents a pound for their fish, and he was only permitted to sell what the retailers wanted to buy. There was a monopoly out there and a man in Pasadena had control of the market. The State legislature appointed a commission to investigate the situation and to find out what it was (and they have since passed legislation) and now if a person wishes, he can go down to the wharf and buy fish from the fisherman and take them home. But before that legislation, if the fisherman sold to the consumer the retailer would not buy from him, and that put him out of business. Before that, down in my town, Sacramento, we used to pay 3 cents a pound for the same fish at the wharf, and we could go right uptown, four blocks, to the fish market, and we had to pay 22 cents a pound. But they have changed that out there. Of course they have got to pay 10 or 12 cents a pound now, if they go to the fish market, but if they go down to the wharf and buy the fish, they can get it for 5 cents a pound from the fisherman.

Dr. Moore. There are a great many fish sold direct by the fishermen in Boston. There has recently developed there a very large shore fishery, carried on mainly by the Italians, in which they take a large quantity of the flat fishes, the flounders and fish of that general type, and they are sold direct to the consumer at the fish wharf, and they are bringing them to the consumer in push carts, etc.

Mr. Greene. I have never seen anybody interfere with the selling of fish at the wharf in my town.

Mr. Curry. Before this law went in effect they used to take their surplus fish, what they could not sell to the retailer in the market, or if they had an extra large catch of fish, and take it offshore and dump it in the water.

Dr. Moore. That is done in New York every now and then.

Mr. Curry. They do not do it out home any more. I would like to see these fish put on the market, and I would like to see you folks whose business it is to think these matters out, think out some way whereby, without the Government going into the business itself, the people will be able to buy fish at reasonable prices. It ought to be the cheapest flesh food the people have; but really, in some places, it is as dear as meat.

STATEMENT OF MR. N. P. M. JACOBS, OF MAINE.

Mr. Jacobs. I come from a dogfish coast, and I know in a small way that I can speak about the menace it is to the public there. The dogfish come onto our coast about the 1st of May and remain there throughout the season, up to the 1st of November. During that time the fishermen can make very little money. The dogfish, as you know, drives everything in front of him. Everything has to go when the dogfish comes. I have seen the dogfish drive the edible fish up onto the beach in front of my house and all along the coast so that we would have to go out and take our teams and get men to bury those fish on the land, there were so many driven in by the dogs.

The fishermen, of course, get no price for the dogfish at

all, and they can not catch the edible fish. Consequently they look to other pursuits. And I might say that the fishermen in our section are becoming less and less every year, and, I think, for that reason; and the dogfish are multiplying very fast.

I have never heard the question discussed much in regard to the dogfish as an edible fish until I have heard it here. I do not think that they can be used among our people for a long time as an edible fish. I am quite sure of that, because the name "dogfish" would certainly kill them, even if they were a good edible fish. And I think that would be so all over the country. It seems to me that if they were a good fish in that way, of course, the fishermen themselves could make a living, and they would catch all dogfish if the price was more than for the other fish.

The Chairman. During this season when you say they infest the coast there, they would catch the dogfish if they had a market for them. Do you think it is practicable to catch them and convert them into fertilizer.

Mr. Jacobs. I wish they could be exterminated in some way. I do not believe that they can catch them fast enough.

The Chairman. How long have these fertilizer plants been established in Canada; do you know?

Mr. Jacobs. No; I do not.

The Chairman. Has there been any appreciable diminution of the number of dogfish since these plants were in operation?

Mr. Jacobs. Not in our section. I think they are multiplying very fast.

Mr. Hinds. Mr. Maddocks is prepared on that branch of the subject.

The Chairman. Very well.

STATEMENT OF MR. LUTHER MADDOCKS, MEMBER OF THE SPECIAL COMMISSION OF MAINE TO INVESTIGATE AND REPORT ON THE DOGFISH.

Mr. Maddocks. Mr. Chairman and gentlemen of the committee, I have no doubt your patience is pretty well exhausted, and I will detain you but a few moments. I wish to call your attention to this bill which you have before you and to speak of its merits. I approve of it. I approve of all that was said by the Secretary of Commerce before the Senate committee on Saturday, a copy of whose remarks you have before you.

What I want to impress upon this committee is the necessity of some action on the part of the Government to reduce the number of dogfish in the sea and to make it of some value to the human family. This is a burning question on the New England coast and on the whole Atlantic coast. It is a question on which the Legislature of Maine has acted and the Legislature of Massachusetts now has under consideration a similar bill. I have been appointed by the Governor of the State of Maine as one of a commission to investigate this whole subject and report to our next Legislature this coming year.

My investigations lead me to believe that any attempt, no matter how feeble, to help the fishermen in this matter is acceptable. If we can not get what we want I believe we should get

what we can. I believe it is commendable on the part of the Bureau of Fisheries to suggest that this fish can be made an article of food. I am willing to help, and our fishermen are willing to help demonstrate it. Conditions are desperate on the coast among the fishermen. I know that because I live among them; on my right and on my left are fishermen; and I know the pinched condition of those families today. They are suffering from poverty, and they are suffering untold poverty in some cases, for the reason that the dogfish were so plentiful on the coast last year that it was impossible to catch food fish to help through the winter. They appear, as has been stated, about the first of May and stay until November, and while they are there it is almost impossible for the fishermen to depend on fishing by trawl, hook, and net fishing to get a living out of the water.

The state has considered this matter and, as I said, appointed a commission, which I represent, and authority was given to us to apply to the Government of the United States for relief. And I am here today to voice the opinion and the desire of the fishermen, and any bill or any effort made in the direction of their relief will be received and appreciated.

The different methods have been suggested to you for handling this question. I do not care to go into them and rehearse that matter, although a part of what has been said to you I have different ideas, based on a practical experience of a whole lifetime of 71 years; so I am not guessing at anything, and I am not telling you anything that people have told me. I had occasion to visit the plant at Nova Scotia, and I feel quite well in-

formed. I was there last June. I went all through their plants, and having had 50 years' experience in the fertilizer business in the East (in the Menhaden business), I readily caught on to the process, as you might imagine. I am satisfied that the principle involved in those factories on the coast of Nova Scotia is the correct principle, but that matter has only been handled in a feeble way. They have 700 miles of coast line and there are only three factories to grapple with this great proposition of destroying or reducing the number of these dogfish, the greatest menace that ever came upon our coast. Now, I am in correspondence with the commissioner who has this matter in charge in Nova Scotia, and I am in correspondence with the superintendent of works. I also have the figures that have been put up to you today, on which I do not wish to take issue; but when I tell you that the Canadian Government to assist their farmers have sold the fertilizer to them at \$20 a ton, when it is worth today \$40 (and have sold their oil at much below the market price), for the purpose of pleasing the farmers and as an offset to the taxes which they must have paid for the benefit of the fishermen, you can understand why their business is being run at such a great loss. As far as the manufacture of the product is concerned, they have as good an outfit and as good a process as is known today. They have the American process machinery, which is up to date and which is sent all over the world for handling garbage. The process would have been explained today had we thought it necessary; and I want to say right here that I have the names of 50 men on my list who would have been

here had we considered it necessary, but under the present conditions we supposed if we came before this committee and gave you the facts about this menace, this bill would meet with very little opposition. I think that is the fact; I think we all coincide with the idea that this is a step in the right direction, and if carried out will affect every man, woman, and child in this country. The people who catch fish will be benefited; the people who buy fish will be benefited, and the people who eat fish will be benefited, because it will conserve the natural food fish which inhabit our ocean today. And if we can make a food of this article (dogfish) and send it into the interior, where they do not know about the name, the prejudice and all that sort of thing, that will be a benefit.

I have been in the canning business for 40 years, and I have canned dogfish. I have sent it all over this country and offered it for sale and have given away a good deal, but I have received very little encouragement, not enough to warrant me in going into the business. I have carried on the dogfish business from a fertilizer standpoint for four years. I bought during that time 4,500,000 dogfish and I paid 2 cents apiece. That is about the price for which the fishermen can afford to catch them. I had these fish eviscerated on my wharf at my factories and I had an opportunity to see what their stomachs contained. I had to do that in order to take out the livers which are very heavily charged with oil. You can not cook the dogfish and the livers together and make good fertilizer, because it contains too much oil, and the heat used in reducing the fish for fertilizer is not the

heat required to convert the liver into oil. I went a long ways along that line, and I want to say there is not money enough in the business, there was not and there is not, to make it an object for private investors or corporations to embark in the business. But I have studied this question ever since, and I came to the conclusion several years ago that it was not commercially a paying proposition so that private individuals or corporations can do anything with it, and the only thing to do was to come to the Government just as we went to our State and to have it considered here. And, as I said before, they have authorized our commission to come here and ask you gentlemen to consider it.

It is only a question of time when, if something is not done for the fishermen on the Atlantic coast, they will not have any fishermen up there. That is all there is to it. They have decreased, in my remembrance, 60 per cent. Adverse circumstances and lack of encouragement on the part of our Government has had something to do with it. Canada has protected her fishermen by paying bounties and subsidies, and in many other ways in which our fishermen have not been protected. We did have an act, which was repealed in the sixties, offering a bounty. That was in 1844 and 1845, I think; somewhere along there, when we were far behind with the American fisheries on the Atlantic coast; and that bounty stimulated and encouraged them, and they raised up a hardy, husky set of men; and when we have wanted those men and have needed them in our past conflicts they have always been ready at any time. And Washington could not have crossed the Delaware had it not been for

the fishermen of Massachusetts, and to them and them alone belongs the praise. But that is a matter of history and I won't dwell on that.

Now, gentlemen, we are talking about ships. Excuse me if I digress a little. We are talking about ships before this same committee—building ships. What is the use of building ships if they have to lay alongside of the wharf without men? What is the use of building ships and manning them with landlubbers? What is a landlubber worth off the coast in a gale of wind, who has not gotten his sea legs on, and who gets seasick? And, gentlemen, you can not find American sailors and fishermen enough today to man the ships which you have—not over 40 per cent. I believe those are the figures. And I want you gentlemen to understand that the great nursery of the American Navy today is the fishing business, and the fishermen should be encouraged and they should be protected.

I will not take any more of your time. If there are any questions that you want to ask I will be glad to answer them.

Mr. Hadley. I would like to know along what line the State commission is working, whether on the bounty basis or the economic basis such as is suggested here?

Mr. Maddocks. The State has no definite plan. They have appointed us as a commission to investigate and report a plan, and we are trying to do so. We have found that there are many men of many minds on this subject, the same as in anything else. Some of them want to make it a food fish. To make it a food fish is all right so far as it goes, but you can eat all you

want and eat them as fast as you can, and it would not perceptibly reduce the number of dogfish in the sea. There is no man who would say that it would. Dr. Smith won't say so. But if you catch 100,000,000 and make them into fertilizer each year, you might in time reduce the number or offset their increase.

The Chairman. You were appointed by the State, I believe, to investigate this question and make recommendations. Are you inclined to recommend that the State erect fertilizer factories and utilize the dogfish for fertilizer.

Mr. Maddocks. I have not discussed it with my associates. Neither one of them are here. But I am inclined to think that we would hail with delight the effects of this bill, as a starting point, as a wedge by which we might open a market and help, so far as it goes. For every dogfish you take out of the sea just so many food fish are preserved that that dogfish would have destroyed; and if you can find a market so that the fishermen can get some money out of it it helps the fishermen that extent. But I shall always say, because that is well known and is nothing new, that the great way, the most expeditious way, to annihilate the dogfish is to make them into fertilizer and oil. The land of this country is hungry for fertilizer. Ammoniates have gone up 30 or 40 per cent in two years and the Menhaden production has gone down 40 to 50 per cent in that time, so that an overstock of ammoniates in this country does not exist. The oil is used for various purposes and there is a good demand.

I want to look at this thing fairly. I appreciate the position

that the Bureau of Fisheries has taken, and I indorse every word that they have said, and especially what Sec. Redfield has said, at the hearing on Saturday before the Senate committee. It is all very strong doctrine. But I do say, gentlemen, that the immensity of the damage, the enormous amount of food fish that are destroyed by the dogfish, and the great necessity that exists today to do something to help the fishermen of our country must be apparent to you.

Mr. Curry. You said that in your experience in the dogfish fertilizer and oil industry you had examined the stomachs of dogfish and know what their food was, but you did not say what it was. What fish do they live on?

Mr. Maddocks. That skipped my mind. It gave me a pretty good opportunity to see what they live on. I found young lobsters; I found young fish of all kinds; all kinds of fry; also mackerel, menhaden, and herring. I do not think the dogfish is such a tremendous eater, but they will bite and spit out. They will get into a school of mackerel and in five minutes they will scatter it here and there and drive them off from the fishing grounds and do a terrible amount of damage in a very short time. And if you catch a school of mackerel in a seine these dogfish will come up behind the net and in fifteen minutes ruin it—a net costing \$1,000. I have known that to be so, and I had a gentleman here last week that would testify to that.

Mr. Curry. Do they eat the mackerel fry?

Mr. Maddocks. We do not have many mackerel fry on this coast. We have the small mackerel which we call the tinker,

and they eat them. Of course, they eat the small fish fry of all kinds when found. We have discovered almost everything in their stomachs that you can imagine in the shape of fish. There was a lobster taken out of one of their stomachs last year which was 7 inches long.

Mr. Burke. How large do these dogfish grow?

Mr. Maddocks. About 3 feet; from 2½ to 3 feet.

FURTHER STATEMENT OF DR. HUGH M. SMITH,
COMMISSIONER OF FISHERIES, UNITED STATES
DEPARTMENT OF COMMERCE.

Dr. Smith. I would like to have put into the record for the information of the committee, if it so desires, some official figures showing the result of the operations of these Canadian dogfish plants of which a great deal has been said. These plants have been in operation since 1910, and I have the detailed figures from 1910 to 1915, inclusive. These have been supplied by the officials of the Canadian Government. I will call attention to the fact that in the first year, in the operation of one of these two plants, the expenses of operation were \$19,876, and the total sales of dogfish fertilizer and oil were \$7,197.

Dr. Moore. Mr. Commissioner, just get into the record there the prices on which that was based.

Dr. Smith. Those figures were based on an average fertilizer price of \$30 per ton, and an oil price of 30 cents per gallon.

In the last year of the operation of these two plants one of

them expended \$17,338 for labor, supplies, raw material, fuel, etc.; and the value of the products sold was \$4,851.

In the case of the other plant, the expenditure was \$10,719 and the products sold for \$3,900.

During those five years these two plants consumed 7,200 tons of dogfish and as to the effect of those operations on the supply, I quote from the letter of an official of the Canadian fisheries department:

As to the affects of the operations of these plants in diminishing the ravages of the dogfish, I regret to say that the department is unable to find evidence that they have resulted in any appreciable diminution of the dogfish. It is true that in some years the run of these fish is smaller than in others, but this, of course, can not be attributed to the operations at the reduction plants.

STATEMENT SHOWING OPERATIONS OF CANADIAN GOVERNMENT DOGFISH REDUCTION
WORKS, 1910-1915.

Year	Labor	Supplies	Expenses	Raw Material	Fuel	Total	Collecting Steamer	Grand Total
Canso, Nova Scotia								
1910-11	\$6,715 85	\$373 05	\$1,058 23	\$5,378 90	\$1,265 90	\$14,791 93	\$5,084 65	\$19,876 58
1911-12	6,232 28	2,243 28	3,333 60	1,273 61	976 56	14,859 23	4,646 89	18,706 22
1912-13	2,696 91	640 80	750 55	5,357 90	919 90	10,366 06	3,185 23	13,551 29
1913-14	5,233 15	982 36	45 18	6,327 73	1,419 77	14,008 19	5,441 32	19,449 51
1914-15	5,168 42	1,587 53	401 46	3,043 27	994 25	11,194 93	6,143 17	17,338 10
Clarks Harbor Nova Scotia								
1910-11	5,319 64	1,192 78	2,574 03	8,551 92	1,474 56	19,112 93	1,164 15	20,277 08
1911-12	3,554 21	1,418 83	940 33	4,408 76	1,322 05	11,644 18	772 92	12,967 10
1912-13	2,818 00	323 57	298 14	1,430 51	1,056 96	5,927 18	1,577 50	7,504 68
1913-14	3,752 19	414 81	443 84	3,630 52	480 00	8,721 36	2,400 00	11,121 36
1914-15	3,602 50	562 31	847 92	2,938 16	908 33	8,859 22	1,860 00	10,719 22

Year	Dogfish Purchased	Offal	Scrap Produced	Oil Produced	Approximate value of Products. †
Casno, Nova Scotia					
	Tons	Tons	Tons	Gallons	
1910-11 *	1,220		143½	9,642	\$7,197 60
1911-12	307½		30	2,205	1,561 50
1912-13	1,048½		123½	13,440	7,737 00
1913-14	1,266		1511-6	15,272	9,116 60
1914-15	743½		91	7,072	4,851 60
Clark's Harbor, Nova Scotia					
1910-11	1,453	421	185	11,000	8,850 00
1911-12	726	220	120	6,000	5,400 00
1912-13	314	52	48	2,604	2,221 20
1913-14	720½	103½	98	3,480	4,084 00
1914-15	625½	124½	81½	4,868	3,900 40

* April 1 to March 31.

† Scrap, \$20 per ton; oil, 30 cents per gallon.

STATEMENT OF MR. J. C. HARMON, OF STONINGTON, ME.

Mr. Harmon. Mr. Chairman and members of the committee, I am in the wholesale lobster business. I am a native of the coast of Maine, and have been all of my life. For about 25 years I was a native of Southwest Harbor, where there are large fishing interests; and for the last 20 years I have been a native of Stonington, Me., where there is quite a large fishing interest.

I just happened to drop in here for a moment, as I feel greatly interested in this bill. I am sent here to Washington by the State of Maine to confer with the Government to see what can be done for the preservation of the lobster fisheries, and I believe if this bill passes it will do as much good as anything else I know of. I understand a large part of the food

of the dogfish is lobsters, which, of course, is a great detriment to the lobster interests on the whole coast of New England.

I have come in contact with a great many fishermen all of my life, and they all say that the dogfish menace is the worst enemy to the fishermen. In the summer time the fishermen will be fishing along, and doing finely until the dogfish strike the coast, when they will be obliged to take up their fishing trawls and nets and abandon the business for some time. And the dogfish ruins their trawls and ruins their nets, and practically puts the fishermen out of business.

I thank you, Mr. Chairman.

STATEMENT OF HON. JOHN A. PETERS, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF MAINE.

Mr. Peters. Mr. Chairman, I suppose I represent more dogfish than any man in Congress. My district extends from the Penobscot River to Eastport, which is a large stretch of coast of Maine, about half, and you gentlemen who do not live on the coast have no appreciation of the dangers to the fisheries that this situation concerning the dogfish is. These gentlemen, Mr. Harmon and others, who are practical men in the business, have described to you the operations of the dogfish, which is practically a shark. When these dogfish come in on our coast in May the fishermen have to cease their operations. The business of fishing has to stop; and you gentlemen, of course, can imagine what that means to the people of the coast of New England.

The people of the State of Maine have thought that possibly by the utilization of dogfish as fertilizer some progress might be made in the elimination of this menace; but the Bureau of Fisheries has thought it wiser to approach the matter from another angle and to endeavor to utilize the fish as a food product, which would thus automatically take care of the danger; because if they become a valuable product, no intervention on the part of the Government would be necessary, and the ordinarily industrial activities of its citizens would be sufficient to greatly remove the menace and convert it into a valuable industry. The people of Maine are very glad to co-operate in an effort to ascertain the value of that idea. And it is evident that if the dogfish can be made available as a product that a great benefit will accrue, both to the fisherman and to the population at large.

I understand from older people that the halibut (now esteemed to be one of the best food fishes) was not considered fit for food some years ago. Do you know anything about that, Mr. Greene?

Mr. Greene. No; I can not say as to that. I have eaten it ever since I can recollect.

Mr. Peters. Senator Johnson told me the other day that he can recollect when the people of Maine would not eat halibut; would only eat parts of the fins. But now halibut is one of the most valuable fish. And I myself know that at one time the people on the coast of New England would not eat haddock, and the cod was the only fish of that kind they would eat. They would not eat haddock.

Mr. Hinds. That was so in the city of Portland; that is, the old fish dealers have told me it was so.

Mr. Peters. And now haddock, the product of our fisheries, is one of the most valuable fishes. And Dr. Smith has told you, in regard to this new tilefish, that only one month's stimulation by the Government was sufficient to establish that as a continuous and profitable business. The sturgeon the same way. And it is evidently possible, and I refer to Dr. Smith's opinion on that point, that this menace to the fishing business can also be converted into food fish. Anyhow, the possibility is sufficient to warrant us making the attempt on behalf of the people of the country.

Mr. Hinds. I would like to suggest that is true of the swordfish also.

Mr. Peters. Yes. Mr. Hinds suggests that is true of the swordfish, that until recently it was not regarded as an edible fish; but now, in my own town in Maine, every day I see in the windows of the fish markets swordfish advertised and much sought after by the citizens.

So, for these reasons and a great many others, unnecessary now on account of the lack of time to detail, it is regarded by us as a very important thing that this bill pass in order to begin, if possible, the establishment of this business.

STATEMENT OF HON. FRANK E. GURNSEY, A REPRESENTATIVE IN CONGRESS FROM THE
STATE OF MAINE.

Mr. Gurnsey. While the district I represent in Maine is

not a coast district, yet formerly I did represent a portion of the coast of Maine. I know, however, that there is a very widespread interest in our country in favor of something being done in connection with the dogfish menace. The idea of the Maine people has been that they might be destroyed by utilizing them for phosphates; but in view of the statement of the Bureau of Fisheries that the destruction and exhaustion of dogfish by any method is practically impossible and that it is better to undertake to utilize them for food, I think the people of our State will accept that view and would favor at least the trial of the legislation proposed here in the bill before you.

It has been called to my attention that dogfish, in the marketing of them, would not be attempted by scattering them broadcast as fresh fish; but it would be done, perhaps most through canning, as shown here. In that event, of course, only the best portions of the fish would be utilized. And yet it would be utilized in a very effectual way, for the profit of our people along the coast and to the advantage of the country as a whole.

Mr. Hinds. Mr. Chairman, Mr. Plummer is here, and I would like him to say a word.

STATEMENT OF EDWARD C. PLUMMER,
OF BATH, ME.

Mr. Plummer. Mr. Chairman, it is only necessary for me to say that my life has been spent among the fishermen and I am interested in what has been said.

I might say that the dogfish, I suppose, destroys more young

lobsters than any other fish in the sea. When they used to be operating down at Boothbay Harbor, that Mr. Maddocks has referred to, it was a common thing to find lobsters up to 6 and 7 inches in length in stomachs of these dogfish.

Of course, the whole country will be benefited by a new food product, and it is not necessary for me to say anything more.

Mr. Burke. Is there anything further, Mr. Hinds?

Mr. Hinds. No; but I would like the privilege of having inserted in the record the remarks of the Secretary of Commerce. There was no stenographer at the Senate hearing, but I think perhaps we have a report that is all right if we send it to the secretary and ask him to revise it. It is a report from a newspaper woman, but it is apparently accurate, and I think that the secretary would indorse it.

Mr. Burke. Your idea or suggestion, Mr. Hinds, is that you desire this newspaper woman's statement of Secretary Redfield's testimony before the Senate committee should be sent to him for the purpose of having him revise it, as he sees fit, and inserting in the record?

Mr. Hinds. Yes.

Mr. Burke. That will be considered as the sense of the committee.

Mr. Greene. I will state this, that I introduced the first dogfish bill in the House a number of years ago, for the purpose of trying to exterminate the dogfish. There was a gentleman living in the state who, knowing that I represented this Cape Cod district, and that I would be very much interested in the

destruction of the dogfish, took the matter up with me. And I think there are some other matters of detail in the files of past Congresses relative to the dogfish that would be of interest. Afterwards Mr. Terrill, who represented the district in which this gentleman lived, introduced a dogfish bill and filed some information in regard to that with the committee.

Mr. Burke. Do you remember when it was that you introduced your dogfish bill and when this other bill was introduced?

Mr. Greene. Oh, it must have been a dozen years ago; 12 years ago, sure. Mr. Terrill's bill must, I think, have been introduced some eight or nine years ago. He is now dead.

Mr. Burke. Do you know if that information was printed at the time?

Mr. Greene. I think it was. We have had a dogfish hearing before this committee. I think those will be among the files. That was the beginning of an attempt to have legislation to provide for the destruction of the dogfish on something after the line that has been talked of here, that they are carrying on this work in Canada. From the information I have been able to gather since the dogfish have accumulated so fast and have been so prolific and are so much more dangerous than they were then, I really think something ought to be done.

Mr. Burke. I think it is impossible to exterminate them, just as much as it is impossible to count the sands of the sea; but that does not seem to be the object of this bill. The object of this bill seems to be to have something done for the purpose of introducing them to the trade as an edible fish.

Mr. Greene. I suppose people would learn how to catch them; but I should be afraid to catch them; I would feel more like they would catch me.

Mr. Burke. That will be a benefit to the public, if it can be done.

Mr. Hinds. The first bill I introduced was a fertilizer bill, but when I talked with the Commissioner of Fisheries I decided that I would put in another bill that would be more in accordance with scientific methods.

(Thereupon, at 12.15 o'clock p. m., the committee adjourned until Wednesday, February 23, 1916, at 10 o'clock a. m.)

This House Committee followed the action of the Senate Committee with a unanimous favorable report. Considering so little was known of the whole subject matter it seemed to me truly wonderful that we were so successful before the Committee, but I attributed some of the reasons for these favorable reports to the private discussions of this matter with the different members of the Committees both by friends and myself.

As I have previously stated, this Senate bill was presented in the Senate by Senator Johnson, and was on its way to the House. It was thought advisable by Mr. Hinds to present a similar bill to the House, as it is sometimes customary to have two bills, one for each branch. In case any accident happens to one the other can be used. The Senate bill reached the House in due process of time and went upon the calendar with many other bills, where it was likely to be for several weeks. The writer felt quite safe in leaving the matter in the hands

of the Maine delegation, and returned to Maine, having expended all the money that was available and more besides, and not feeling like using any more of his own money for this purpose.

After I had been in Washington a month or more, and my expenses had run up to several hundred dollars, I was informed by letter from the Secretary of the State of Maine that the appropriation for the year 1916 had been divided by two, and that I had available for my use in this case only five hundred dollars. This was one half what I had anticipated when I left home. You can readily imagine my feelings upon receiving such information. The remaining half of the appropriation was divided among the other commissioners to repay them for what work they might do in Portland and within the State.

Before leaving Washington I had arranged with the Maine delegation to call me by telegraph if my services were needed. I kept up a correspondence, partly to pacify my anxiety over this matter and so that I might be assured from day to day and week to week that the bill was on the calendar and would be ready in a few days; but it seemed to meet with setbacks and was not reached until June 14, which probably was the most unfortunate day in the whole session for it to come up, as none of our delegation was present at its final passage, as it took them unawares, they not expecting it on that date. To show the uncertainty of federal legislation, I herewith attach a copy of the Congressional Record of that day, or as

much of its as relates to our case. It will be noted that Mr. Mann, who is the floor leader on the Republican side of the House, proved himself to be a great friend of ours. Before leaving Washington Mr. Hinds, who has the right to claim the friendship of Mr. Mann, accompanied by other members of our delegation, discussed the matter thoroughly with Mr. Mann and asked his co-operation and assistance when this matter should come up, which he said he thought was a meritorious case and should have fair consideration, and that he would see to it as far as he could that we would be protected. A careful reading of the records of that day will show how dangerous a position it was in when its consideration was undertaken. I felt very grateful to Mr. Mann and all others who assisted in the passage of this bill, which reads as follows:

(PUBLIC—No. 100—64TH CONGRESS)

(S. 4401)

AN ACT to conduct investigations and experiments for ameliorating the damage wrought to the fisheries by predaceous fishes and aquatic animals.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Commissioner of Fisheries be, and he is hereby, authorized and directed to conduct investigations and experiments for the purpose of ameliorating the damage wrought to the fisheries by dogfish and other predaceous fishes and aquatic animals.

Sect. 2. That the said investigations and experiments shall be such as to develop the best and cheapest means of taking

such fishes and aquatic animals, of utilizing them for economic purposes, especially for food and to encourage the establishment of fisheries and markets for them.

Sect. 3. That the sum of \$25,000, or so much thereof as may be necessary, is hereby appropriated, out of any money in the Treasury not otherwise appropriated, to enable the Commissioner of Fisheries to carry out the provisions of this Act, the same to be immediately available.

Approved, June 21, 1916.

PREDACEOUS FISHES AND AQUATIC ANIMALS.

The next business on the calendar for unanimous consent was the bill (H. R. 11254) to conduct investigations and experiments for ameliorating the damage wrought to the fisheries by predaceous fishes and aquatic animals.

The clerk read the title of the bill.

The Speaker protempore. Is there objection?

Mr. Cox. Reserving the right to object, I should like an explanation of this bill.

Mr. Mann. We passed this bill in the last House after quite full consideration. The bill is introduced by the gentleman from Maine (Mr. Hinds), the former parliamentary clerk of the House, and the proposition contained in it is a fair and legitimate one. The gentleman from Maine has given great study to this subject.

Mr. Cox. Reserving the right to object, I will say that the author of the bill, the gentleman from Maine (Mr. Hinds), is a man for whom I have the very profoundest regard. I under-

stand that his health at this time is not the best. The bill strikes me as committing the Government to a very far-fetched policy.

Mr. Mann. What the gentleman says has a great deal of virtue in it, but we passed this bill in the last House after a good deal of consideration, waiving that part of it which might be considered objectionable. The fact is, the Secretary of Commerce told me some time ago, in connection with some ocean fish, I have forgotten now what they were—that they had put carts—

Mr. Cox. They were mussels, according to his own letter.

Mr. Mann. It was something else first—that they had done this until they had gotten people very anxious to eat the fish. I do not know whether that is a long bow or not. I understand they have done somewhat the same thing as to hotels.

The dogfish, which this bill seeks to get after, is a very destructive fish, that practically ruins, to a large extent, fishing grounds where other fish are caught. The gentleman from Maine (Mr. Hinds) thinks it may be possible not only to get rid of the dogfish as far as their preying upon other fish is concerned, but also to get people to acquire a taste for them, so that instead of being an evil they will become a blessing.

Mr. Cox. I rather doubt the wisdom and propriety of the Government educating the taste of the people to like dogfish.

Mr. Mann. After all, that is one of the things that the Bureau of Fisheries is doing as to other fish.

Mr. Cox. This is the first time that I know of the Government attempting to teach a love for the taste of dogfish.

Mr. Mann. But the gentleman knows that probably nobody ever had an appetite for oysters without acquiring it.

Mr. Cox. Oh, that is not a fair comparison at all, to compare dogfish with oysters. Oysters have been eaten since the Pilgrims landed on Plymouth Rock.

Mr. Mann. I suppose the gentleman would not eat snails?

Mr. Cox. No; and I would not want the Government to try to teach me to acquire a taste for snails.

Mr. Mann. If we had great quantities of snail going around and destroying other things, it would be a good thing for the gentleman to acquire the taste.

Mr. Mondell. If the gentleman will yield, I will remind him of the work that was undertaken by the Department of Commerce, possibly without authority in connection with the introduction of the tilefish. The tilefish was formerly a food fish, but it disappeared from eastern waters for a long time. Several years ago it reappeared, and the Secretary of Commerce, by guaranteeing a reasonable profit to the captain of a certain fishing boat, persuaded him to catch and sell tilefish. By doing that the tilefish were reintroduced, and have, as I understand, become quite popular in the market as food fish. In that case it did not cost the Government anything—

Mr. Cox. But this is costing the Government something. This bill proposes to appropriate \$25,000 and if the bill becomes a law that will probably become a permanent appropriation.

Mr. Mann. Oh, I think not. I fully agree with the argument of the gentleman, as far as that is concerned, but—

Mr. Cox. I think they have already solved this problem as the Secretary of Commerce can solve it. I do not know that I am going to object to the bill. The letter of the commissioner is very enthusiastic. I have read it two or three times. He says:

“The belief is entertained that the proper method of procedure is not to exterminate the dogfish by indiscriminate destruction, but to convert a nuisance into an economically useful product and a source of profit. It is believed that the only way in which this can be accomplished is to induce the utilization of this pest as food. Although this has been scoffed at by some who would be the first and principal beneficiaries, the project is practical and economically sound. The dogfish is not eaten in the United States solely on account of prejudice. It is palatable and nutritious, and its foods is but little different from that of the haddock and other valued food fishes. It is extensively eaten in Europe, and during the past few years it has grown in favor in England, where 5,000,000 pounds, with a value to the fishermen of \$82,000 were marketed in 1914. This large and increasing production of a cheap and excellent food is a boon to the people at large, while the fishermen receive about \$28 per ton for their catch as against \$8, which they would receive if the Government were to engage in the unprofitable production of fertilizer under the conditions recently proposed in this country.”

They seem to have solved the problem there, and I do not like to see the Government commit itself to the establishment of a commissary department to enable the people to enjoy the taste for a peculiar kind of fish that is already on the market in England. I think the letter is rather esthetic. I do not think he knows very much about the subject, but out of due deference to the gentleman from Maine (Mr. Hinds) I shall not object.

Mr. Moore of Pennsylvania. Will the gentleman yield for a question.

Mr. Cox. Yes; I will yield.

Mr. Moore of Pennsylvania. I wanted to know whether the gentleman was serious about introducing dogfish as human food during the present administration?

Mr. Cox. Oh, no; we do not need it. We do not need dogfish now. If we did, I might not raise any question about it.

Mr. Mann. Well, probably both gentlemen have eaten dogfish without knowing it. I am told by a very distinguished authority that fillet of sole, which is one of the most popular dishes there is, is nine times out of ten, or maybe less often, dogfish—and fillet of sole is one of my favorite dishes.

Mr. Cox. If this bill becomes a law, does the gentleman think this will practically amount to a permanent appropriation?

Mr. Mann. I do not think so.

Mr. Cox. I will withdraw my objection, Mr. Chairman.

The Speaker pro tempore. Is there objection to the consideration of the bill?

Mr. Mann. I ask unanimous consent to consider in lieu of the House bill, Senate bill 4401, which is No. 193 on the Unanimous Consent Calendar, and is the same bill. I ask unanimous consent to consider it in the House as in Committee of the Whole.

The Speaker pro tempore. The gentleman from Illinois asks unanimous consent to consider S. 4401. Is there objection?

There was no objection.

The Speaker pro tempore. Is there objection to considering the bill in the House as in Committee of the Whole House on the state of the Union?

There was no objection.

The clerk read the bill S. 4401, as follows:

Be it enacted, etc., That the Commissioner of Fisheries be, and he is hereby, authorized and directed to conduct investigations and experiments for the purpose of ameliorating the damage wrought to the fisheries by dogfish and other predaceous fishes and aquatic animals.

Sect. 2. That the said investigations and experiments shall be such as to develop the best and cheapest means of taking such fishes and aquatic animals, of utilizing them for economic purposes, especially for food, and to encourage the establishment of fisheries and markets for them.

Sect. 3. That the sum of \$25,000 or so much thereof as may be necessary, is hereby appropriated, out of any money in the Treasury not otherwise appropriated, to enable the Com-

missioner of Fisheries to carry out the provisions of this act, the same to be immediately available.

The bill was ordered to be read a third time, and read the third time, and passed.

The bill H. R. 11254 was laid on the table.

This seemed to end my term of office so far as the Maine Commission went. The object for which we were appointed having been accomplished, and the Maine appropriation exhausted, I felt at liberty to discontinue any further efforts on behalf of the State of Maine, and at the suggestion of the Maine delegation, Secretary Redfield and the Commissioner of Fisheries saw fit to appoint me as an agent of the Bureau of Fisheries, to assist further in this matter. On July 3d, I received my appointment and immediately entered upon the discharge of my duties, receiving my instructions direct from Washington. I feel that it would be a breach of official etiquette to embody in this report anything that has transpired since my official connection with the Maine State Commission has expired, but I believe it is my duty to give the State of Maine the benefit of my conclusions arrived at through my investigations.

It has been a much discussed question in the press as to the proper way to handle this question. There seemed to be two opinions. One was to prepare this fish for food in many different ways, which had been done in times past and this year, and to arrive at its cost put up in different styles, and the next stage was to find a sufficient market that would warrant

private individuals or corporations to embark in the business as a commercial venture.

The other proposition was to reduce the fish in large quantities into fertilizer and oil, similar to the methods adopted by the Canadian Government. This can be done under present market conditions at a profit, and at no time within our history has fertilizer been so much needed as it is at the present day. With 50 per cent. of the fish as caught that would be prepared for food as worthless for that purpose, that should be as a by-product used as a fertilizer if no better use can be found for it. The analysis that has been furnished me by Chas. F. Wood, Director of the Agricultural Department of the University of Maine, I hereby submit:

DRIED AND GROUND DOGFISH.

Nitrogen	9.64 per cent.
P-2-0-5	0.59 per cent.
K-2-0-5	1.01 per cent.
Fat	33.66 per cent.

From the fishermen's standpoint the object of this investigation is to create a market and establish a business along our coast that will reduce the number of dogfish in the ocean, or to offset its natural increase, so that our food fishes will have a better chance to live. It is very evident to the fishermen that unless something is done to reduce the numbers of dogfish that prey upon all kinds of fish along our coasts during the summer and fall months, our fishermen will become discouraged over

the loss of their fishing gear and from their inability to make a livelihood for themselves and families.

With this end in view it seems to us the proper thing for this commission to do is to recommend the encouragement of all methods that will tend to diminish these fish that are such a menace to our coast fishermen. There seems to be no reason why this business cannot be carried on with a proper knowledge of it, and carried on on business principles under such conditions as now exist, providing the state and Federal Government would pay a bounty of \$3.00 per ton for the state and \$3.00 for the Federal Government to encourage the fishermen to catch them. Private individuals or corporation^s could afford to pay the same as they are paying in Canada, \$4.00 per ton, making in all \$10.00 per ton. The increased cost in gasoline and fishing gear, and the high cost of living, making it necessary that the fishermen should have this price. There are efforts being made by the Federal Government to introduce grayfish as a food product. The competition which it will meet is the cheapest quality of salmon, and it takes less labor to prepare salmon for the can than it does grayfish, and its waste is not so much. If the canners are obliged to pay \$10.00 per ton there can be no inducement for anyone to undertake the business. The great advance in the cost of tin cans and labor makes it impossible under the present conditions, to pack them at a profit, and it is a slow process to introduce a new article of food unless you can make it much cheaper than your competitors who pack other grades of fish.

The demand for fertilizer, which can be made from these fish, is well known. They contain a large percentage of ammonia, phosphoric acid and other desirable fertilizing ingredients, which can be sold at a reasonable price to the farmers. The oil finds a ready market at a satisfactory price at the present time. It would seem with the valuable information already obtained, it will not be assuming too much to say that a great industry can be started on our coast which will work a great benefit to our citizens in many ways. First it lessens the terrible menace to our fishing industry, which it now threatens to destroy. Second it will produce an article of food for both our plants and our citizens. This proposition if carried out can only be estimated by millions of dollars benefit, and it seems to us that the Legislature should see it to the advantage of the citizens to make a liberal appropriation to encourage fishermen to catch these fish and indirectly encourage our citizens to erect plants to utilize them in the most profitable way. No one can estimate the advantage that would accrue in this business if it meets with encouragement. Here lies at our very door an industry capable of employing many of our citizens, especially our fishermen, at a time when their business is very much interfered with by these scavengers of the seas.

Having accomplished all that we undertook, and having exhausted our appropriation, we feel that our duty is at an end.

Respectfully submitted,

LUTHER MADDOCKS,

CHAS. L. DONOVAN.