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The Dogfish Bill.



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THE DOGFISH BILL

HEARINGS

BEFORE THE

COMMITTEE ON THE MERCHANT MARINE AND FISHERIES

U. S. Cong 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



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HOUSE OF REPRESENTATIVES.

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DOG FISH BILL.

COMMITTEE ON MERCHANT MARINE AND FISHERIES,
HOUSE OF REPRESENTATIVES,
Washington, D. C., Monday, February 21, 1916.

The committee met at 10.30 o'clock 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 set 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 gentleman 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.

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.

Sec. 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 establish fisheries and markets for them; and for these purposes the Commissioner of Fisheries is authorized to employ such persons as may be necessary, and to catch, buy, or otherwise obtain, and to sell at cost or less or distribute gratuitously such quantities of the said aquatic products as may be necessary for tests or demonstrations of their qualities or the establishment of a demand among prospective consumers: *Provided*, That the proceeds of any such sales shall be accounted for and covered into the Treasury as miscellaneous receipts.

SEC. 3. That the Commissioner of Fisheries, through the Secretary of Commerce, shall submit in his annual estimates of appropriations for the Bureau of Fisheries an estimate of the sum of money necessary to give effect to this act; *Provided*, That the said sum shall not exceed \$25,000 in any fiscal year.

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 "establish," so as to make it read:

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

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, COMMISSIONER 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. That 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.

The 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 a 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 these 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 or 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. That 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.]

THE TILEFISH—A NEW DEEP-SEA FOOD FISH.

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 reestablishment 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 chamaeleonticeps*. This name, which means the crested tilus with a head like a chameleon, 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 coastal 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 formerly had 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—the acquaintance of the fishermen with its abundance, ease of 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 coastal 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 reestablished 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. From 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 was 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 execution 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 do. 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.

Dr. 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 get 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 something 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 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 different 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 dog fish 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 dog fish 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 to-day 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 dog fish can be brought into use in 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 dog fish 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 Nor-

wegians 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 over night 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 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 of 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 this 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 dealer 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 to-day 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 never would 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 knew 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 impossible. 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 3½ 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 shoe men 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 to 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 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 have had 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 1st of May and stay until November, and while they are there it is almost impossible for the fishermen to depend on fishing by troll, 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 to-day 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 informed. 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 superintendents of works. I also have the figures that have been put up to you to-day, 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 to-day \$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 might 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 to-day. 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 to-day 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 to-day. 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 out 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. There is about a 10 per cent deficit, and I know that by experience, because I kept on with the business until I was about \$10,000 in the hole and then I abandoned it. 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, to 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 or 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 those men 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 up here on 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 to-day 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 to-day 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 reduce the number of dogfish in the sea. There is no man who would say that it would. Dr. Smith won't say that. 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 is here; they were unable to come on account of sickness. 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 to 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 or 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 Mr. Redfield has said, at the hearing on Saturday before the Senate committee. It is all very nice and 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 to-day 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 knew 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. 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 $2\frac{1}{2}$ 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 those 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 these operations on the supply, I quote from the letter of an official of the Canadian fisheries department:

As to the effects 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.	Ex- penses.	Raw ma- terial.	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
Clark's 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	12,867.10
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 pur- chased.	Offal.	Scrap pro- duced.	Oil pro- duced.	Approx- imate value of products. ²
Canso, Nova Scotia:					
1910-11	<i>Tons.</i> 1,220	<i>Tons.</i> -----	<i>Tons.</i> 143½	<i>Gallons.</i> 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	-----	151½	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

¹ Apr. 1 to Mar. 31.

² Scrap, \$30 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 lumber 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 and Penobscot, Me., 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 trolls and nets and abandon the business for some time. And the dogfish ruins their trolls 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 the 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 fisherman 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 ordinary 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 cooperate 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 in Maine would not eat halibut; would only eat part of the fins. But now halibut is one of the most valuable fish. And I myself know that at one time the people of the coast of New England would not eat haddock, and the carp 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 defer 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 market 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. GUERNSEY, A REPRESENTATIVE
IN CONGRESS FROM THE STATE OF MAINE.**

MR. GUERNSEY. 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 more through canning, as shown here. In that even, 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 MR. 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 the 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 inserted 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. Terrell, 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. Terrell'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.

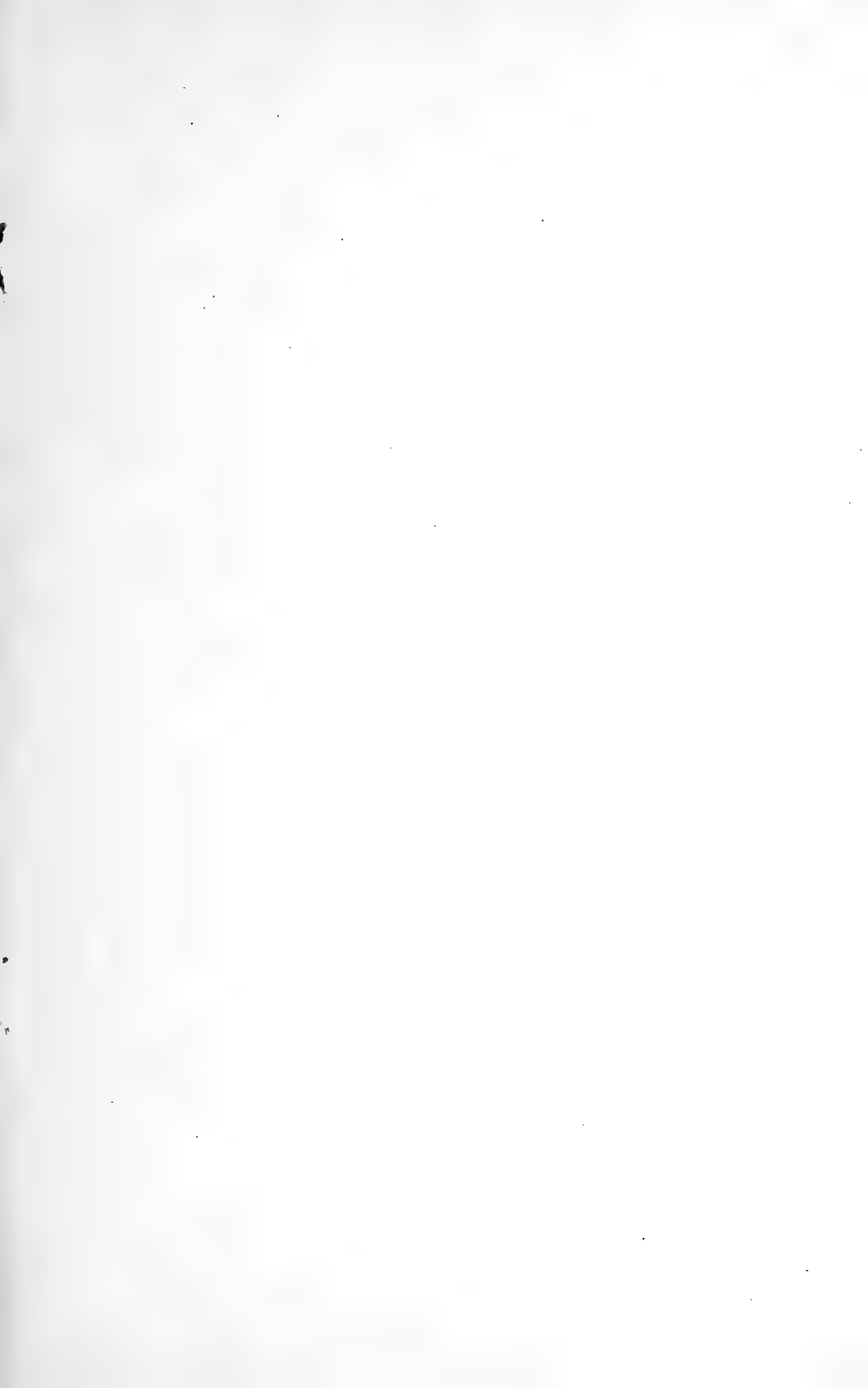
Mr. GREENE. I suppose people would learn how to catch them; but I should be afraid to catch them; I would feel more like they would catch me.

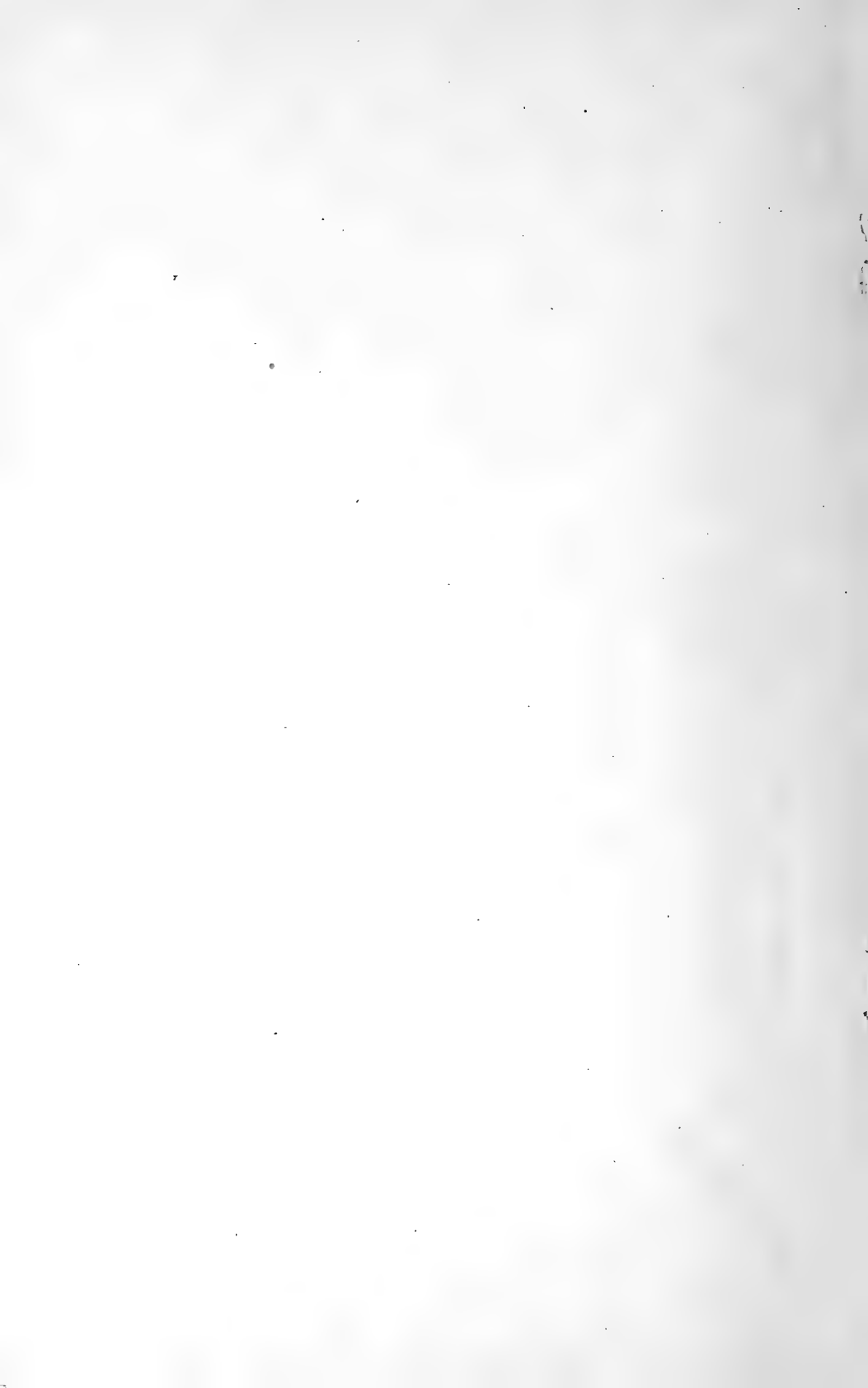
Mr. BURKE. That will be a benefit to the public, if it can be done.

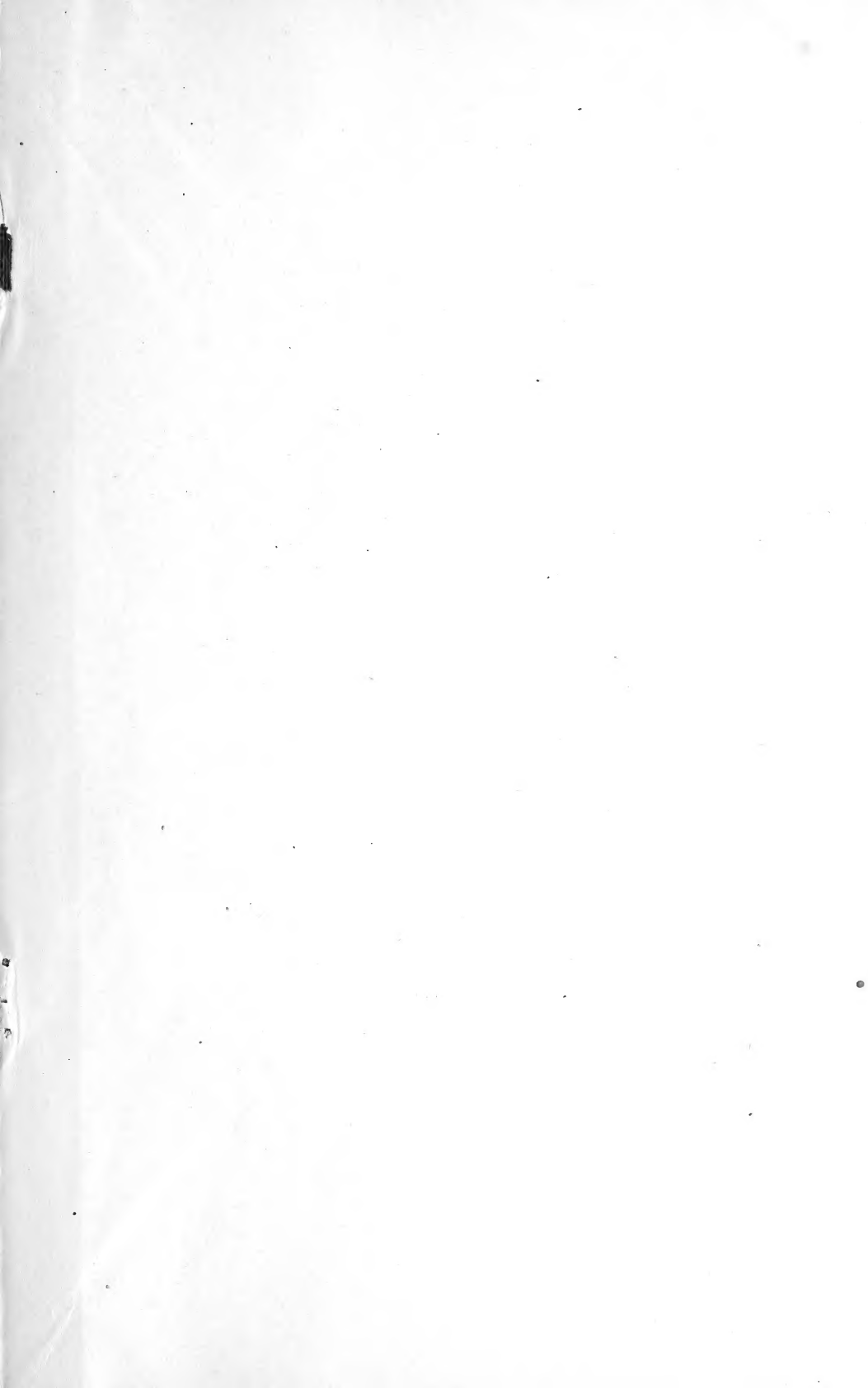
Mr. HINDS. The first bill I introduced was a fertilizer bill, but when I talked with the Commissioner of Fisheries I decided that I would put in another bill that would be more in accordance with scientific methods.

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









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