

Canada. Parl. H. of C. Select
Standing Comm. on Marine and
Fisheries. 1924.
Official report of the
evidence.

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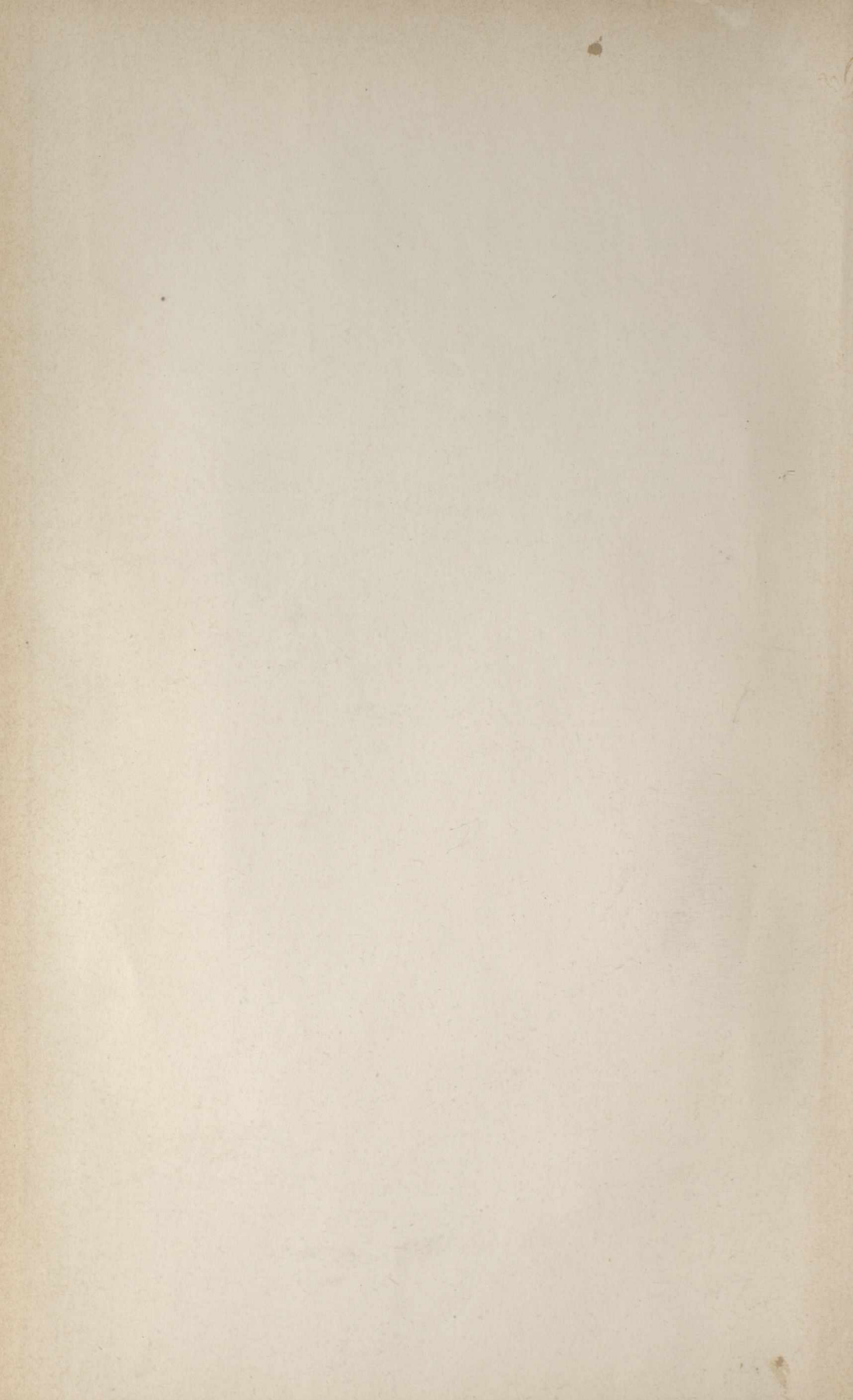
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TAKEN BY THE

MARINE AND FISHERIES COMMITTEE

RESPECTING

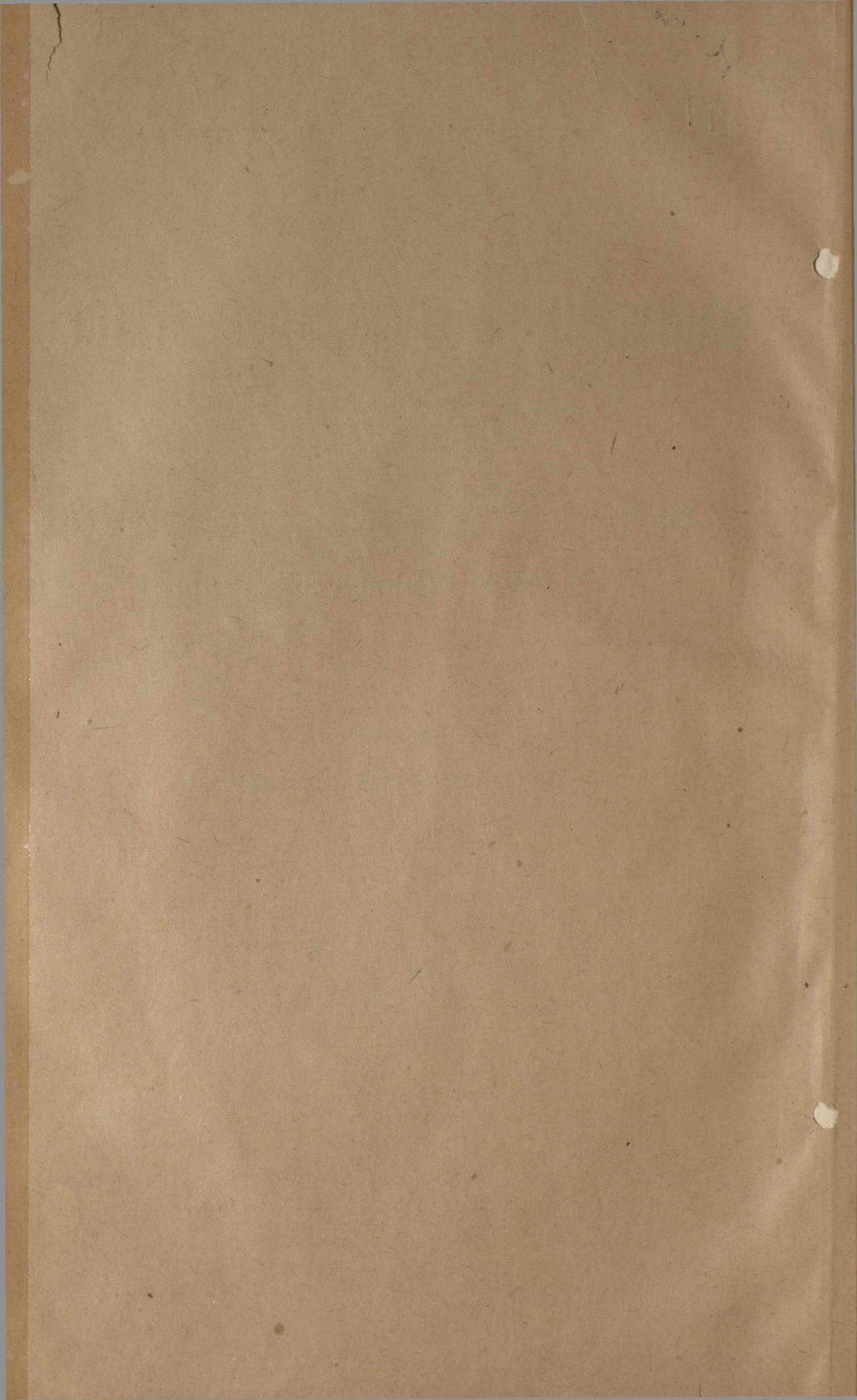
PROPOSED CHANGES REGARDING CANNING OF LOBSTERS

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TUESDAY, APRIL 29, 1924

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COMMITTEE ROOM No. 424,
HOUSE OF COMMONS,
TUESDAY, April 29, 1924.

The Select Standing Committee on Marine and Fisheries met at 11 o'clock a.m., the Chairman, Mr. Duff, presiding.

The CHAIRMAN: The principal business before the Committee this morning is the proposed regulations in connection with the lobster business. I had a letter from the Deputy Minister of the Department on the fourth of April stating that Dr. Knight, Chairman of the Biological Board of Canada, along with Mr. Cowie had made an investigation, and had met the lobster canners and discussed certain amendments with them to which they had agreed. These amendments have to come before us for approval. There are a number of copies of the old regulations and also of the proposed amendments which are available to members of the Committee. I would suggest that we hear Doctor Knight and Mr. Cowie in explanation of the proposed changes, and then we might adjourn until a later date so that we may study the proposed amendments and decide at our next meeting whether we should agree to them or not.

Mr. J. J. COWIE: I may explain, Mr. Chairman and gentlemen, that there is a little history attached to this proposal to change the regulations. Prior to 1917, we had no regulations dealing with the canning of lobsters at all. In fact, it had not come under the jurisdiction of our department but was under the Meat and Canned Foods Act which was administered entirely by the Department of Agriculture up till about 1913, I think. It was then handed to our Department to look after, and we discovered that in the Act there was only one section dealing with fish in an incidental kind of way. This was Section 13 which read as follows:—

“All fish, fruit, or vegetables used in any establishment where these articles are prepared for export, shall be sound, wholesome, and fit for food; and any such articles or products thereof found in the said establishment unsound or unwholesome shall be confiscated and destroyed as provided by the regulations.”

Under that Section the Department of Agriculture was supposed to have jurisdiction over lobster and other fish canneries; but, as a matter of fact, they did not have any, because this Act was intended to apply to big meat canning places where they had inspectors installed on the ground. When we took it over, the first thing we did was to try to draft some sections to be inserted in the Act which would deal entirely with fish. That was done in 1917. Then regulations were drawn under the authority of the amended Act, and these regulations were in force until 1923. Then in 1920, Doctor Knight undertook to investigate the methods of canning lobsters on the Atlantic coast, and as a result of his investigation and the report submitted thereon, it was maintained that many of the regulations then in force were not very suitable, and that they should be brought more into line with the ideas of scientists and of those who investigated the conditions in 1920 and 1921.

So, in 1922, I met the canners at Amherst, and we amended the old regulations. These which you now have in your hands in the form of this booklet (indicating) are the regulations which were amended in 1922. Since that time Doctor Knight has devised a plan for grading lobster canneries by a system of marks for certain equipment that they should have; and it was then found that the regulations were not quite in accord with the proposals outlined by Doctor

Knight in his plan. So in order to bring the regulations into agreement with that plan, a drafted amendment was submitted to a gathering of representatives of the fishery business at Truro last July and from there it was taken to a meeting of canners at Amherst, at which Doctor Knight was present, along with the chief inspector of fisheries for Nova Scotia. I was unable to be present myself because at the time I was in the western part of Nova Scotia in connection with the lobster season.

These are the proposals that came from that meeting. They were backed up by the canners there, but after getting these amended proposals we discovered that there was some opposition especially from some of the small canners, and we decided to send out a circular and ask the canners, large and small, for their opinion on the proposed changes. At the same time it was decided to withhold putting them into force or to ask authority to make them effective until they had been submitted to this Committee. That is really what we are here for this morning.

Mr. HATFIELD: Do I understand that the large canners are all in accord with these proposed amendments?

Mr. COWIE: I would not say all.

Mr. HATFIELD: One of the largest canners and canning operatives in my district, just previous to my coming to Ottawa, rather intimated to me that he was not exactly satisfied and suggested that before these amendments were finally dealt with, the canners should be given an opportunity to appear before this Committee and state their opinion, which I thought was a very reasonable suggestion. I think that before we finally dispose of these regulations it would only be fair to give them an opportunity to present any arguments or statements that they would care to make.

The CHAIRMAN: I may say that after I received the letter from the Deputy Minister of the Department I wrote to Mr. Johnston suggesting that the Department write to all the canners and give them an opportunity to come here and be heard. That was done, and nobody turned up.

Mr. COWIE: What is known as the canning section of the Canadian Canners Association wanted to send representatives. That section, I think, is composed chiefly of the largest canners down there. They desired to send representatives, and they were informed of the date of this meeting and told that we would be glad to have their representatives up here. But the other day they wrote and said that owing to the start of the season they could not afford the time to come to this meeting. They wired and informed us that they were still behind what they had decided on last fall at Amherst.

Mr. HATFIELD: It seems unfortunate that some of the large canners, holding the views they do, are not here to give us the benefit of their experience or to present any statements they would like to make.

Mr. COWIE: As a matter of fact, there is no particular hurry for these regulations going through. I think that the suggestion of the Chairman is a good one, that a little time be given to the Committee to go over the proposed changes and compare them with the old regulations, and decide at a future meeting, at which the canners might be present, whether they should be adopted.

Mr. HATFIELD: If we adjourn to a definite date, I could advise the gentlemen I have referred to so that they might have an opportunity to attend.

The CHAIRMAN: I think we might hear Doctor Knight in the meantime. After hearing him, we will adjourn and try to get the canners to be present. Doctor Knight might explain what the changes are and why he thinks they are advisable.

Doctor KNIGHT: Mr. Chairman and gentlemen, I have no special standing before this Committee except that as a scientist and as Chairman of the Biological Board of Canada I represent the fisheries department. I have been

doing volunteer work in the interests of the fisheries for nearly twenty-five years. When I was invited to come here I expected to be asked questions, not to make an explanation of the proposed regulations, not to deliver an address. But as you have been good enough to ask me to address you on the subject of these regulations, I would like to say a word or two on the fundamental principles, because they will enable you to understand better the proposed regulations and why they are asked for. Now, let me say in the first place, that three scientific bodies have been at work during the last three years on the big question of the blackening of lobster. The three scientific bodies are, the Research Council here in Ottawa, composed of foremost scientific men in Canada probably; the Biological Board, of which I have the honour to be Chairman, and the Research Council of Great Britain, with its head offices in London, which is part of the machinery of the Imperial Government.

These three bodies have all been at work on the question of the blackening of lobsters. Some of you may know, and some may not, that in 1920, when I first began looking into the work of the canneries, that the estimated loss from blackened lobsters—estimated by Mr. Tidmarsh, and corroborated by Mr. Simpson, one of the Simpson-Robertson Company, Mr. Tidmarsh being with the Portland Packing Company—this estimate was placed at \$375,000. Whether that is right or wrong I do not know. This past year, 1923, the same two people estimated the loss from blackened lobsters, the direct loss, because they drew a distinction between direct loss and indirect—they estimated the direct loss at \$150,000. That, however, does not take into account the shortened sales, the losses in sales from bad lobster canning, and the Simpson people estimated that if that were taken into account in addition to the \$150,000, the total loss would be twice or three times that amount.

The CHAIRMAN: What percentage is that of the total canned lobsters?

Dr. KNIGHT: The direct loss is estimated at \$1 a case.

The CHAIRMAN: You say the loss was \$375,000; that is what percentage of the total value?

Mr. COWIE: The total value would be between three million and four million dollars. It has been estimated for a number of years at five million.

The CHAIRMAN: That is about ten per cent, then. Will you please proceed.

Dr. KNIGHT: Now, what is the teaching? That is, what is the result of the investigation conducted by these three bodies, the three independent scientific bodies? That is what you will be interested in. The general result is this, gentlemen, that the regulations, even brought up to the standard submitted by Mr. Cowie this morning, do not comply with the teaching of these three bodies. It will be your duty, therefore, I should suppose, as a committee, to see whether or not these regulations before you for consideration fall short of the standard set up by the Research Council of Canada, the Research Council of Great Britain, and the investigators in the service of the Biological Board. We are grateful—I may say that individually and as representing the Biological Board and the Fisheries Department, we are grateful for the proposed progress in these regulations, but I should not like you to suppose that these regulations reach the standard which they should reach in order to make sure of the elimination of the blackening of lobsters and consequent great depreciation of value, which ultimately falls upon the canners and the fishermen.

I may summarize best, perhaps, the findings of the British Research Council, because it is possibly a more independent body than either the Canadian Research Council or the Biological Board, and I can give you in brief, just in about ten lines, what the British Research Council considers the standard to which lobster canners should attain.

Here it is. "To sum up this section, manufacturers"—that is canners—"who wish to insure the absence, or at least a minimum of spoilage, blackening

and other spoilage, must be encouraged to obtain their food products as fresh as practical." What does that mean? That means that the food, the lobsters, at the earliest possible moment after they are taken out of the water away out in the fishing grounds, should be rushed through the canning process as fast as possible.

Now, is that done to-day? We all know that in many cases these fishermen go out early in the morning—they work hard; that is conceded—they go out at four or five in the morning and come back at noon, or thereabouts. Some of them, when they shift their traps, come back a good deal after that, and the lobsters are out of the water, that is, they are undergoing deterioration from the time they leave the water until they get into the boiling pot, sometimes four hours, sometimes eight hours, sometimes longer.

"They should obtain their food products as fresh as is practical. Secondly, they should can them as speedily as possible," that is, the moment they are boiled, in place of leaving them on the coolers as is the usual practice in a great many canneries,—not all by any means,—they should be canned as quickly as possible. The bigger canners, I should say, come fairly up to these standards; they have done it voluntarily, they have been complying with standards considerably in advance of the regulations imposed by the Department. I need not mention them; they are perfectly well known. They are able to do it because they have the capital, and so they do can them as speedily as possible from the time they leave the boilers until they are in the retorts where they are sterilized, and the meat is cooked. I have timed them on a number of occasions, and have found half an hour the limit for the bigger canners. That is what I call canning them as speedily as possible. Leaving them on the coolers all day, much less leaving them on the coolers all night, simply means that these canners are going to have a very considerable percentage of the meat blackened meat.

"The canning should be done under conditions of great cleanliness; cleanliness of floors, cleanliness of the tables, and cleanliness of the operatives' hands and clothing." Exquisite cleanliness is, I am sorry to say, a condition which does not prevail in probably three-quarters of the canneries, the lobster canneries of Canada.

"To treat their products so as to ensure the presence of a vacuum in the can." That has never been done as far as I know, except in so far as a partial vacuum may be got by warming the contents of the can so that a good deal of the air is forced out before the cap is put on, but getting a vacuum is perfectly well known in the salmon canneries. In British Columbia they have machines that take out the air and seal on the cover at one operation, so that they do have vacuums in the British Columbia canneries. We have not got them here.

"To employ the right processing." That is, the boiling of the cans after the meat has been put into them, as most of you probably know; the boiling of the cans at temperatures that will ensure sterilization of the meat. Now, there are two general kinds of sterilization; one is what we call the open boiler or bath. The other is in the retort, where a cover is put on the retort and screwed down and heat is applied or steam is passed in under pressure, and you can raise the temperature from the boiling point, which is 212 degrees, which is the usual way of boiling meat and sterilizing it; in the retort you can raise it to 240 degrees and increase the pressure 10 or 12 pounds, and the increased temperature and the increased pressure sterilizes it and kills a lot of bacteria that are not killed by what we call open boiling or the open bath.

"The good quality of tin plate." A lot of blackening comes from poor tin plate. What is the cause of blackening? The main cause, apart from conditions that help or hinder—the prime cause of blackening is a compound of iron on the one hand and sulphur on the other. The iron comes from bad tin plate,

or cracks in the plate; the sulphur comes from the decomposing of meat, the decomposing lobster meat. You must have both of these things or you will have no blackening, hence the warning here that the tin plate must be of such a quality, that is the covering of the tin must be such that there will be no little spots of iron uncovered. If there is, you are sure to have blackening; that is, if there is delay in canning. But with a good quality of tin plate, or what the American Can Company puts out as their renamel cans, anything that will cover up the iron and keep it covered, you will prevent the formation of smut. You will probably get the other thing, sulphur; there are the two of them, sulphur on the one hand and iron on the other. Poor tin plate will give you the iron, and that with the sulphur will give you the smut. Hence this recommendation of the English Research Council that the tin used in canning must be of good quality, or the renamel can which covers up the tin in addition, so you have the double cover, the tin over the iron and the enamel over the tin. Then you must have efficient tin-closing methods, so as to avoid leakage and maintain a vacuum.

Now, these in brief are the five or six requirements of the Research Council of Great Britain. This report also contains one fact here which you will be all interested in, I am sure, namely this: the workers who turned out this report for the Research Council bought meat, different kinds of fish, in the shops of London, and took them to the laboratory and made analyses. I find on page 60 that six cans of lobsters were bought. They did not know where they came from or how they were processed, whether by retort or open boiling or anything, but here is the outstanding fact. Six cans were bought; of the six, five of them contained bacteria, showing that the cans were not sterilized. That means that retorts, at any rate, were not used, or if they were used they were improperly used. That means, you see, that 82½ per cent of the six cans contained bacteria; or, in other words, there was only one good can out of six.

Now, I think those of you who are in touch with the canners this year particularly, know very well that there are some ten thousand, or possibly more—what is your information on the number of cans carried over this year?

Mr. COWIE: Up to about six or eight weeks ago it was nearly ten thousand.

Dr. KNIGHT: I understood it was ten thousand, yes.

Mr. ROBICHAUD: Ten thousand cans?

Dr. KNIGHT: Yes.

Mr. ROBICHAUD: Would these be from overseas, or from this country?

Mr. COWIE: Mostly overseas.

Mr. ROBICHAUD: That would not include what would be in stock in the Maritime Provinces?

Mr. COWIE: Yes, I think so, both from here and overseas.

Dr. KNIGHT: I think you will agree with me that it looks rather serious for our export of lobsters, and I would suggest to you gentlemen in regard to these regulations here that the time has come when you should insist on every cannery having a retort, so that you will be just that much more likely to send over to the old country lobster exports, with some certainty that the meat has been sterilized, and you cannot be sure of that with the open boiler that is used in probably 80 per cent or 90 per cent of the canneries of this country.

I do not know, Mr. Chairman, that I have anything more to say excepting that the finding of our Canadian Research Council under Dr. Harrison, well known bacteriologist, principal of MacDonald College, corresponds generally with this, and so does that of the Biological Board of Canada.

The CHAIRMAN: If a regulation were passed to make every cannery put in a retort, what would be the cost to the individual cannery for the extra machinery?

Dr. KNIGHT: Dr. Harrison estimates and states in his report to the Research

Council that it would cost between \$25 and \$30 for the smaller canneries. Of course, in the larger canneries a retort would cost more than that.

The CHAIRMAN: How much more?

Mr. COWIE: We have some price quotations here, which we secured when this question came up, after Dr. Harrison had made his report. They are from a Hamilton company which manufactures these retorts. The cheapest retort that they quote here is one 12 inches by 18 inches, and the price is \$33, but that does not include the fire-box. Now, they have one with a fire-box, 18 by 18, and the cheapest is \$122.

The CHAIRMAN: What size would that be?

Mr. COWIE: Eighteen by eighteen.

The CHAIRMAN: That is pretty small.

Mr. COWIE: Yes, and it costs \$122, so I do not think the smallest cannery could put in a retort for much less than a couple of hundred dollars.

Dr. KNIGHT: I think that is a little misleading. An ordinary square box stove would not cost over \$15 or \$20, and it will work well enough, will be sufficient to germinate steam for the cheaper retort at \$33. It is all very well for the Hamilton firm to quote a special fire-box, but a special fire-box is not necessary.

The CHAIRMAN: You say a box stove would take the place of a fire-box?

Dr. KNIGHT: Yes.

The CHAIRMAN: What about the boiler or retort; what will it cost outside the fire-box?

Dr. KNIGHT: I am afraid I cannot answer that.

Mr. ROBICHAUD: I think they all come together, do they not?

Dr. KNIGHT: No, the retorts are separate. I used one down at the Biological Station for canning lobsters three summers. Mine cost \$22. We worked it with gas, but we could just as well have put it on a stove, only our gas is in the laboratory and it would be easier to use that than a box stove.

Mr. ROBICHAUD: How many lobsters would a retort of that size hold?

Dr. KNIGHT: They hold eighty quarter cans, forty half-pound cans and about twenty pound cans at one time.

Mr. ROBICHAUD: For what length of time must they be sterilized?

Dr. KNIGHT: The boiling will sterilize them to a certain extent, but the retort insures better sterilization.

Mr. ROBICHAUD: What I want to arrive at is, what would be the length of time required to sterilize.

The CHAIRMAN: How many minutes would it take to sterilize a large lot of lobsters?

Dr. KNIGHT: Thirty minutes with a retort in a temperature of 240; half an hour for the half-pound cans; fully half an hour. The pound cans would take still more because it requires a longer time for the heat to penetrate from the circumference to the centre, and it must penetrate to the centre, otherwise you do not kill the bacteria in the centre.

Mr. ROBICHAUD: I wish to get this point clear. I understand it takes about three hours of boiling with the ordinary old-fashioned boilers?

Dr. KNIGHT: Yes, and then you are not sure.

Mr. ROBICHAUD: Will the thirty minutes of boiling that you speak of with the retort complete the operation?

Dr. KNIGHT: Yes, because in the one case you are supposed to have a temperature of 212, while with the retort you get a temperature of 240, and if you put on ten or twelve pounds extra pressure, the extra pressure will kill all the bacteria that the open boiler does not kill.

Mr. ROBICHAUD: I suppose that an 18 x 18 retort would answer for thirty per cent?

Mr. DOUCET: I may have been led astray, but I have correspondence here stating that the small canners would be compelled to pay about \$500 for this retort, and in that event I have been asked, and I intend, to safeguard the interests of the small canners on the shore. But if the information given by Doctor Knight is correct, and I have no reason to doubt its accuracy—if an 18 x 18 retort can sterilize a case of lobsters in thirty minutes at a very small cost indeed, my argument would fall to the ground, but that is the information I had from a canner.

The CHAIRMAN: Did they tell you how they made up that \$500?

Mr. DOUCET: No, they did not give particulars. They are prepared to use it, but if it was to cost so much, the small canners say they would be driven out of business.

Mr. HATFIELD: Not if they are going to save a lot of money on the smut.

Mr. DOUCET: Many of them would not have the capital to install them. We have canners in our district who have not had retorts at all. Possibly the great trouble during the past few years has been due to poaching and a lot of the canning was done in the bush through not having the proper facilities with which to can the lobsters.

Mr. COWIE: I might explain that when we sent out that circular letter, to which I have referred, asking for the opinion of the individual canners, we sent one to each canner in the Maritime Provinces. Every canner did not reply, but we got replies from nearly one hundred, I think, and out of that number, about sixty or seventy objected to this particular section in the proposed amendment, that is Section 12 (f).

“(f) After the canning season of 1924 no lobster cannery shall be allowed to operate unless it is provided with a steam retort to assure adequate sterilization of the canned lobsters.”

The great bulk of the replies we received objected to that.

Mr. ROBICHAUD: Perhaps it is, as Mr. Doucet says, that those canners do not have any idea of the cost of such a retort.

The CHAIRMAN: Were the objections mostly from small canners, or from large canners?

Mr. COWIE: They were mostly from small canners, but we have the head of the Portland Packing Company, Mr. Baxter, objecting to it. He objects very strongly to that because he feels it would put the small canners out of business. He says he has been packing for forty or fifty years and for most of that time he has used nothing but an open boiler and they have not had any trouble. On the other hand, Mr. Tidmarsh, who is his manager in Prince Edward Island is of a different opinion. So there you have the heads of one of the largest packing companies divided in their opinion. Mr. Baxter says he objects simply out of consideration for the small canner.

Mr. DOUCET: How many canners would there be in the Maritime provinces, roughly speaking?

Mr. COWIE: Between five hundred and six hundred.

Mr. DOUCET: You had replies then from about twenty per cent, and sixty per cent of the replies were opposed to it?

Mr. COWIE: They were opposed to that particular Section.

Mr. DOUCET: I assume that the small canners did not reply, and these are the ones who would be most affected.

Mr. HATFIELD: What would you call a small canner?

Mr. ROBICHAUD: A canner who packs up to one hundred and fifty or two hundred cases.

Mr. HATFIELD: Are there many canners packing less than one hundred and fifty cases?

Mr. COWIE: Oh yes, a great many; especially in Mr. Robichaud's district. Many pack not more than fifty cases.

Mr. ROBICHAUD: A father and son go out fishing and the daughters assist. The operations are kept within the family. What I had in mind was that I did not think that these retorts could be bought so cheaply. I had in mind the establishment of a co-operative system amongst the small lobster canners.

Mr. DOUCET: I believe that if we could insist on the lobster being boiled shortly after being taken out of the water and then immediately canned, we would overcome the greatest difficulty that causes smut in the lobster.

The CHAIRMAN: Is it not a fact that the large lobster packers purchase from the small canners?

Mr. COWIE: Yes, a great many of them.

The CHAIRMAN: It seems to me that it would be in their interests to see that the lobsters of the small canners are properly packed.

Mr. DOUCET: I have correspondence—I am not permitted to use the name—from a small canner who says it can be done without the retort system providing the regulations are such that the canners pack a lobster the moment it is caught. That, to my mind, has been the great difficulty.

Mr. ROBICHAUD: If I were permitted to divulge the history of canning lobsters in my own constituency and were to explain why we have blackened lobsters, the story would be a sad one. The lobsters are sometimes packed in the woods and held over until the next year and sold with the next year's packing.

The CHAIRMAN: Do not the purchasers investigate when they buy them and try them as Doctor Knight says they do in England?

Mr. ROBICHAUD: Take the case of a large lobster dealer; he supplies perhaps twenty or twenty-five factories. Some of them supply more. In July they take the lobsters back from the fishermen and many of them are left with perhaps \$200 or \$300 on their books. They go to work and supply the fishermen with boxes and they fill them in the woods. These lobsters go back to the dealers and that is how you find so many blackened lobsters.

Mr. DOUCET: In some sections of the country the large canners co-operate with the small canners in poaching, according to Mr. Robichaud, and in other sections they do not. In my constituency, I do not believe it is done.

Mr. ROBICHAUD: Most of the poaching done in my constituency has been encouraged by dealers from outside of my county but who are doing business in my county.

Mr. HATFIELD: That seems to be a question of enforcing the regulations which now exist. I think that where lobster canning is done regularly and properly, the lobsters are boiled immediately after being taken out of the water. If you have a lot of illicit canning, and that sort of thing, that is a matter for the enforcement of the regulations, not of trying to cope with it by making regulations that might only add to the difficulties of enforcement.

The CHAIRMAN: Have you any information, Doctor Knight, as to where this evidence came from?

Dr. KNIGHT: I cannot get the information.

Mr. ROBICHAUD: And you will never get it.

Dr. KNIGHT: A man like myself cannot get at the evidence. Here is a paragraph in my last report which was distributed among the members of Parliament; my report for 1923, which bears upon this point. (Reads).

"I have before me a letter from a buyer and exporter, telling me of a loss of \$12,000 which he has sustained. When he bought the lobsters in the spring, they appeared to be of good quality. By August they were blackened and unsaleable. He appealed to me to explain

the cause. And herein lies one of the disabilities of the scientists. We do not generally get particulars as to where the blackened meat has been put up, so that we may promptly examine conditions."

The man who buys them does not want to tell where he got them, because if he did, and it got back to the small packer that the man to whom he had sold the previous year had given him away as being the salesman of the bad lobsters, he would not get another lobster to buy from that man for years. That is the position I am in. We do not get the information. If we did, we could help them out just as in Ontario to-day in chesse-making and butter-making, they have cheese inspectors, and if bad butter or bad cheese turns up, the inspector is notified and he is sent at once to the cheese or butter factory to investigate. We will never be right in the lobster canning business until we do the same thing and have a government inspector to whom the information could be given or to the overseer when he goes around and weighs. As it is, what does he do? He does not do anything. I think he sends a sample or a report to the chief inspector in Halifax, but outside of Nova Scotia he would not get a report. The chief inspector does not do anything. But if you had a scientific man to whom a report could be made in a case of blackened lobsters, he could be sent straight to the factory to investigate the conditions and report, and have the conditions changed just as is done in the case of cheese and butter making.

Mr. COWIE: I wish to make a slight explanation in regard to what Doctor Knight has said as to examining lobsters at the canneries. The blackening, as a rule, does not develop at the cannery; it develops after the stuff has been shipped. When the overseer goes around to test for weight, if he comes across defective cans of any kind, or even if he comes across them in the retail stores in his district, he has no authority under the Act as it is to seize. But they have definite instructions to report immediately to the local health authorities who will take action. We had a case within the last few weeks. The trouble in connection with finding out the source of the blackening or the cannery at which the cans had been packed that had developed blackening, is that the canners of lobsters have always insisted on their cans being shipped without any labels. They are labelled over in England.

We have, therefore, no means of telling where the cans came from. A large firm probably gathers in a consignment of lobsters from 50 or 100 different canneries; there are no labels, no marks of any kind to say where they came from, and they may be from Quebec, Prince Edward Island, New Brunswick or Nova Scotia. They ship to England and label them there, and we have no possible means of telling where they came from, and that is the reason why we are unable to trace these things.

The CHAIRMAN: Do they re-box them as well as re-label them, or leave them in the original boxes? Would they be likely to come back in the same boxes?

Mr. COWIE: Yes.

The CHAIRMAN: Could it not be done in this way? For instance, if a large canner buys from 10 small canners, could not each canner have his mark?

Mr. ROBICHAUD: They are all marked.

The CHAIRMAN: Could it not be followed up by that mark?

Mr. COWIE: If the shipper would keep a record of these private marks it could be done in that way, but the shipper what he calls "reconditions" them before they leave Halifax, say.

Mr. HATFIELD: What do you mean?

Mr. COWIE: He takes them and puts them into other cases.

Mr. HATFIELD: Could it not be arranged that every canner should have his own private mark by which he could mark every can, or the cover of his

cans with a little die or something of that sort? I asked a practical canner about that within the last year, and he said it was very feasible and could be done; that every canner who took out a license could state his mark on his license, and every can he cans could be easily marked by this little die, which would not affect the canner in the least.

Mr. COWIE: Yes, but they will not do it. We had a case of a large canner reporting some what he said or thought were underweight cans being packed down on the western Nova Scotia coast, but he would not tell us who was doing it; he simply said they were receiving cans that they thought were underweight. He would not help us out because he was afraid that if he did so he would not be able to buy any more lobsters.

Mr. HATFIELD: If you adopted this scheme you would relieve him of all that responsibility. When a bad can was discovered the can itself would show exactly who put it up.

Mr. COWIE: We have an absolute hold on them in so far as the sale in Canada is concerned, because we compel them to label every can with the name of the packer.

Mr. HATFIELD: Those labels could easily come off the can, or be changed, but the stamp could not.

Mr. COWIE: Of course it could be done that way, but there is another thing connected with discolouration that I think is overlooked to a great extent. It is pointed out by Dr. Harrison in his report. I do not know if the committee has studied that report, but I think before the next meeting it would be well to read it over very carefully. He goes on to say that, as a result of his investigations, blackening or discolouration is more of a chemical nature than bacterial. He estimates that chemical discolouration accounts for 85 or 90 per cent of the affected cans, and he further states that that appears more largely, almost altogether, in spring caught lobsters; that it does not appear so much in fall lobsters owing to the chemical change in the lobster. Of course I am not arguing one way or the other, but I think these are points that should be studied before any definite conclusions are reached at your next meeting. Another suggestion is the use of acid to counteract the effect of blackening to a great extent, acetic acid, as he proposes. We found that very very few cannerymen used acid last year, but in one or two cases they did use it, and the results were astonishing. One man in fact, in Prince Edward Island, who had been canning lobsters for many years, was about giving it up, discouraged, owing to the blackening. He was induced last year by our inspector down there at Charlottetown to get a little acetic acid and use it in his pack. He did it, and he never put up better lobsters. There was no blackening, they were absolutely clear; the pickle was absolutely clear and the fish perfectly good.

Mr. ROBICHAUD: It does not affect the quality of the fish?

Mr. COWIE: Not the small quantity that is put in. Another thing is that Great Britain, the United States and France have no objection to a small quantity being used, and we know that where it was used last year the results were excellent. That is just a little acetic acid, not more than is contained in an orange.

Dr. KNIGHT: May I say a word? I feel constrained to differ with my friend Mr. Cowie on that point. I think he is giving an impression to the committee that is somewhat misleading, but not different from the impression created on the average reader by reading Professor Harrison's report. Reading that over, you would think that if cannerymen would all use acetic acid they would have no blackening. Now, of course that is not the case. Acetic acid is a valuable aid, but it does not remedy the main trouble. I think it is important that this committee should consider what are the outstanding causes of the blackening of lobsters. You see, it is not referred to by the British Council at

all. The Biological Board's scientific investigator, Dr. Reed, an old Nova Scotian, a graduate of Harvard, spent eleven years in university working to qualify himself for investigations like this. Dr. Reed admits the value of the use of a little acetic acid or vinegar; there is no question about that; but to get the idea into your head that that is the outstanding remedy is most misleading. What the Biological Board has found, and what Dr. Harrison admits and enters in his report is that the acetic acid is only part, is only one of the remedies for blackening lobsters.

Now, the outstanding cause of blackening is delay. I would like the committee to just make a note of that; the delay in canning, and I want to point out in this connection that precisely the same cause, delay, is the cause of so much of the fish food that is placed upon the market as fresh fish food, turning out to be not fresh fish food, because the delay between taking the fish out of the water and the time it comes before the consumer is so long that the fish begin to deteriorate. It does not show in blackened fish, but it does show in blackened lobsters, and the principle is precisely the same in the two cases. In fact, in the old country, Scotland, they have learned that, and the fishing boats that go out with the fishermen and get the fish out in the North Sea, are big floating refrigerators, so that the moment the fish is out of the water it is frozen. No matter how much money you spend on advertising to try and get people to eat more fish, let me tell you that you do not need that; if you give us inland people fresh fish, you will not need any advertising; they will advertise themselves.

Let me tell you the outstanding cause of blackening; it is delay, and it does not matter whether it is the delay from the time you leave the fishing grounds until the fish are landed at the factory, or whether the delay is on the platform of the factory, or whether it occurs between the boiling and putting them into the retort, it is delay, and of that delay the most serious is the delay after the lobster shells have been taken off, so that the bacteria get access to the meat. Our latest research—and I may say here that I had nothing to do with it except in the way of encouragement and advice—I may also say that Dr. Reed's paper which is being printed now, although I have it in manuscript form, is very good. I think it is the best paper that was ever printed in America or the Old Country on the blackening of lobsters, and when it comes out I advise you all to get it, and you will see that delay is the prime cause. Mr. Chairman, perhaps you would be good enough to read this, and you will see that the first paragraph deals with delay. I have here half a dozen simple rules that I sent down to Mr. Found and asked him to sign and send out to the canneries, not as official, but simply the rules that would be before the eyes of the fishermen, that they might know that when they violate these rules they are going to have a poor quality of lobsters. The second one after delay is "Table tops, meat dishes, and operatives' hands should all be kept exquisitely clean." There are dozens of canneries where that is not observed. Four years ago I found only one cannery out of fifty-three that had a wash-basin and a towel; one out of fifty-three. Do you think you can can lobsters and have good lobsters under those conditions? It is impossible. The next rule is "Table tops and meat dishes should be thoroughly cleaned and sterilized just before work is begun in the morning, also after any pause in operations during the day, and immediately after the day's work is finished." Another rule is "While cleanliness and sterilization can be secured to some extent by the careful and liberal use of clean boiling water and a plentiful supply of soap or Dutch Cleanser, yet every cannery should be provided with a steam boiler and hose in order to ensure a greater degree of cleanliness and sterilization than is possible with ordinary boiling water." Ordinary water is usually warm water, and the washing is done in tubs, and not one batch

only is washed in one tub, but I have seen five or six, and the subsequent batches put in are all being polluted by dirty water. The same thing is true of sea water. Around Prince Edward Island and along the good part of New Brunswick, they use sea water. Here, Mr. Chairman, are some photographs of canneries as I saw them, in the last report. Here is one cannery with a pipe going out into the sea probably a hundred yards; when the tide is out and the pump is working; they get water, roiled sea water, consisting of sand and mud and decaying animal and plant matter, and when they do not take that in with a pipe, two men go down with a barrel and dip it full and take it back up and wash meat in it. That was very bad. It would be infinitely better for them not to wash the meat at all, just to can it. Meat is never cleaner than when the shell is immediately taken off, and to wash it in roiled sea water or in tubs in which meat has already been washed will not give you a good quality of meat, and it will often give you blackening. The next rule touches on that, "The meat should be washed in pure running water—not in roiled sea water." Then it goes on to say "The renamel can or cans made of the best quality of tin plate should always be used." You see, he does not touch on the use of acetic acid until the next rule, which says, "Add a fluid ounce of glacial acetic acid to a gallon of standard (3 per cent) pickle, and pour a measure and a half of this acidified pickle into the cans just before they are filled with the meat." That is all right, it is an aid, but it is not the principal one.

The CHAIRMAN: Of course, a number of these suggestions you have just read are included in the regulations in force at the present time.

DR. KNIGHT: No; some of them have no relation to it at all; blackening is never mentioned.

The CHAIRMAN: No, but keeping fisheries clean and the use of clean water and so on—

DR. KNIGHT: Yes. I do not think there is any reference to blackening at all in the regulations, and I think there ought to be.

The CHAIRMAN: Now, gentlemen, are there any further questions to ask Dr. Knight? If there are not, I would suggest that we adjourn and take these old regulations and the new ones, and we will meet at a future date. In the meantime if we want to correspond with any of the packers in our constituencies, we can do so and get their ideas as to what extra expense will be entailed, and so on.

The Committee adjourned until Tuesday, June 10, 1924.

1724
CANADA

OFFICIAL REPORT OF THE EVIDENCE

TAKEN BY THE

MARINE AND FISHERIES COMMITTEE

RESPECTING

PROPOSED CHANGES REGARDING
CANNING OF LOBSTERS

THURSDAY, JUNE 12, 1924

No. 2

OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1924

The Select Standing Committee on Marine and Fisheries met at 11 o'clock a.m., the Chairman, Mr. Duff, presiding.

The CHAIRMAN: We will come to order, gentlemen. There are one or two gentlemen here to-day, I believe, who want to give expression of opinion as to what they think of the suggested regulations we were considering at our last meeting and we adjourned the meeting in an effort to get some more evidence. Dr. Knight is here. I think we will perhaps hear from him first.

Dr. A. P. KNIGHT called and examined.

WITNESS: Mr. Chairman and gentlemen, there have been some seven or eight different reports, which I have here on this question of lobster canning and blackening of lobsters. I do not suppose you men have had time to read the seven or eight reports, so all I am going to do to-day is to read a summary of the seven or eight and you will have the matters before you in a nut-shell. After that if you wish to ask me any questions and I can answer them I shall be glad to do so. Now I will begin with a definition of blackened lobsters:—

“‘Blackened lobster’ means lobster meat that has begun to putrify or decay or rot. The remedy, therefore, is to can the meat properly when it is perfectly fresh.

BLACKENED LOBSTERS

“The annual losses from blackened lobsters being very heavy, the scientific workers of both the Research Council of Canada and the Biological Board of Canada have concentrated their attention during the past three years upon the best means of avoiding these losses, estimated by the lobster canners themselves as varying annually between \$375,000 in 1920 to \$300,000 in 1923.

“The results of their investigations have been satisfactory. Working independently, the two sets of scientists have nevertheless reached practically the same conclusions. It can now be said with confidence that we know the causes of blackening and that we know the remedies for preventing it. Fortunately these findings in Canada have been corroborated. Scientists in the service of the Research Council of Great Britain have been at work upon this same problem and have amply confirmed the conclusions reached in our Canadian laboratories.

“The only objection to the remedies proposed is that they are likely to meet with opposition from a considerable numbers of canners, the reason being that the remedies will entail some additional labour and expense. No opposition is likely to come from the best canners, because they already have their canneries fully equipped and follow the best methods of procuring lobsters and packing them; but a very large number of small canners have neither the buildings, the equipment, nor the necessary skill for turning out a good quality pack.

“The outstanding fact in the blackening of lobster meat is that it is caused mainly by the presence of bacteria on the meat tables, the meat dishes, and the meat itself, and that these bacteria came from the gut or intestine of the lobster. I never yet saw the abdomen of a lobster

opened without the contents of the gut being spread more or less over the meat.

"In the first place, when the tail is broken from the body, the gut is ruptured between the stomach and the gut, and some of the contents get out onto the meat. In the second place, when the shell is removed from the tail, the gut is broken a second time at the anus. In the third place, when the tail is split by the gut picker, the gut is again broken, sometimes into two, sometimes into more pieces. The contents of the gut are thus spread more or less over the meat. Indeed, its spread cannot be prevented unless great care is taken by the gut pickers.

"When the tails are washed in standing water in dishes or tubs, the faeces are inevitably spread from the meat throughout the water. Some of the faeces adhere to the tub, so that even if the water is thrown away for each batch of tails, the tub is left filthy. A subsequent batch of tails add more faeces to the water, and so on, until finally in some factories where water is scarce—and it is often scarce—the water in which the meat is washed has become filthy. Such canneries are simply canning lobster faeces with the lobster meat."

By Mr. Martell:

Q. What part of the lobster meat—

WITNESS: Two years ago I nearly lost my hearing through an attack of influenza and I cannot hear distinctly what you are saying now.

Q. I do not want to interrupt you but I want to ask you what portion of the lobster is it that was green, which is very tasty, commonly called "tamale." What does that come from?—A. That is in the chest.

Q. What is it?—A. It is chiefly the reproductive organs, the male and the female and the liver. It is not the gut.

"The gut of the animals makes the largest contribution of bacteria to the shelled meat. The numbers of bacteria present varied enormously in different animals, as a result apparently of the type of food taken and the time after feeding (It was calculated that there were 700,000 bacteria in every drop of gut contents

"The boiling of the animals in the shell for seven to ten minutes, as ordinarily carried out in the factories, does not, as a general rule, destroy a very large number of these intestinal bacteria. In the case of very small animals in a few instances, all non-sporebearing forms were found to be destroyed; whereas in two-to-three pound animals very little decrease in numbers of bacteria was observed. This is apparently simply a matter of the rate of penetration of the heat. Boiling for a sufficient length of time to have any marked influence on the number of bacteria from this source is not practical on account of the difficulty of handling such meat. The methods of shelling the meat and removing the gut result in a contamination of the meat with a considerable proportion of gut contents.

"The subsequent washing of the meat results in carrying bacteria well into the tissue (meat). This action is further greatly facilitated in many factories by the practice of washing the meat in tubs of water which rapidly become grossly infected.

(Extract from report of Messrs. Reed and McLeod, p. 8.)

"Another outstanding fact is that delays—particularly in warm weather—in getting the lobsters from the water to the boiler, and from the boiler into the steam retort, help to spoil the quality of the meat, even if they do not produce blackening. All delays except at freezing

point permit bacteria to increase greatly in number, and start putrefication.

“Preventable delays occur (1) on the fishing grounds when fishermen change the location of their traps, or convey their lobsters too great a distance to a factory; (2) on the landing platform when the employees are too few in number to can the catch speedily; (3) on the cooling table when the catch is too numerous to pack at once, or too few to pack until more are caught the next day; (4) between boiling and sterilization in the cans.

“As regards these delays the bacteriologists of the Research Council of Great Britain have this to say: ‘Manufacturers (canners) who wish to ensure the absence, or at least a minimum of spoilage, must be encouraged to obtain their food products as fresh as practicable and to can them as speedily as possible.’ (See their report, p. 64. See also pp. 22 and 23 of Report of Sanitation for 1922.)

“Now, it cannot possibly be said that fishermen who hold their lobsters in their boats in sun and wind for several hours during the time they are changing their traps, are delivering their ‘food products as fresh and practicable.’ Nor, after lobsters have been delayed for several hours on the factory platform, can it be truthfully said that the canners are canning them ‘as speedily as possible.’

“It was planned in the grading scheme (see report, 1922), that the ill effects of delays at the factory should be obviated or at least lessened by requiring canners to keep their lobsters in floating crates until they were ready to can them; but apparently the grading scheme is to be abandoned altogether. At any rate no reference is made to it in the proposed amendments and no section in either regulations or amendments requires canners to use crates.”

Mr. COWIE: I would just like to say that is not quite correct. The grading scheme is not abandoned. It is not to be incorporated in the regulations but it is a matter for the Department to put into effect. That is simply a report form that is to be placed in the hands of the officers to be sent periodically to the Department. It need not be in the regulations at all.

By Mr. Martel:

Q. As a practical fact is it not the case that in many instances where the canners do not can they have a large receptacle which is in the water, with the sea water going back and forth, which they call a car, in which they put their lobsters?—A. It is only done by a few.

Q. Every factory I have seen in Cape Breton does that. I worked in lobster factories, and they have a huge crate, commonly called a car?—A. I might say, and I want to point out to Mr. Cowie that while he tells you the grading scheme has not been abandoned, I am glad to know that. What I want to point out is that in the present regulations and in the proposed amendment there is no regulation requiring that crates shall be used.

By Mr. Cowie:

Q. You mean for carrying lobsters from the boats?—A. Either for carrying them or keeping them.

Q. I understand it was provided in the original draft of the regulations but in the draft that was agreed to in the canners meeting down at Amherst evidently that was left out. It was not the Department that left it out. I think

perhaps Mr. Williams would know that better than I do. I was not at the meeting. A. (Reads):—

“Not merely is the delay in packing shelled meat objectionable because it permits multiplication of bacteria, it is objectionable also because the table tops and meat dishes are, generally speaking, not clean and not properly sterilized. It is not a pleasant fact for consumers to learn that bacteria from the gut of the lobster are spread in large numbers over the table tops, meat dishes, and the meat itself. The only thing which will at all reconcile consumers to this condition of affairs is to be assured that canners take the utmost precautions to either remove these bacteria or kill them.

“Consequently all the utensils for handling the meat should be boiled two or three times a day for half an hour in clean water. The table tops should be scrubbed two or three times a day with clean boiling water and soap and subsequently washed down with a plentiful supply of live steam from a steam boiler. Even this vigorous treatment will not kill the sporebearing bacteria, but it will at least greatly reduce their numbers, and it will kill the less resistant kinds.

“As regards the water supply, the large majority of the 600 Canadian canneries pollute their meat with dirt and bacteria contained in water taken from along the sea shore. In windy weather roiled sea water occurs along the coast of the Maritime Provinces, excepting in the deeply indented bays of southern and western Nova Scotia. Here the rocks are hard, and do not readily break up into sand and mud through the agency of wind and waves. Roiled sea water contains, in addition to sand and mud, decaying animal and plant matter and large numbers of bacteria. It is never clean, and is generally quite unfit for either washing meat or making pickle. If used at all, it should be only after filtration.

“Nor is fresh water from surface wells fit for such use. It also contains many bacteria. Washing meat in either roiled sea water or in fresh water from unprotected surface wells is simply polluting it. Lobster meat is never cleaner than when the shell has just been removed. Why, therefore, pollute it by washing in contaminated water?

“All meat should be washed in running water. This means that all factories should have an abundant supply of pure water; that the water should flow continuously from a tap on to the meat, and should run away continuously from the meat into a deep sink or drain. There should be no stoppage. Only thus can the particles of lobster faeces be washed off the meat in anything like a sanitary manner.

“Inasmuch as all meat is affected with bacteria from different parts of a factory, and especially, as we have seen, with bacteria from the gut of the lobster, and inasmuch as these bacteria cannot be washed free from the meat, it is absolutely essential that the meat should be thoroughly sterilized after being packed in the cans. Now, ordinary boiling water at 212° F atmospheric pressure will not sterilize the spore-bearing bacteria which grow in clumps. Principal Harrison found (see his report, p. 32) that some of these bacteria can live for 9 hours in boiling water. It is manifest, therefore, that the ordinary boiler can give no guarantee of sterilization in a lobster factory. Consequently, in order to sterilize properly and thus command the confidence of those who eat canned lobster, all canners who have not as yet installed steam retorts should be compelled to do so. Even the use of this machine is not an absolute guarantee that all spore-bearing bacteria will be killed, but it is an additional safeguard.

"I have tried to summarize for you gentleman—all busy men—the scientific principles which must be embodied in the official regulations if you wish to avoid the heavy losses from blackened meat. I have no doubt you are all anxious to put an end to these losses. It will be interesting for you to learn that four workers of the Research Council of Canada, and four of the Biological Board, have spent more or less of the past three years in the solution of this problem, and that the two researches have cost Canada about \$10,000.

"Over a year ago the Fisheries Department was notified that the problem of blackened lobsters had been solved. Four reports published since then corroborate our previous knowledge of this subject. As yet, however, not a single new regulation has been passed so as to enable the fishery officers to put a stop to defective canning methods.

"Why should there be this delay? There need be no fear that any injustice will be done to canners through precipitate action on the part of the Department. Many of the methods urged upon canners to-day were known and urged upon them years ago. I have before me as I write a circular issued by the Roberts Simpson Co., in 1905, in which canners were strongly advised to exercise the greatest care in the cleanliness of boats, surroundings, factory, and employees; to avoid the use of dirty water; to avoid delays in packing; to keep live lobsters in crates; and to avoid leaky cans.

"A year or two afterwards another circular strongly commended the use of the steam boiler for supplying steam to the boiling vat and steam for the steam retort. It was even advised that the inside of the tin cans should be cleaned of all 'dust and dirt'. There is nothing new about all this, and it is excellent advice to-day.

"The only recent requirements are the use of steam for creating a vacuum in the cans, clean running water in which to wash the meat, canopies over meat tables, and acid pickle. So simple and inexpensive is the whole equipment (except the steam boiler) that I cannot escape the strong conviction that many of these canners will not spend a single additional dollar on further equipment if they can possibly avoid it.

"May I appeal to you, gentlemen, to do something towards abolishing the more or less unsanitary condition in about three-quarters of the lobster canneries? The plain truth is that much of the blackening and probably all of the poor quality of the meat is due chiefly to lack of strict cleanliness—to dirt and bacteria.

"Up to 1922 losses were unavoidable, because nobody had discovered their cause. But by March, 1923, the Department had been informed as to the cause, and had been urged to hold a course of instruction for the fishery officers so that they could go among the canners and instruct them how to avoid the losses. Such a course of instruction has now been given, but the existing regulations and proposed amendments are entirely inadequate. Even if they were approved to-morrow, they would not authorize the fishery officers to put an end to those practices which promote bad canning. Some of the regulations are useless, and some are defective. New ones should be added if it is intended that blackening shall become a thing of the past.

"Much of the loss for last year (1923)—\$300,000—could have been prevented by prompt action. The season of 1924 opened without executive action, and further losses may therefore be expected between now and October 15.

"No doubt additional expenditure on further equipment is not popular with the small canners. They would like to run a lobster factory with very little equipment; but in their desire to save money they must

be told plainly that consumers have their rights as well as canners. Consumers have a right to expect that lobsters shall be fresh when they reach the factory—not stale; that meat shall be retained fresh by speedy canning; that equipment shall be kept exquisitely clean; and that a steam boiler and steam retort shall be available for adequate sterilization.

“These are not the conditions that prevail generally at present, and as a consequence trouble looms up for the small canners. With the publicity which blackened lobsters have deservedly received during the past three years, with the revelations that have been made in regard to the unsanitary conditions of many of the factories, paralysis of the market may occur almost any day.

“The confidence of consumers in the cleanliness of factories may be easily lost, and when it is, it will be regained only by ‘playing the game.’ Once confidence is lost, canned lobsters will become unsalable. The best canners will retain their customers because they can properly and they stand behind their goods; but even they may suffer in the general slump if one comes. But the smaller canners are sure to suffer, and they deserve to, because many of them have been packing human food for four years past, (and I don’t know how much longer), in disregard of the principal laws of sanitary science. The true friends of these men are those who tell them the truth, and the truth is that canning is being done to-day in many small factories under conditions which should not be tolerated.”

By Mr. Stewart (Humboldt):

Q. There is just a question—as you know I am not well informed on the matter of canning lobsters but the Professor referred to acid pickle in a casual way. Is that a chemical preservative that is used. I wonder if he would give us a little explanation.—A. It was first recommended by Professor Harrison and you will find it in his report and it has been corroborated since through work by another scientific man, Professor Wraite and there is not question as to its efficacy.

Q. It is wholly in conformity with the Pure Food and Drugs Act?—A. This question of using acid pickle was brought up in connection with the French market and at first the French Government refused to allow lobsters to come in that were treated with that, but they were made to understand that acid pickle means pickle of the strength of vinegar any they withdrew their objection and it is very servicable.

Witness retired.

Mr. WILLIAMS (Halifax), called and examined.

WITNESS: Mr. Chairman and gentlemen, I am representing the Fish Canners section of the Canadian Manufacturers Association. I am also representing Robert Simpsons & Co., Ltd., of Halifax. The amendment and regulations and proposed changes as they are at present are really the result of a conference with the commercial interests, which was had with the departmental officers and the scientists last year. We met them and by no means did we get these changes which we sought but we met in the spirit of compromise, each one feeling that he would have to concede something to the other. If they were to be accepted by this Committee as they are at the present time we would feel in honour bound to approve of them but if they are wanting changes we feel we would like the commercial side of it to be stated as well as the scientific or the departmental side. There are some points which I have listened to in Dr. Knight’s report with considerable interest and some of these points were taken up by Dr. Knight last fall, and even the question

of cars and freights, which the Doctor mentioned now, was discussed at the earlier meeting but it was conceded by the meeting—there were representatives from the three Maritime Provinces there—it was claimed by some in New Brunswick and Prince Edward Island that it was impossible for them to keep cars and freights in a proper position near their factories; therefore it was left out of the regulations, as I remember it, strongly recommended, but not made as a regulation, making it compulsory for people to have cars and freights so as to meet those people that could not possibly have them on account of the tidal conditions and such things. The chief objection that the canners have to the regulations is the matter of expense in connection with the installation of the retort and the steam boiler. The rest of the regulations, I think, we are pretty well in accord with each other on, that is the different departments, the scientists, the departmental officers and the trade. As Dr. Knight said, the firm that I represent has been advocating the same things, most of these, nearly all of them, for the last thirty years. The last of the circulars to the packers was one that Dr. Knight spoke of this morning. There is the report of the scientists that you have. Dr. Knight makes it appear as an absolute necessity that these retorts and steam boilers should be had but so far, although the scientists have been working on this for a matter of three or four years, the reports are not to such a degree as to make them an absolute necessity. If science says we must have them and shows the reason, I suppose it would be foolishness for the trade to attempt to oppose anything like the installation of a retort or a steam boiler. As regards our concern it makes very little difference. In most of the larger factories that makes no difference because we already have the retorts and the steam boilers, but we must give the smaller factories time to prepare. We all appreciate what Dr. Knight has done for the industry, what he is still doing, but we are afraid that in their desire to remedy matters they are liable to kill the industry before we get the remedy. We feel we are suffering sufficiently at the present time from other causes, than through the blackening causes and we do not want to have business ruined in order to be rebuilt. We need the co-operation of the different departments so that we can put the business on a different plane. The latest reports of Drs. Reed and McLeod do not seem to be conclusive as to retorts. They are agreed with the report of Dr. Harrison but they close with the statement that the primary objective should be to avoid the decomposition which causes the formation of discolouration material. Expedition in packing and sterilizing the cans has been advocated by us for a long time and most of the packers are trying to do that. The first part of the report then emphasizes the necessity for most of the regulations. In the present suggestion he does not conclusively, as far as I can read them, show that the retorts are absolutely necessary. The report unfortunately has already done more harm to the industry than it can do good in its present form because some newspaper reporters have taken a paragraph or a sentence out of that report and broadcasted it right through the Dominion of Canada; the Canadian Press, I think it is, showing the millions or trillions of bacteria that are in lobsters as prepared for canning and the newspapers seem to have had the reports before the trade saw them, and we have already had a great many people saying it is going to do a great deal of harm to the lobster business of this country. If the same report gets abroad to the United States or Great Britain, I am afraid the injury will be almost irreparable. I do not want to waste your time, Mr. Chairman and gentlemen, but I have some other things to mention. Perhaps if you would let me read some of these things I could express myself more clearly. Dr. Knight has mentioned the question of running water. There are members representing constituencies here where running water is not so easy to obtain. In this Island, where lobster factories are situated, in Yarmouth County, there is considerable difficulty in getting water, so that they can have running water in their factories in the way that the scientists are suggesting

although there are means used by most of the factories in order to obviate the difficulties. The cost of the recommendation is one stumbling block with a number of the operators and that is certainly an important item, when these retorts are considered as to their cost. What is really destroying the lobster business to-day is the multiplicity of these factories and the overhead charges that have been made by having so many of them. The question of citric acid for acetic acid, which is proposed by Dr. Knight, I do not think forms part of the new regulations. It was left out because it was a debatable question at the time, and we do not wish to have this made a final regulation until we know that it will be acceptable in all foreign countries to which lobsters are sent. We must admit there are practically no food canning industries to-day, where the goods have to be hermetically sealed, that do not use retorts and steam in their establishment. The investigations made by the scientists showed that there are germs in lobsters that cannot be killed by boiling water, and therefore it seems that the retorts are necessary.

By Mr. Hughes:

Q. That cannot be killed by boiling water?—A. Yes. Still in the last reports that does not seem to be so conclusively shown as in the earlier statements. We must admit that the goods processed with retorts are usually better than goods that have been processed with steam, boiling water. (Reads):—

THE PROPOSED NEW LOBSTER REGULATIONS

“In the proposed regulations for the lobster industry now being considered by the Committee most of the matters introduced are already well known and accepted as essential by all canners who are desirous of putting up a satisfactory article of human food. Many of them have been recommended by us and other packers and dealers for the last thirty years. In many of the canneries they have been adopted for some years. Experience has confirmed them and the trade welcomes the proposals to have them made uniform.

“In a series of letters and circulars sent the packers generally, from 1894 to 1905 almost all of these items were advocated by my principals and there is a remarkable similarity in the recommendations now made by the Scientific investigators and departmental officials showing us to be well in accord with each other's views.

“When the Fish Canners Branch of the C.M.A. were invited to discuss these proposals there were representative packers and exporters from all the Maritime Provinces and all these features were discussed.

“Since this fishery covers such a vast coast line, where the natural conditions vary, where the fishing grounds are widely different, and where tides and currents change the situation to a very marked degree, and since the fishing seasons are not uniform and the nature of factory surroundings have a marked effect upon the manner in which operations can be carried out, then care must be taken that any regulations put into force for general use must not inflict unnecessary hardships upon any districts. Uniform regulations under such conditions are very hard to make. Precautions that need to be taken when canneries are operated in March and April don't always assume the same importance when the operations are conducted in August and September. It is more important to rush the completion of canning work on hot summer days than when cool weather prevails. The fresh water supply available in some places makes the question of running water much easier where it can be had in abundance than in such places where the supply is restricted. The sea water obtainable for canneries where there are long shallow stretches of sand needs more filtration or attention than that where the rocky shores

and deep waters prevail. Some regulations put into force for P.E.I. with good reason would possibly not assume any such importance for the Atlantic coasts of Nova Scotia.

"Many changes had to be made in the original proposals to meet existing conditions.

"The industry acknowledges the superior knowledge and the sincerity of the scientific gentlemen that have been investigating matters for the Government. It owes them a debt of gratitude but it is natural we should fear that some of the theories they might suggest, while simple under laboritcal treatment may not be feasible in canneries as they are at present constituted and especially those on remote parts of the coast.

"The cost of their recommendations is one stumbling block with a number of operators, and this is certainly an important sum when such items as retorts and steam boilers have to be multiplied by six hundred factories. We believe however that we also have to face the cost of non-compliance with these scientific suggestions and when carefully calculated we have to admit that the annual losses experienced by the trade as a whole (and indirectly—even if not directly to the individual) is quite as staggering as that of the proposed innovations.

"Then there is the proposal of a "2½ per cent pickle" or the addition of acetic or citric acid which science may be quite correct in insisting upon, but not without first considering its commercial effect or at least not until the other lobster consuming countries with their Pure Food Laws or kindred restrictions will let them have their seal of approval.

"These were the features that those representing the industry wished to protect themselves with the scientists.

"Then while we accredit the Department of Fisheries as being anxious to improve general conditions for the industry we feared that some misunderstandings or misconstructions might arise that would handicap an honest canner or unduly interfere with his operations at critical periods.

"An over-zealous officer acting upon powers conferred by these regulations could do irreparable injury to a canner or his cannery. Slight technical differences could easily arise, and with the memories of such interferences in the past some of the rules originally proposed required modification.

"We met at Amherst prepared to concede some of our contentions in order that the scientific departmental and commercial interests could be served. We were met by the others showing a similar disposition. It was a Round-table Conference. None of us got all we desired but each felt that the recommendations would meet the present needs. Those of us who were at Amherst felt then that the regulations as they are submitted should be accepted.

"If however the Committee feels that changes are required, we respectfully ask that the commercial aspect of such alterations be considered carefully and as representing this branch, which includes fishermen, canners and exporters we may be permitted to express our opinions.

"Having explained our position towards the proposed regulations it can be seen that while the various interests appear at the outset to be conflicting, such differences of opinion are easy to solve when those directly concerned meet together with a spirit of 'give and take.' If we are met either here or elsewhere determined that we must attain our own ends and be unwilling to consider the views of the others little progress can be made. It is that lack of co-operation in the past, engendered by the local jealousies and fostered afterwards by intriguing politicians that has, we believe, proved a serious menace to the industry and

prevented almost every reform. It has created a feeling that the packer and fisherman are always at loggerheads. The Department and the operators are always at variance and so it goes until in desperation we lose respect for ourselves and our laws and agree to disagree as much as possible with each other. While our members of Parliament for the Maritime Provinces are harassed by these pettifogging differences and spend more time in Ottawa talking about lobsters than the real importance of the business merits of their attention.

"In the present matter before this Committee the proposals are nominally attacked chiefly on account of the extra costs that will be entailed in conforming with the suggestions of our scientific friends by installing retorts and steam boilers at all factories.

"There are practically no food canning industries to-day, where goods have to be hermetically sealed that do not use retorts and steam in their establishments. We are told now that the investigations made by the scientists show that there are germs in lobsters that cannot be killed at a temperature of boiling water. We have in the past met instances of lobsters being spoiled knowing that the water bath was carried out as usual and being unable to find any causes for their subsequent deterioration. This statement by the scientists may explain the cause. We ourselves cannot disprove it. We have noticed however that goods processed in retorts have not deteriorated in this way, and it was for that reason that as early as 1894 we recommended the use of retorts when possible. If this has now been established scientifically then we feel that the proposal merits acceptance.

"As already intimated we believe the extra cost should be set off against the extra risk that we ran in not complying.

"The trouble here lies then in the multiplicity of the lobster canneries. Thirty years ago there were over 900 factories in operation. Now the number is reduced to about 600. But since the pack today is but half of what it was in 1894 it can be seen that conditions at present are worse than ever. This has recently come forcibly to the attention of the investigators and references are made thereto in some of the latest reports. The situation that exists around Miscou and Shippegan Islands is especially quoted to show the evils that arise out of a multiplicity of competing factories.

"These plants as they stand to-day do not conform with the regulations. They are difficult to control hygienically by scientists or departmental. Few of them can pack a choice quality of foodstuffs and many of them have caused complaints from buyers and injured the general demand for canned lobsters by their irregularity and unreliability. An observance of close seasons, the protection of spawn lobsters are impossible under the existing conditions. To equip these with retorts and steam boilers is a practical impossibility.

"We have as buyers no animosity towards these canners if they can produce choice goods. We quote them to illustrate that if factories of this kind are to be permitted, merely upon a basis of argument that 'Competition is the life of trade' they have been in operation now long enough to belie that attitude, for they do not, nor can they, secure better results for fishermen by their numbers. Rather would it be possible for an amalgamation of such canneries to equip themselves in accordance with a necessary standard and enable the operators to pay more money to be fishermen for their catches, and receive more for their canned products than are now possible. This is true to a proportionate degree in most districts.

"According to Government statistics for 1922 the lobster canneries in the Maritime Provinces are valued at two and a half million dollars. Equip all these with retorts and steam boilers and the value would be increased to nearly three millions. These are used to pack four and a half million dollars worth of canned lobsters. In the majority of cases these plants are not available for other purposes, and so the overhead expense to cover interest, depreciation, repairs and fire insurance are exceptionally heavy. They can be conservatively calculated at from two dollars to three dollars per case or about five cents for each so-called pound can. It means too that the price the canner is able to pay the fishermen is at least one cent per pound less than it should be under improved conditions. We won't believe there is any other canning industry in our country so handicapped with its 'overhead'.

"The boats and other equipment used in connection with so many factories are all multiplied in a similar way and entail a great expense upon the industry or a charge that disables the fisherman in getting a higher return for his catch.

"Almost every item of cost is increased by the system. That adage regarding 'competition' has reversed itself until it has become the death knell of our industry.

"Consider the traps enumerated in the same statistics. They are valued at one and a half million dollars. Their average life is reckoned as three years. It costs the fishermen half a million dollars to catch three and a half million dollars worth of lobsters. It means each trap secures on an average 200 lobsters in three years; less than two lobsters per day for the period it is in use and represent one-third of a cent on each lobster brought ashore.

"Their other charges are also proportionately heavier than economic conditions justify. A student of economics by going through the available statistics could easily demonstrate that the business has been allowed to drift into its present methods by an excess of competition and a lack of co-operation, under it is almost impossible now to interest new capital for the industry or even proper facilities for its operation.

"Similarly the cost to the Government is increased by the divided state of the industry. The time and attention now necessarily devoted to this branch of the fishery is rendered great. It is out of proportion with that needed and deserved for other fishery products. Add to these the services of the Mounted Police, the Biological Board, the Research Council and it can be seen that the lobster industry costs the people of Canada a great sum of money because your predecessors have always insisted that their safety lay in granting packing licenses indiscriminately to all comers. The political significance of the industry has outweighed its economic possibilities. In attempting to pamper the industry they succeeded only to hamper it.

"Looking backward for forty or fifty years we cannot see where any permanent profits have accrued to either fishermen or packer. None of them have become wealthy in this branch of their operations. The number of failures makes a most formidable list and these failures have injured not only people in this line only but the entire provinces. The morale is poor and an ethical standard cannot be obtained while an industry remains so precarious. Laws and regulations are then drawbacks instead of assistance and conservation for the future is lost in the necessities of the present. Everyone grumbles and his first impulse is to blame his neighbour. Canner blames fishermen. The Government officers blame both and even the scientists are influenced until they begin

to feel that a psychological enquiry into the personnel of the industry is even more important at this juncture than all the germs and bacilli the lobsters themselves contain, and it is perhaps natural that the members of this Committee may be inclined then to consign the whole lobster business into oblivion as a veritable nuisance.

"All this, however, despite our highly flaunted boast that Canada holds a practical monopoly of the lobster supply—that the annual supply is only enough to give all the people who seek lobsters about an ounce per person in each 365 days and that this wonderful asset should produce great wealth to our country each year.

"With co-operation we believe these results are yet obtainable. The business should not be allowed to drift further by such false economic ideas as have existed in the past nor until the present operators and the further supply have both been ruined.

"To the people of Canada the lobster should be a national asset. To those of the Maritime Provinces it assumes the role of a public utility because it has—either directly or indirectly—an effect upon every branch of business conducted there. We would hardly care to recommend its control to such Boards as some of our newspapers describe at times; or presume to suggest how the various factions could be harmonized immediately.

"The ills now endured, the difficulties experienced and the losses still prevailing cannot be cured by any set of regulations formulated by any one of us regardless of others. They will not be properly effective unless the people realize their necessity. The industry is already enveloped in a net work of commandments mostly beginning with 'Thou shall not'—and there is an element in human nature that objects to restraints unless the people can see the benefits that accrue therefrom.

"We believe this Committee could benefit their constituencies by bringing about an area of co-operation for the industry and demonstrate the reasons for the regulations to the fishermen and packers they represent if they decide to accept them in their present form.

"*R.H.W., Vice-Chairman of Fish Cannery Section, Direct. of S.R. & J.*

"The proposed regulations were submitted to canners last year. Representatives of the three provinces met Dr. Knight, representing the scientists. Mr. Cowie representing the Department.

"Those now submitted are a compromise on what were originally suggested.

"None of us got what we sought. We feared that scientists might attempt to revolutionize the industry before their investigations had gone far enough to justify them. We feared the Department might seek powers that over-zealous officials would render harmful. No doubt those gentlemen feared we would be both to have extra encumbrances placed upon this business.

"We met at a Round Table Conference. Each in a spirit of give and take, and as we wished to co-operate with the scientists and the department some clauses were conceded to us and some to them.

"If then your Committee feel that these should be accepted in their present form we feel in honour bound to show a willing acquiescence.

"If, however, changes are to be sought then we ask that the commercial interests be consulted and an opportunity to discuss them be afforded."

By Senator McLean:

Q. It has been suggested that in the first boiling of the lobsters, if the water is sufficiently hot, it would kill the bacteria that may exist in the faeces. When

the lobster is opened and they commence handling the meat the idea is probably that that is the greatest reason for contamination?—A. That would be a scientific question.

By Mr. Hughes:

Q. Would long boiling improve conditions in the first stage?—A. Long boiling would destroy the appearance of the lobster when it was canned, which would be detrimental to the appearance of the lobster. It would be detrimental to the meat.

By Mr. MacLaren:

Q. Would it take the flavour away?—A. To some extent.

By the Chairman:

Q. It would make the meat tougher?—A. Yes.

By Mr. MacLaren:

Q. Is a retort an expensive thing?—A. The average cost of it in most factories I think would be about \$300.

Q. And the boiler?—A. They vary to-day. I do not know; according to the size of the boiler. I should say an average of \$500.

Q. There is not much difference between the cost of the boiler and the retort?—A. You have to install steam to have retorts. They go together.

By Mr. Cowie:

Q. There is a style of retort which is self-contained with a heater underneath it, which can be used without a separate steam boiler?—A. They are very small.

By Mr. Cowie:

Q. Thirty years ago there were 900 canneries in operation. To-day there are about 600, but the pack to-day is about half what it was twenty or thirty years ago, so our condition is really worse than it was then, and while we have those same plants it is going to be very difficult for people like Dr. Knight to have the theories that they advocate properly carried out.—A. The situation has come to this point now that with certain classes of factory their goods do not bring within four or five times what other goods would bring. The cure might be seen in the difference that they get for their goods.

By Mr. Hughes:

Q. There is an opinion or a suspicion that some injury is caused by lobsters packed out of season, lobsters illegally packed, and consequently improperly packed and the larger buyers take these and sometimes they are carried over until the fall of the year, when they cannot be disposed of and put in with the regular pack. Is there anything in that?—A. Speaking as so-called larger buyers, I would say no.

Q. Is it done at all?—A. It has been done in the past, but I do not think it is being done to-day and I do not think there is any reliable lobster exporter to-day who would willingly buy anything that he knows would be out of season.

Q. If they are packed somebody buys them?—A. Unfortunately they do. There were some on the market twelve months ago. They were being sold in Canada at \$20 a case, while goods that we had packed during the season were costing us over \$30 a case, so that we certainly do not advocate any packing out of season of goods in that way. Their quality does not make them desirable anyway. It is better for us to do without them at the \$20, even if our goods were costing us \$30, but they had the effect of influencing the market price, bringing them down to the low levels of last year.

Q. The haste and the secrecy with which the work has to be done means that it is not done as well as under ordinary circumstances?—A. Haste is perhaps not a good word.

Q. Secrecy?—A. Yes.

By the Chairman:

Q. Have you any suggestions as to what regulations could be made? Are you in sympathy with all those new regulations?—A. We are in sympathy with all the new regulations proposed except there would be a necessity of imposing the retorts and steam boilers on the smaller packers.

Q. Would you suggest anything that could be done by the province to help the small packers put up a better lobster?—A. What we need in the lobster industry at the present time is more co-operation than we have had in the past. We are a little bit closer to-day with the scientists and the departmental officers than we were before. We find it is helpful to us and we think we should try to get closer together, the packers and the fishermen and the dealers, than we have been in the past. We have got into such a state that everyone considers that if I am a packer I am naturally the enemy of the fishermen or if I am an exporter I am the enemy of both, and I am afraid the scientists consider we are all enemies of theirs.

Q. Do you know how this can be done?—A. I think the Members of Parliament in the different constituencies could do a great deal themselves to create a better condition between the parties. When we got together at close quarters, as we did at the conference at Amherst, although we were divided at the outset, we found our differences were not so very great.

Q. The larger packers purchase from the smaller packers?—A. Yes.

Q. I suppose you endeavour as far as possible to see that the goods you purchase from the smaller packers are in good condition, and this view you adopt now?—A. We have adopted in the past all the suggestions and advice to the lobster packers, which we have been publishing from time to time, and which Dr. Knight has referred to. We send them periodically to the different factories and we find they do a great deal of good, but there is still room for improvement.

Q. When you buy the lobsters do you open them and sample them?—A. Yes. We sample them, and we are able, with such experience as we have, to determine very well just what kind of treatment they have had at the factory, by their appearance, by the stains and by the general character of the factory itself.

Q. If you find that they are not well packed you either do not take them at all or give them a smaller price?—A. To-day the position is such that we would rather not have them at all. The demand in Europe to-day is really for the choicest foods. The market is in a poor condition and only the best is sought, so to-day unless we can get choice lobsters we would rather be without them.

Q. Is not the remedy of the larger packers in their own hands? You do not have to buy them if they are not good pack or good food?—A. It does not always apply that way. In a great many instances we have to give cash advances in the fall so that we have really bought the goods six months before we get them and when the time comes for delivery we have to take them or lose our money.

By Mr. Robichaud:

Q. I suppose when you make cash advances to these small packers you have to take what you can get?—A. That is something that keeps us in a position where we cannot take the drastic action as buyers that we should take.

Q. Are you aware of the fact that when you buy lobsters from smaller packers that they in turn buy from other small packers who operate all along the coast?—A. We know some of them.

By the Chairman:

Q. With your knowledge and experience do you not blacklist any packers? For instance, you buy lobsters from one packer this year and you find his pack is bad, would you advance money to him next season?—A. No.

Q. That would have a good effect?—A. It drives him to a competitor. By the time he has gone the round of these different competitors he is cured or out of business.

By Mr. Robichaud:

Q. Would you believe in co-operative factories around these islands on the north shore?—A. I think it would be a step in the right direction. Those we refer to now, I think, are a glaring example of the destruction.

Q. If there were co-operative factories, putting up a better class of merchandise, would your firm be ready to compensate those people for their better merchandise? Would you make a difference in the price of lobsters put up by a co-operative factory as compared with the merchandise put up by the small factory?—A. Not because it was on a co-operative basis, but if the quality would justify the price. It is possible, I believe, to pack as good a quality in Shippegan and Miscou as it is in any of the other points in New Brunswick. There are some goods in these other places that we seek and which we are glad to get, but we do not seek them very hard at the present time.

By Mr. Hughes:

Q. I have a letter here from one of the larger buyers and the letter says that some of the smaller packers put out better goods than some of the larger packers?—A. Say "Just as good as some of the larger packers."

Q. He says, "better."—A. There are some of the smaller packers can put out a choice article and we have a great many, of course, that we know of, who put out just as good, and I would admit sometimes even better than we would put out in our own plants.

Q. Therefore the reason is not because they are small packers that the goods are poor?

The CHAIRMAN: Because they are poor packers.

By Mr. Hughes:

Q. The suggestion or the intimation made by Dr. MacLaren that education be given to all the people in the business, is going to be very difficult to carry out. It is going to take a very long time. I think the remedy would lie largely in the hands of the larger buyers. If they would not take any of the goods that were not up to standard the men in the business would see that what they send out were saleable and pretty nearly all right. I think the remedy would have to come from the larger buyers getting together.

By Mr. Robichaud:

Q. What would be your idea of making the larger buyers get together? Discard the small packer?

Mr. HUGHES: Do not buy the goods unless they are up to standard.

Mr. ROBICHAUD: There is a great deal in that.

By Senator McLean:

Q. Do you not make a good deal of difference in the price you pay for goods, not only because they are put up in a good package but packed poorly,

that is broken meat and not nicely packed. When you are sampling goods do you not find that in a great many cases?—A. Yes.

Q. A small packer, as a general thing, packs the lobsters hot. He packs probably 100 to 150 cases during the whole season, but as soon as they are in and boiled they are packed immediately hot, and they turn out brighter and better than any other lobster?—A. Yes.

By Mr. Stewart (Humboldt):

Q. Is there a distinguishing brand that these small packers use that distinguishes their product from another factory, or do you bulk it all under your own brand?—A. Speaking for ourselves we have a variety of brands. We keep the choicest of one particular brand and we have them in four or five or perhaps more different grades. The choicest brand is used for the choicest lobsters, and they decline in value and in quality.

By Senator McLean:

Q. If you find a buyer who wants goods right up to the market does he not want them with one brand?—A. We do it in Europe and to a great extent in the American trade. They are demanding their own labels. We have our country trade, our retail trade over in Britain and Europe.

Q. I think what Mr. Stewart means is this: If you bought lobsters say from fifty small packers—if you have a distinguishing brand on each small packers pack, so that you can follow it in case of complaint.—A. Every packer is followed by a system of numbering we have. They are followed right through.

By Mr. MacLaren:

Q. Is it stamped on the tin?—A. No, it is stamped on the box. We call them ourselves "lot numbers." Lots that come in are consecutively numbered and that lot follows it right to destination. If we get a complaint from any part of Europe that stencil 529 is showing inferior quality we know just what packer it was who packed it and what date we received it. We are able to follow the complaints in that way.

By Mr. Stewart (Humboldt):

Q. What difference in the price do you make to these various canners, depending on the condition of their goods? What difference would that make in percentage roughly speaking, of course?—A. Well, speaking for last year, the early part of last year, the difference with us varied from two to five dollars a case.

Q. It is almost generally conceded that the south shore Nova Scotia lobsters are worth more than lobsters packed in some of the other districts. There is a difference in the market that way of about \$2.50 a case. Would that mean from 5 to 15 per cent?—A. No, I would say from 10 to 15 per cent.

By Senator McLean:

Q. How would the extension of time last year in the fishing season affect the market?—A. The extension last year was ruinous to the market and ruinous to business.

By Mr. Robichaud:

Q. Do you mean to say the extension that was given in June?—A. There was an extension in June.

By Senator McLean:

Q. At the same time the buyers on the other side expected that the season was extending almost one-third of the time. There would be that many more lobsters packed, and for four or five seasons you could not sell them at any

price?—A. The moral effect upon the market was bad and I think the effect upon the fisheries the following season was bad. It was invariably proven that if you have an extension this year you suffer for it the next year. The people of Halifax county were given a special season in December last and they started in to try and catch lobsters again in the month of March, in the present season. They were trying to catch the same lobsters twice. They found that they were not there. They have done nothing this spring. The situation was saved to them last December apparently but they were facing a worse condition at the end of May than they would have had without the extension. They cannot get the same lobsters twice.

Q. Would you not, in the interest of lobster fishing, strongly recommend that no extension of time be granted at all under any circumstances, that is for spring fishing?—A. From our experience we are strongly opposed to all extensions.

By Mr. Robichaud:

Q. How is the pack coming out this year?—A. The pack this year is very poor.

By Mr. Hughes:

Q. Poor or small?—A. Small. The catch is poor.

By Senator McLean:

Q. The smallest in the history of the trade?—A. As far as we can gather.

By Mr. Robichaud:

Q. Would not that have any effect on the market this year?—A. It should have. It seems to me we were faced at the end of 1923 with a situation where we estimated there were from 40 to 50 thousand cases of last year's lobsters unsold. The previous December there were 30,000 cases unsold. It showed, from our method of calculation, that the demand at last year's prices and the year before was equal to the demand of 100,000 cases. We have started this year with a surplus of 50,000 cases so that if our pack is anything like normal we would still be going ahead, but if our pack is even 30,000 cases less than last year we will have enough lobsters to supply the demand unless a demand arises from some other source. At the beginning of this year Germany started in with a demand for lobsters. We expected the good times were coming again because in March the Germans were trying to resell in London what they bought in January and February, so it is making the situation really worse instead of better, but we are not talking that way to our customers at present. We are hoping for the demand to come. We are counting upon a revival of the exchange conditions in France and other countries, but we cannot see a lot ahead yet. There is no justification for high prices to-day.

By Mr. Hughes:

Q. Is the pack small around Nova Scotia?—A. On the western end of Nova Scotia the pack was decidedly small, according to our experience. The statistics will prove that as well.

Mr. COWIE: It is ahead of last year but last year was an exceptionally poor year but it is behind an average year.

Mr. HUGHES: It is very small I am told at Prince Edward Island.

Mr. COWIE: Yes.

By the Chairman:

Q. Is not the catch small on portions of the coast where there is no fall season and where there was a fall season last year?—A. I cannot say that there is any improvement shown anywhere this year.

Q. The catch was small in Halifax county?—A. Yes.

Q. The catch this year is just as small in a portion of Halifax county and Yarmouth as it is any place else?—A. I think Yarmouth county suffered by having a ten days' extension in the first part of June.

By Senator McLean:

Q. Where was this request for extension last year?—A. As we heard, it was in Halifax. I do not think there was any district that did not apply for extension.

Q. Do not the fishermen ask for an extension every year?—A. There is generally a request.

By Mr. Hughes:

Q. I understand there was no request from Prince Edward Island at all last year.

SENATOR McLEAN: Apart from that I think they made up their minds early in the season not to grant any extension but they paralyzed the market as soon as the extension was granted.

WITNESS: I have a telegram from Charlottetown: "There is a movement here to induce Government grant one month fall fishing. Trust you will oppose this and all extensions." That is from Mr. Tidmarsh.

By Mr. MacLaren:

Q. What is he, a packer?

MR. HUGHES: Yes, a packer and a buyer. The Portland Packing Company.

Mr. MacLean (Prince):

Q. I think there was one item mentioned in the regulations. I have not read them very carefully. This item refers to lobsters being left in the cooler over night. Supposing there is a rough day and the fishermen go out and pull their traps in the evening and the catch is landed but not packed until the next morning, does the new regulation make that prohibitive?—A. The regulation is a compromise of what Dr. Knight wanted and of what the Department wanted. There are places in Prince Edward Island and New Brunswick where they say they cannot keep them in the water over night. Therefore there was a slight modification made in the proposed regulation.

By Mr. Cowie:

Q. I think, Mr. Williams, there is something at fault here somewhere. The regulation as drawn, No. 18, goes on to say that in localities where it is impracticable to keep lobsters alive in the water or adjacent to canneries, lobsters may be allowed to remain in the cooler until the day after they have been boiled. Now there is no such compromise on that point. Section 18 simply says that no boiled lobsters for canning purposes shall be kept over night, so there is not provision for keeping them.

By Mr. McIsaac:

Q. Why cannot they be kept in water everywhere?—A. It is permissible to keep them in water. The question is as to keeping them in the factory.

By Mr. Cowie:

Q. The point is, they say they cannot keep them in water, in cars, until they are ready and they want to boil them and keep them over night boiled.

By Senator McLean:

Q. I would like to ask Dr. Knight if he ever came to any conclusion as to what affected the lobsters in 1920. The lobsters were packed for years and from one end of Prince Edward Island to the other 90 per cent of the lobsters

were in first class condition, bright and all right. Ten per cent of them were black. This did not happen on any particular day, because in our factories we keep each day's pack of lobsters separate, so if we have any suspicion of anything going wrong we know where to put our hand on it. Right around Prince Edward Island 10 per cent of the lobsters were black and we had experts examine those lobsters and we never could get the reason why there were 10 per cent of them black and the rest of them all right. And some of these lobsters are three years old now and as bright as they were when they were packed. Have you ever come to any decision in your own mind as to what the cause was.

Dr. KNIGHT: There is no one cause for the blackening of lobsters.

Senator McLEAN: Was there not some cause in that particular year?

Dr. KNIGHT: I think you will find the explanation of it in the delay. That is one of the big causes. They are out on the ground or on the platform or in a factory.

SENATOR McLEAN: How would it affect the whole season, because the lobsters were kept separate for each day's packing. It was about uniform all the way through.

Dr. KNIGHT: Was it at the beginning of the season or at the end?

SENATOR McLEAN: The whole season.

Dr. KNIGHT: I do not think anybody can answer that unless we put a man down there to look over it. You have seen the lobsters that were wrong.

SENATOR McLEAN: You know we used to blame the acid when we were packing the lobsters the other way, but those lobsters went as black as your coat. You have seen some of those, have you not?

Dr. KNIGHT: I got samples last fall, worked on them in the laboratory with Dr. Reed all this last winter, from a pack of, I think 1,200 cases, got samples from each one of them. It was quite evident that in most of the cases delay was the chief trouble and next to delay pure old fashioned dirt on the table, on the dishes and lack of sterilization of that dirt and bacteria.

Senator McLEAN: That could not have applied in all cases because from one end of the country to the other the larger factories that worked under sanitary conditions were affected just the same as the small factories, and I did not know but that in your investigation you came to some conclusion as to cause of that.

Dr. KNIGHT: No. It is possible I could suggest a number of general causes. For example the food of the lobster might give more bacteria in the gut but that would necessitate an examination of the animals themselves.

By the Chairman:

Q. Mr. Williams, Dr. Knight, if I understood him, objects pretty strongly to the use of salt water and recommends the use of running fresh water. You spoke of a number of factories being situated on islands and I might say that most of the factories along the Nova Scotia coast especially are situated at outlying places on the mainland where the salt water should be pretty clean. Do you think it was necessary in a case of that kind that fresh water would have to be used or would be better than salt water.—A. I would not like to pit my opinion against a scientist, but at the same time our experience in that part of Nova Scotia is that we have very little complaint of the quality of lobsters. In a great many instances they are not able to get fresh water, except in very limited quantities.

Q. Would not the salt water which is continuously coming in from the sea and moving be as clear as fresh water and as pure?—A. I would think so.

Dr. KNIGHT: Take Northumberland Strait and at the side of New Brunswick, the weather is windy; you cannot get clean water, partly sand, decaying animal and vegetable matter and heaps of bacteria, but down where Mr. Duff

lives you have not got mud and sand, because the rocks will not disintegrate into mud and sand and besides you have not got the sweep of the sea with the wind. Last year, right up to June, for two weeks I never saw along the south shore of Prince Edward Island and the east side of Prince Edward Island anything but roiled sea water, mud and sand.

By Mr. McIsaac:

Q. You are opposed to extension in summer time or in the fall?—A. We are opposed to both. We understand, from the little experience that we have, that the seasons, as they are at present, give us all a fair chance to get the lobsters during the best part, as we think, of the available time for each spawn. We have a two months' season and usually we can get during the two months three really good weeks of lobster fishing, so that the pack in most sections is obtained really during three weeks of the eight weeks of the season. Unfortunately the fishermen and the packers do not realize that sufficiently, because either the beginning or the end of the season is not as good as they would like to see it and they invariably ask for extension, but in the two months' season, I do not think we can count on the supply of lobsters got on the beginning remaining good until the close of the season. If we give them any more than two months I believe we will be destroying the supply and we think it is better, from our own experience, to leave it as it is.

By Senator McLean:

Q. The year that the fall fishing was granted did you not find an effect on the next spring's catch?—A. Yes, always.

By Mr. Robichaud:

Q. I cannot quite agree that fishing lobsters in the fall will affect the spring catch, because the catch in 1923 fell short. Last year, through some exertion of my own and with the help of the Department, poaching has not been done on the New Brunswick coast at all and this spring the catch is almost nil. Now there is an argument that counterbalances any argument that anyone can bring to this Committee, showing that fall fishing will destroy the catch during the succeeding spring.

SENATOR McLEAN: I think I can say this, that last year there was not a lobster caught anywhere around Prince Edward Island after the 26th of June because it did not pay them to keep open because they had exhausted the catch. Your argument is bad. It was the extension of time but it was not used there and still we have poor fishing. This year is one of the off years.

Mr. ROBICHAUD: It is a known fact that lobsters were very thick on the coast last fall, during the months of September and October.

By Mr. Cowie:

Q. Mr. Williams, in connection with Section 10 (a), the matter of running water, do you think there would be any hardship to the majority of small canners, to compel them to have running water, say, a year after the regulations come into force?

Mr. STEWART (Humboldt): Running sea water, though?

Mr. COWIE: It would be either clean sea water or clean fresh water. Their idea is to have a tank. What have you got to say to that, Mr. Williams?

WITNESS: As long as it is not defined that it must be fresh water and not salt water, but that clause says, "running water, clean running water." You can use your tanks in the places where it is impossible to use fresh water.

Mr. COWIE: I think that is the intention of the clause, to use either fresh water or salt water as long as it is clean.

Mr. McISAAC: Running water does not mean water kept in tanks.

Mr. COWIE: That is the idea.

Mr. McISAAC: Running water means running in its natural channel, I should think.

Mr. ROBICHAUD: The same as you would get in a first class hotel.

Mr. COWIE: The intention is to have it running through pipes, into sinks or basins.

SENATOR McLEAN: You would have to have an engine that would keep pumping all the time.

Mr. ROBICHAUD: You would have to have an engine and instal a pump and get a tank. It would be an expenditure of a thousand or some twelve hundred dollars.

Mr. HUGHES: Dr. Knight seemed to favour the very small retorts that could be put on a stove. How many lobsters could he take care of in a day.

Mr. McISAAC: That is only for picnic parties.

By Senator McLean:

Q. Would you recommend the small retorts to be put in factories?—A. In the small canneries, yes. They are perfectly good.

Mr. COWIE: The size is only 18 inches by 12 and it costs \$33 without the fire box or any heating apparatus.

Witness discharged.

The Committee adjourned.

