

AGRICULTURAL APPROPRIATION BILL, 1928

HEARINGS
BEFORE THE
**SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
UNITED STATES. SENATE**
SIXTY-NINTH CONGRESS
SECOND SESSION
ON
H. R. 15008

**A BILL MAKING APPROPRIATIONS FOR THE DEPARTMENT
OF AGRICULTURE FOR THE FISCAL YEAR ENDING
JUNE 30, 1928, AND FOR OTHER PURPOSES**

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AGRICULTURAL APPROPRIATION BILL, 1928

TUESDAY, DECEMBER 28, 1928

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met, pursuant to call, at 10.30 o'clock a. m. in the committee room, Capitol, Senator Charles L. McNary presiding.

Present: Senators McNary (chairman), Warren, Jones of Washington, Lenroot, Overman, Harris, Kendrick, and Capper.

The subcommittee thereupon proceeded to the consideration of the bill (H. R. 15008) making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1928, and for other purposes.

The CHAIRMAN (Senator McNary). I have before me an index of projects covered by the various items in the bill before the subcommittee, which, with the approval of the subcommittee, I should like to have appear in the record.

(The index is as follows:)

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STATEMENT OF HON. R. W. DUNLAP, ASSISTANT SECRETARY OF AGRICULTURE

W. A. Jump, Budget officer, Department of Agriculture, appeared.

GENERAL STATEMENT

Senator McNARY. Mr. Dunlap, I desire the record first to show the total estimate made by the Department of Agriculture to the Bureau of the Budget for agricultural activities for the fiscal year 1928.

Mr. DUNLAP. The preliminary estimate for 1928 was \$165,197,208.

Senator McNARY. What was the total estimate made by the Bureau of the Budget to the Congress?

Mr. DUNLAP. \$144,487,820.

Senator McNARY. What was the total appropriation made by the House?

Mr. DUNLAP. \$139,730,635. The House bill carries a total of \$128,379,385, but this is exclusive of permanent and indefinite appropriations aggregating \$11,351,250, which brings the total up to \$139,730,635.

Senator McNARY. What is the difference between the department's preliminary estimate and the estimate made by the Director of the Budget?

Mr. DUNLAP. \$20,709.388, most of which, however, was on the road items.

Senator JONES of Washington. What does that sum represent?

Mr. DUNLAP. This is the difference between the preliminary estimate we made to the Budget Bureau and the sum allowed by the Budget. I understood that to be the chairman's question. Mr. Lump will submit an analysis later.

Senator McNARY. That is, the preliminary estimate made by the Department of Agriculture exceeds the estimate of the Director of the Budget by that amount?

Mr. DUNLAP. That is correct.

Senator McNARY. What is the difference between the estimate of the Director of the Budget and the actual appropriation made by the House?

Mr. DUNLAP. \$4,757,185. The House increased the items for the regular work of the department by \$242,815 and reduced the items for road work by \$5,000,000 making a net reduction of \$4,757,185.

Senator KENDRICK. The amount allowed by the House is smaller than what was authorized by the Budget by that amount—\$4,757.185?

Mr. DUNLAP. Yes, sir.

Senator McNARY. Mr. Dunlap, as Assistant Secretary, I am advised that you have some statement you desire to make regarding the bill.

Mr. DUNLAP. Yes, sir. I have here a statement in which the department is asking an increase over the House bill of \$68,520, to include four items which were submitted in the Budget but which are not in the bill as now before you. Briefly, the items are: 1. An increase of \$2,820 for the Virgin Island Experiment Station, 2. An increase of \$21,700 for research work in dairying, 3. An increase of \$40,000 for forest products research, and 4. An increase of \$4,000 for our dairy experiment at Huntley, Mont. We have two other amendments which do not involve increased expenditures. All of the recommendations involving increased expenditures were included in the Budget.

Senator McNARY. Let us have the items, one by one.

VIRGIN ISLAND EXPERIMENT STATION

Mr. DUNLAP. We are asking for an increase of \$2,820 for the Virgin Island Experiment Station.

Senator McNARY. That is on page 8, line 15. You want the estimate of \$25,000 restored?

Mr. DUNLAP. Yes, sir.

Senator McNARY. Why did the House reduce that amount \$3,000?

Mr. DUNLAP. Senator, I am not prepared to say why they did not include the increase.

Senator McNARY. Will it cripple your activities if that reduction is continued in the Senate bill? If so, tell the reason why you want that amount restored, Mr. Dunlap.

Mr. DUNLAP. We want to put a horticulturist on St. Croix Island to take care of the work that seems to be necessary for the natives on that island. At the present time we have no horticulturist there and they are in very great need of help and practical advice. The nearest place where we do have a representative of the department is on St. Thomas Island, some 40 miles away. It is quite inconvenient and quite expensive for the people from St. Croix to get to St. Thomas. I understand there is only one boat each week.

Senator OVERMAN. What do these experts or representatives of the department do down there?

Mr. DUNLAP. They advise the natives as to the best manner of raising their crops, such as they raise. I really am not familiar with the agriculture there; but they advise with them, the same as our men do here in the various counties and States, as to just what they shall do to make their agriculture profitable, especially along the line of horticulture.

Mr. JUMP. They are unable to raise even their own food at the present time, and have to import a good deal of it from a British island in that general vicinity. When the island of St. Croix was first acquired by the United States it had some industry, due to its being an open port or a port of call; but the ships have almost entirely stopped coming in there, and that has taken away the means of employment that a great many of the natives had prior to that time. We are simply trying to teach them, in the most elementary way, some of the principles of gardening and produce raising, so that they can have something to eat without having to import it. Furthermore, they really have not the financial means to import it so that the situation is rather acute. The industry that they had along with the shipping in former times was largely rum, so I am told, prior to the United States acquiring the islands.

Senator McNARY. How many employees are connected with the experiment station in the Virgin Islands?

Mr. JUMP. We have four people altogether, Senator—three technical men and one clerk to look after the business end of it—but on the island of St. Croix we have just an agronomist and a clerk. There are three principal islands—St. Croix, St. Thomas, and St. John—and the point is that on St. Croix we have no horticulturist now. The island of St. Thomas—which is about 40 miles away, with one boat a week calling there, and a fare of \$8—was without any agricultural instruction whatever, and the people there were in rather dire need, so that a situation arose where we had to take away the horticulturist that we had at our experiment station at St. Croix and send him over there as a means of relief, to get something started on St. Thomas.

Senator KENDRICK. You have no station on the island of St. Thomas?

Mr. JUMP. No, sir. We have the one man there now, but we have no real station. He is going around, doing what he can to instruct the natives.

Senator McNARY. Do you do any research work at the station?

Mr. JUMP. It is very simple, elementary work. It is practically a demonstration proposition, to try to show them how to raise garden produce and some tropical fruits.

Senator McNARY. It is field work, largely?

Mr. JUMP. Oh, yes; entirely so.

Senator OVERMAN. What kind of products do they have on the island?

Mr. JUMP. They are tropical fruits largely, and some garden vegetables.

Senator JONES of Washington. What reports do you get from this man you sent to St. Thomas?

Mr. JUMP. Very encouraging reports—very encouraging.

Senator JONES of Washington. What does he say? What does he tell you?

Mr. JUMP. I was just going to give you a copy of our last report on the Virgin Islands Experiment Station. The report is that the man sent to St. Thomas found that the people knew almost nothing about gardening. He has practically had to begin at the beginning. He has been there only a short time. It is just during the past year that we have made this change. That is why we come now with an estimate to continue our work at St. Croix. The report we have indicates that the people on St. Thomas have responded to the instruction given them; but we have no particular technical report from him yet. It is simply a case of going in and showing them how to raise their own food.

Senator KENDRICK. Are the climatic conditions there such as to enable them to raise more than one crop a year?

Mr. JUMP. Yes, sir. It is a tropical climate. I think the islands are only a relatively short distance east of Porto Rico.

Senator KENDRICK. What do you know, if anything, about the character of their soil?

Mr. JUMP. Senator, I, personally, am not familiar with that, and we did not bring up here the man who is familiar with it, because the amount recommended was so small that we did not feel that the committee would want to take a great deal of time with it; but we can ask Doctor Evans to come up and discuss it, if you desire. He knows all about the Virgin Islands, if you care to spend some time on it, and will be only too glad to present the situation fully.

Senator KENDRICK. St. Thomas is the port, is it not, where the ships land?

Mr. JUMP. St. Thomas is the port; yes.

Senator KENDRICK. The country round about there looks barren; it looks like a desert.

Senator McNARY. You have been there, have you, Senator?

Senator KENDRICK. Yes.

Mr. JUMP. It is. A great deal of it is rough country, and not ordinarily suited to agriculture. That is why it is gardening that this man is spending his time on. We do not expect to make farmers out of these people in the sense that we farm here, but if they can raise their food it will help a great deal.

Senator KENDRICK. I may say to the committee that the situation there apparently is rather discouraging. The truth is that the only way in which this country has in any way influenced the situation is by the enactment of the prohibition law. The manufacture of rum out of their products of sugar cane was their chief industry. In fact, their dependable source of supplies and a living was in connection

with the unloading and loading of ships prior to the building of the Panama Canal. It was the point at which ships bound down the coast of South America and around Cape Horn were wont to stop and refuel, or unload fuel, or unload supplies that would go from St. Thomas across to the coast and down the coast. After the building of the canal, of course, that was all done away with, and that occurred before we took over the islands. So, as I understand the situation, the condition, industrially and otherwise, in the island of St. Thomas and the Virgin Islands was very unsatisfactory when we took over the islands, and we added to a rather desperate situation by the enactment of the prohibition law, which the natives claim, and I believe with a good deal of truth, destroyed their one dependable industry.

Senator McNARY. You want the item of \$3,000 restored?

Mr. JUMP. \$2,820; yes, sir. That was the Budget estimate. I have a concise statement prepared on this item that it might be well to have included in the record if agreeable to the committee.

(The statement referred to is as follows:)

VIRGIN ISLANDS EXPERIMENT STATION

Page 8, line 15. Strike out "\$22,180" and insert "\$25,000."

This amendment would provide an increase of \$2,820, as recommended by the Budget, for the work of the experiment station on the Virgin Islands. The additional amount is needed principally for the employment of a horticulturist.

The Virgin Islands agricultural experiment station is located on the island of St. Croix, and it is developing its work along agricultural, horticultural, and animal husbandry lines. It has been quite successful in stimulating increased production of fruits and vegetables on that island.

St. Croix, however, is about 40 miles from St. Thomas, and there has been little opportunity for the people of this and other islands to visit the station and learn of its work. St. Thomas and St. John, which are separated by a sound about 2 miles wide, have approximately one-third the inhabitants of the group. Formerly they were supported largely by shipping and other employment about the docks and harbor, but changed conditions have left many of the people without means of livelihood. Several naval governors, the Woodson Commission of the Department of Labor, and committees of the people have strongly urged that cooperative and demonstration work in agriculture be taken up on St. Thomas and St. John in order that employment might be given some of the people and fruits and vegetables produced to take place of those now largely supplied from a neighboring British island.

In order to meet this urgent need, the horticulturist of the St. Croix station was transferred to St. Thomas on July 1, and he has entered on demonstration work that gives promise of success, although many of the people did not have even elementary knowledge of the crops and methods to be adopted. His assignment to St. Thomas leaves the horticultural work of the station on St. Croix without an expert leader, and since there are many problems still to be worked out on the introduction, adaptation, propagation, and cultivation of tropical fruits and vegetables in the Virgin Islands, it was the expectation that with the small increase recommended by the Bureau of the Budget it would be possible to continue the horticultural work at the station.

It is recommended, therefore, that the increase of \$2,820 recommended in the Budget be included in the bill.

INSPECTION OF FOOD AND OTHER PRODUCTS

Senator McNARY. What is the next item?

Mr. DUNLAP. The next item is on page 21, line 11, where it is desired to insert:

Provided, That the Department of Agriculture may, upon request of any branch of the Federal Government, perform inspection of food and other products and receive reimbursement of the cost of such inspections, including salaries and expenses.

Mr. JUMP will explain why that is necessary.

Mr. JUMP. The written explanation that we have handed to the members of the committee covers the matter in a very concise way. It explains that for a number of years the department, especially the Bureau of Animal Industry, upon request of other branches of the Government, such as the War and Navy Departments, the Veterans' Bureau, and others, has been inspecting meat and meat food products that the Government was about to purchase as Government supplies; and we have always submitted to the other department concerned a voucher covering the cost of that service. Recently, however, because of some comptroller's decisions such a bill was questioned by the Indian Service of the Interior Department.

They questioned their legal right to pay that bill; and just as we were considering the question we ourselves received a decision from the Comptroller General which we will take up with the committee in detail a little later, because it applies more directly to the engineering work we are doing for the National Park Service, and accepting reimbursement from them for it. The gist of the comptroller's decision on our matter was that while Congress, in passing the fortifications act, section 7 of which permitted the departments to transfer money from one to the other, under certain conditions, had in mind that sporadic instances where one department might render services to another would be regarded as proper matter for a transfer and exchange of funds, where one department is engaged regularly, as a continuous proposition in rendering service to another department, it would be necessary for the comptroller to have an indication from Congress that Congress really intended that one department should do that for another.

It is in order to remove any doubt whatever as to our being in position legally to perform meat inspection and other inspection which we are qualified and have the experts to render to other departments that we are asking for the insertion of this proviso. It does not involve any additional expenditure and protects the Government as a purchaser.

Senator McNARY. Did you submit this language to the House committee?

Mr. JUMP. No, sir. This matter has come up since the House bill was reported.

Senator McNARY. Is it due to a ruling of the comptroller?

Mr. JUMP. It is due to a ruling of the comptroller; yes, sir.

Senator McNARY. But this has been the practice you have followed for years?

Mr. JUMP. It has been followed for years.

Senator McNARY. And you are legalizing it now?

Mr. JUMP. We believe that it may be legal now. It is really to remove any doubt whatever that we are asking it.

Senator McNARY. But you are removing the doubt?

Mr. JUMP. Yes, sir. It is a beneficial practice. It insures that the Government actually gets value received, and it is not forced on any

department. We propose to do it only when the other departments wish it. The proviso reads: "Upon request of any other branch."

We have a concise statement on this proposed amendment which we should be glad to submit for the record, if desired.

(The statement is as follows:)

Page 21, line 11, insert:

"Provided, That the Department of Agriculture may upon request of any branch of the Federal Government perform inspections of food and other products and receive reimbursement of the cost of such inspections, including salaries and expenses."

For a number of years the department has performed inspections for various branches of the Government, particularly Navy, Marine Corps, Veterans' Bureau (hospital service), Interior Department (Reclamation Service, and Indian Office), Shipping Board, and War Department. The inspectors examine food products, particularly meats, to see if they conform to contract specifications. Typical stipulations in the specifications are that the meat must be federally inspected, and must be cut, piled, cured, drained, smoked, etc., in a prescribed manner. The examinations are ordinarily made in the packing houses where the foods are prepared. The amount of reimbursement for such inspections during the fiscal year 1926 was approximately \$85,000.

The reimbursement has included the salaries of inspectors during the time employed and other necessary expenses. Recently a department billed on this basis questioned the authority to repay the inspectors' salaries. At about this time also came the Comptroller General's ruling in the Public Roads—National Park Service case—laying down a principle adverse to the repayments, unless specifically authorized.

Without reimbursements for salaries and expenses the Department can not continue the inspections. Its funds are too limited to meet so large a demand upon its inspectors. The work, however, is important. It safeguards the health of the consumers of the products and insures full value received to the Government.

The system which is now threatened with discontinuance rests upon a sound business basis. It means simply that the branch of the Government specializing in a technical line of work steps in to perform it, strictly at cost, for other branches which lack the trained personnel and facilities. The purpose of the authorization sought is merely to continue this system.

Senator JONES of Washington. Your proviso is intended to make this authority permanent?

Mr. JUMP. Yes, sir. We did not put the word "hereafter" in there, however.

Senator JONES of Washington. That is really what we ought to do, if we do it; is it not?

Mr. JUMP. It was purposely left out, Senator, because I thought we had better carry it in the bill for a year or two in its present form, because we do not know what the comptroller would have to say about this particular language; and it would be easier for us to come in and ask for a change of a word or two than it would be to get a "hereafter" proviso changed. We thought we would just leave it as it is, then, if the comptroller does not like this language, we can ask Congress to change it slightly without having to come in and ask for new legislation altogether.

Senator JONES of Washington. This language has not been submitted to him?

Mr. JUMP. No, sir; but our lawyers have passed on it.

BUREAU OF DAIRY INDUSTRY**RESEARCH WORK DESIRED BY DAIRY INDUSTRY**

Senator McNARY. What is the next item?

Mr. DUNLAP. The next item we are asking for, on page 21, line 21, is an increase for research work desired by the dairy industry of \$21,700. After the word "buildings," we desire to have inserted "and not exceeding \$7,600 for construction of buildings."

Senator McNary. I do not see where you find that on page 21.

Senator HARRIS. At the end of line 21, Senator, after "additions," "Estimated new," etc.

Senator McNARY. What do you desire?

Mr. DUNLAP. Doctor Larson, the chief of the bureau, will speak on this subject.

Senator McNARY. "And not exceeding \$7,600 for construction of buildings"—is that the language you want in there?

Doctor LARSON. Yes, sir.

Senator McNARY. All right; go ahead and make your explanation.

STATEMENT OF DR. CARL W. LARSON, CHIEF OF THE BUREAU OF DAIRY INDUSTRY**MANURE PIT, BELTSVILLE FARM**

Mr. JUMP. We have not really gotten into the record yet the second amendment which Doctor Larson is going to talk upon. You will notice that, due to the fact that one of the amendments changes the authorization, we had to mention that first. Right below it you will see, on page 22, line 4—that is the real amendment that the doctor is going to speak to—an increase of \$21,700, which is the Budget estimate for this item.

Senator McNARY. You want an increase of how much?

Mr. DUNLAP. \$21,700.

Doctor LARSON. I might speak of the \$7,600, which is for a manure pit at our farm at Beltsville, where we are conducting experiments.

Senator McNARY. That is the Beltsville, Md., farm?

Doctor LARSON. Yes, sir.

Senator McNARY. That is a poultry farm?

Doctor LARSON. No, sir; a dairy farm.

Senator McNARY. There is a poultry farm there as well as a dairy farm; is there not?

Doctor LARSON. Yes, sir.

Senator HARRIS. They raise hogs, too.

Doctor LARSON. Yes; the Bureau of Animal Industry has the hogs and poultry. We have the dairy cows.

Senator JONES of Washington. You want some new buildings, do you?

Doctor LARSON. We want a manure pit, a place to store our manure. We have there in the neighborhood of 300 head of cattle, and we have no place to store the manure; and there are several months during the year when we can not put it on the land—that it must be stored.

Senator McNARY. What kind of a building do you want?

Doctor LARSON. Just a solid concrete building with suitable openings in the roof where the manure can be dumped in.

Senator McNARY. Is it not an exposed pit? It is under roof?

Doctor LARSON. It is under roof. We want it, first, to conserve the fertility; second, to make it possible to control the flies.

Senator McNARY. Have you had an estimate that this amendment will provide sufficient funds?

Doctor LARSON. Yes, sir.

Senator McNARY. Do you want it for any other purpose whatsoever?

Doctor LARSON. No, sir.

Senator OVERMAN. It will take \$7,600 to build it; will it?

Doctor LARSON. Yes, sir; it requires quite a large pit for 300 cows. The saving in fertility will be over \$1,000 a year—which would normally leach out if it were stored in the open.

Senator OVERMAN. Do they use any fertilizers there?

Doctor LARSON. Very little. We use the farm manure, largely.

Senator KENDRICK. What acreage is included in that station?

Doctor LARSON. We have a little over 300 acres in the dairy farm.

Senator CAPPER. Was this item in the estimate submitted to the Budget Bureau?

Doctor LARSON. Yes, sir.

Senator CAPPER. Did they turn it down?

Doctor LARSON. No; they approved it. This was approved by the Budget Bureau.

Senator CAPPER. The House cut it out?

Doctor LARSON. It was not allowed by the House.

Senator McNARY. Is that all you have to present on this item?

Doctor LARSON. Yes, sir.

NUTRITION OF DAIRY COWS

Senator McNARY. All right. What is the other item?

Doctor LARSON. The next item is for one additional man to assist in the investigations of the nutrition of dairy cows—that is, their proper feeding.

Senator McNARY. You are speaking now about the increase in the item on page 22, line 4, of \$21,700?

Doctor LARSON. This is one part of it—\$1,860 for an assistant to help with that work.

DAIRY CATTLE BREEDING INVESTIGATIONS

Another item of \$3,400 is to employ a man in our dairy cattle breeding investigations. We believe that one of the most important lines of work is the improvement of our cattle through breeding. We have some very important work going, we think, in the proving of sires. In other words, experience has shown that simply the ancestry or the pedigree will not determine the value of a bull; and what we are attempting to do is to use proved bulls—in other words, bulls that have daughters whose production excels that of their dams—and use, generation after generation, proved sires, until we

can get sires that will assure uniformly high-producing daughters—daughters with the ability for high milk and butterfat production.

Senator McNARY. Is not that an old thought or an old practice?

Doctor LARSON. No; it is not.

Senator McNARY. It was in use when I was a boy.

Doctor LARSON. What they have done is to use pedigree. What we are doing now is to determine the producing ability of these animals, and then try, generation after generation, to use only proved sires—sires that actually have been proved.

Senator McNARY. They have followed that practice in horse raising for a hundred years, and out in the West in perfecting our dairy herds. I do not see that you have anything new.

Doctor LARSON. It is new in the sense that it has not been done up to this time.

Senator McNARY. Over here, do you mean?

Doctor LARSON. No; anywhere in the world. You do not understand me, I think.

Senator McNARY. Perhaps not.

Doctor LARSON. Of course, we have used good sires; that is not new; but the breeding of a bunch of cows to a sire that is proved, and then taking his daughters and using a proved sire on them, and taking the daughters of those and using proved sires on them is new. These sires would have all of their daughters tested and all show improvement.

Senator McNARY. That has been the practice, I say, for a hundred years in this country. Through that evolution we developed the milk strains and the butterfats that we have to-day and the fast horses.

Doctor LARSON. But the point is that it has not been done by selecting all the animals. The point is that a bull has been selected that has one great daughter; and we know that in our herds in this country a bull may have one daughter that will produce an enormous quantity of milk and many of the others a low quantity; and so we have not developed any herds that give uniformly high production.

Senator KENDRICK. May I ask a question there?

Doctor LARSON. Yes.

Senator KENDRICK. Do you hope by this experimentation to establish any fixed plan by which selection of cows may be had for a certain breed of bulls; or do you expect to establish any fixed rule at all under this investigation?

Doctor LARSON. No; it is planned to use a principle already established. We believe we can have fixed inheritance in these animals by continuing this practice.

Senator KENDRICK. As the chairman has suggested—I think that was in his mind—after you have proceeded in this way you will find some animals that will breed well along a certain line, and others that will not. The question I should like to ask is, Do you expect to establish a rule that may be followed in breeding?

Doctor LARSON. Yes, sir; we do. I will give you an example of exactly what I mean.

We have at the farm at Beltsville a cow that produced almost a thousand pounds of butterfat a year. The average of the country is about 160 pounds. The son of this cow by a splendid bull, supposedly, has been used on our farm in Woodward, Okla., and

he actually reduced the average production of that entire herd, which production was only 400 pounds. What we are doing now is taking a bull and using him on a herd and if he raises the production of all of the daughters uniformly—all of them—then we us him, and wet get another one like him, and use such bulls, generation after generation. The trouble now is that you can buy a bull—and they have bought them for a hundred thousand dollars—because of his breeding, his ancestry, and find that he actully reduces the production of the daughters. We are finding it all over the country.

Senator JONES of Washington. Why do you need another man for that?

Doctor LARSON. We need a man to study out the records, and find these bulls, and then get them used. Then, right along with this, of course, we are working on methods of continuing these bulls in service for a long time. In practice, now, bulls become impotent very young. They do not last very long. We have been making splendid progress along this line. We have bulls now that are 17 years old that are potent; and we have through methods of feeding, we believe, worked out a way of keeping cows and bulls in breeding condition.

Last year we had six heifers that we bred seven times without result, seven different months in succession. We fed them on what we believed contained vitamin E for five weeks, and those six heifers conceived at the first meeting after that. In the same way we are treating bulls.

Senator OVERMAN. What is that feed?

Doctor LARSON. We are using sprouted oats and the extract of wheat germ. We have bulls that we are handling in the same way. The work has only started; but during the year we started some young bulls on feeds that we thought were as nearly deficient in vitamin E as possible; and although the work has just been going on for part of a year, as I say, we have just tested the semen of the first bull that is old enough to serve, and I found that the sperm cells are all dead. Of course, that does not prove anything yet, but it is along the same line, indicating that there is something there to be done; and we believe that we are making progress in it.

Senator KENDRICK. You do not expect to employ this additional man to work at one station, but over the country in a general way?

Doctor LARSON. Yes, sir, with our cattle. We have different farms; and we also want to encourage other farmers to keep bulls that are proved, and help find them. We do find that there are bulls here and there that are proved, but they are not appreciated.

Senator McNARY. Doctor, I thought this gentleman's activities would be limited to your farm at Beltsville.

Doctor LARSON. And our other farms.

Senator McNARY. What other farms?

Doctor LARSON. We have four other farms—one in Louisiana, one in Oklahoma, one in South Dakota, and one in Montana.

Senator McNARY. Will he visit all of these farms?

Doctor LARSON. Yes sir; he will look after the sire work for these farms and find the bulls, keep a record of them, and make a study of the daughters of these bulls.

Senator McNARY. Have you not been keeping records on these farms heretofore?

Doctor LARSON. The bull work has not been given the attention that it should have.

Senator CAPPER. Do benefits come to anyone else other than your own Government stock?

Doctor LARSON. Why, certainly. If this works out so that it will increase the number of prepotent bulls, of course that will be useful throughout the whole country.

Senator McNary. This is just research work that you are doing now?

Doctor LARSON. Yes, sir.

Senator McNary. And after you obtain information you will spread it through the country?

Doctor LARSON. Certainly.

Senator KENDRICK. It is a tremendously important thing. The only question about it that I am unable to decide in my own mind is whether by this line of research and experiment you will ever reach a place where you will not find it necessary to try out every single generation of cattle. If you establish a fixed principle by which that can be done it will prove a great help to the industry.

Doctor LARSON. That is it exactly. Of course, we do not know that. We believe that can be done. I want to say that the breeders of the country have been here, through their delegates. They came here this past spring and went over this work, requesting that this appropriation be increased and work enlarged.

Senator McNary. Who did that?

Doctor LARSON. The breeders of this country. Every one of the national organizations sent its representative here, and they went over this work thoroughly.

Senator McNary. This conforms to the estimate of the Director of the Bureau of the Budget, does it?

Doctor LARSON. It does; yes, sir.

Senator McNary. Did you go before the House committee and ask for this increase and make this statement?

Doctor LARSON. Yes, sir.

Senator JONES of Washington. Do you propose to go out and get an entirely new man and pay him the salary that you estimate here?

Doctor LARSON. Yes.

Senator JONES of Washington. Why do you not take one of your experienced force and promote him, in a way—move up a man from down below?

Doctor LARSON. They are all engaged in their own lines of work, and moving along just as fast as they can.

Senator JONES of Washington. You have been doing this work in a general way; have you not?

Doctor LARSON. Yes; some of it.

Senator JONES of Washington. And the men that you have now have had some experience along those lines?

Doctor LARSON. Yes; but it is a very big job, a big problem.

Senator JONES of Washington. It seems to me that you can deal with that problem better by taking a man who has been dealing with it than by going out and getting an entirely new man. It seems to me the wise thing to do would be to take a man who has

been doing this work in a general way anyhow, who has had some training along that line, and bring him up from the bureau.

Doctor LARSON. That is true if you have a big-enough force to draw from; but when there is only a small unit there are not people available for these other positions.

Senator JONES of Washington. How do you expect to find a suitable man on the outside who has not had any experience at all?

Doctor LARSON. There are men who have had training and experience, and the application of it to this work would not be at all difficult.

Senator JONES of Washington. Has this work that you want done been done outside, among private people?

Doctor LARSON. Oh, no; but he would know the fundamentals of cattle breeding; know cattle; and the application and carrying out of this work does not require any special training, outside of that.

Senator JONES of Washington. You say "he" knows it. Whom do you have in mind?

Doctor LARSON. I have not any one especially in mind; I mean, the man we would select for a job like this.

Senator JONES of Washington. If they have not been doing this work outside, where are you going to find a man outside?

Doctor LARSON. But, I say, we will get a man who is trained in dairy-cattle breeding and management, and knows cattle, and knows the science of breeding, and all that.

Senator JONES of Washington. Who knows it better than the people in your own force?

Doctor LARSON. No one, perhaps; but they are already employed on these other problems.

Senator JONES of Washington. Why do you not take one of them and promote him, and then build up from below?

Doctor LARSON. That would be all the same so far as the appropriation goes. We could shift them; but then somebody else would have to take that man's job. They are all employed full time.

Senator KENDRICK. It is to be assumed that you will employ the most capable man you can find, from whatever source he can be obtained.

Doctor LARSON. Yes, sir; certainly.

Senator HARRIS. Have you issued any bulletins on your experiments in feedstuffs for cows?

Doctor LARSON. Yes, sir.

Senator HARRIS. I wish you would send me one, please.

Doctor LARSON. All right, sir.

MILK-POWDER INVESTIGATIONS

Senator McNARY. Doctor, what is the next item involved in this increase?

Doctor LARSON. Milk-powder investigations, \$2,240.

Senator JONES of Washington. Give the page and line, please.

Doctor LARSON. This is the same one.

Senator JONES of Washington. Oh; this is the same one? All right.

Senator McNARY. For milk-powder investigations, you say?

Doctor LARSON. Yes, sir.

Senator McNARY. All right. What about that?

Doctor LARSON. We want to employ a junior chemist to help with the analyses of milk powders in our studies of keeping qualities and uses of milk powder.

Senator McNARY. Are you not doing some work in that line now?

Doctor LARSON. Yes; but it is going slowly, because the men in charge of the work have to help with the analyses.

Senator OVERMAN. What do you mean by "milk powders"?

Doctor LARSON. Dried milk.

Senator KENDRICK. It is a preparation used in lieu of condensed milk on hospital ships and everywhere in the Tropics, as I understand, where they can obtain it, because of its qualities and desirability for sick people under the conditions of the Tropics. Is that correct?

Doctor LARSON. That is right; but it is used even more in infant-feeding and baking.

Senator KENDRICK. I know; but it applies in the Tropics with unusual effect?

Doctor LARSON. Oh; yes, sir.

Senator OVERMAN. It is better than condensed milk?

Senator KENDRICK. Yes. Officers on hospital ships that we visited in southern countries claimed that where the men could not stand condensed milk at all, and had not an appetite for anything, they found this milk produced from milk-powder as palatable as the milk they had at home.

Doctor LARSON. Enormous quantities are used in hospitals for infant feeding. Large quantities are used in baking, making bread. Probably the largest amount is used in bread making.

Senator McNARY. It is the same thing as desiccated milk, as it is referred to in the West?

Doctor LARSON. Yes.

Senator McNARY. It is not a new experimentation?

Doctor LARSON. No.

Senator McNARY. It is a standard product. What do you propose to do now? Is this for an employee?

Doctor LARSON. We are studying the keeping qualities of the product. That has been the difficulty with it—that it will not keep a long time, as it was at first supposed—and our men are working on the keeping qualities of milk powder.

Senator McNARY. You have a laboratory in connection with the Beltsville experimental farm, have you?

Doctor LARSON. Yes, sir. We have a laboratory in Washington where we do this work.

Senator McNARY. This work is done in Washington?

Doctor LARSON. Yes, sir. We have a complete unit here for manufacturing milk powder. We have a small, complete plant here.

Senator McNARY. I am curious to know how many chemists are employed in your laboratory.

Doctor LARSON. We have in the neighborhood of 100 scientific men.

Senator McNARY. I mean, that look into the milk proposition.

Doctor LARSON. Oh, only the milk powder?

Senator McNARY. Yes.

Doctor LARSON. Two men and a baker.

Senator McNARY. Now you want an additional man? Is that the idea?

Doctor LARSON. We want a junior chemist to help them with routine analyses, to give them more time to work on the other problems of milk powder.

Senator McNARY. A junior chemist is an amateur chemist?

Doctor LARSON. I man who can do the straight analytical work that does not require the training that these other men must have.

Senator McNARY. Would he be able, being a junior chemist, to assist these experts in attempting to find some chemical process by which this milk powder would be preserved?

Doctor LARSON. No; but the men who are trained tell this chemist to analyze this product for certain things. This he has learned in college to do, and he goes ahead and does it, and saves them the time so that they can go ahead and do more work on the studies of milk powders, deterioration, etc.

Senator KENDRICK. Have you made any definite progress in the study of milk powder in the last few years?

Doctor LARSON. Very much. Our men in the laboratories have worked out during the past year the method of treating the milk before it is powdered so as to get the best results in baking. We have carried on hundreds of baking tests, and we know exactly the method of treating the milk before it is powdered in order to get the best results in baking. That has been of great value to the industry—the baking industry as well as the dairy industry.

Senator LENROOT. What is the output of milk powder now?

Doctor LARSON. Something in the neighborhood of 75,000,000 pounds of skim-milk powder and 9,000,000 pounds of whole-milk powder.

Senator LENROOT. And approximately what number of manufacturers are engaged in manufacturing it?

Doctor LARSON. I think there are about 75 manufacturers in all.

Senator LENROOT. Do the larger manufacturers do this research work, too?

Doctor LARSON. Not this sort of research. They are encouraging research by scholarships in some of the colleges now.

Senator LENROOT. Do they not have their own chemists at all?

Doctor LARSON. Oh, yes.

Senator LENROOT. As a commercial proposition, it would be very important to them, would it not?

Doctor LARSON. Surely; but they have not facilities and men that can do this sort of research.

Senator KENDRICK. Can you tell the committee whether or not, in the treatment of this particular kind of product, you are finding it possible to practice economies in the salvage or saving of milk that otherwise would be wasted?

Doctor LARSON. Yes, sir. That is the basis of our studies. At the present time about a third of our milk is made into butter, and in making butter only 25 per cent of the solids of milk is used. The rest is largely wasted, and it is a splendid food product.

Senator KENDRICK. And it is this particular commodity that you are treating?

Doctor LARSON. Yes, sir. This is one of them. We are also working on the whey from cheese and buttermilk, trying to manufacture that into products, and we have made progress along those lines.

Senator LENROOT. Is this milk powder made out of skimmed milk?

Doctor LARSON. Most of it; yes, sir. The whole-milk powder does not keep as well as the skimmed-milk powder. There is quite a little whole-milk powder made for infant feeding, put up in small packages, sealed, and that will keep for two or three months.

Senator LENROOT. Is there anything added to the powder?

Doctor LARSON. No, sir.

Senator LENROOT. It is just skimmed milk reduced, or desiccated, or whatever the term is?

Doctor LARSON. Yes, sir.

Senator McNARY. Has the department issued any bulletin on this matter?

Doctor LARSON. We have published several papers on it.

Senator McNARY. Have they had general circulation?

Doctor LARSON. Yes, sir.

Senator McNARY. What reaction did you get from the public generally?

Doctor LARSON. Very favorable. We have had representatives of practically all of the different factories at our laboratories this year to get information based on these studies. They have a national association of powder manufacturers also, and our people are working in close cooperation with that association and furnish them information that we have gotten from the laboratory.

Senator McNARY. You now have two chemists devoting their time to this work?

Doctor LARSON. Yes, sir.

Senator HARRIS. I thought you said you had one baker and one chemist.

Doctor LARSON. We have a baker, also.

Senator HARRIS. Then you have two chemists and one baker?

Doctor LARSON. Yes, sir.

Senator HARRIS. And you want a third chemist?

Doctor LARSON. Yes, sir.

ICE-CREAM INVESTIGATIONS

Senator McNARY. Very well, Doctor. What is the next item?

Doctor LARSON. Ice-cream investigations.

Senator KENDRICK. What page is that on?

Senator McNARY. The same page. These are subdivisions of the sum involved in an increase on page 22, line 4. You want \$4,200 for ice-cream investigations? Is that true?

Doctor LARSON. Yes, sir.

Senator McNARY. For what reason?

Doctor LARSON. There are a great many problems involved in the manufacture of ice cream, especially those which concern the texture. We are undertaking a series of experiments to control those factors.

Senator McNARY. Is this for another chemist? What are you going to do with the \$4,200? Tell us in a word.

Doctor LARSON. We are going to pay \$3,800 for a dairy manufacturing specialist in ice-cream manufacture. That is the minimum salary for that grade.

Senator McNARY. What is he going to do?

Doctor LARSON. He is going to conduct our investigations in ice cream.

Senator McNARY. Whereabouts?

Doctor LARSON. Here, in our laboratories.

Senator McNARY. Are you doing any work in that line now?

Doctor LARSON. Yes, sir.

Senator McNARY. How many men are employed on investigational work of this character?

Doctor LARSON. One man.

Senator McNARY. You want two?

Doctor LARSON. We want two; yes, sir.

Senator OVERMAN. For what purpose?

Doctor LARSON. To study the problems of ice-cream manufacture.

Senator OVERMAN. What are the problems?

Doctor LARSON. One of the chief difficulties that has been disturbing the industry for years is that of the texture and body of ice cream. Sandiness is a constant trouble in the manufacture of ice cream. It develops sandiness, coarseness, in the process of making and storing under certain conditions; and they never have been able to control that fully.

Senator McNARY. It is not fluffy and velvety and smooth?

Doctor LARSON. No. You may have, as far as they know, the same general composition, and because of the methods of making and the make-up of the mixture you get that condition.

Senator McNARY. Doctor, there is no standardized formula of making ice cream, anyhow, is there? It varies in different localities and in the same locality, does it not?

Doctor LARSON. Yes, sir.

Senator McNARY. Would they all follow your rule or recipe if you laid down one?

Doctor LARSON. If we can work out the principle, as we think we can, of the solubility of these different substances, we can tell them exactly when they will get sandiness and how to avoid it.

Senator McNARY. You have a chemist on the job now. Has he given the world anything of value?

Doctor LARSON. A great deal, I am sure.

Senator McNARY. Have you issued any circulars?

Doctor LARSON. Many of them.

Senator McNARY. Is your laboratory visited by ice-cream makers throughout the country to seek advice?

Doctor LARSON. Yes, sir. This is a very large industry and determines very greatly the profits of dairy farms.

Senator OVERMAN. Where is this laboratory in which you work out all of this research work?

Doctor LARSON. Right here in Washington. We have an ice-cream factory; we have a cheese factory; we have a milk-powder factory.

Senator OVERMAN. At the Bureau of Standards out here?

Doctor LARSON. No; in the Agricultural Department Building. We have a complete condensed-milk plant, evaporated milk and all, right there.

Senator OVERMAN. You have a complete laboratory for working out all these things in the Agricultural Department Building?

Doctor LARSON. Yes, sir. We make all these products right here.

Senator JONES of Washington. Have the people here in town used the results of your experiments?

Doctor LARSON. The ice-cream people?

Senator JONES of Washington. Yes.

Doctor LARSON. Yes; they have used them.

Senator JONES of Washington. Have they made any improvement?

Doctor LARSON. We think very much.

Senator JONES of Washington. What do they think about it?

Doctor LARSON. They are very anxious that this work be done and continued. They are in constant touch with our people, and using the information we get out of it.

Senator McNARY. Doctor, without denying that it is a worthy effort, why do you need another chemist? You are already devoting one man's time to this work. Is it a matter of urgency?

Doctor LARSON. It is because these problems are difficult, and take so long to work out with one man doing it.

Senator HARRIS. Doctor, the ice-cream industry runs up into the hundreds of millions a year. They are all making money, or some of the largest ones are, and a great deal of it. Why should not they make these experiments? They are interested in it.

Doctor LARSON. They could, but they do not. They have not the facilities or the organization to do it. This is fundamental work that requires unusually trained men. The man who is directing this immediate laboratory work is Doctor Rogers, who has been for 25 years and is now recognized as one of the leading investigators in the world in dairying.

Senator LENROOT. How much are you spending on this work now?

Doctor LARSON. On ice-cream work?

Senator LENROOT. Yes.

Doctor LARSON. \$11,000.

Senator LENROOT. This would be an increase to \$15,000?

Doctor LARSON. \$15,610; yes, sir.

Senator LENROOT. You have a manufacturing specialist now, and what else—how many chemists?

Doctor LARSON. Part of this goes for paying part of the salary of a chemist, and the cost of materials and equipment use up the balance.

Senator LENROOT. Then you now have a chemist part-time?

Doctor LARSON. Yes, sir.

Senator LENROOT. And a manufacturing specialist, and the balance goes for material?

Doctor LARSON. Yes, sir.

Senator McNARY. Do these chemists visit some of the large laboratories that are maintained by some of these large ice-cream makers?

Doctor LARSON. Yes, sir.

Senator McNARY. And attempt personally to assist them in the work?

Doctor LARSON. Certainly. We see to it that our accomplishments in the laboratories are carried out in practice. That is exactly what we do.

Senator McNARY. Then you are doing work in the field as well as in the laboratory?

Doctor LARSON. Yes, sir.

Senator McNARY. With \$11,000?

Doctor LARSON. Yes, sir. These men will go out to the plants, and go out to meetings, and give the results of their work.

Senator LENROOT. Is your chief work in the line of experimentation under different combinations for your specialist, or is it chemistry?

Doctor LARSON. It is the specialist that deals directly with the factories, unless it is a chemical problem, of course.

Senator LENROOT. Your progress is expected through a multitude of experiments; is it?

Doctor LARSON. Yes, sir.

BACTERIOLOGICAL, ETC., WORK IN CONNECTION WITH EVAPORATED AND CONDENSED MILK

Senator McNARY. What is the next item in the one that we are now studying?

Doctor LARSON. It is an item of \$2,400 for bacteriological and chemical work in connection with milk used for making evaporated and condensed milk.

Senator McNARY. That is a part of the work that is done by chemists in connection with desiccated milk?

Doctor LARSON. No; this is a different problem.

Senator McNARY. Of course, the problem is different; but is it not worked out in the same laboratory?

Doctor LARSON. Oh, yes.

Senator McNARY. By the same chemists?

Doctor LARSON. No.

Senator LENROOT. This relates to bacteria.

Senator McNARY. It is all part of one institution and one study, is it not, of your milk problems?

Doctor LARSON. Yes; but if we did not have this we could not do the work that we have planned in condensed and evaporated milk.

Senator McNARY. Is this for the salary of a new man?

Doctor LARSON. Yes; this is for the salary of a new man.

Senator McNARY. How many now are employed in this work?

Doctor LARSON. Now, I think, there are three.

Senator McNARY. What is the total amount you are devoting to the study of the chemistry of milk?

Doctor LARSON. \$14,220.

Senator OVERMAN. How much more do you want?

Doctor LARSON. \$2,400.

Senator McNARY. You are now expending \$14,220?

Doctor LARSON. Yes, sir.

Senator OVERMAN. Is that the salary of a new man—\$2,400?

Doctor LARSON. Yes, sir.

Senator McNARY. Is this to be a junior chemist?

Doctor LARSON. A bacteriologist.

Senator McNARY. Junior?

Doctor LARSON. No, sir; an assistant bacteriologist.

Senator McNARY. To assist these experts?

Doctor LARSON. Yes, sir.

Senator McNARY. What is there to be studied about this subject?

Doctor LARSON. One of the chief things that we are concerned with and the whole industry is concerned with is a method of selecting milk for condensing and evaporating. There is no measure to-day known that will determine what milk is proper for condensing and what is not. With one test it may appear to be all right, and when they put it in the condensing vat it will coagulate. It may be sweet, and will still coagulate when it is heated. Other milk, after it is put in the pan, will become bad.

Senator KENDRICK. Will any test that is set up as a standard apply other than with each particular quantity of milk?

Doctor LARSON. We believe that it can be worked out so that each batch from each farm can be tested.

Senator KENDRICK. In that event will it be a practicable thing to take the time for testing each container of milk?

Doctor LARSON. We have found practical methods of testing for other purposes; yes, sir.

Senator HARRIS. Is this better than malted milk in keeping?

Doctor LARSON. No; malted milk keeps very well. It is a different product, of course.

Senator McNARY. You have three experts now. Why do you need a junior bacteriologist?

Doctor LARSON. To enlarge the work and get this result sooner. This is the largest industry of the country—the dairy industry. It exceeds all other industries in the world in size. The consumers of this country spend for dairy products 20 cents out of each dollar they are spending for food. All the nutrition experts say they could spend more economically and advantageously from the health standpoint. With this industry going into three or four billion dollars annually, it is important that we study these factors that tend to reduce the cost of production, and serve the best possible product to the consumer.

Senator McNARY. What information have you given to the milk consumers throughout the country as to the subject?

Doctor LARSON. A great deal. When we reduce the cost of production it helps the consumer indirectly.

Senator McNARY. That is fundamental. That is not my question. Have you issued any circulars? Have you gone out on the highways and the waysides of the country and helped these consumers out?

Doctor LARSON. I should say that we had.

Senator McNARY. Tell us about that; briefly.

Doctor LARSON. One of the things which we have fostered and carried through is the cow-testing association, which is putting the dairy business on a business basis. We have been working on that for a long time, and at the present time we have 1½ per cent of the cows of this country under those business tests; and just to-day I

had brought before me some of these records showing that through these it was possible to cut the cost of production in two.

We also know from these records that it will be possible to continue to meet the demands of the consumers of this country, with our increase in population.

Senator OVERMAN. What the chairman asked was how you have been getting this information which you get, these records, to the people.

Doctor LARSON. I was leading up to that. These cow-testing associations, which are now in every State, are leading the farmers to test and weigh their milk and weigh their feed, so that it may be determined which are profitable and which are unprofitable cows; and the methods are worked out in the laboratories here as to how to feed to get the greatest quantity of milk per annum.

Senator KENDRICK. That ought to be very practicable.

Senator OVERMAN. I can see how that is practicable; but suppose that I was making ice cream in my home; how would I get information on that?

Doctor LARSON. We have circulars which we issue.

Senator OVERMAN. Do you distribute these circulars to the people generally?

Doctor LARSON. Yes, sir; and we have 15 or 20 popular bulletins as the result of these studies on feeding cows and dairy cattle, which are used by the farmers throughout the country.

Senator CAPPER. Is there any demand for them?

Doctor LARSON. There is a very great demand, and many of them are copied in the agricultural journals throughout the country.

Senator KENDRICK. There would be a very much greater demand for them if the people knew of the publication of these periodicals or pamphlets.

Doctor LARSON. Yes; but it is spreading. You can not do it in a year, but it is going further and further in the country all the time.

Senator McNARY. Under the Adams Act and the Purnell Act the Government does a great deal to carry on experimental work in all the States of the Union.

Doctor LARSON. Yes.

Senator McNARY. Is not this work being done in all the States of the Union in the agricultural colleges with Government funds?

Doctor LARSON. Some of it, yes; but some of the fundamental work the colleges are not equipped to do, and that is why we believe we are justified in this. The whole country, and all of these colleges, benefit by that fundamental work.

Senator LENROOT. What would be the practical demonstration of this work? You say you demonstrate that milk will or will not coagulate in the making of condensed milk.

Doctor LARSON. Yes.

Senator LENROOT. What do you expect to determine in a practical way by these studies?

Doctor LARSON. We believe we can find a test which we can apply to each farmer's batch of milk so as to determine whether or not it is good to condense, or must go into butter or some other product. This is a test of each batch of milk. No one knows how or why this happens. A farmer may be sending his milk every day for a month, and he may send two or three batches that will ruin a whole

lot of condensed milk, and we want to prevent that; and when you have that you save milk and that milk brings a higher price to the farmer.

Senator LENROOT. Then by a test you can determine that he can use his milk for condensing?

Doctor LARSON. For condensing; yes, sir. Of course, it may be used for something else if not for condensing.

Senator KENDRICK. Is it not true that the manufacturers of condensed milk would have other use for the milk that could not be used for condensing, for the making of butter and cheese?

Doctor LARSON. If they found it possible to make a test it would prevent this loss. But now these milks go together and you ruin a whole batch; and the loss falls upon the producer of the milk that is rejected, if it spoils, because the manufacturers certainly can not pay for that milk.

Senator JONES of Washington. How do they go about it to bring about the results?

Doctor LARSON. They have to test each farmer's milk as he brings it in.

Senator LENROOT. Now, the loss is that of the condenser, and if they determined it, the loss would be that of the producer.

Senator KENDRICK. My thought would be that it would be on the purchaser, because they would condense it regularly, whether it was fit to be condensed or not.

Doctor LARSON. No; they would not. The condensed milk would not be marketable at all, if it coagulated.

Senator KENDRICK. Is it true that the manufacturers have difficulties or losses at the present time of that kind?

Doctor LARSON. Yes.

Senator KENDRICK. To what extent?

Doctor LARSON. It is not very extensive, but it is relatively great, and they are anxious to get a test.

Senator OVERMAN. Where you have made the test and find that milk will coagulate, can it be used for any purpose?

Doctor LARSON. They can separate or skim it and make butter.

Senator OVERMAN. They can make butter?

Doctor LARSON. Yes; butter and cheese.

Senator OVERMAN. So that it would not be a waste to the farmer?

Doctor LARSON. No; and of course, if they find a test, the manufacturer will make butter or something else along with their condensed milk.

Senator LENROOT. How long have you been engaged in this work?

Doctor LARSON. Do you mean on this particular line?

Senator LENROOT. Yes.

Doctor LARSON. About a year and a half or two years.

Senator LENROOT. Has your appropriation for it been increasing each year?

Doctor LARSON. The appropriations have not increased in recent years.

Senator McNARY. Is there any other item involved in this increase?

Doctor LARSON. No, sir.

HUNTLEY, MONT., FIELD STATION

MR. DUNLAP. While Doctor Larson is here, however, I would like to have you turn to page 21, Mr. Chairman, line 20.

SENATOR McNARY. Pardon me a second. Have you discussed all the elements involved in this increase of \$21,700?

DOCTOR LARSON. I have; yes, sir.

SENATOR McNARY. On what page is that item, Mr. Secretary?

MR. DUNLAP. It is on page 21, line 20. We are asking there for an increase of \$4,000 for the station at Huntley, Mont., for further development of the dairy work there, and Doctor Larson will explain why he needs this money.

SENATOR OVERMAN. Did you go before the House and ask for an increase of this item?

DOCTOR LARSON. Yes, sir.

SENATOR McNARY. What do you want there?

DOCTOR LARSON. An increase of \$4,000.

SENATOR McNARY. You want the estimate restored?

DOCTOR LARSON. Yes, sir.

SENATOR McNARY. All right; what for?

DOCTOR LARSON. \$2,400 is to appoint an assistant dairy husbandman at the station, and \$1,600 additional for maintenance.

SENATOR McNARY. \$2,400 for the assistant?

DOCTOR LARSON. Yes; and \$1,600 for maintenance.

SENATOR JONES. That is in Montana?

DOCTOR LARSON. Yes, sir; in Huntley, Mont.

SENATOR McNARY. Did you request this increase of the House?

DOCTOR LARSON. Yes.

SENATOR McNARY. What did you receive last year?

DOCTOR LARSON. The same. It has been the same for several years.

SENATOR McNARY. Is there need of the assistant? What is he going to do? Why do you need him?

DOCTOR LARSON. In this project we are working in cooperation with some 30 farmers in the neighborhood of the farm. They are using our bulls, and we are proving them on these herds. We keep records of the cows in the herd, and the daughters, and it is necessary for a man to go to these 30 farms regularly and test the cows and the milk and the weight of the feed and to keep these records, so that we can determine the prepotency of these bulls.

SENATOR OVERMAN. \$1,600 is necessary to maintain this one man?

DOCTOR LARSON. \$2,400.

SENATOR OVERMAN. \$2,400?

DOCTOR LARSON. It costs that much to hire a man of the necessary training.

SENATOR OVERMAN. And \$1,600 for maintenance, you say?

DOCTOR LARSON. That is for the maintenance of the station itself.

SENATOR OVERMAN. How is it maintained now? You want this by reason of the fact that you will have another man to whom you pay \$2,400?

DOCTOR LARSON. The point is this. The station is now being maintained—well, it is not being kept up. That is what I mean. There are not sufficient funds there to keep up the buildings and paint the buildings, and keep up the general repairs and buy the necessary feed for this work.

Senator KENDRICK. For the information of the committee, I would say that this Huntley project is not a great ways from my home, and it is still closer to some of my ranch associates, and I have occasion to know that it is located in one of the most successful reclamation projects in all the West. It includes probably 40,000 acres of land, subdivided into small farms, and is one of the few irrigation projects under reclamation that I believe has been pronounced a success from the start.

Senator McNARY. Let us have the name of the project.

Senator KENDRICK. It is the Huntley project, on the Yellowstone River.

Senator McNARY. Excuse me, Senator; we were discussing this bull proposition a few moments ago, and discussing the matter of the prepotency of bulls. You said, Doctor, that was the reason you asked for this assistant there, and you said that he was an expert who would visit the experimental stations as well as the Huntley project.

Doctor LARSON. Yes; and then, again, he is making a detailed study of these 30 bulls that we have right there, and he has to be right at those farms regularly.

Senator McNARY. But the main study is made at Beltsville, Md.?

Doctor LARSON. This is one of the parts of our work which will be done all over the country. This man first mentioned will be working with the 11 colleges that are cooperating with us and looking after these farms, including Beltsville; but this other man is a man who will be stationed at Huntley to carry on the detail work.

Senator KENDRICK. Under the direction of the other man we were discussing a moment ago?

Doctor LARSON. This will be only a small part of the bulls that he is concerned with.

Senator KENDRICK. I understood you to say that you maintain and keep 30 bulls at this station?

Doctor LARSON. Yes; on 30 farms.

Senator HARRIS. How many bulls has the Agricultural Department, and where are they stationed?

Doctor LARSON. We only have them at the agricultural colleges where we cooperate and in the neighborhood of the stations. We do not send them elsewhere.

At Huntley there is a plant-industry station, and it is in connection with this plant-industry station that this dairy station was established later.

Senator McNARY. Are these bulls located on farms which are privately owned?

Doctor LARSON. Yes.

Senator McNARY. They are not Government-owned farms?

Doctor LARSON. But we have a dairy farm there as well.

Senator McNARY. Yes; but you said in reply to Senator Harris that there were 30 farms—privately-owned farms. You are letting the farmers have the use of these bulls?

Doctor LARSON. Under a contract with each farmer that he will keep all the daughters of these bulls and that he will test all these daughters, and give us all the records so that we can make these studies.

Senator KENDRICK. What other conditions does the Government impose on farmers for the use of these bulls?

Doctor LARSON. Those are the only ones. They must be in the vicinity of a station, where it will be practicable for the Government to get the records.

Senator LENROOT. The Government buys these bulls and furnishes them to the farmers?

Doctor LARSON. They are raised. We raise them.

Senator LENROOT. You raise them?

Doctor LARSON. Yes. Of course, they are only loaned to these farmers. They can not buy them, and they are loaned only for a period of three years.

Senator LENROOT. What is the size of the average herd?

Doctor LARSON. These herds are relatively small. They average about 10 or 12 cows.

Senator LENROOT. And they move these bulls from one farm to another?

Mr. DUNLAP. There are 160 acres in that farm at Huntley.

Senator LENROOT. Does one bull take care of more than one farm?

Doctor LARSON. No.

Senator LENROOT. And do they move them from one farm to another?

Doctor LARSON. No, sir.

Senator LENROOT. I mean, for those three years, do they stay upon one farm and take care of that farm alone?

Doctor LARSON. A few of them, where there are neighbors close together, are used on two farms.

Senator LENROOT. What force have you there?

Doctor LARSON. We have one man in charge of our project, and two laborers in the experimental dairy.

Senator LENROOT. Does that take \$41,000?

Doctor LARSON. No. Oh, this \$41,000 is for all of the dry-land dairy and livestock stations.

Senator LENROOT. How many have you?

Doctor LARSON. We have two dairying stations, and then the live-stock stations use half of the appropriation.

Senator LENROOT. Where is the other one?

Doctor LARSON. At Ardmore, S. Dak.

Senator LENROOT. Is the agricultural condition there the same?

Doctor LARSON. It is quite different. At the station at Ardmore it is dry. In Montana it is irrigated.

Senator KENDRICK. The best one of the dry-land stations is located very near my home town.

Senator LENROOT. How many of the dry-land stations have you?

Doctor LARSON. I can not tell you that. Doctor Taylor, who is here, may be able to tell you. We have only two of these stations, and animal industry has half of this appropriation for other kinds of livestock studies. We have only half and the Bureau of Animal Industry has the other half.

Senator McNARY. You have three of these stations, one at Beltsville, one at Ardmore in South Dakota, and one in Montana, where these problems are being discussed, the chief laboratory being at Beltsville, Md.?

Doctor LARSON. That is right.

Senator McNARY. I am curious on this point. These farmers keep these records and send them in to the man at Huntley?

Doctor LARSON. Yes.

Senator McNARY. Would it be just as well to send them on to Beltsville, where you have your trained men to go over the records?

Doctor LARSON. It would, to give experimental results. For results that will be useful, that we can really publish as facts, we would have to have some one who can actually visit these herds and know and see those daughters, and get those records themselves. The farmer has not facilities for testing milk.

Senator McNARY. That is, what you call field work—observation work?

Doctor LARSON. That is what it is.

Senator LENROOT. Is not this man doing that now, who is in charge?

Doctor LARSON. The superintendent is doing it as well as he can, but he is now getting up in the morning at 4 o'clock and milking these cows, and then he goes out and gets as far as he can; and unless we get this increase, he will either quit because he can not do it all, or we will have to discontinue some of the work. It is not possible to carry it on; and it is not being well done; because he has not the necessary time to do it.

EXPERIMENT STATION

Senator OVERMAN. How many of these cattle farms on experiment stations are there now in the country?

Doctor LARSON. There are five.

Senator OVERMAN. Where are they?

Doctor LARSON. One is at Beltsville, Md., our main station here. There are also stations at New Iberia, La., Woodward, Okla., Ardmore, S. Dak., and Huntley, Mont.

Senator OVERMAN. Do you cooperate with the State colleges?

Doctor LARSON. Yes.

Senator OVERMAN. They cooperate with you in all these lines?

Doctor LARSON. Yes.

Senator OVERMAN. I believe each State college has its own dairy farm?

Doctor LARSON. Yes.

Senator OVERMAN. And they cooperate with you, and you send this information to them?

Doctor LARSON. Yes; with most of them we have a definite cooperative agreement on which they work right along with us.

Senator LENROOT. I would like to ask the doctor a general question here. Doctor, in some cases the House has granted less than the estimates. In other cases the Budget did not grant what the department thought ought to have been granted. Of course, the committee will use its judgment upon the whole question. You say that these increases you are asking up to the Budget estimates are of equal importance to requests that have been denied by the Budget?

Doctor LARSON. I can hardly answer that.

Senator LENROOT. Well, that is a very proper question. You are not permitted to ask for any increases, but we are permitted to ask you questions.

Doctor LARSON. The Department of Agriculture?

Senator LENROOT. The department has not given you what you thought you ought to have in some cases.

Doctor LARSON. You mean this bureau?

Senator LENROOT. Yes, certainly.

Doctor LARSON. I beg your pardon; I did not understand you.

Senator LENROOT. In other words, suppose in your department you should be granted the same amount of money that is granted in the Budget estimates, would you say we could follow the Budget estimates in all cases? That is what I want to get at.

Doctor LARSON. Yes; in this particular notation.

Senator LENROOT. I mean, when you are asking that the committee give you increases.

Doctor LARSON. Absolutely; yes, sir.

Mr. JUMP. These are the same items we had in the Budget estimates as submitted to Congress. These are the same amounts and for the same purposes.

Senator LENROOT. So that, so far as your department is concerned, the Budget gave you what you asked for?

Mr. JUMP. No; I beg your pardon. I misunderstood your question.

Senator LENROOT. Then I want to repeat my question. I am not speaking of your department as a whole; of the dairy division.

Doctor LARSON. May I try to answer that?

Senator LENROOT. Yes.

Doctor LARSON. If we were allowed an increase of \$21,700, this is the way we think we can spend it most advantageously.

Senator LENROOT. Even though there was no Budget?

Doctor LARSON. Yes, sir.

Senator LENROOT. All right.

Mr. JUMP. May we insert in the record the concise notes we have of the dairy items that have just been discussed?

Senator McNARY. I think it would be a good thing to put them in.

Page 21, line 21, after the word "buildings" insert "and not to exceed \$7,600 for construction of buildings."

Note.—This change in language is recommended in order to provide the necessary authority for the construction of a manure pit at the Beltsville (Md.) dairy experiment farm, for which an increase of \$7,600 is submitted. (See following note f.)

Page 22, line 4, strike out "\$420,494" and insert "\$442,194."

Note.—This amendment provides for an increase of \$21,700 for scientific investigations in dairy production, manufacture, and utilization and will be used for the following purposes:

(a) \$1,860 for nutrition of dairy cows

This increase will provide for the employment of a junior chemist to analyze feeds, excreta, etc., in connection with the experiments being conducted on balanced rations for dairy animals and to assist in the work of analyzing various feeds to determine the availability of minerals.

It has been shown that in many cases milk secretion is limited by inability of the cow to obtain sufficient calcium and phosphorus from her feed and that this deficiency is more readily supplied by legume hay than by timothy hay or such material as bone meal or ground limestone. In studies designed to explain the superior qualities of legumes for this purpose it has been found

that the alfalfa plant contains considerable quantities of citric acid, some malic and malonic acids.

The comparative ease of assimilation of calcium from red clover and alfalfa hay is being studied through balance experiments. This also includes the effect of different proportions of calcium and phosphorus in the ration. An extensive investigation of the relation of calcium and phosphorus metabolism to milk secretion is being organized through cooperative experiments in various experiment stations. The study of the nature of the calcium and phosphorus compounds in the alfalfa plant is being continued.

(b) \$3,400 for dairy cattle breeding investigations

This increase will make possible a slight expansion in the improved sire work of the bureau.

Investigations in dairy cattle breeding have resulted in the theory being advanced that the surest means of breeding cattle that will be pure in their inheritance for high milk and butterfat producing capacity is through the use of sires for generation after generation that have shown by the uniformly high-producing capacity of their daughters that they have an inheritance for high-producing ability that is pure. This theory is now being accepted by other investigators. The Bureau of Dairy Industry, in a small way, is attempting to breed cattle in its herd at Beltsville, Md., that will be pure in their inheritance for high production by the continued use of proved sires. The bureau has also planned to use proved sires for generation after generation in its several station herds, but because of insufficient funds it has been unable to purchase the necessary proved sires. Well-bred young sires have been used, but this method of breeding is not sound. This is illustrated by that fact that the daughters of one of the best bred sires used in one of the bureau's herds have shown on the average a butterfat production of 80 pounds less than their dams.

The discovery of the best proved sires in the dairy cattle breeds, and the utilization of these sires in herds where this most desirable inheritance will be brought to a pure state, is one of the most important features of the breeding work.

In the past few years data on proved sires in cow-testing associations have shown that well-bred young sires exist in a great many herds. Any one of these well-bred sires may possess combinations of hereditary factors which will make him great in transmitting ability. At the present time there is no adequate machinery for finding these sires and putting them into service in herds where their great inheritance will be best utilized for the advancement of the dairy industry.

(c) \$2,240 for milk-powder investigations

This increase will provide for further investigational work in the manufacture of milk powders, with particular reference to the solubility and keeping qualities of milk powders.

Oxidation, which is the major cause of deterioration, is slowest in powders with 2.5 to 3 per cent moisture, and one-half as great at 3° C. as at 25° C. Fats undergo an oxidation through an intermolecular rearrangement, even in a vacuum or an inert gas. Carbon dioxide accelerates rather than retards this oxidation. The value of a milk powder for baking is increased by a heat treatment of the milk before drying. This is correlated with an increased viscosity of a solution of the powder.

Work is in progress on the relation of oxidation and reduction potentials to the tendency of the milk powder to oxidize, and the possible use of reduction indicators as measures of the condition of the powder. Baking tests are being made to determine if the condition of the albumin in milk powder has any relation to its effect on the size and quality of the loaf.

An effort will be made on the basis of results, which may be obtained in the present investigation, to develop tests by which the quality of a milk powder may be determined.

(d) \$4,200 for ice-cream investigations

It has been demonstrated that the initial viscosity of an ice-cream mix is destroyed by the first few minutes of whipping in the freezer, but that a permanent viscosity persists which varies with different mixes.

The relation of the permanent viscosity of the mix to the texture and yield of ice cream is being studied. This includes the effect of variations in freezing temperatures and in the concentration of sugar, fat, protein, and salts.

The increase recommended is for the purpose of developing a standard method of freezing so that all of the factors entering into the process can be controlled. By varying single factors the effect on the quality of the product of such factors as homogenization, Pasteurization, initial temperature, brine temperature, and volume, etc., can be determined.

(e) \$2,400 for bacteriology and chemistry of milk

The investigation of the physical-chemical constitution of milk, with special reference to its relation to changes produced by bacteria, heat, and other factors, should be somewhat enlarged. These investigations are coordinated with bacteriological investigations and have an application in developing methods of grading milk and in the manufacture of condensed and evaporated milk and milk powder.

(f) \$7,600 for erection of manure pit at the Beltsville, Md., Dairy Experiment Farm

It is proposed to erect a manure pit 30 by 88 feet by 13 feet 6 inches, having a capacity of 35,600 cubic feet, or approximately 1,400 tons. This pit will be constructed entirely of concrete, with flat concrete roof, the latter to be provided with suitable openings to permit filling through the use of conveyors.

The lack of facilities properly to handle large quantities of manure produced at the Beltsville farm entails a direct and unnecessary economic loss to the Government and brings about a condition of sanitation which should be corrected without further delay.

Estimated annual production of manure, 2,050 tons.

Commercial value, at \$3 per ton, \$6,150.

Average annual production per cow, 14 tons.

Page 22, line 12 strike out "\$495,094" and insert "\$516,794."

NOTE.—This amendment is for the purpose of correcting the total for the Bureau.

Page 22, line 13, strike out "\$256,000" and insert "\$264,000."

NOTE.—This amendment provides for an increase of \$8,000 in the amount which may be used for personal services in the District of Columbia. The amount authorized for expenditure for personal services in the District of Columbia is insufficient for the employment of the necessary personnel properly to conduct the bureau's activities. Additional technically trained employees are urgently needed and the increase recommended will permit the employment of three additional men as follows:

1 dairy manufacturing specialist	-----	\$3,800
1 assistant chemist	-----	2,400
1 junior chemist	-----	1,860
		\$8,060

Page 71, line 20, strike out "\$41,610" and insert "\$45,610."

NOTE.—This amendment provides an increase of \$4,000 in the appropriation "Experiments in dairying and livestock production in western United States," and will be allotted for expenditure to the Huntley, Mont., field station.

\$4,000, Huntley, Mont., Field Station

One of the principal activities of the Huntley station is the proving of bulls. Thirty purebred Holstein bulls have been loaned to dairy farmers on the Huntley irrigation project and in the Yellowstone and Big Horn Valleys under co-operative agreements for the purpose of proving their prepotency for transmitting high milk and butterfat producing ability to their offspring. The supervision of these bulls and the keeping of production records of their offspring involves a considerable amount of work and a competent man should be employed in order that the dairy husbandman in charge may devote more of his time to the work of the station proper. It is proposed to use \$2,400 of the increase asked for the payment of the salary of an assistant dairy husbandman. The remaining \$1,600 will be used for the purchase of feeds and other supplies.

Important lines of work have been developed at this station which have added materially to the cost of maintenance, although the size of the herd has been kept to the minimum for economical and practical experimentation.

While the investigational work conducted at this station is important and should be continued, the inadequacy of funds available for its proper support is becoming more apparent from year to year. Therefore, unless at least this small increase is made available it will be necessary to reduce the size of the herd. This will destroy the opportunity for making comparative tests with groups of cows, and in such a circumstance the importance of the work will be reduced so materially that there would be serious question as to the advisability of continuing the work of the station.

Mr. DUNLAP. Now, Mr. Chairman, if you will turn to page 36, line 20, we are asking to have restored there the increase for research on forest products to the total of \$40,000. Colonel Greeley is here and will speak for this item.

Senator McNARY. He wants an increase to the amount of the estimate?

Mr. DUNLAP. Yes, sir; \$40,000, the Budget estimate.

FOREST SERVICE

STATEMENT OF W. B. GREELEY, CHIEF OF THE FOREST SERVICE

Senator McNARY. Colonel Greeley, you may address yourself to this item, which I think involves work under the Madison (Wis.) forest laboratory. Is not that right?

FOREST LABORATORY, MADISON, WIS.

Senator HARRIS. This is the item, I think, on which Senator Wadsworth came before us last year and urged its adoption.

Senator McNARY. Yes.

Mr. GREELEY. An increase of \$40,000 for investigations bearing on forest products was recommended by the Secretary of Agriculture and approved by the Director of the Budget because of the importance, as we regard it, of extending the various lines of research at the forest products laboratory for the elimination of wood waste and the correction of a number of very serious losses in the prevailing situation as to forest products.

Senator McNARY. Does this cover the subject of the utilization of woods?

Mr. GREELEY. Yes; this deals with the utilization of timber.

The increase does not contemplate any distinctly new developments or departures, but is for the purpose of extending a number of our lines of research on a wider and more effective scale. For example, we are undertaking to appraise the exact situation in regard to logging and sawmill waste, which now exceeds in volume the amount of material cut from the timber and put into commercial use.

We are trying to get that situation clearly analyzed and set forth before the timber-using industries, with as many practicable forms of remedy as we can develop. We have within the last year made a study of logging waste in the Lake States, in the stands of hardwood and hemlock timber characteristic of that region. We went into an analysis of logging costs in reference to these wastes. We found, for example, that a great deal of the waste results from the

cutting of small, low-grade trees which yield a large proportion of inferior products. This results in the accumulation of low-grade lumber that the sawmills find it difficult to dispose of.

A cost analysis carried out in connection with that study shows roughly that in that region hardwoods 14 inches in diameter and under are now being cut by the logging industry at a loss, and it would be economy as well as promotive of reforestation to leave that small timber standing in the woods to increase in size and quality before it is cut.

These studies will also develop possibilities in utilizing tops and other wood waste and waste accumulating at the sawmill for the manufacture of paper. We have in the Lake States an active paper industry as well as an active lumber industry, but the two industries have not been correlated in the use of raw lumber to the degree that appears possible. I mention the Lake States situation because that is quite typical. There are at least six or eight important forest regions where studies of this character should be made to determine the amounts of logging and mill waste in a quantitative way and work out as far as possible various means of utilizing such material. It is a long-time project. It can only be dealt with effectively by continuous work carried on over a good many years; but we see so many serious drains now being made upon the timber supply of the country through these forms of waste that, in the judgment of the Secretary and with the concurrence of the Director of the Budget, it was planned under the estimates to enlarge the scale of this type of work to the extent of \$25,000. This is part of the increase in the total of \$40,000.

Senator OVERMAN. How much did you have last year?

Mr. GREELEY. We had an increase last year of \$20,000, which made the whole item for investigations in forest products \$490,264; as the bill comes before you that amount is continued for the fiscal year 1928 without any change.

Senator McNARY. That includes the \$20,000 extra that was allowed you?

Mr. GREELEY. That includes the \$20,000 allowed last year.

Senator McNARY. This work is carried on at Madison since that laboratory was built?

Mr. GREELEY. Yes; largely.

Senator McNARY. I recall a very pleasant visit there several years ago. It is one of the problems that has had the most intensive study of all the problems of maintenance and conservation. How many men have you to-day on this matter?

Mr. GREELEY. On this particular study of the utilization of logging and mill waste we are now spending about \$25,000 a year; we would like to enlarge that to the extent of \$25,000 more.

Senator OVERMAN. We allowed you \$20,000 last year, and you want now \$40,000 more. That is \$60,000 on the appropriation?

Mr. GREELEY. It would make \$60,000 for the two years.

Senator HARRIS. Where are these experiments being conducted? You said there were five or six more places beside in the Lake States.

Mr. GREELEY. A great deal more along the same line needs to be done in the southern pine region, where the question of timber use is becoming more and more important, with the possible extension

of new industries. We have started work in the southern pine region, particularly in Arkansas, in connection with timber cutting on the national forests; and have carried through, in a preliminary way, the same type of investigation showing the sizes and classes of trees which are not being logged economically at the present time. We would like to extend that to other southern forest regions, and deal in a comprehensive and adequate way with their whole waste problem.

INVESTIGATIONS BY PRIVATE INTERESTS

Senator McNARY. Before you leave that, let me ask you, is it not true that the Great Southern Logging Co. at Bogaloosa, Miss., is studying this problem intensively, and is it not true that they are now utilizing tops and stumps of trees that formerly were wasted, for the making of paper pulp?

Mr. GREELEY. Yes.

Senator McNARY. Are you developing that work?

Mr. GREELEY. To some extent. We are also taking up the problems of the smaller operators who are not able to carry out such a comprehensive plan of close utilization as the Great Southern Lumber Co.

Senator OVERMAN. Are not the Champion Fiber Co. investigating this question?

Mr. GREELEY. They have done a good deal along the same line. One of the problems in the South is the large number of small mills and medium sized mills that have no subsidiary industries connected with them and no opportunity to make paper, but which accumulate an enormous amount of waste in their operations. We believe that it is possible to work out practical ways to utilize much of that material. But it is an enormous problem, and requires an immense amount of field work to get this data together and in such shape so that it can be used industrially.

Senator OVERMAN. How would a small company make paper?

Mr. GREELEY. They would probably have to send the material somewhere else.

It is possible to reduce the waste material to chips or some other small form so that it can be picked up, a carload here and a carload there, and removed to a paper-making plant. That is one of the distinct possibilities in the southern situation.

Senator HARRIS. Two-thirds of the paper that is used in this country comes from Canada on account of wood pulp being cheaper there, and they are trying to get it nearer the plant.

Mr. GREELEY. That is, two-thirds of the newsprint paper, Senator Harris.

Senator OVERMAN. Do you mean that the small manufacturers could take the limbs and stumps of the trees and send that material to the Champion Lumber Co.?

Mr. GREELEY. Yes; or they could begin with the waste right at the sawmill. One-third or more of the logs that are cut now, that are sent to the sawmills, goes into the waste burners in the form of slabs, sawdust, etc. There is a possibility of using such material, as is being done in some instances, by putting it through a hogging machine and reducing it to small chips and then sending the material to pulp plants.

Surveys of logging waste have also been started in the northern Rocky Mountains, in the pine territory of northern Idaho and west-

ern Montana. In connection with that, some specific problems have been taken up, such as the losses in timber driving. A large part of the lumber industry in northern Idaho is still based on the old practice of driving the streams. The industry has known for some time that this results in a considerable loss of timber, not only in the sinking of logs but in the deterioration of logs from staining and other defects resulting from the long period of being soaked in water. We were able last year to carry out a specific study of that sort, comparing the yield in quality of logs handled by stream driving with those handled by other methods that did not involve stream driving. It showed in the average operation that stream driving results in the loss of \$6 a thousand feet from staining and other defects arising from the long period of immersion.

Senator McNARY. What was the saving in transportation?

Mr. GREELEY. There is doubtless some saving in transportation costs.

These specific questions are simply samples of a large number that are being put up to us by the various industries for assistance in working out. They all have a bearing on the general problem of making our supply of standing timber last as long as possible and perform the greatest possible economic service, which, as you gentlemen appreciate, is one of the most important features of the whole forestry situation.

We would also like to extend the studies we have been making, and for which specific provision was made last year, to develop the possibilities of manufacturing print paper from southern pine.

Senator JONES of Washington. Before you get onto that, let me ask you if you have been making any lumber investigation on the Pacific coast?

Mr. GREELEY. Yes, sir; a good deal has been done in the Douglas fir region, including possible uses for the so-called inferior species. There is a vast amount of waste in the usual logging camps of the west coast, in the form of low-grade logs and also species like the white firs that are rated as inferior for the manufacture of lumber.

We have made a study of waste materials in several typical logging operations and from that were able to determine the approximate quantities of such material available for such purposes as the production of paper. The utilization of waste through the manufacture of paper and other fiber products is, in our judgment, going to be an important industrial development in the Northwest in the next 10 years.

Senator McNARY. Where were these studies made in the Northwest?

Mr. GREELEY. They were made at typical logging operations in western Washington and Oregon.

Senator McNARY. Were any made at Longview?

Mr. GREELEY. I do not know whether any work was done at Longview. One of the important phases in the Northwest is that a number of new, large lumber-manufacturing developments are under way, like the enterprise at Longview; and the interests concerned with those developments are appreciative of the necessity for planning their operations so as to get the closest possible use of the raw material. They are seeking information on all of these lines.

Senator McNARY. Just how was this study made? Take any region of the country; do you send men out there to go over the ground and make a field study?

Mr. GREELEY. We send competent men, take a sample strip through a logging operation, and make an actual measurement of the timber on the ground after the logging has been done. Of course, certain portions of it are too defective to be used for any purpose. Other portions would make low-grade lumber, and other portions would make fiber products, etc. The hemlock, white fir, and spruce are the fiber woods or pulp woods, as distinguished from Douglas fir and other material that can only be used for lumber.

Senator McNARY. Is not that generally understood by the operators in the Northwest?

Mr. GREELEY. The operators understand the problem in a broad way; but when a new plant is being planned; and various processes are being worked out, we find them anxious to get exact information, such as how much material will be left in the ordinary cutting for saw timber which would be available for the manufacture of fiber products.

Senator McNARY. How do you get the information to them?

Mr. GREELEY. Of course all of this information is published as soon as it is completed, and made available in that way to anyone; and then a good deal of it is made available through personal consultation with people that are known to be interested.

Senator McNARY. Have you issued any circulars adaptable to the condition in the Northwest?

Mr. GREELEY. There are one or two coming out shortly.

Senator McNARY. Have any heretofore come out?

Mr. GREELEY. Not on this specific question of wood waste.

Senator OVERMAN. We have several great tanneries in my State, and I have noticed thousands and thousands of tons of bark that have been hauled down from the mountains by these people, and it brings considerable revenue to them; but what becomes of the trees? Are they used for making ties or for lumber purposes?

Mr. GREELEY. Do you mean the hemlock bark?

Senator OVERMAN. All sorts of bark.

Mr. GREELEY. The bulk of that is probably from chestnut or chestnut-oak. In former years a good deal of that bark was cut and the trees were simply left on the ground, unused.

Senator OVERMAN. What becomes of those trees now?

Mr. GREELEY. The chestnut-oak, a great deal of it, is worked up into railroad ties. It is valuable for that. The chestnut timber also is now largely utilized for extract wood, poles, or other products.

Senator OVERMAN. Of course, the tree dies when you take off its bark.

Mr. GREELEY. Those trees are all felled and peeled on the ground.

Senator HARRIS. Have you found anything that will stop this pest from destroying the chestnut trees?

Mr. GREELEY. No, sir; that is a problem that the pathologists, I think, regard as insoluble. Do they not, Doctor Taylor?

Doctor TAYLOR. So far as the cure of it is concerned—

Senator McNARY. You spoke of using inferior trees in the Northwest for the making of paper. Have you found out whether that is possible?

PAPER-MAKING TESTS

Mr. GREELEY. We have made tests of the paper-making qualities of about 90 different woods at the Madison Laboratory. They include white fir, western hemlock, the tupelo gum of the South, jack pine, and so on. The experiments cover practically all of the trees that have been regarded as inferior. Those tests show the amount of pulp that can be produced from a cord of dry wood, and the quality of the pulp as to length of fiber, etc. Other tests have been made to determine the kind of paper or other fiber products that the pulp could be used for. That line of work comes under a different section—that of pulp and paper investigations. It goes hand in hand with these studies in the West and elsewhere so as to connect up all possible forms of use with the kinds and quantities of material not wasted.

Another line of investigation which connects the waste studies is the development of wood chemical industries and the possibility of utilizing some of this material for chemical products.

The newsprint situation is an important one for the Eastern States particularly, because the industry is so largely moving into Canada, while we have very large newsprint resources in the Northwest and in Alaska, it is going to become more and more of an economic problem to supply the enormous consumption of newsprint in the eastern States. The work thus far done indicates that the southern pines probably have possibilities for the manufacture of white paper through the working out of processes for removing resin, which is now the main handicap that prevents the manufacture of newsprint paper from southern pine. The types of paper now manufactured from southern pine are the craft papers, heavy wrapping papers, etc., where the pulp is reduced by the sulphate-cooking process and the presence of resin is not detrimental.

Experiments are under way for removing the resinous substances from southern pine wood through solution processes. It may prove possible to develop methods of distillation that will not only take the pitch out of the wood but utilize it profitably for wood turpentine.

We are anxious to increase the scope of this work, because it will make a large amount of raw material available for the manufacture of newsprint and aid in the solution of the problem of waste in southern logging and milling by providing a new product in which such waste can be commercially utilized. In the estimate of \$40,000 our plan is to use from \$5,000 to \$10,000 to expand those studies on the conversion of the southern pines for white paper.

Such portions of the \$10,000 as are not used for paper studies will be devoted to investigations bearing upon the production of naval stores from southern pine.

Senator McNARY. Is there any place where they are making white newsprint paper now down South?

Mr. GREELEY. They make it at one or two places, but not out of pine. Of course, they have some spruce there in high elevations in the Appalachians and some hemlock. It is also, apparently, going to be possible to make white paper out of some of the southern gums.

Senator McNARY. There is \$10,000 for this work and the balance you have is for what—\$30,000?

Mr. GREELEY. \$25,000 is for the waste studies and \$10,000 for this study of the southern pines.

Senator McNARY. Pardon me; you have \$25,000 for this wood utilization?

Mr. GREELEY. Yes.

Senator McNARY. And \$10,000 to expend on conversion of southern pine into white paper?

Mr. GREELEY. Yes; and for studies of naval stores.

Senator McNARY. What is this other \$5,000 for?

PRESERVATIVE TREATMENT OF TIMBER

Mr. GREELEY. The balance of \$5,000 we would like to use in what is really a new development in this country, for the preservative treatment of lumber going into every-day house building and other forms of construction. Timber preservation has made rapid gains in this country in the case of such products as railroad ties, telegraph and telephone poles, and to a less extent in mining timbers, where treatment by creosote is effective and where the smell of the preservative and the ability of treated timber to take paint, etc., are not important questions.

Senator McNARY. Have you studied this phase of the problem at all, as to this preservative treatment of lumber? Have you given any study to it?

Mr. GREELEY. Some study has been given to it in a laboratory way, but we find that it is necessary to push timber preservation much more actively in this field. That means developing new types and methods of timber preservation.

Creosoted timbers have been turned out to some extent. It works fairly well with large timbers for warehouse construction and that sort of thing; but creosoted lumber will not take paint, or will take paint with only a great deal of difficulty. It retains its heavy creosote odor, and it has other objections that have kept it out of the general building trade. One of the really serious forms of timber loss in this country is the loss from decay and insects in ordinary building construction where lumber is used.

That is particularly serious in the warmer and moister sections of the country. Right here in Washington there is a great deal of loss going on every year from the decay of wood, or from the attacks of white ants, and other destructive insects on wood after it is put into buildings. We want to develop that phase of timber preservation through trying out forms of treatment adapted to lumber that goes into buildings, that will not have disadvantages in the matter of painting or odor.

We have gathered information on the European practice in that respect, and have promising leads that we want to follow up. They involve tests at the forest products laboratory, supplemented by commercial tests where timber preserving firms can be interested in cooperating with us. We hope to lead, in this way, into a development of good commercial timber preserving practice for building lumber. That is the objective. That takes up the remaining \$5,000 of the increase.

Senator LENROOT. In your opening statement you said that your studies have shown that there was a loss in the cutting of hemlock and hardwoods under 14 inches.

Mr. GREELEY. Yes, sir; that is a rough average.

Senator LENROOT. Have any of the lumber companies accepted that conclusion that you know of?

Mr. GREELEY. It is correct, I think, that at least two or three lumber companies in that region have accepted this conclusion and are putting it into practice. Several of the other lumber companies are studying our figures with a great deal of interest and are checking them themselves.

Senator LENROOT. How did you arrive at that conclusion? Did you charge up overhead, or was that a real loss?

Mr. GREELEY. We made cost studies in the woods, of logging the trees of different sizes. We found out, for example, that it costs about three times as much per thousand board feet to fell, trim, butt, and log a 10-inch tree as it does a 24-inch tree. We classified them by sizes and worked out the logging cost per thousand board feet for each size class. Then we carried those same size classes through the mill and found out what it costs to manufacture them. We found, for example, that it costs about twice as much per thousand board feet to mill a 10-inch as a 24-inch tree.

Then we graded the product of each class of logs and found the average money value per thousand board feet of the logs from 10 and 12 inch trees, as compared with 18, 20, and 24 inch trees.

The net result of all of those figures, compiled and classified, shows that on the basis of the operating cost, not including overhead, the line of profit and loss falls at about the 14-inch tree.

Of course, the overhead and fixed liabilities, investments, etc., must be taken into account, but in that particular instance we now have concrete data to work on. It is a subject of great interest to lumbermen, because their chief problem to-day is how to dispose of low-grade lumber, and their low-grade lumber is largely from the small timber.

Senator KENDRICK. How long is it since you worked out the size of logs that may be economically cut?

Mr. GREELEY. These figures in the Lake States were arrived at last fall as the result of a study during the year preceding. We have carried on some similar studies in the South and the West, and with generally similar results.

Senator KENDRICK. Is it not true, and is it not accepted as a fact, that the only practicable way, and the cheapest and most economical way of reforestation is through leaving those trees standing and uncut?

Mr. GREELEY. Yes, sir; and to get natural seeding.

Senator LENROOT. How about taxation? That is a very important factor, is it not?

Mr. GREELEY. Taxation is one of the big problems in the picture; yes, sir.

Senator KENDRICK. Right in that connection, have the majority of the States that contain these vast areas of timberland enacted legislation that will have a tendency to require the lumber companies to leave so much standing timber for reforestation purposes?

Mr. GREELEY. No, sir; there has been very little legislation of that character.

Senator LENROOT. What has been the result of your experiments in the making of white paper with aspen wood?

Mr. GREELEY. We have worked out experiments with aspen, and find that it makes very good book paper. To a considerable extent it is now being used for that purpose. The difficulty is that there is so much of it, while the demand for book paper is relatively limited.

Senator LENROOT. Is there any possibility of it being used for the making of print paper?

Mr. GREELEY. That is possible. It has not been done yet.

Senator LENROOT. What is the trouble with the fiber?

Mr. GREELEY. The trouble with the fiber is that you can not grind it as you grind spruce, and there have been difficulties in the way of economical reduction in making a light cheap sheet like newsprint. That has not been worked out yet.

Senator LENROOT. If that could be worked out, the problem would be solved in this country, would it not?

Mr. GREELEY. It would go a long way toward solving it.

Senator McNARY. I think when I first came to this committee Senator La Follette, now deceased, placed in the bill an item of \$15,000 for experiments with straw for paper pulp uses.

Mr. GREELEY. That was for experiments with flax straw.

Senator McNARY. I was wondering how you have progressed in that study.

Mr. GREELEY. I think we can finish that in another year. We have found it possible to pulp the flax straw in ways that are commercially feasible. In fact, it apparently can be used in producing grades of paper closely comparable to the paper made from linen rags. That project will probably be completed within another year, and the results will be published in such a way as to make them available for any of the paper companies that wish to use them.

Mr. JUMP. So we will have all of the amendments before the committee, with page and line numbers. I will insert our memorandum on the forest production item.

FOREST SERVICE

Page 36, line 20, strike out \$490,264 and insert \$530,264.

This recommendation contemplates provision of an increase of \$40,000 recommended by the Budget for 1928 for forest products research but which was not included in the House bill. The increase is recommended for more nearly adequate attacks upon the immense problem of timber waste. In national importance it is comparable to the problems of forest fire protection and reforestation. Expanded research is necessary to establish a technical basis for the improvement of the utilization situation.

It is proposed to use \$25,000 of the increase on the study of woods, mill, and fabricating plant waste, and studies of consuming markets to develop possible uses of such materials, primarily in the South, the Lake States, and Pacific Northwest. Extended research is needed to aid and direct commercial and trade developments in this field. It is also intended to use \$5,000 to develop timber-preservation methods, primarily for those used in house and building construction, for which satisfactory methods have not been worked out. Five thousand dollars of the increase will be used to expand the pulp and paper investigations, particularly those designed to bring about the utilization of a strong white pulp from the resinous pines, and thus reduce our dependence upon the diminishing stock of spruce and hemlock. Five thousand dollars will be used to develop more efficient processes in the production of naval stores.

Senator McNARY. Is there anything further? If not, thank you, Colonel. I wish you would remain here.

Congressman Simmons has something to say to us in regard to the restoration of an item in the bill that was in the 1927 bill, I believe.

STATEMENT OF HON. ROBERT G. SIMMONS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEBRASKA

Representative SIMMONS. The item is on page 37, Mr. Chairman.

HALSEY (NEBR.) NURSERY STATION

Senator McNARY. It is on page 37 of the bill, between lines 5 and 6; and for the record I will state this, that the language he desires restored is as follows: I read from the supply bill of 1927 [reading]:

Provided, That from the nurseries on the Nebraska National Forest the Secretary of Agriculture, under such rules and regulations as he may prescribe, may furnish young trees free, so far as they may be spared, to residents of the territory covered by "An act increasing the area of homesteads in a portion of Nebraska," approved April 28, 1904.

That language is omitted from the supply bill for 1928, which we are now studying, and Congressman Simmons wants it restored.

Senator KENDRICK. May I ask a question, as to why that should be confined to Nebraska?

Senator McNARY. I do not know, Senator.

Senator KENDRICK. The territory in my State is just as waste as Nebraska, and I know that would provide very great service to the people in my State—almost a treeless State—as much so as in Nebraska. I wonder about that and I would like to have Colonel Greeley's impression of that situation.

Senator McNARY. Senator, will you not permit the Congressman to make his statement first?

Senator KENDRICK. Certainly. I would not want to interfere with that.

Senator McNARY. Thank you.

Representative SIMMONS. For years, under the provisions in this act, the forestry station has been sending out from 100 to 200 trees, pines and cedars or other trees of types that will grow in the sand hills in Nebraska, as an experimental matter, to the people in what is known as the Kincaid section of Nebraska. That work has been carried on, and there are several large plantings. They are being used for fence posts and for firewood and things of that sort. It is a small matter, except that it is one of the things that the Government has been doing for those people in that section of Nebraska to assist them in building up the country.

My purpose in asking that this item be restored to this bill is more for the psychological effect than for the actual value of the trees. They can buy such trees. But the Government has been doing this, and it has been of assistance to about 1,200 or 1,500 farmers and ranchers in that section of Nebraska that have for years been receiving those trees from the Government, and have been developing the forestry work there in that way.

Senator McNARY. Two years ago Congress adopted a new plan of forest development.

Representative SIMMONS. Yes, sir.

Senator McNARY. And we carried \$50,000 for the distribution of trees all over the country.

Representative SIMMONS. Yes, sir.

Senator McNARY. Would you not get your supply under that, rather than under a provision that limits it only to a portion of your State?

Representative SIMMONS. I think so, sir; only I discussed that matter with Colonel Greeley just now, before I came before the committee, and I told the forester at Halsey that the thing I would like to have them do is gradually to work the Clark-McNary Act into this free distribution, and blend the free distribution into it, instead of cutting it out. I think the Clark-McNary Act, if the Senator please, is very fine; but the cutting off of these trees before the Clark-McNary Act has begun to operate effectively in Nebraska, in my opinion, is going to be a mistake, and will set back the work of forestation.

Senator JONES of Washington. As I understand this proviso, Congressman, it does not encourage the department to produce more trees there than they need; but it does permit them, if they have them, to turn them over to the people in the neighborhood.

Representative SIMMONS. If they have surplus trees; yes, sir.

In answer to Senator Kendrick's statement, I will say that there is nothing that I see that would prevent the Senate changing this to apply to Wyoming. The language of the bill relates back to the Kincaid Act, which gave the 640 acres of land to Nebraska, and limits it to that section of the State. If you wished to extend it, there would be no objection to it that I know of.

Senator McNARY. That would be all right if you did not have this other bill that carries the distribution throughout the country. It would not be prudent, in my judgment now, to extend the act from Nebraska over to take in Wyoming when we have a general law covering the whole country; but I will ask Colonel Greeley to discuss that phase of it.

STATEMENT OF COL. WILLIAM B. GREELEY, FORESTER AND CHIEF OF THE FOREST SERVICE—Continued

Senator McNARY. Why was this language omitted? Did you make an estimate for it to the Director of the Budget?

Colonel GREELEY. No; it was omitted by the department, and for the reason that you mentioned. Section 4 of the Clark-McNary Act provides for Federal cooperation with the States in growing and distributing trees for planting by farmers. We have \$75,000 under that section this year, and the same amount is in the Budget for next year. Under that section we are now cooperating with 32 States.

Senator McNARY. Do you say \$75,000?

Colonel GREELEY. \$75,000; yes, sir. It began with \$50,000, and was increased to \$75,000 for the fiscal year 1927. We are now cooperating with 32 States, including Nebraska and, I am happy to say, Wyoming, Senator.

Senator KENDRICK. May I ask, right there, if it does not interfere with the line of your remarks, what is the system of cooperation

with the States like? How does the farmer or the ranchman proceed to obtain his supplies through this so-called cooperation with the States?

Colonel GREELEY. The farmer or ranchman obtains his supply of trees from the State forestry department or any other State agency that handles the work. That State agency establishes its own nursery, and we contribute to the States to help meet the cost of the nursery.

Senator KENDRICK. I am wondering if my State has any such agency.

Colonel GREELEY. I am not familiar with just how far they have gone in Wyoming, but it is included in the States which are receiving cooperation during the present year.

I may say that as a result of that section to date something like 19 States have established forest nurseries which never had them previously; the State itself determines how it shall distribute this stock to the farmers. Most of them distribute the stock at the actual cost of growing it. In some cases the State makes it practically a free distribution. I think Pennsylvania simply charges the cost of transportation to the farmer, or the cost of transportation plus the cost of packing. That is something that the Department of Agriculture does not attempt to control. We furnish a limited amount of money—it is only \$2,500 or \$2,000—to each cooperating State. In some cases we may furnish our assistance in the form of seed, where we can handle seed collection on a large scale, and turn over a thousand pounds of seed to each cooperating State, or something of that sort. Then the State maintains its nursery and makes its own arrangements as to advising the farmers that this stock is available and inviting them to apply for it.

We began cooperation with Nebraska a year ago; and Nebraska, I understand, is establishing or enlarging her State nursery, and preparing to take up this line of work.

From my standpoint, the Forest Service would be perfectly willing and agreeable to continue this special distribution to settlers in the Kincaid district of Nebraska. We have been doing that for the past 18 years, if my memory is correct. We maintain a large forest nursery at Halsey primarily for planting on the Nebraska National Forest in the sand hills, and it does not take very much money or very much additional time or labor to send out these 1,000 or 1,200 packages each spring of 100 or 200 trees to the farmers around us in the Kincaid district.

Senator JONES of Washington. If you did not send them out, what would become of the trees or shrubs?

Colonel GREELEY. They would all be planted on the national forest in time. As a matter of fact, the language "trees that can be spared" is more or less of a fiction. We are producing about 2,000,000 trees a year there.

Senator JONES of Washington. As a matter of fact, then, you do turn over to the settlers what you otherwise could use?

Colonel GREELEY. What we otherwise would plant on the national forest, but we like to be a good neighbor, and we do spare 150,000 or 200,000 trees a year and turn them over to the settlers.

Senator KENDRICK. Suppose a State has not any State forestry station; then what steps would the settlers of that State take in order to secure their pro rata of such trees or seedlings as the Forest Service could furnish them?

Colonel GREELEY. This is the only instance where Congress *has ever authorized us to furnish stock to private individuals from nurseries of the Forest Service. We have other nurseries at other places—seven, all told—but in no other instance have we been given authority to give stock to individuals; so that the farmer or other landowner would have to get his stock either from a State nursery or from a commercial nursery.

Senator McNARY. But, Colonel, I do not think that is quite a direct answer to Senator Kendrick, if I interpret his mind. Take a State which does not cooperate, which has no State nursery, but has a great many farmers who desire trees for farm-lot planting: Could they, under this bill, go to the Government and get trees?

Colonel GREELEY. No, sir.

Senator McNARY. That is what I thought. That is an answer to him.

Colonel GREELEY. The Clarke-McNary Act requires us to cooperate with the State.

Senator McNARY. I appreciate that. I wanted the record to show that.

Senator OVERMAN. Where are these nurseries?

Colonel GREELEY. This particular nursery is at Halsey, Nebr.

Senator OVERMAN. I understand that. Where are the others?

Colonel GREELEY. There is one on the Monogahela National Forest in West Virginia; one in Washington, near Silverton; one in western Montana; one in Colorado—the Monument nursery—the Halsey nursery, Nebr.; and two in the Lake States—one near East Tawas, Mich., and the second at Cass Lake, Minn., on the Minnesota National Forest. Those seven nurseries were all established primarily for planting denuded lands in the national forests. In the case of six, that is their only function. In the case of the Halsey nursery, Congress gave us, 18 years ago, this additional function, if you wish to term it that, of furnishing free stock to the settlers in the Kincaid district, as it was then called. I have no objection to continuing this.

Senator JONES of Washington. If Nebraska is cooperating, your cooperative work with it will be done from this Halsey nursery?

Colonel GREELEY. It might be. If the State desired to have us grow stock in quantity at Halsey, for her distribution, we could do so, the State paying the cost.

Senator JONES of Washington. I understood you to say that you understood that Nebraska was provided with cooperation.

Coloney GREELEY. Yes; Nebraska is cooperating, but so far it has been through maintaining a nursery of her own.

Senator JONES of Washington. What do you do on your part in the way of cooperating?

Colonel GREELEY. We simply furnish a portion of the funds made available under section 4 of the Clarke-McNary Act.

Senator OVERMAN. For example, in the case of Georgia, if Georgia has a nursery and wanted to cooperate, you would give her so much money of this \$25,000?

Colonel GREELEY. So much money. She would establish the nursery, and she would distribute the stock herself. That is what 32 States are now doing.

Senator OVERMAN. Will you put a list of the States in the record? **Colonel GREELEY.** Yes, sir; I shall be glad to do that. We have it here.

(The list is as follows:)

Funds budgeted by States and Territories for cooperative distribution of forest-planting stock to farmers under section 4, Clarke-McNary law, fiscal year 1927

States	Federal	State	Total
Alabama.....	\$2,000	\$2,000	\$4,000
California.....	790	790	1,580
Colorado.....	1,703	1,703	3,400
Connecticut.....	2,000	2,000	4,000
Delaware.....	625	625	1,250
Georgia.....	2,000	3,500	5,500
Hawaii.....	2,000	14,130	16,130
Idaho.....	1,060	1,060	2,120
Indiana.....	2,000	4,500	6,500
Iowa.....	2,000	3,060	5,060
Kansas.....	2,000	4,000	6,000
Kentucky.....	2,000	6,000	8,000
Louisiana.....	2,000	4,699	6,699
Maine.....	1,500	2,000	3,500
Maryland.....	2,000	3,731	5,731
Massachusetts.....	2,000	8,000	10,000
Michigan.....	2,000	5,000	7,000
Missouri.....	2,000	3,000	5,000
Nebraska.....	600	2,075	2,675
New Hampshire.....	2,000	6,456	8,456
New Jersey.....	1,296	1,296	2,592
New York.....	2,000	51,000	53,000
North Carolina.....	2,000	2,000	4,000
North Dakota.....	2,000	4,600	6,600
Ohio.....	2,000	11,557	13,557
Oklahoma.....	1,000	1,000	2,000
Oregon.....	2,000	2,000	4,000
Pennsylvania.....	2,000	45,281	47,281
Porto Rico.....	2,000	12,315	14,315
Vermont.....	2,000	5,000	7,000
Virginia.....	1,250	1,250	2,500
Washington.....	1,582	1,582	3,164
Wisconsin.....	2,000	2,600	4,600
Wyoming.....	1,000	1,000	2,000
Total.....	58,406	220,720	279,126
Administration.....	5,000	-----	-----
Contingent for additional allotments.....	11,594	-----	-----
Total appropriation.....	75,000	-----	-----

Senator McNARY. Now, Colonel, if you have concluded that matter, I think, if it is agreeable to the committee, we will adjourn until 2 o'clock and return at that time and go as far as we can this afternoon.

Representative SIMMONS. I should like to be permitted to offer another amendment, which also deals with the Halsey reserve and authorizes some improvements that they can not make now without it.

I thank the Senate for its courtesy to me.

(Thereupon, at 12.45 o'clock p. m., the subcommittee took a recess until 2 o'clock p. m.)

AFTERNOON SESSION

(The subcommittee reconvened at 2 o'clock p. m., Senator Charles L. McNary presiding.)

NEVADA'S TRANSCONTINENTAL HIGHWAYS EXPOSITION

Senator McNARY. On account of the presence of Senator Oddie, of Nevada, we will hear him first in regard to his amendment to the bill which refers to page 10, line 21. To that paragraph and that item Senator Oddie has offered the following amendment [reading]:

Provided, That not to exceed \$10,000 of this appropriation shall be immediately available for the purpose of enabling the Department of Agriculture to participate as an exhibitor in Nevada's Transcontinental Highways Exposition, to be held in Reno, Nevada, during the months of June and July, 1927.

It seems that that sum has been decreased to \$5,000 over the appropriation of last year.

Senator Oddie, you are not asking for restoration of the item, at all? You are simply asking for a proportion of it to be used for this specific purpose?

STATEMENT OF SENATOR TASKER L. ODDIE, OF NEVADA

Senator ODDIE. I want to be sure, if I may, that this item of \$10,000 will be available for this particular exposition.

Senator McNARY. Will you state what that is, so that the members of the committee may know?

Senator ODDIE. For over two years the State of Nevada has been planning an exposition in commemoration of the completion of the transcontinental highways that cross the State. One is the Victory Highway, that has been recently completed, except a comparatively small section of it; the other is the Lincoln Highway, which is nearly completed.

The exposition was to have been held in 1926, but because of some delays in the completion of these highways it was postponed until 1927.

Several States have signified their intention of participating. California has appropriated considerable money, and is about to build a building; and several of the other States are contemplating taking an active part also.

Senator McNARY. What contribution has your State made?

Senator ODDIE. I can not state offhand, Mr. Chairman, but it has recently completed a building that cost about \$250,000.

Senator McNARY. It has contributed, then?

Senator ODDIE. Yes; and it has gone to considerable expense; and the city of Reno has also gone to considerable expense.

Senator McNARY. Does this commemorate any particular highway, or the completion of a part of any transcontinental highway?

Senator ODDIE. Of the two highways that pass through Reno, the Victory Highway and the Lincoln Highway.

Senator OVERMAN. Is this fair that is to be held there an agricultural fair?

Senator ODDIE. Yes; it is going to be a general exposition and we want the Department of Agriculture to send an agricultural and livestock exhibit.

It has already been discussed at considerable length, and the State is making great preparation for it. It means much for the State and much in the promotion of highway building.

The Bureau of Public Roads has planned sending an exhibit. We want to make it a particularly attractive exposition; and I wish, if the committee sees fit, that it may grant this appropriation.

Senator McNARY. The whole appropriation is only \$103,000. Ten thousand dollars would take a very substantial part of that appropriation for this fair in 1928.

Mr. JUMP. Would you be embarrassed in regard to any other exhibits by having \$10,000 taken for this from the amount available?

Mr. JUMP. Yes; it would interfere very seriously, Mr. Chairman, with the circuits that we make up for the State fairs. It so happens that when I saw Senator Oddie's proposed amendment, I asked for comment on it from Doctor Warburton, the director of extension work, who has this matter in charge, and he points out that if we were to make that exhibit, additional money would be necessary because the time there is such that it would take away exhibits from the regular circuit fairs so as to interfere seriously with our western State fair program.

Senator McNARY. Would you have to have the full amount of this appropriation in addition, or could you operate with a restoration of the amount contained in the estimates?

Mr. JUMP. The statement I have here is that \$10,000 would be sufficient if we renovated a considerable amount of material that has been at the Sesquicentennial Exposition in Philadelphia.

Senator McNARY. Have you fully obligated the \$10,000?

Mr. JUMP. Yes; we have more demands now than we can meet from the appropriation. The way we are meeting the situation is by requiring the fairs to assume more and more financial responsibility, such as paying freight and paying other expenses, and we are getting more and more onto a basis where all that we do is to send the material.

Senator McNARY. Did you make an estimate for 1928 of \$108,045?

Mr. JUMP. Yes; that was our estimate, including the \$8,300 statutory salary allotment which has now been added to the item.

Senator McNARY. Why did the House reduce the amount by \$5,000?

Mr. JUMP. The House did not do it. The House allowed the Budget estimate.

Senator McNARY. Senator Oddie, in view of that statement, do you desire to have your amendment changed and ask for an additional \$10,000, and that that be made available for the Reno, Nev. exposition?

Senator ODDIE. Yes, Mr. Chairman, if that seems to be the most practical and appropriate way of doing it.

Senator McNARY. You heard the statement of Mr. Jump. It all seems to be obligated, and this would really impair the work of the department.

Senator ODDIE. I would like to have it included as an additional appropriation.

Senator LENROOT. Is this more important than an annual state fair such as there are in most of these States?

Senator ODDIE. It is to celebrate the completion of these two great highways:

Senator JONES of Washington. Why do you not bring this under the road fund—take it out of the road fund?

Senator ODDIE. Because the road money has all been allocated and set aside for the building of roads.

Senator McNARY. I do not believe we could do that, Senator Jones. Mr. Jump, if we were to restore the amount of last years' appropriation, would that enable you to take care of the Reno exposition?

Mr. JUMP. Here is the situation that we are up against. Where there is a reduction made we have simply got to reduce the number of requests for exhibits that we can comply with. The work is already on a very economical and efficient operating basis so that we can not effect more economies in that direction in this particular office. It would be difficult for us to convince the State fair people—who have a national association of their own and cooperate closely with the department on this work and who were instrumental in the beginning in having this arrangement set up—it would be very difficult for us to convince them that we were acting in good faith with them if we were to reduce their service, when the amount of money is not reduced, and at the same time say that we have got to take care of an extra expense for the Nevada exposition. In the past, when we have been under obligation to take care of an extra exposition, there has been provision made for it, so that it would be very embarrassing to us to have to take care of this without some additional appropriation.

Senator McNARY. I did not mean to take anything out of the \$108,000, but I meant—

Mr. JUMP. You meant the \$108,000?

Senator McNARY. Could you use that \$5,000 for that purpose?

Mr. JUMP. It would all depend on what the instructions were from this committee when it added the money. We have always operated on that basis.

Senator McNARY. I understand that.

Senator LENROOT. Suppose we gave you the extra \$5,000 for the Nevada exposition?

Mr. JUMP. We would spend not to exceed \$5,000 for that exposition, of course.

Senator LENROOT. What could you do with \$5,000? Would it make a good exhibit?

Senator ODDIE. It would go a long way, but it would not make it the way we would like to have it. This has been planned for several years. I took it up with the Department of Agriculture two years ago; not to the point of asking for an appropriation, because it was too immature, then.

Senator McNARY. Has this been planned for that long?

Senator ODDIE. Yes; for two years.

Senator McNARY. Then two years ago the Legislature of Nevada recognized this date, and set a day?

Senator ODDIE. Yes; and made an appropriation for it.

Senator KENDRICK. Have you discussed this with the Budget at all?

Senator ODDIE. No; I have not seen the Budget about it.

Senator OVERMAN. How much has the State appropriated?

Senator ODDIE. I do not know how much, altogether. I know that in one building they have spent \$250,000.

Senator LENROOT. Is that a permanent building?

Senator ODDIE. Yes.

Senator LENROOT. That, of course, is not built for this purpose alone.

Senator ODDIE. It is an exposition building.

Senator LENROOT. It will be there for other uses, if it is permanent.

Senator ODDIE. Yes.

Senator McNARY. The whole of those two months, June and July, will be occupied in this fair?

Senator ODDIE. Yes.

Senator OVERMAN. It is not a fair. What is it?

Senator ODDIE. It is an exposition.

Senator OVERMAN. For what purpose?

Senator ODDIE. For commemorating the completion of these two great transcontinental highways.

Senator McNARY. How long since they have been completed?

Senator ODDIE. The Victory Highway has been practically completed for part of a year. Of course, there are some portions of the road that are not completed, but it is open, and travel is going over the road now.

Senator McNARY. Is it completed through the State of Nevada?

Senator ODDIE. Yes; a good part of it is almost completed.

Senator McNARY. How is the Lincoln Highway?

Senator ODDIE. The Lincoln Highway is almost completed in the State of Nevada. There is a break in the State of Utah, and negotiation is on now with the State looking to a completion of it in that State.

Senator McNARY. I think you have made it very clear, Senator. We will consider the item.

Senator ODDIE. I thank the committee for its attention.

Senator McNARY. Senator Oddie, do you have an annual State fair at Reno?

Senator ODDIE. We have an agricultural fair; not always at Reno; sometimes at Reno and sometimes at Fallon.

Senator McNARY. Does this fair have any connection with your State fair?

Senator ODDIE. I do not know that they have any connection.

Senator McNARY. Are they being held at the same time of the year?

Senator ODDIE. I think probably they will be, this year. I have not heard the details, but I presume that they will be.

Senator McNARY. Does the Agricultural Department contribute a part of the funds for that fair?

Mr. JUMP. I am not sure about that, but I notice that in his memorandum Mr. Warburton touches on the point you have in mind. He says, that the time of this exposition would overlap to some

extent our western fair circuit. Whether he includes the regular Nevada fair or not is not certain; but evidently some of the southwestern state fairs are held at the same time that it is planned to hold this fair, that is during June and July.

Senator McNARY. Is Nevada getting any portion of your appropriation?

Mr. JUMP. I do not know, but I imagine that they do have an exhibit from the department if they have a state fair there. Do you happen to know, Colonel Greeley, whether any of the appropriation goes to this state fair? I know Forestry has been preparing exhibits for the regular western fair circuits.

Mr. GREELEY. Where is it held?

Mr. JUMP. At Reno, I judge, but I am not sure of that.

Senator ODDIE. Sometimes it is held at Reno and sometimes at Fallon on the Newlands Reclamation Project.

Mr. JUMP. We do not pay out this money to the States; we have an arrangement to furnish these exhibits, and they are routed on circuits following a schedule.

Senator McNARY. You contribute funds to all the State fairs?

Mr. JUMP. No; no funds are contributed out of the appropriation, but we prepare exhibits and send people to the fairs to demonstrate the exhibits. Most of the people sent out by the department are detailed from the various bureaus, so that most of this appropriation goes into exhibits.

Senator McNARY. How many States do you operate in?

Mr. JUMP. We operate very extensively during the fair season. We operate five or more sets of exhibits, each one following a schedule arranged many months ahead of the fair season. We exhibit at 70 or more fairs in the course of a year.

Senator JONES of Washington. If they asked you to do so, you would cooperate with the State fair?

Mr. JUMP. With the State fair?

Senator JONES of Washington. Yes.

Mr. JUMP. Yes; if the date were such as to fit in with the schedule of one of the sets of exhibits and proper cooperation could be established. Perhaps that already is the case.

Senator JONES of Washington. I think you had better have your road celebration at the same time that you have your State fair.

Mr. JUMP. But this exposition is to last for two months.

Senator JONES of Washington. But you would not need to keep your exhibit there that long.

Mr. JUMP. We could only keep our regular exhibit there for a week or so, which is the usual time. Otherwise, some other fairs would have to be disappointed.

Senator ODDIE. I would like to make this statement, Mr. Chairman, that the State of Nevada is advancing very rapidly in agricultural development, and there is room for a great increase in it.

Senator McNARY. Yes; there is plenty of room. Eighty-eight per cent of the land in the State is Government land and is untaxed.

Senator ODDIE. About 90 per cent, Mr. Chairman.

Senator McNARY. Mr. Jump, I wish you would put into the record those papers you had a few moments ago concerning Senator Oddie's amendment.

(The following papers were submitted by Mr. Jump.)

DECEMBER 27, 1926.

Dr. C. W. Warburton,

Director of Extension Work.

DEAR DOCTOR WARBURTON: I notice in the Congressional Record that Senator Oddie proposes an amendment to the agricultural appropriation bill to add \$10,000 to enable the department to make an exhibit at the Nevada Highway Exposition during June and July, 1927. In case the committee asks about this during the hearings to-morrow, I wonder if you can let me have a brief memorandum some time to-day, giving information about this exposition and any comment or information we can give, if called upon, concerning possible participation by the department.

Sincerely,

W. A. JUMP, *Budget Officer.*

DEPARTMENT OF AGRICULTURE,
Washington, D. C., December 27, 1926.

Memorandum for Mr. W. A. Jump, Budget officer.

DEAR MR. JUMP: With reference to Senator Oddie's proposed amendment to the agricultural appropriation bill to add \$10,000 to enable the department to make an exhibit at the Nevada Highway Exposition during June and July, 1927, it is my understanding that while this exposition is planned primarily as a celebration of the completion of the transcontinental highway through Reno, Nev., California, and perhaps some of the other western States are making considerable expenditures for buildings, the showing of natural resources and land products, and the making of other exhibits so that a considerable attendance is expected. If the department makes an exhibit at this exposition, I think it would be proper for us to show not only considerable road material but also material representing several of the bureaus the work of which is largely in the western States, particularly the Forest Service and the Bureau of Biological Survey. The Extension Service, the Bureau of Animal Industry, the Bureau of Plant Industry, and perhaps some of the other bureaus should also be adequately represented.

It will not be possible to take care of this exhibit with our regular exhibit material for showing on the agricultural-fair circuit because of the necessity for retaining it at Reno for a period of several weeks overlapping in part the State-fair dates. We have considerable material from our Sesquicentennial exhibit which would be suitable for showing at Reno, but this would have to be renovated and to a considerable extent remodeled to fit western conditions. Other material, such as the exhibit of the Forest Service at Philadelphia, requires the bringing together of numerous articles for inclusion in the exhibit, as only the backgrounds used at Philadelphia are suitable for long-distance transportation. It will also be necessary to pay the transportation and subsistence expenses of several demonstrators, who should remain with the exhibit through the period of the exposition. An additional appropriation of \$10,000, therefore, would not be out of line with our needs if we are to participate adequately in the Nevada Highway Exposition.

Yours very truly,

C. W. WARBURTON,
Director of Extension Work.

INVESTIGATION OF METHODS OF PRODUCING CRUDE GUM FOR NAVAL STORES

STATEMENT OF SENATOR DUNCAN U. FLETCHER, OF FLORIDA

Senator McNARY. Senator Fletcher is present, and he has an item on page 36 of the bill, after line 24.

Senator FLETCHER. It is on page 36, after line 24. You remember this bill came in, I think, on the last day of the session, and of course I did not have an opportunity to offer this amendment.

Senator McNARY. Will you let me read it into the records?
[Reading:]

On page 36, after line 24, insert the following: For conducting such forest, laboratory, and other experiments, investigations, and demonstrations at the southern forest experiment station and elsewhere as may be necessary to determine the best methods of producing crude gum for naval stores from southern pine timber and of increasing the yield of gum from such timber, \$50,000.

Senator FLETCHER. The object is, Mr. Chairman, that that fund may be used for this research work. There are people in the department who are able to do it, but of course there needs to be some expense incurred in that regard, and we can not get this done without an appropriation similar to this.

Senator OVERMAN. Are they not doing this work at Madison?

Senator FLETCHER. Yes; they are doing certain work there. Colonel Greeley, I think, supports this proposition.

Senator McNARY. You want \$50,000 for this?

Senator FLETCHER. I think this appropriation does not cover the research work at all.

Senator McNARY. Is any work of this kind being done at Madison?

Senator FLETCHER. Not at Madison. At Madison they are determining the utility of wood products, and all that sort of thing. They are not going into this question; I think, that is involved here, namely, the proper method of operating this naval-stores business, gathering gum, boxing the trees, and preserving the timber. It is a very considerable industry.

I have here a clipping taken from a wood paper. Pensacola is shipping nine cargoes of resin. It says Pensacola is shipping nine cargoes of resin. There are nine cargoes going out of that one port.

I will be perfectly frank with the committee. I introduced a bill on the floor early in the last session, and it was referred to the Committee on Agriculture, and the department reported on it, and I have that report here. In it they say this [reading]:

The naval-stores industry in the South has since the Civil War been second only to agriculture and lumbering. Although for some time it was regarded as a dying industry, the possibility of permanence now seems to be recognized by the rank and file of its personnel. It is being realized, however, that perpetuity lies in timber growing and in an improved technique in naval-stores operations, both of which depend upon results which can be obtained only through research. For instance, although shipping methods are vastly improved over those of 20 years ago, they are even now an instrument of forest destruction. But through research which will reduce damage to a minimum there is an opportunity to make naval stores an aid and incentive to the practice of forestry by insuring early returns from the timber crop. The opportunity is also afforded to keep the United States independent of foreign supplies, and since timber ownership of the naval-stores species is widely scattered in the South and much is in small farm holdings, anything which can be done to perpetuate naval-stores production by permanent supplies of timber and improved methods of operation would promote diversified farming.

While therefore the department would like at the appropriate future time to see favorable action taken upon Senator Fletcher's bill, upon reference of this matter to the Bureau of the Budget we are advised that the additional expenditure involved in the proposed legislation would at this time be in conflict with the financial program of the President.

That was last July. This report is dated July 3, 1926.

Senator JONES of Washington. Let me ask you what this term "naval stores" embraces?

Senator FLETCHER. That includes resin and spirits of turpentine.

Senator JONES of Washington. Does it mean anything used for anything else other than naval operations?

Senator FLETCHER. It has nothing to do with naval operations.

Senator JONES of Washington. That is what I was getting at.

Senator FLETCHER. I do not know how it got this name, except that these products were used originally in connection with ropes and that sort of thing connected with ships.

Senator KENDRICK. Were they not used in connection with calking ships?

Senator FLETCHER. Yes; calking and that sort of thing.

Senator JONES of Washington. What are these things used for now?

Senator FLETCHER. Resin is used for a thousand different things. It is used in paints, in soap manufacturing, and for various things.

Spirits of turpentine, of course, is used in medicine, and is used also for various other things.

Senator JONES of Washington. Could you not get a different term that would come more nearly expressing the facts?

Senator FLETCHER. It is a term which is thoroughly well known in the trade.

They box a pine tree, as they call it. In some instances they have little cups to catch the gum as it exudes from the tree. In some instances they have a kind of box at the bottom of the cut which catches the gum. They scarify this tree, and usually for about three years they can get gum from the same tree by continuing the cutting up higher and higher each year; and after that the tree is supposed to be large enough now to be cut for lumber. But often this turpentining it, and particularly when it is done in a wasteful sort of way, when the tree is tapped or cut too soon, before it is large enough ever to make lumber—the wind blows it down; sometimes worms get into it—there is a chance there, as you see, for enormous destruction and waste, and when it is not done wisely and properly, that happens.

I think in France and some of the other countries of Europe they have already devised plans and means by which they perpetuate this industry. They cut the tree in a certain way and collect the gum in a certain way; and for a hundred years, or something like that, they have been turpentining the same timber.

Senator JONES of Washington. Why can we not learn their method and learn it rather cheaply?

Senator FLETCHER. I do not know. That is all a matter of study and research. They have not adopted those methods down there yet; but, as the Secretary says, the methods are somewhat improving.

They collect this crude gum as it comes from the tree and haul that to a still and get from it the spirits of turpentine of commerce. They put that into barrels. They also get resin. Those are the two products that go into naval stores.

Senator JONES of Washington. Why would not the easiest and best way and the cheapest way be for the department to send somebody over to France to observe these processes and see just how they do it? It would not cost \$50,000.

Senator FLETCHER. No; that would not in itself. Colonel Greeley was in France during the late unpleasantness and—

Senator JONES of Washington. But he was not looking after that.

Senator FLETCHER. He was not looking after this industry, but he probably saw what was going on there.

I think I am perfectly willing to leave it to Colonel Greeley, if he thinks that that language will cover this kind of thing, and it can be done under that, and I will not ask for any more. I do think that this research work ought to be done down there at this experiment station, and this is in that region. You take Wisconsin; they do not have that naval stores industry there.

Senator LENROOT. It is just a question of where it can be done best; that is all.

Senator FLETCHER. That institution at Madison is a great institution. I have been there. But, of course, this work can best be done where the practice is in operation.

Senator LENROOT. That could be left to the department, could it not?

Senator FLETCHER. Well, that is so. I do not object to that. Let them do it where it is to be done. But the amendment specifies that it should be done in that region, in the yellow-pine region where this work in going on all the while, and this naval industry is going forward, and where the growing trees are cut and the gum is collected and naval stores are being manufactured. It seems to me this work should best be done down there where the conditions are all apparent. The idea is to undertake this work in a scientific, practical way, and by experiment and demonstration to show to the people who are engaged in the industry; to let them come right there and see it themselves, and then they will learn about it. The idea is to show them the proper method for collecting the naval stores and preserving the trees at the same time, so that the industry may be perpetuated instead of being destroyed. The wasteful methods used at present are very destructive.

Senator McNARY. Is not one of the principal questions to be studied how early you should box a tree, and the effect that that boxing has upon the growth of a tree, and the quality of the lumber you get out of it?

Senator FLETCHER. Yes.

Senator McNARY. We encountered that consideration on the question of reforestation, and that also has to be studied out.

Senator FLETCHER. Yes; that is all involved in this kind of an investigation. The language is, I think, sufficient to cover that.
[Reading:]

For conducting such forest, laboratory, and other experiments, investigations, and demonstrations at the southern forest experiment station and elsewhere as may be necessary to determine the best methods of producing crude gum for naval stores from southern pine timber and of increasing the yield of gum from such timber.

Senator McNARY. Yes.

Senator FLETCHER. It all tends toward forest preservation.

Senator JONES of Washington. Would not this language pretty near cover it?

And for other investigations and experiments to promote economy in the use of forest and fiber products.

Senator FLETCHER. I would not think that is broad enough to take care of this.

Senator LENROOT. Colonel Greeley, was not a part of this \$40,000 increase you asked for to be used for this purpose?

Mr. GREELEY. A small portion of it might be so used.

Senator LENROOT. You spoke of southern pine in your statement, and said something about the use of resin and turpentine.

Mr. GREELEY. That \$10,000 was primarily to develop the manufacture of white paper from yellow pine.

Senator LENROOT. I think it was perhaps in the House committee that you said that you wanted \$5,000 for this.

Senator HARRIS. For extracting resin. Senator Lenroot is right about that.

Senator McNARY. \$10,000 for the conversion of southern pine to white paper.

Senator LENROOT. I am quite sure you testified this morning, in relation to the conversion of white pine to white paper, that one of the features of the process was the extraction of turpentine.

Mr. GREELEY. I said that a part of that conversion of yellow pine did involve the extraction of resin and turpentine as a by-product.

Senator McNARY. And here we are dealing with the increasing of production of resin and turpentine.

Mr. GREELEY. You have to get rid of the gum in order to make newsprint.

Senator LENROOT. I notice that before the House committee you asked for \$40,000, and there you proposed to use \$5,000 of that \$40,000 for the study of more efficient methods of producing naval stores.

Mr. GREELEY. Yes; that is the matter that Senator Fletcher is dealing with.

Senator LENROOT. It is your view that the present language is sufficient, if you had the money to cover it?

Mr. GREELEY. Yes, sir; I think the present language is sufficient.

Senator FLETCHER. Do you think that would enable you to conduct this investigation at the southern forest experiment station?

Senator McNARY. What amount of money are you using at the Madison laboratory for this work, or expending in the South?

Mr. GREELEY. At the southern forest experiment station?

Senator McNARY. Where is that located?

Mr. GREELEY. It has headquarters in New Orleans, but is conducting work in several of the Southern States. We are conducting a branch station at Stark, Fla., which is dealing primarily with these problems of the best production of naval stores, or as to the growth of pine trees, and we are expending for that purpose approximately \$15,000 a year, under the general authority for conducting this research at the southern stations.

Senator McNARY. How long have you been carrying on that work?

Mr. GREELEY. That Stark substation has been running for three years.

Mr. JONES of Washington. Colonel, have you acquainted yourselves with the methods of doing this over in France?

Mr. GREELEY. Yes, sir.

Senator JONES of Washington. You know what they are doing?

Mr. GREELEY. We are testing out the French method right now in the Florida national forests.

Also at the Madison laboratory we are doing some work on the technological features of turpentine, to determine the effect of chipping upon the formation of the resin-producing cells. That is a very important aspect of this whole problem, because it has been found that by controlling the season of chipping and the depth of chipping the formation of the resin-producing cells in the wood—that is, the cells that produce the gum—can be controlled, and that is a very important line of investigation which, because of the laboratory facilities, can be conducted most economically and effectively at the laboratory. The two ought to go right together, as it is being done now.

Senator McNARY. How much are you spending on that?

Mr. GREELEY. Approximately \$5,000 a year is being spent for that purpose now at Madison.

Senator McNARY. So that you are spending annually \$5,000 for that?

Mr. GREELEY. Yes.

Senator FLETCHER. Do you need any more?

Mr. GREELEY. Yes; because the whole naval-stores industry of the Southern States must pass from a virgin-timber basis to a second-growth basis, and that is involved in this problem of the size of trees that should be turpentined, how to turpentine small timber so as to get a practicable yield of gum and at the same time not to kill the trees or stop their growth, and the scientific method of chipping, and the methods of handling and distilling the gum are involved. It is a very large problem and one of the most important industrial problems of the South to-day, and I agree with Senator Fletcher heartily that larger appropriations should be made for it.

Senator McNARY. How much larger amount could you use?

Mr. GREELEY. We could use advantageously the amount mentioned in the amendment. I have not given that phase of the matter any extended attention, as to just how large an organization should be provided, but we would like to extend the research now being done at the Stark station. We would like to enlarge the force there and equip some additional stations in the second-growth long-leaf pine belt of the South to test out the French method of extracting turpentine and various modifications of it. You have got to adapt your method to the American species of timber. You can not simply take the French method, which was applied to maritime pine, and apply that to our southern pine. You can not just say "I am going to use it as the method of turpentining in second-growth southern pine."

Senator OVERMAN. Did you make any estimate of this?

Mr. GREELEY. I do not think any estimate was made by the Forest Service for this amount.

Senator OVERMAN. Why did you not, if you needed it?

Mr. GREELEY. Possibly we should. We have been providing, as you know, Senator, for increases at various forest experiment stations and this year we secured an increase for two additional forest experiment stations, and we rested on our oars there, on the estimates made by the department.

Senator FLETCHER. How large a force have you at the station at Stark?

Mr. GREELEY. I think there are two men there. The Secretary stated here in this report that the department would like, at the appropriate time, to see favorable action taken upon Senator Fletcher's bill, which is the same as this bill. They would like to see it done.

Senator LENROOT. This morning you thought that the other items you testified to were relatively more important than this?

Mr. GREELEY. Yes; speaking of it primarily from the standpoint of timber use as a whole. The naval-stores question is an important one, and we are going right ahead in it, just as rapidly as our resources will permit.

Senator LENROOT. On page 41 of the bill we have an item which reads:

For the investigation and demonstration of improved methods of processes of preparing naval stores, the weighing, handling, transportation, and the uses of same, in cooperation with individuals and companies, including the employment of necessary persons and means in the city of Washington and elsewhere, \$10,000.

Mr. GREELEY. That is in the Bureau of Chemistry.

Mr. JUMP. That applies to the grading; that is for the establishment of different grades of resin, etc.

Senator FLETCHER. Yes; that deals with the finished product. There are 8 or 10 grades of resin, dark and yellow.

Senator KENDRICK. It occurs to me that one of the purposes of this section is to preserve young timber—to provide safeguards against the destruction of young timber, rather. You could hardly employ any sort of experimental work to better advantage than along that line.

I am wondering, however, if it would not be more in keeping with the present situation, in approaching this question at this late time, to reduce the amount in Senator Fletcher's amendment to about \$10,000, and begin your work with that.

Senator LENROOT. The point is, if you did that, he would be getting less than he gets now, because if you authorize an expenditure in these words, you will not be authorizing an expenditure from the general fund.

Senator JONES of Washington. You might add something to the general appropriation, saying it will be hereby authorized to expend something in addition to that.

Senator FLETCHER. I will be glad to have that done, if the department thinks that language is as broad as my amendment. I would like to be certain of that.

Mr. GREELEY. I think that would be ample; and I suggest, if an addition is made, that it be made at the beginning of line 9, on page 37. That is the general item under which the present southern forest experiment station is maintained, as well as the other forest experiment stations; and the great bulk of this work should be done, as Senator Fletcher suggests, in the Southern States, as a part of the field program of that southern station; and if any increase you see fit to make is added to that general item we can take care of this work without the additional language.

Senator McNARY. You think, Colonel Greeley, that would do for the field work?

Mr. GREELEY. Yes.

Senator McNARY. I appreciate that; but we are adding this here for work that might not be carried on at Madison and would not come under this at all. It would leave the Madison appropriation just the same. It would extend the field work.

Mr. GREELEY. It would extend the opportunity for field work.

Senator McNARY. If you come back to your other appropriation on page 36, under that you could do both field work and the Madison work by simply increasing the total?

Mr. GREELEY. I think we could do it, as a matter of fact, under either item, Senator.

Senator McNARY. I think we had better carry this in the place as suggested by Senator Fletcher. I think the language is sufficient. The only question, I think, we should consider is whether we want to increase the item in that.

Senator FLETCHER. You could use it very economically and effectively, too, if you had \$50,000 more there, could you not, Colonel?

Mr. GREELEY. We would undertake to use \$50,000 effectively in broadening that whole field of research upon the naval-stores question. There is a tremendous amount to be done, and at Stark station we have only made a beginning.

Senator JONES of Washington. You could use a hundred thousand dollars, could you not?

Mr. GREELEY. Not right away.

Senator JONES of Washington. Over the year?

Mr. GREELEY. In the course of two or three years we could come up to it. With \$10,000, we would use the great bulk of that money to enlarge the field work at the Stark experiment station, and with probably one additional similar station in another portion of the naval-stores region to carry out these tests of the best ways of tapping second-growth timber. You have got to not only preserve the timber from destruction but you have got to make it a commercial undertaking, and that means an adjustment of methods, and the season of tapping, and that sort of thing.

Senator LENROOT. Are you not making those tests now?

Mr. GREELEY. Yes.

Senator LENROOT. The mere duplication of tests does not necessarily mean anything?

Mr. GREELEY. It would be an extension of tests—trying out additional methods. There are several additional tests that we want to make as soon as we can get to them. As it stands now, we will get to them in time, because we regard that as one important phase of the southern stations.

Senator FLETCHER. If you had more money you could go on with the work at a swifter rate. You may wait until it is too late—until the timber is all gone.

Senator KENDRICK. You spoke of second-growth pine. Has this country been reforested or has it reseeded through natural causes?

Mr. GREELEY. It is all natural reseeding, practically. You find every situation there—from land that has been denuded and where nothing is coming back to land that is coming back with a good second growth. You find every intermediate stage between.

Senator KENDRICK. Has it already been demonstrated conclusively whether the tapping of these young trees has a detrimental effect on the lumber produced from the trees in after years?

Mr. GREELEY. It slightly decreases the grade of the butt cut; that is all.

Senator HARRIS. There is very little of the original pine timber left; not one-half of 1 per cent. It is all second growth.

Mr. LENROOT. Is the natural second growth of the southern pine the same as the original growth, or does something else spring up in its place?

Senator HARRIS. In some places it is the same and in some places it is different.

Senator OVERMAN. I was talking with a gentleman about sending trees out from these nurseries to farmers, young trees, ornamental trees, and he said to me that a Congressman can get those trees. Are you in the habit of distributing them among Congressmen?

Mr. GREELEY. No, sir. A Congressman, to get some of those trees, has to qualify as a dirt farmer.

Senator OVERMAN. That is what I thought you said, but this gentleman said that he got some trees.

IMPROVEMENT OF ROADS FOR OTHER DEPARTMENTS

Mr. JUMP. We had one more item, Mr. Chairman, in that group this morning, and if it is agreeable, will you take that up now? It is on page 53, line 9.

Senator McNARY. Very well.

Mr. JUMP. Following the word "distributed" in line 9, the department would like to ask for the consideration by the committee of the insertion of the following proviso:

Provided further, That hereafter the Secretary of Agriculture is authorized, upon the request of any branch of the Federal Government, to perform any engineering service in connection with the survey, construction, maintenance, or improvement of roads, payment of the salaries and expenses of employees so engaged and of the cost of transportation, repairs, and replacements of equipment and supplies of the Department of Agriculture used in such work to be made by transfer of funds in the manner provided by section 7 of the act approved May 21, 1920 (41 Stat. 613).

The note which has been prepared by the department here for the members of the committee explains the matter in a concise way, and I will insert that in the record.

(The statement follows)

BUREAU OF PUBLIC ROADS

Page 53, line 9, insert:

"Provided further, That hereafter, the Secretary of Agriculture is authorized upon the request of any branch of the Federal Government, to perform any engineering service in connection with the survey, construction, maintenance, or improvement of roads, payment of the salaries and expenses of employees so engaged and of the cost of transportation, repairs, and replacements of equipment and supplies of the Department of Agriculture used in such work to be made by transfer of funds in the manner provided by section 7 of the act approved May 21, 1920 (41 Stat. 613)."

NOTE.—Under the act approved April 9, 1924, (43 Stat. 90), Congress authorized appropriations to be made of \$2,500,000 for the fiscal years ending June 30, 1924 and 1925, and a like sum for each of the fiscal years 1926 and 1927, for the construction, reconstruction and improvement of roads and trails in the national parks and monuments under the jurisdiction of the Department

of the Interior. Under this authorization appropriations have been made annually to carry on the work. During the fiscal year 1926 an agreement was entered into between the Interior Department and the Department of Agriculture pursuant to which the Bureau of Public Roads is now performing the engineering services incident to work under said appropriations, such as surveying, preparing plans, specifications, and estimates, and supervising projects, reimbursement therefor to be made by transfer of appropriations. Expenditures by the Bureau of Public Roads in rendering such services to December 1, 1926, and for which reimbursement has been or will be made under said agreement, amount to \$210,304.16.

Under date of December 11, 1926, the Comptroller General rendered an opinion (copy attached) to the effect that reimbursement for engineering services rendered by the Bureau of Public Roads must be discontinued after January 1, 1927, but that road work already arranged for may be proceeded with during the remainder of the present fiscal year but not thereafter, provided the required funds for carrying out the existing arrangements will be placed to the credit of the Bureau of Public Roads by allocation in accordance with the provisions of section 7 of said act of May 21, 1920.

The agreement between the Department of the Interior and the Department of Agriculture for handling the engineering work necessary in the construction of roads and trails within the national parks and monuments was entered into to save the Park Service the necessity of building up a separate engineering organization. Since the Bureau of Public Roads already has the trained personnel for conducting such work, large savings to the Government will continue to be effected by the enactment of the above clause; otherwise it will be necessary for the Park Service to create a separate road building unit after June 30, 1927.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, December 11, 1926.

The SECRETARY OF AGRICULTURE.

SIR: There has been received your letter of July 13, 1926, relative to an agreement between the Department of the Interior and the Department of Agriculture under the terms of which the services of the Bureau of Public Roads as a road-building organization are made available to the National Park Service in connection with the construction and improvement of roads within the national parks and monuments, said agreement providing that the Bureau of Public Roads will be reimbursed from time to time by the National Park Service for actual expenses which may be incurred in investigating, surveying, preparing plans, specifications and estimates, and supervising the projects. The agreement provides that the actual work of construction and improvement shall be done under contracts entered into by the Department of the Interior and payment made for such work by the disbursing officers of said department. Reimbursement to the Department of Agriculture is made only to cover the estimated cost of the services of the regular employees of that department for the time spent by them on the work for the Department of the Interior. It appears that the reason for securing the services of employees of the Department of Agriculture is that the National Park Service does not have the personnel with the requisite skill and training to perform the services rendered by the employees of the Bureau of Public Roads and by utilizing the services of the latter employees without additional compensation the employment by the National Park Service of additional employees is avoided and thus a substantial saving to the Government is effected.

It has been held that when an appropriation is made for a specified purpose it should be carried out by the department for which the appropriation is made and that the amount should not be transferred to another department, the theory being that the appropriation and the purpose to be carried out are presumably placed by the Congress under the control of the department it desires to do the work and that to allow such transfers in effect would increase the appropriations expendable by the department to which the amounts are transferred. (43 MS. Comp. Gen. 818; 5 Comp. Gen. 737.)

However, in view of the circumstances in the instant case the road work already arranged for between the two Government agencies may be proceeded with during the remainder of the present fiscal year but not thereafter, without specific legislative authority. It is to be understood that there is not authorized the entering into of new agreements similar to those herein referred to. Credit will be allowed in the accounts of the disbursing officers of the Department of the Interior for payments made prior to January 1,

1927, to the Department of Agriculture as reimbursement of expenditures made under the agreements now in existence, but on and after January 1, 1927, the required funds for carrying out the provisions of existing agreements between the two departments will be placed to the credit of the Department of Agriculture by allocation in accordance with the provisions of the act of May 21, 1920, 41 Stat. 613.

Respectfully,

J. R. McCARTY,
Comptroller General of the United States.

This is the amendment I referred to this morning when I was discussing the authority asked for under the meat-inspection item.

As explained in the note under an agreement between the Secretary of Agriculture and the Secretary of the Interior the Bureau of Public Roads of our department has been performing engineering work, making the surveys, giving engineering advice, and supervision of the national park road construction program. That was done by agreement between the two departments, in order that the existing engineering organization of the Bureau of Public Roads might be utilized to the fullest possible extent by the Government and that the National Park Service might not have to set up an independent engineering unit. It is a splendid example of coordination of governmental activity.

The Comptroller General, however, in a decision dated December 11, 1926, a copy of which is attached to each one of the notices I have given you, has held that beginning January 1, 1927, it will be necessary to have an indication from Congress that it is satisfied and authorizes this arrangement by which the National Park Service makes use of the engineering service of the Bureau of Roads. The position is taken, as I interpret it, that if it was originally desired to have the Bureau of Public Roads do this surveying and locating work, it would have been so stated in the beginning. The comptroller's decision is based on an interpretation of the fortifications act, and the revision in the language we are asking here is to section 7 in the fortifications act, to the effect that when one department desires to use the services or supplies of another department, there should be a transfer of funds; and the comptroller requires that all such cases be submitted to him for individual ruling. Where there is just a sporadic case, he is willing to let it go, but where you have an arrangement that is of a continuous nature, he thinks Congress ought to be asked to ratify the agreement. That is what we are recommending now.

Senator McNARY. Did you present this matter to the House committee?

Mr. JUMP. We did not get this decision until December 11.

Senator McNARY. This follows out the one you referred to this morning?

Mr. JUMP. Yes; the one this morning was somewhat dependent on this.

Senator McNARY. This is limited to the Bureau of Roads?

Mr. JUMP. No; the language here is such that the Department of Agriculture can render engineering service to any department, and that it can have funds from that other department transferred over to it for those purposes when desired by another department. That is the gist of it.

Senator McNARY. For instance, in the act of 1924, which was rather a redraft and modification of the reclamation act, one of the matters involved was the possibility of soil surveys on new projects. Your department since that time has been sending experts in to make soil surveys for the Department of the Interior.

Mr. JUMP. That is right; when request is made by the other department.

Senator McNARY. Would that cover this situation here?

Mr. JUMP. We have never had those cases questioned, because there is only just an occasional case of that kind where the Interior Department wants a soil survey made and a man is sent out to make it and a voucher is submitted.

Senator McNARY. Who is paying for it?

Mr. JUMP. My impression is that the Interior Department is paying for it.

Senator McNARY. What effect would that have on the illustration I have given you?

Mr. JUMP. It would not have any, because this applies purely to engineering work for road construction.

Senator McNARY. That is what I thought. It is only in connection with the matter of roads that this amendment is to be considered.

Mr. JUMP. That is our intention; but the wording of the amendment is such that it applies to the Department of Agriculture as a whole, and would enable us to render any engineering service for roads.

Senator OVERMAN. You are going back to the old Overman Act, that we repealed, allowing one department to coordinate with another.

Mr. JUMP. Yes; that is the act. The date is May 21, 1926; section 7 of the fortifications act.

Senator LENROOT. What is that section 7?

Mr. JUMP. I copied it because I thought the question might arise. It is very broad. I have it here.

Senator LENROOT. There is one thing that it does that is in conflict with the bill. There is an appropriation available for two years instead of one year.

Mr. JUMP. This would not be any of our money. We would get our money from the other department, the one to which the service is rendered.

Senator LENROOT. But it applies to the other department.

Mr. JUMP. But this particular type of appropriation, road appropriations, are continuing, and without the year. You are correct in what you say, as to an annual appropriation. An annual appropriation transferred under the act becomes available for two years; but the comptroller has been very rigid in regard to the transactions that he has allowed to pass under this section. He passes especially on each one, according to its merits.

Senator McNARY. Would not this involve the activities of only two departments, the Agricultural Department and the Interior Department?

Mr. JUMP. That is all we had in mind at the present.

Senator McNARY. It would occur to me that it was a matter of only those two departments.

Mr. JUMP. Not the way we have it fixed. This language is:

Hereafter, the Secretary of Agriculture is authorized upon the request of any branch of the Federal Government, etc.

Senator McNARY. But it is "to perform any engineering service in connection with the survey, construction, maintenance, or improvement of roads." It is limited to the question of road construction and service in connection therewith.

Mr. JUMP. That is correct.

Senator McNARY. So that, are not only two departments involved?

Mr. JUMP. The War Department builds roads in Alaska.

Senator McNARY. Yes, that is right.

Mr. JUMP. And the Navy Department has built some roads in the insular possessions. We thought we might have the language made as broad as possible while we were getting it, in order to take care of matters in future. Mr. Bishop, the Acting Chief of the Bureau of Roads is here, if you wish to discuss the matter in detail.

Senator McNARY. I think you have made it clear to us.

(The memorandum submitted by Mr. Jump is as follows)

Page 53, line 9, insert:

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SIR: There has been received your letter of July 13, 1926, relative to an agreement between the Department of the Interior and the Department of Agriculture under the terms of which the services of the Bureau of Public Roads as a road-building organization are made available to the National Park Service in connection with the construction and improvement of roads within the national parks and monuments, said agreement providing that the Bureau of Public Roads will be reimbursed from time to time by the National Park Service for actual expenses which may be incurred in investigating, surveying, preparing plans, specifications, and estimates, and supervising the projects. The agreement provides that the actual work of construction and improvement shall be done under contracts entered into by the Department of the Interior and payment made for such work by the disbursing officers of said department. Reimbursement to the Department of Agriculture is made only to cover the estimated cost of the services of the regular employees of that department for the time spent by them on the work for the Department of the Interior. It appears that the reason for securing the services of employees of the Department of Agriculture is that the National Park Service does not have the personnel with the requisite skill and training to perform the services rendered by the employees of the Bureau of Public Roads, and by utilizing the services of the latter employees without additional compensation the employment by the National Park Service of additional employees is avoided and thus a substantial saving to the Government is effected.

It has been held that when an appropriation is made for a specified purpose it should be carried out by the department for which the appropriation is made that the amount should not be transferred to another department, the theory being that the appropriation and the purpose to be carried out are presumably placed by the Congress under the control of the department it desires to do the work and that to allow such transfers in effect would increase the appropriations expendable by the department to which the amounts are transferred. (43 MS. Comp. Gen. 818; 5 Comp. Gen. 737.)

However, in view of the circumstances in the instant case the road work already arranged for between the two Government agencies may be proceeded with during the remainder of the present fiscal year but not thereafter, without specific legislative authority. It is to be understood that there is not authorized the entering into of new agreements similar to those herein referred to. Credit will be allowed in the accounts of the disbursing officers of the Department of the Interior for payments made prior to January 1, 1927, to the Department of Agriculture as reimbursement of expenditures made under the agreements now in existence, but on and after January 1, 1927, the required funds for carrying out the provisions of existing agreements between the two departments will be placed to the credit of the Department of Agriculture by allocation in accordance with the provisions of the act of May 21, 1920 (41 Stat. 613).

Respectfully,

J. R. McCART,
Comptroller General of the United States.

Section 7, act of May 21, 1920 (41 Stat. 613) :

"That whenever any Government bureau or department procures, by purchase or manufacture, stores or materials of any kind, or performs any service for another bureau or department, the funds of the bureau or department for which the stores or materials are to be procured or the service performed may be placed subject to the requisitions of the bureau or department making the procurement or performing the service for direct expenditure: *Provided*, That funds so placed with the procuring bureau shall remain available for a period of two years for the purposes for which the allocation was made unless sooner expended."

Senator McNARY. Earlier in the afternoon you referred to an item that you had in manuscript concerning Senator Oddie's amendment.

Mr. JUMP. I had simply a memorandum from Mr. Warburton.

Senator McNARY. Will you put that in the record.

Mr. JUMP. I submitted that for the record a few moments ago but may I make this one more request?

Senator McNARY. Yes.

Mr. JUMP. This morning you asked us for some figures which were inserted, giving the figures of the Budget the House Bill, etc., and if it is agreeable to the committee, in order that the figures may be entirely clear and fair, we would like to insert a statement containing an analysis breaking up these totals into separate parts, showing that the reduction of \$20,000,000 referred to is largely on road funds. Our estimates are in much better shape this year than heretofore. In general, very good provision has been made for the department.

Senator JONES of Washington. Does that state how much your estimates have been reduced?

Mr. JUMP. I can not state that offhand, Senator. I have that here—do you mean our original estimates for the work of the department?

Senator JONES of Washington. Yes. Can you not give the estimate, or about what it was?

Mr. JUMP. Our preliminary estimate for the ordinary work of the department was \$48,450,958. The amount of the Budget estimate was \$46,811,570.

Senator JONES of Washington. A little short of two million dollars less.

Mr. JUMP. Yes, and the figure allowed us was \$1,566,997 in excess of this year's appropriations. Of course that was largely on account of the tuberculosis indemnity item.

*Department estimates, Budget allowance, and House action, fiscal year 1928,
compared with appropriations for fiscal year 1927*

[Arranged by appropriation groups]

Appropriation groups	Appropriation, 1927	Department's preliminary estimates, 1928	Budget estimate, 1928	House bill, 1928
1. Regular or ordinary activities of department...	\$45,244,573	\$48,450,958	\$46,811,570	\$47,054,385
2. Special forestry and wild-life conservation items...	1,360,500	3,235,500	2,165,500	2,165,500
3. Colleges and stations (payments under Smith-Lever, Hatch, Adams, Purnell, and supplemental Acts)	8,760,000 3,770,750	9,240,000 3,770,750	9,240,000 3,770,750	9,240,000 3,770,750
4. Forest Service special receipt funds...				
Total for above activities.....	59,635,823	64,697,208	61,987,820	62,230,635
5. Federal aid and forest road funds.....	80,000,000	100,600,000	82,500,000	77,500,000
Total.....	139,635,823	165,197,208	144,487,820	139,730,635

Senator LENROOT. You spoke of section 7 of the act of 1920.

Mr. JUMP. Of the act of May 21, 1920.

Senator LENROOT. Yes.

Mr. JUMP. It is in force and effect.

Senator LENROOT. Wholly?

Mr. JUMP. Yes; so far as I am aware. We are still making transactions under it; but as I say, the comptroller requires that every case of a transfer under that section be submitted to him in advance for

a decision, and he then decides whether a transfer of funds can be made or not.

Senator McNARY. Have you any further items?

Mr. JUMP. That completes the department's amendments, Mr. Chairman, so far as I know. There are a few details that I can take up with Mr. Rea at the proper time.

Senator McNARY. Doctor Taylor, what items were you here to present?

Mr. JUMP. Doctor Taylor is here at my request, Mr. Chairman, in case you should ask about any of our scientific work. Doctor Woods, our director of scientific work, will be here in a day or so, but in the meantime I have asked Doctor Taylor to attend the hearings.

Senator McNARY. You will be here during the hearings, will you not?

Doctor TAYLOR. Yes, sir.

STATEMENT OF SHIRLEY ALLEN, REPRESENTING THE AMERICAN FORESTRY ASSOCIATION

Senator McNARY. Mr. Shirley Allen is here. He is interested in forestry matters.

Mr. ALLEN. May I say, Mr. Chairman, that I represent the American Forestry Association, which has its headquarters in Washington, here.

There are two items in which we are very much interested.

Senator McNARY. Which is the first one?

FOREST-FIRE WEATHER WARNING SERVICE

Mr. ALLEN. The first item in which we are interested is in the Weather Bureau, line 23, on page 13 of the bill. That item has become popularly known as forest-fire weather warning, but it does not occur in the bill under that name. It simply occurs as Weather Bureau expenses outside of Washington, and the amount included in the total under this paragraph for that activity is \$18,456, which is the same amount that was included last year.

Senator McNARY. Do I understand you to say, Mr. Allen, that last year was the first time that this committee appropriated money for weather warnings?

Mr. ALLEN. Yes; for fire weather warnings.

Senator McNARY. On the question of atmospheric humidity as to the question of fire hazards in the forests.

Mr. ALLEN. Yes.

Senator McNARY. I thought we gave you \$15,000 last year.

Mr. ALLEN. Yes; but Congressman Albert Johnson appeared before the House Committee on Appropriations and talked with the Budget and then came over to the Senate committee and secured a small appropriation of \$3,456, which was left in the bill at the time that the \$15,000 recommended by the Budget was allowed by the Senate committee, so that it made that total.

Senator JONES of Washington. Is not what you have in mind covered on page 14, lines 3, 4, and 5, which reads:

For investigation, observations, and reports, forecasts, warnings, and advices for the protection of horticultural interests.

Mr. ALLEN. Not horticultural interests, Senator. This is strictly to warn against the conditions which promote forest fires.

Senator McNARY. This item last year carried \$18,456?

Mr. ALLEN. Yes, sir.

Senator McNARY. You are asking now for what amount?

Mr. ALLEN. The members of our association on the west coast, which has asked me to appear on this item, say that \$25,000 is necessary to maintain this service throughout the country.

Senator McNARY. You mean you want an increase to \$25,000?

Mr. ALLEN. An increase to \$25,000. That would mean \$6,544 more.

They explain that while apparently everyone who was concerned last year thought that this money was to be spent in the Northwest, or rather in the five Pacific Coast States—California, Idaho, Oregon, Washington, and Montana—as a matter of fact \$5,000 of it is allocated to other parts of the country where there had not been the amount of private cooperation that had existed in the West. The pioneer work on this activity has all been done in the West, and the owners of the timberlands, the State agencies, and others concerned think that it has accomplished things in preventing forest fires through closure of dangerous areas; the suspension of logging, for instance, in times of extreme hazard. And may I say that it is not entirely tied up with the question of atmospheric humidity? The prediction of high winds is also an important thing, and there is probably no activity in which the Weather Bureau is engaged where they get more hearty cooperation from people who have private interests, these timberland owners and resort owners and stage drivers and others who can give cooperation by making readings under the instruction of the bureau experts.

Senator McNARY. It is true that when there is a marked lack of humidity in the air the danger of fire is greater than when there is heavy humidity in the air?

Mr. ALLEN. Yes.

Senator McNARY. And in the meantime the loggers and others can be warned as to what is coming, and can cooperate in that direction?

Mr. ALLEN. Yes.

Senator McNARY. And that has been employed to some extent for some years, but this is the first time that the Government has taken it up for the purpose of study?

Mr. ALLEN. Yes; this is the first time that the Government has appropriated money for the purchase of instruments. That has all been put in by private owners before this year.

It would seem evident that people who have grown up in the country and who are used to the outdoors would, just as a matter of common sense, sense a low humidity day, and would know it was dangerous; yet like the boss with the mill crying for logs, and like the man who goes hunting, and that type of person who is not apt to use what he knows, he is put on his toes by this daily warning that is given, and by his participation in making observations; and for the amount of money spent it is of tremendous use.

Senator McNARY. I have a telegram from Mr. E. T. Allen, who is forester in charge of the Western Forestry and Construction Association, advocating the same increase of \$25,000, and I ask that that be placed in the record.

(The telegram referred to is as follows:)

Hon. CHAS. L. McNARY,
Senate Office Building, Washington, D. C.:

Please try hard for \$25,000 for Weather Bureau. Fire-warning work this year provided practical results and it is worth many times such sum to Government. Takes \$20,000 to carry western organization and they are about sure to divert \$5,000 to eastern work. Our western protective agencies are ready carry their end generously in cooperation.

E. T. ALLEN.

Senator JONES of Washington. I have gotten several communications on that same thing.

Mr. ALLEN. May I say that I am not in the Weather Bureau, and have made no experiments, but I understand that the observations and warnings that have been made have been very successful, and there is great enthusiasm regarding the work in the five Pacific Coast States.

Senator McNARY. So that you want this increased to \$25,000 in the appropriation?

Mr. ALLEN. Yes.

Senator McNARY. What is your other item?

CONTROL OF FOREST INSECTS

Mr. ALLEN. For the control of forest insects. The item is on page 43 of the bill, line 23, "For investigation of insects affecting forests."

Senator McNARY. What increase do you want there?

Mr. ALLEN. \$50,000. I do not know whether you gentlemen realize that there is a loss of between \$5,000,000,000 and \$7,000,000,000 in pine timber from the pine bark beetle and other insects in the West at the present time. Figuring that at \$3 per thousand feet, it amounts to a monetary loss of between \$15,000,000 and \$20,000,000, at \$3 a thousand feet. Sugar pine in California is now bringing better than \$5, and yellow pine in California is at \$5 to \$8, and western white pine is better than \$12.

Senator McNARY. What particular insect is destroying the forests?

Mr. ALLEN. There are three or four of them, all of them known as pine bark beetles.

Senator McNARY. That does not include the white pine blister rust?

Mr. ALLEN. No; that is a disease.

Senator McNARY. This item is for beetles?

Mr. ALLEN. Yes. These beetles girdle the pine under the bark. This money would be used to perfect methods and make it possible to get more per dollar through improving control methods. The present control methods are expensive, and the men who are in the work do not have the time to make the studies of the insects and method of controlling them that should be made to get more out of the dollars and cents.

Senator McNARY. You want this money expended in the national forests or on private holdings?

Mr. ALLEN. On both; on all the timber of the five Pacific Coast States, including the northern Rocky Mountains.

Senator LENROOT. Can you tell us what has been accomplished thus far in these States?

Mr. ALLEN. Control methods have been developed whereby bad infestations of insects have been controlled in certain places in eastern Oregon and portions of California.

Senator LENROOT. How?

Mr. ALLEN. By cutting the standing trees which, through the appearance of their needles, show them to be harboring the overwinter grubs or larvae of the insects; cutting them down and barking them, so that the insects lie exposed to the weather; and in that grub form they can not develop into the adult, which lays the eggs for the next brood. That, in general, is the method which is used, and it is an expensive, though an effective one.

Senator McNARY. Colonel Greeley, let me ask you at this point: What are the three beetles, by name, that are ravaging some of the forests in the northwest country?

Colonel GREELEY. The most serious is the so-called western pine beetle, one of the *dendroctonus* beetles, which bores into the inner bark of western yellow pine and lays its eggs. The young larvæ as they mature feed on the soft inner bark of the tree; and that process, when the insects occur in a heavy infestation, is sufficient to kill a great deal of timber through girdling. There is another *dendroctonus* beetle, *dendroctonus monticola*, which attacks the western white pine, the white pine of Idaho, and the western lodgepole pine in the same way.

Those are the two most serious western insects from the standpoint of forest destruction.

Senator McNARY. In what particular localities are these insects operating?

Colonel GREELEY. The insects occur in a more or less normal state throughout the greater part of the western pine areas; and in their normal condition their natural enemies—the birds, particularly—keep them down to numbers so small that the annual loss is not very serious. Then from some natural cause or combination of causes which are not fully understood from time to time these insects increase enormously in particular localities and develop what is called an epidemic stage, when they swarm in countless millions and cause a great deal of destruction.

We have had a situation of that character to contend with in southern Oregon and northern California for the last five years in one of the most valuable areas of pine timber remaining in the country. The effectiveness of these control methods on a large scale has been thoroughly demonstrated in the past five years' effort in that region. A special appropriation was made by Congress to enable the Federal Government to clean up its lands. The private owners in Oregon organized associations and levied assessments pro rata on the respective holdings to clean up their lands. The Bureau of Entomology furnished the technical leaders in the work; and a large area was cleaned up of these beetles. Since then the destruction has been at a minimum in the areas which were cleaned up in that manner.

There are other areas in Oregon and California where the beetles are now doing a great deal of damage. There are some outbreaks in Idaho and some in Montana which require work on an intensive scale; and while the item that Mr. Allen refers to comes under the

Bureau of Entomology, and not under the Forest Service, I want to say that I feel that it is very important to increase the facilities of the Bureau of Entomology for dealing with these forest insects.

Aside from the research end of it, which requires larger resources, the Bureau of Entomology should have a larger staff of field experts to make surveys of the insect situation in these important pine belts, so as to detect the conditions which are leading up to one of these epidemic outbreaks, and to organize the owners of the land in effective control measures.

We shall have to do the same thing with the insects of the West that we have already learned to do with the forest fires of the West. We shall have to have joint organization between the Federal Government and the private landowners and the States in accordance with the actual ownerships involved in a particular dangerous situation. The Bureau of Entomology have done some very fine work, in my judgment, in developing the methods and showing us how to handle these attacks; but they do need a much larger staff of trained men to cover these very important western forests, so that we will know more about the situations where the insects are increasing rapidly and assuming dangerous proportions, and so that we can have more expert local leadership in handling those situations.

Senator McNARY. Have you made an estimate of the annual losses caused by these insects?

Colonel GREELEY. A good many different estimates have been made. They are all, of course, approximate. I do not think Mr. Allen overstated the situation as to the total yearly loss. I think it easily runs up to fifteen or twenty million dollars a year in the five north-western States.

Senator McNARY. What results are you accomplishing by this work?

Colonel GREELEY. We have been able to save a great deal of valuable timber. Under the leadership of the Bureau of Entomology, the Forest Service and the National Park Service joined forces and cleaned up a very threatening situation in northern Arizona, involving partly the Grand Canyon National Park and partly the Kaibab National Forest. That situation now is apparently safe. Under the leadership of the Bureau of Entomology, also, we carried out this very large project in southern Oregon involving national forest lands, the Klamath Indian Reservation, and a large area in private ownership. In that instance we all joined forces in cleaning up the more dangerous areas and assessing the cost to the private owner or the Government in accordance with the acreage involved, the Bureau of Entomology furnishing the leaders.

Senator McNARY. When you speak of "cleaning up," what methods do you employ?

Colonel GREELEY. The experts of the Bureau of Entomology, or forest rangers, or employees of the lumber companies who have been trained by the entomologists, go out in the spring of the year and spot the trees which are in that season infested by the swarms. That is followed by crews who fell these trees, rip off the bark, and burn the bark sufficiently to kill the larvae. The larvae in that stage are very sensitive to heat, and a slight scorching of the bark will kill them. In that way the incipient swarms are killed before they have a chance

to infest additional timber; and by cutting and burning in that fashion possibly only a dozen or twenty trees to the section, that particular section of timber will be effectively cleaned up of the insects.

Senator McNARY. Do you salvage the tree after the bark is removed and destroyed?

Colonel GREELEY. Wherever it is possible to get the logs into a mill, they are salvaged. In some cases that can not be done.

Senator KENDRICK. Is there any difficulty in locating the trees that are infested with the insect, Colonel?

Colonel GREELEY. That is a job for the expert entomologist, although in the case of the more prevalent of these beetles—the western pine beetle—it is possible with a little experience to identify the trees through the change in the color of the foliage, which is the first symptom of death from girdling. The trees that are harboring the broods begin to get a sorrel tinge in the foliage along in April or May; and if you get those trees down and get the bark burned before the swarms mature and fly to new timber you can check the infestation. That is the general method.

Of course, there is a great deal of research on these insects and their life habits, and on possible methods of controlling them, that the Bureau of Entomology is doing; and it is quite possible that cheaper methods will be developed. We have several leads in that direction.

Senator McNARY. Have you studied the problem of finding natural enemies?

Colonel GREELEY. The senatorial committee, I think, rather developed that phase of the matter at its meeting at Klamath Falls, suggesting various means of propagating woodpeckers and other birds that prey upon these beetles. In the more normal situation the birds keep them pretty well checked.

Senator KENDRICK. What member of the committee recommended that? [Laughter.]

Colonel GREELEY. I refer you to the record of the Klamath Falls session of the Senate Committee on Public Lands.

Senator HARRIS. Colonel Greeley, I want to ask you about the chestnut blight. We started into that and left it open until now. The national associations, the manufacturers of shoes, tanners, etc., have been urging us to appropriate money to find some way to stop the killing of the chestnut trees.

Colonel GREELEY. Senator, may I suggest that you ask Doctor Taylor to speak on that?

Senator LENROOT. We are to take up the chestnut blight on Thursday. That was arranged during your absence.

Senator HARRIS. I did not know that. I will wait.

Mr. ALLEN. I have here two short statements that might help the committee.

(The statements are as follows:)

STATEMENT OF SHIRLEY W. ALLEN, FORESTER OF THE AMERICAN FORESTRY ASSOCIATION, IN SUPPORT OF \$50,000 ADDITIONAL APPROPRIATION FOR WORK IN THE ROCKY MOUNTAINS AND PACIFIC COAST STATES TO CONTROL INSECTS AFFECTING FORESTS

The American Forestry Association, which I represent, is interested in more effective control of forest insect pests in the pine regions of the Rocky Mountains and the Pacific coast. Estimates made two years ago by Government experts indicated that between five and seven billion board feet of merchantable yellow pine, sugar pine, lodge-pole pine, and western white pine were lost each year through the ravages of the pine-bark beetles. At the conservative rate of \$3 per thousand feet stumpage this would represent a loss of something between \$15,000,000 and \$20,000,000 annually. Three dollars is low for stumpage. Sugar pine in California now brings \$5 or better, yellow pine in eastern Oregon from \$5 to \$8, and western pine in the inland empire country as high as \$12.

Advice from members of our association in the West indicates that there is need for \$50,000 in addition to the \$79,570 carried in the bill as passed by the House; \$25,000 of this would be used to establish a field station in the heart of the western yellow-pine region, either in northern California or southern Oregon, to do some badly needed research work on more efficient control methods. The remaining \$25,000 would be used to extend the actual control work and to assist private owners of timberland in controlling the pine-bark beetle. The research work I have mentioned is particularly important, because under the present arrangement there is such a clamor for assistance in control work that little time is given for study and perfecting more efficient methods.

The American Forestry Association urges that you give the matter of appropriating \$50,000 additional careful consideration.

STATEMENT OF SHIRLEY W. ALLEN, FORESTER OF THE AMERICAN FORESTRY ASSOCIATION, IN SUPPORT OF AN ADDITIONAL ITEM OF \$6,544 TO EXPAND A FIRE WEATHER WARNING SERVICE OF THE WEATHER BUREAU

Last year there was made available for the first time a substantial item in the Weather Bureau appropriation in the sum of \$18,456 to establish and perfect a fire weather warning service. You will remember that this work had been carried on largely through contributions of interested timberland owners, and that the first appropriation was made largely to encourage the personnel of the Weather Bureau to specialize in this type of work. The entire effort to secure this appropriation was made by the west coast people, many of whom are members of the American Forestry Association. It was necessary, however, to allot \$5,000 of the amount to similar work in other parts of the country, where it is no doubt needed but where it had not previously had the encouragement of private owners.

According to the members of the association which I represent, the West Coast Fire Weather Warning organization finds itself handicapped for lack of sufficient equipment and for the means to expand this very useful work. The total amount needed for the United States is about \$25,000. Considering the usefulness of fire weather warnings and the effectiveness of the service, it is dirt cheap at this price. The small item of \$6,544 should not be withheld. There is perhaps no line of fire-prevention endeavor that has more whole-hearted and intelligent cooperation from loggers, stage drivers, resort owners, ranchers, and other local people. The American Forestry Association urges your approval of this increase of \$6,544.

FOREST ROADS AND TRAILS

Senator McNARY. I have had quite a number of letters and telegrams asking this committee to restore the appropriation for forest roads and trails. Congress for several years has authorized the expenditure of \$7,500,000 in the construction of roads and trails in the national forests. The House committee this year eliminated \$1,000,000, providing for \$6,500,000. If we want to take up the question of the restoration of that sum, I think we had better do it

while Colonel Greeley is here; and we will have enough time this afternoon, if you will be patient, to go through that.

Colonel GREELEY. The item is at the bottom of page 75.

Senator McNARY. Yes; but the particular item is on line 1, page 76. The estimate last year was \$7,500,000; the appropriation was \$5,000,000; but there was an additional sum appropriated later and carried in the deficiency bill. Colonel Greeley, will you discuss this part of the bill? Is that satisfactory to the department?

Senator LENROOT. Will you first discuss just what this means? I do not quite understand it.

Colonel GREELEY. The main point to bear in mind in connection with this item is that for the past several years Congress has followed the policy of authorizing the Secretary of Agriculture to allocate to the States and to incur obligations against the full amount carried by the statutory authorization for forest roads and trails, which has been running \$7,500,000 annually for the past several years. At the same time the Bureau of the Budget and Congress have been appropriating only enough money to take care of the cash disbursements under these obligations as they should mature; so we have been carrying, as you might say, a double set of books. In the first set we have had these annual authorizations which the Secretary of Agriculture has been instructed to prorate among the States and actually to incur contracts against. In the second set of books we have had the cash appropriations made from time to time, based on the estimates of the withdrawals from the Treasury necessary year by year as these prior commitments became due.

That has been a somewhat difficult situation for the department to handle, since it involved incurring obligations even to the point of letting road contracts in advance of having the money actually appropriated, and with the necessity from time to time of coming to Congress for supplemental or deficiency appropriations.

To show you just how far that process has been carried, including the fiscal year 1927, the current year, the authorizations made for forest roads total \$43,000,000. The actual appropriations for the same purpose total \$36,775,000. So for the current year of 1927, let alone the year 1928, we are short \$6,225,000 in appropriations as compared with authorizations.

Senator KENDRICK. Right there, let me ask you a question to clear up a point in my mind. Is there a limitation on the length of time that authorization stands?

Colonel GREELEY. The authorization is made for a specific fiscal year, and I think it carries without year. I do not think there is any limit on it.

Senator KENDRICK. That answers the question this far. I wanted to be sure. Suppose there were an authorization of \$6,000,000 for 1927, as you have suggested, and the Department expended only \$5,000,000. Would there remain a million dollars authorized that the department might still make contracts against?

Colonel GREELEY. Yes, sir; the controlling point in the business of building forest roads has come to be these amounts authorized, because the Secretary has been told to go ahead and allocate those amounts between the States, to set up projects against them, and to

enter into contracts against those allocations; and the supply bill has even stated, year after year, that these acts of the Secretary shall be deemed as constituting a contractual obligation of the United States. So, as long as that policy is continued, the question as to whether you shall appropriate a certain amount of money in the regular bill, or only a part of it in the regular bill and the balance in a deficiency bill, is somewhat immaterial. We are committed to complete these contracts.

Senator McNARY. In other words, if this bill carried only a million dollars, and your projects outlined were to carry \$10,000,000, you would go forward anyhow, and trust to the deficiency bill to carry the balance?

Colonel GREELEY. We would have to if we carried out the instructions contained in the appropriation acts.

Senator McNARY. Then will this amount of \$6,500,000 in any way show up the work against an authorization of \$7,500,000?

Colonel GREELEY. In my judgment it is not a matter of very great importance; but it will require an appropriation of that additional million dollars, presumably in a deficiency bill coming up at the next session.

Senator KENDRICK. Do you happen to know, Colonel, right there, just what amount is now standing as authorized on your records?

Colonel GREELEY. Yes, sir. The authorization for the current year, 1927, is \$7,500,000; but of that only \$775,000 has been appropriated to date. Because the appropriations have been so far behind the authorizations, we have to come to Congress now with a deficiency appropriation for the current fiscal year.

Our situation to-day is this: The money for paying contractors on forest roads is practically exhausted to-day. We estimated that we would require a deficiency appropriation of \$3,000,000 to cover the actual disbursements between now and the 1st of July, the end of the present fiscal year.

Senator OVERMAN. Are these authorizations separate acts?

Colonel GREELEY. Separate from the appropriation acts; yes, sir.

Senator OVERMAN. How many of them are there?

Colonel GREELEY. They have been made for biennial periods from time to time. The last one set up an authorization of \$7,500,000 for the fiscal years 1928 and 1929. The preceding act of the same sort had set up \$7,500,000 for the fiscal years 1926 and 1927.

Senator LENROOT. That is the general road act?

Colonel GREELEY. Yes, sir.

Senator OVERMAN. Oh, that is the general road act?

Coloney GREELEY. Yes.

Senator McNARY. Yes; carried in the general road act was an item for this purpose.

Colonel GREELEY. But, you see, in addition to that act, our appropriation act, following the same language that is given here, has contained this language:

That the Secretary of Agriculture shall, upon the approval of this act, apportion and prorate among the several States, Alaska, and Porto Rico the sum of \$7,500,000 authorized to be appropriated for the fiscal year ending June 30, 1928: *Provided further,* That the Secretary of Agriculture may incur obligations, approve projects, or enter into contracts under his apportionment and

prorating of this authorization, and his action in so doing shall be deemed a contractual obligataion on the part of the Federal Government for the payment of the cost thereof.

That language has been running in our appropriation acts ever since 1923.

Senator KENDRICK. My question was directed at the accrued amounts of authorization that have not been expended. Is there not a considerable sum that is shown on your accounts?

Colonel GREELEY. Yes, sir. For the fiscal year 1927 there is an accrued authorization of \$6,225,000 against which there has been no appropriation. Then for the fiscal year 1928 we have another authorization of \$7,500,000 with no appropriation.

Senator McNARY. And what will be the amount totally expended for roads and trails in national forests for the fiscal year 1927?

Colonel GREELEY. The total to date, do you mean, sir?

Senator McNARY. By June 30, 1927—the end of the fiscal year 1927.

Colonel GREELEY. The total expenditure under this series of appropriations stands to-day at approximately \$36,775,000. That is as of January 1—\$36,775,000.

Senator CAPPER. Covering how many years?

Colonel GREELEY. Going back, beginning with the fiscal year 1921.

Senator McNARY. Colonel, that was not the question I propounded at all. As I read the record you will have expended in 1927, if all your contractual obligations are carried out, about \$12,000,000.

Colonel GREELEY. During the fiscal year 1927?

Senator McNARY. Yes; that is the question.

Colonel GREELEY. Yes, sir; and including all of the road funds.

Senator McNARY. Yes. The truth of the matter is, in some years you have expended less than the authorization given you by Congress?

Colonel GREELEY. Yes, sir.

Senator McNARY. In other years you have taken up that slack and expended considerably in excess of the authorization provided by Congress?

Colonel GREELEY. That is correct.

Senator KENDRICK. Of that year.

Senator McNARY. Of that year; yes. The time is coming, though, when that gap will be filled, and your expenditures and appropriations will offset your authorizations. Is not that true?

Colonel GREELEY. That is correct.

Senator KENDRICK. When will that time be reached?

Colonel GREELEY. We estimate that our expenditure curve will reach its high point during the present fiscal year of 1927, drop off from that date, and probably by the fiscal year 1929 the expenditures will be very close to the \$7,500,000, assuming that that authorization is continued.

Senator LENROOT. Colonel, I probably am dense, but I do not quite understand this yet. On the 1st of next July what will be your balance under existing appropriations? I am not speaking of obligations.

Colonel GREELEY. At the present time, sir, the balance is practically extinguished, and we have pending a deficiency appropriation.

Senator LENROOT. Then on the 1st of July your authorization and appropriation will balance if you get your deficiency?

Colonel GREELEY. No. If we get our deficiency we will still not have used up the authorization for 1927.

Senator LENROOT. Not the authorization, but the obligation.

Colonel GREELEY. The obligations will have been cared for; yes, sir.

Senator LENROOT. On the 1st of July, the obligation and appropriation will balance in case you get your deficiency?

Colonel GREELEY. The obligation and appropriation will balance.

Senator LENROOT. Now, then, for the next year, this item reads:

\$6,500,000, which sum is composed of \$6,225,000, the remainder of the sum of \$7,500,000 authorized to be appropriated for the fiscal year 1927—

And so forth. How do you arrive at that \$6,225,000?

Colonel GREELEY. \$7,500,000 was authorized to be appropriated for the fiscal year 1927. At the present time the actual appropriation against that authorization is only \$775,000, which leaves the \$6,225,000 authorized for 1927 but not yet appropriated.

Senator JONES of Washington. Colonel, right there in connection with that, here is the provision of 1927:

For carrying out the provisions of section 23 of the Federal highway act approved November 9, 1921, including not to exceed \$48,000 for departmental personal services in the District of Columbia, \$5,000,000; which sum is composed of \$3,725,000, the remainder of the sum of \$7,500,000 authorized to be appropriated for the fiscal year 1928, and \$1,275,000, part of the amount authorized to be appropriated for the fiscal year 1927 by the act approved February 12, 1925.

There is at the present time \$1,275,000 appropriated for 1927 instead of \$775,000, as you have just mentioned. I am reading from the appropriation act.

Colonel GREELEY. That is correct, sir. I gave an erroneous figure. The authorization is \$7,500,000. The amount appropriated to date is \$1,275,000. That is right. Then there remains \$6,225,000 authorized but not yet appropriated.

Senator McNARY. Those are the figures that you placed in the House hearings?

Colonel GREELEY. Yes, sir.

Senator McNARY. Now, a final word as far as I am concerned: Is it material whether this item carries the full authorization or not?

Colonel GREELEY. I do not think it is very material, Senator. It means that we will have to come to Congress for two bites each year instead of one.

Senator McNARY. But you are going through with your program just the same?

Colonel GREELEY. We are going through with the program.

Senator McNARY. And it will not be modified or diminished at all?

Colonel GREELEY. No, sir.

Senator LENROOT. Colonel, if you get your deficiency, how is that going to affect this item? This item would not then harmonize, would it?

Colonel GREELEY. That is a point I should like to bring out. The sum necessary to meet our obligations for the rest of the current fiscal year will be about \$3,000,000. The Director of the Budget,

however, wished to cut that to \$1,400,000, which will carry us until the new appropriation under this bill becomes available, presumably by March 4 next. So the deficiency item will come before the Appropriations Committee very shortly for \$1,400,000. That deficiency should be taken out of the authorization for the fiscal year 1927. I think then that it would be necessary to amend the language of this item so as to make the first figure in line 24 read "\$4,825,000."

Senator LENROOT. Instead of "\$6,225,000"?

Colonel GREELEY. Instead of "\$6,225,000"; and then make the last figure in the page, instead of reading "\$275,000," read "\$1,675,000." The effect of that will be to leave \$1,400,000 of the authorization for 1927 to be taken up by this pending deficiency item. We would then carry this \$6,500,000 as an appropriation for 1928 out of what will then be left from the 1927 authorization, plus what is necessary out of the 1928 authorization.

Senator LENROOT. That is, you would deduct from the \$6,225,000 whatever amount is carried in the deficiency bill and add the same amount to the \$275,000?

Colonel GREELEY. Yes, sir.

OKLAHOMA NATIONAL FOREST

Senator KENDRICK. Mr. Chairman, may I ask the Chief Forester about a small appropriation?

Senator McNARY. Certainly.

Senator KENDRICK. You have a forest located in Oklahoma, have you not?

Colonel GREELEY. Yes, sir.

Senator KENDRICK. On which you keep at the present time elk, buffalo, and a lot of undomesticated animals. It has been very strongly recommended to me that I make an effort to secure a small appropriation of about \$3,000 for the purpose of buying and locating on the forest there a small bunch, 25 or 30 head, of pure-strain Mexican long-horn cattle, and keeping them, perpetuating the breed of those cattle. Have you any ideas about that, as to whether that would prove a practicable or advisable thing to do?

Colonel GREELEY. As a museum?

Senator KENDRICK. Yes. You dispose of your surplus buffalo, do you not, now, for market?

Colonel GREELEY. Yes.

Senator KENDRICK. It is reasonable to believe—in fact, it is almost an assured fact—that with such an investment in these cattle they would more than pay their way, and within a few years would return the original cost to the Government, because they breed in a prolific way, and are hardy, and would easily take care of and protect themselves without expense to the Government.

Colonel GREELEY. The idea which prompts that suggestion, I think, is the desire to preserve a small herd of the old strain of Mexican and Texan long-horn cattle which started the cattle industry of Texas, and really started the western open-range cattle industry.

Senator KENDRICK. It is a part of the breed of cattle that perhaps had a vastly greater influence on the settlement and development of the West than any other class of livestock; and as it is now they are

gradually mixing the breeds, so that within a few years that type of animal can not be found on the face of the earth. The plan here is to take a limited number of the pure strain, selecting them from such places as they can get them, probably to cost \$40 or \$50 a head, and locating them there and keeping them as a part of that museum of animals.

Senator McNARY. Where is this location to be?

Senator KENDRICK. In Oklahoma.

Senator McNARY. At our experiment station there?

Senator KENDRICK. No; it is a national forest.

Colonel GREELEY. It is a national forest and a national game refuge. We have 150 buffalo, a small elk herd, a small antelope herd, and a lot of small game. It is a great breeding-ground for wild turkey; and the suggestion has been that it would be very interesting to add as a feature, a sort of a souvenir of the old West, a small herd of the original strain of longhorn cattle, which, as the Senator says, is being rapidly displaced now in the range industry with new breeds and better beef breeds.

Senator KENDRICK. Even in old Mexico the breed is becoming mixed, and, as a westerner would feel, contaminated by an attempt to improve them. As an illustration of what it meant in the development of the western country, in the spring and summer of 1884 the movement of this class of cattle, almost without any breeding whatsoever except the pure strains of Mexican cattle, amounted in numbers to 825,000 head.

Senator CAPPER. What is there to commend the perpetuating of that strain of cattle? Are they not inferior to American native cattle?

Senator KENDRICK. Absolutely, in the same class that the buffaloes are; but as a curiosity they are as well worth perpetuating as any class of animals, and they will soon be extinct unless some effort is made to take care of them. I think it is a highly commendable thing to do.

Colonel GREELEY. You want a place where the old cowboy of the plains can go and feel at home. It would be really a part of a historical museum, would it not?

Senator KENDRICK. Exactly; and, also, it would be initiated in an inexpensive way.

Senator McNARY. How much would it cost—\$3,000?

Senator KENDRICK. I think \$3,000 would give them a splendid nucleus.

Senator McNARY. Are you going to offer that as an amendment?

Senator KENDRICK. I thought I would, but since it has to do with the forests I wanted to talk with the colonel about it.

Colonel GREELEY. It would be a very interesting and worthwhile thing to do as a historical souvenir.

Senator KENDRICK. A historical collection?

Colonel GREELEY. Yes. It could not be justified on economic grounds.

Senator KENDRICK. We are now bringing and did bring. I believe, from the north country, moose into the Yellowstone and other parks, and we are breeding them there; not only that, but they are multiplying, and we are allowing people to kill them. I see no reason why this should not be done.

BUREAU OF PUBLIC ROADS

Senator McNARY. In the item of the Federal highway cooperative funds, there is a difference of practically \$900,000 between the amount carried in the bill as it comes from the House and the amount estimated for and authorized in 1926. Of course, that is under Mr. MacDonald; it is in his charge?

Colonel GREELEY. Yes, sir. Mr. Bishop is here, and represents that bureau.

Senator McNARY. Do you want to appeal to this committee to increase the item to the amount of the estimate as authorized?

Mr. JUMP. I do not think the department has any recommendation to make on that point. What Colonel Greeley said about the forest roads applies to this.

Senator McNARY. That is, you contract up to the full amount of the authorization or any unexpended balance, irrespective of what it is?

Mr. JUMP. Yes, sir. It is more clean-cut in this case than it was in the case of the Forestry Service.

Senator McNARY. I appreciate that; it was made clear in the House committee; but I want to know if you desire that on the forest road matter.

Mr. JUMP. Nothing has been said to us.

Senator McNARY. Is there anything else that the department desires to present to the committee?

Mr. JUMP. That, I think, is all, except some clerical changes.

Senator McNARY. I want some one here to take up the leaf-hopper item when I propose it.

Mr. JUMP. To-day, or at a later day?

Senator McNARY. No; later, if agreeable to the committee.

(Thereupon, at 3.45 o'clock p. m., the subcommittee adjourned until to-morrow, Wednesday, December 29, 1926, at 10.30 o'clock a. m.)

AGRICULTURAL DEPARTMENT APPROPRIATION BILL, 1928

WEDNESDAY, DECEMBER 29, 1926

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met, pursuant to adjournment, at 10:30 o'clock a. m. in the committee room, Capitol, Senator Charles L. McNary presiding.

Present: Senators McNary (chairman), Warren, Jones of Washington, Lenroot, Overman, Harris, Kendrick, and Capper.

STATEMENT OF W. A. JUMP, BUDGET OFFICER, DEPARTMENT OF AGRICULTURE

Senator JONES of Washington. Mr. Jump, I want to ask you about some items for the record while we are waiting for the other people.

PLANT DISEASES

I have received several letters and telegrams, largely from fruit growers, with reference to three items: \$15,000 to investigate ornamental-plant diseases; \$10,000 to investigate the curly-top diseases of truck crops; and \$5,000 for the investigation of nematode diseases of bulbs and other crops. What have we in the bill with reference to those matters?

Mr. JUMP. We have not anything for the curly top, Senator, unless the item you spoke of yesterday, Senator McNary, would cover that. Did you intend to cover that in the amount of money you referred to for the sugar-beet insects?

Senator MCNARY. Yes. I shall offer at the proper time an amendment on that subject. It is a very important matter to the beet industry.

Mr. JUMP. That is the matter you discussed with Doctor Brandes and Doctor Graff a short time ago?

Senator MCNARY. Yes; attempting to locate the virus that the leaf hopper brings into the leaf.

Senator JONES of Washington. I had that under the term "leaf hopper" heretofore; but "curly top" covers that?

Senator MCNARY. Curly top is the effect the virus has on the leaf.

Mr. JUMP. Doctor Taylor will be here in a short time, and he can discuss that subject if you want to go into it.

Senator JONES of Washington. No; I think that is enough. Now, what about this investigation of ornamental-plant diseases?

Mr. JUMP. I do not recall that we have anything in the bill—any increase for that.

Senator JONES of Washington. You say "an increase"—what have you for it?

Mr. JUMP. I can not answer that offhand, but I will do so a little later in the morning. I shall have to look up these projects. We do some work on ornamental trees and shrubs, but my impression is that it is negligible. Doctor Taylor will give you full information about it.

Senator JONES of Washington. And then this matter of diseases of bulbs and other crops.

Mr. JUMP. We have two increases in the bill for bulb work. One is for bulb insects, under the Bureau of Entomology, and one is for better cultural methods of bulbs under the Bureau of Plant Industry.

Senator JONES of Washington. All that these people are urging here is \$5,000; and they use this term—I have not had an opportunity to look it up—"nematode diseases."

Mr. JUMP. Yes; that comes under the Bureau of Plant Industry, but under another appropriation.

Senator JONES of Washington. You already have something covering that in the bill?

Mr. JUMP. Yes. There is a small amount covering it, but I can not tell you offhand how much it is. Doctor Taylor can tell you about that, and he is on his way here now. He is very familiar with that.

HANDLING FRUITS IN TRANSPORTATION

Senator JONES of Washington. Now, for the proper handling of fruits in transportation in the winter time: They seem to be urging the necessity of study to protect fruit from freezing, etc., in transportation.

Senator McNARY. That was your item two years ago.

Senator JONES of Washington. Yes. How much have you in the bill for that; do you know?

Mr. JUMP. I do not know what amount we are spending on that, but I do not believe any additional amount has been included in the bill for that particular project.

Senator JONES of Washington. You do not think that has been included in the bill?

Mr. JUMP. I think not. We are spending some money on that work at the present time, but there is no increase requested for it.

Senator JONES of Washington. Then I want to look that up, and find out just how much you have for that.

Mr. JUMP. That is the nursery-stock investigation?

Senator JONES of Washington. No; that is the transportation and handling of fruit, especially apples. The Wenatchee people are interested in that.

Mr. JUMP. In transit and storage?

Senator JONES of Washington. Yes; in transit and storage, to protect them from freezing, etc.

Mr. JUMP. Before the morning session is concluded I will give you notes on all of those matters. Doctor Taylor is familiar with

them all, and that is why I had asked him to be here. I anticipated that he would be here by now, but he has not yet arrived.

WHITE-PINE BLISTER RUST

Senator JONES of Washington. All right. These other items are general ones about which we have gotten telegrams. I have received a great many telegrams with reference to insect ravages on forests, the beetle, and other timber insects, and the white-pine blister rust. What have we in this bill for the white-pine blister rust?

Mr. JUMP. The House committee put in an increase of \$100,000 for the white-pine blister rust control work in the Western States.

Senator JONES of Washington. What is the total amount?

Mr. JUMP. I will give you the total amount in just a minute.

Senator JONES of Washington. In some of their letters or telegrams these people asked me for \$273,500. I take it that is to cover all the country.

Mr. JUMP. I think that refers just to the West. The total amount in the House bill is \$471,520, which is \$100,000 increase provided by the House over the current act. The increase is for the work in the West, which will bring the allotment for the West up to \$260,000 for next year. That is taken care of, I believe, to the satisfaction of everybody concerned by the action of the House committee.

STATEMENT OF HON. FRANK R. GOODING, A SENATOR FROM THE STATE OF IDAHO

MARKET NEWS SERVICE

Senator McNARY. We will refer now to page 54 of the bill, line 21. The language refers to the market news service. That item has been increased from year to year, and the service has been extended. Senator Gooding is here. I have been advised prior to the meeting that the great city of Boise does not receive this service at all; and I think he has asked for an appropriation which might bring the service from Salt Lake over to Boise.

Senator GOODING. Yes, Mr. Chairman; Idaho has been without adequate news service all through the years that this service has been in operation. We have received some service, but it has not been satisfactory. The State is asking for the leased wire to be extended from Salt Lake to Boise at a cost, so Doctor Henny advises me, of \$10,716. The State, however, will have to make an expenditure almost equal to that. They will furnish the office and disseminate the news; and it will take an appropriation by the legislature this year, to disseminate this news in one way or another, of something like \$7,500.

The State is quite willing to do that. I think we all understand the importance of news service to the whole country; and, as I understand, most of the States are enjoying it. Idaho is shipping something like 30,000 cars of food and potatoes and other carload products to which this news is important; and without the news service in its best form it is not much service at all.

Senator McNARY. What amount did Mr. Tenny tell you would bring it from Salt Lake to Boise?

Senator GOODING. \$10,716. That merely takes care of bringing up the wire and the operator. All the rest of the expenditure is taken care of and borne by the State.

Senator McNARY. Are you receiving any service whatsoever in that section of the country?

Senator GOODING. I understand that they have some service sent up from Salt Lake, but it is far from being satisfactory.

Senator McNARY. This is to be a leased wire?

Senator GOODING. Yes.

Senator McNARY. Not a relay over wires now operated by private companies?

Senator GOODING. No; I understand this is a leased wire—the same service that Salt Lake and the other cities get, and California gets, and, I think, the rest of the country. It is merely efficient service, which we are not getting at the present time.

Senator McNARY. Is Salt Lake getting the complete service by leased wire?

Senator GOODING. Oh, yes; and California.

Senator McNARY. And this puts Boise on a parity with Salt Lake?

Senator GOODING. Yes; that is all. The fact that the State itself is willing to appropriate nearly as much money to disseminate the news and to make it efficient shows the importance of it, as the people feel, to the State of Idaho.

Senator OVERMAN. Has the State already done it?

Senator GOODING. They are doing the best they can, but they are not getting it satisfactorily.

Senator OVERMAN. I mean, have they made an appropriation?

Senator GOODING. No; but they will at this session.

Senator McNARY. This bill provides for cooperation on the part of States, communities, or cities. Mr. Jump, have you any data on this item—Market News Service?

Mr. JUMP. I have here a memorandum from Mr. Kitchen, the business manager of the Bureau of Agricultural Economics, saying that there was some inquiry about extending the market news service to Boise. He points out that the bureau is now maintaining an office at Idaho Falls only for about six or seven months of the year to issue potato reports to the growers and shippers in that area; but that is a fragmentary service. To extend the leased wire from Salt Lake City down to Boise, he says, will cost approximately \$10,716 per annum, as Senator Gooding has just stated; but that would merely pay for the cost of the extension of the wire and the salary of the operator. To maintain an office there with a telegraph operator and with a news-service man, etc., would cost, he estimates, \$20,000 for the full year, or \$15,000 if we are going to operate it for a period of nine months. Of course that is the total figure, and the Senator says the State is in position to assume part of that.

Senator McNARY. You are asking for only \$10,716?

Senator GOODING. Yes.

Senator McNARY. For the leased wire?

Senator GOODING. For the leased wire and to pay the operator; and the State will take care of the rest of it.

Senator McNARY. The rental of the office and the cost of operation?

Senator GOODING. Yes.

Senator LENROOT. Will you take care of the operator?

Mr. GOODING. No; this \$10,716 takes care of the operator.

Senator McNARY. No.

Mr. JUMP. That would merely be the fee to the telegraph company for extending the leased wire down from Salt Lake.

Senator McNARY. The salary of the operator is not taken care of in the \$10,716?

Mr. JUMP. No, sir; that is the telegraphic charge.

Senator GOODING. Mr. Tenny says in his letter to me that it includes the salary of the operator at Boise.

Mr. JUMP. That is correct. I have one memorandum on this matter on the basis of the Federal Government assuming the entire expenditure, but from the letter to the Senator it is clear that I was wrong.

Senator McNARY. Is Boise receiving any service whatsoever now?

Mr. JUMP. None at all. Idaho Falls is the only place to which we are extending any service.

Senator McNARY. Have you not two forms of service—one by leased wire and the other by relay?

Mr. JUMP. Yes; and that is what this service to Idaho Falls is, by commercial wires. We have a great many places where that service is used.

Senator McNARY. Is not that true of the Northwest in general? For instance, does not the leased wire stop at San Francisco, and do not Washington, Oregon, and those States have the commercial wire?

Mr. JUMP. That is all commercial.

Senator McNARY. And it is not as efficient as the leased-wire service?

Mr. JUMP. No. It is a matter of economy. We have not the funds to run the leased wires up there.

Senator LENROOT. How many leased-wire stations have we, Mr. Jump?

Mr. JUMP (producing map). This map, I think, will be the easiest way for you to see it. This shows the present leased-wire system.

Senator McNARY. Can you give that in such a way that it may be reflected in the hearings?

Senator JONES of Washington. What service have you in the Yakima and Wenatchee country?

Mr. JUMP. I can not answer that offhand. We have a number of temporary stations where we place a man and he gets reports and informs the local shippers during the shipping seasons. I can put in the record a statement of that, or we can have Mr. Tenny come up if the committee desires to discuss the situation more fully.

Senator LENROOT. I can just read off these names. The leased-wire cities are Jacksonville, Atlanta, Raleigh, Richmond, Washington, Baltimore, Lancaster, Philadelphia, New York, Boston, Pittsburgh, Columbus, Cincinnati, Chicago, Plymouth, Stevens Point, Waupaca, St. Paul, Minneapolis (they are all on the same wire), St. Louis, Jefferson City, St. Joseph, Kansas City, Omaha, Ames,

Hastings, Wichita, Oklahoma City, Fort Worth, San Antonio, Denver, Salt Lake City, and San Francisco.

Senator McNARY. When the leased-wire service reaches San Francisco it is relayed north over commercial wires, which is a fragmentary distribution of the service. That applies to practically all the intermountain country.

Senator OVERMAN. And they pay for that?

Senator McNARY. Oh, yes; of course.

Senator GOODING. I know no part of the country that needs this information more than the northwest, because we are the heavy shippers of fruit and potatoes.

Senator KENDRICK. I want to ask an important question, for information, as to the system under which this service is conducted. It is somewhat new to me. Does the Government own or lease these lines and furnish the information to market centers free of cost to producers and distributers?

Senator McNARY. To a very large extent, Senator. As I recall, up to five years ago the service was very incomplete, and might be designated by a straight line from Washington to Chicago to Omaha, where it stopped. Since that time we have extended the leased-wire service, which is the highly perfected service, down into the South and up into the New England States and across the continent to San Francisco. All other services are commercial or fragmentary services taken off of these lines at commercial rates, which distribute the news affecting markets.

Senator OVERMAN. Mr. Jump, how do you distribute the news on the leased wire? Do you give it to the press every morning?

Mr. JUMP. We not only give it to the press, but we give it to market agencies and to farmers' cooperative associations, who have representatives at the terminal markets. It is made available to the public in the broadest sense of the word.

Senator OVERMAN. Does the press get it every morning?

Mr. JUMP. Yes. A great many papers print the reports.

Senator McNARY. And it is radioed, too, during the day.

Mr. JUMP. It is also distributed by radio during the day, so that individual producers may receive the reports. The mail also is used extensively for the dissemination of the information.

Senator GOODING. The State usually acts through its commissioner of agriculture.

Mr. JUMP. That is correct.

Senator GOODING. In my State they do it very nicely at Boise city, and disseminate it very satisfactorily to every part of the State, either by radio, mimeograph, or in some other way. Of course we give them the best service we can afford to give.

Senator LENROOT. Senator Gooding, if this should be put in, how would it be utilized as compared with present facilities?

Senator GOODING. We have not any.

Senator LENROOT. No; but if this leased wire is put in, how will it be utilized by your people, I mean?

Senator GOODING. By my people? The commissioner of agriculture at Boise would, of course, accept the news and disseminate it through the State. We have a very active commissioner out there.

Senator LENROOT. How would he disseminate it?

Senator GOODING. Either through radio or over the phone, I suppose, or through letters. I am not in touch with that kind of work, but I can understand, of course, that it can be done very nicely by radio, and will be done, I think, largely by radio; but the State can take care of that very nicely, and we are willing to appropriate the money to do it.

Senator McNARY. Mr. Jump, there seems to be some doubt in the minds of some of the members of the subcommittee as to just how this thing operates. Can you tell us in a word?

Mr. JUMP. The radio is being used more and more extensively for the dissemination of these reports. The reports deal with prices, receipts, shipments, etc.—the whole picture of the market for that day. Our market reporters are on hand at a very early hour in the morning in the livestock, poultry, and meat markets, and the fruit and vegetable markets, the shipping and terminal markets, and they make up a picture statistically which is put on the circuit, and the report is sent over the leased wires, and all of the cities on the wire take it off at the same time. They have their own operators and they all get on the circuit at the same time. If the Senator's proposal were adopted, therefore, it would mean that Boise would get on the same circuit that all these western cities are on, and get the full service by tapping in on that; but it is expensive, because there would have to be a wire cased to connect with the main circuit.

That, in a word, is the distribution.

Senator McNARY. Would the Government construct the wire or purchase the wire?

Mr. JUMP. No; the wires are leased from the American Telegraph & Telephone Co. They are the same wires that the Associated Press use, but we have them at certain stipulated hours of the day.

Senator McNARY. Is it a leased wire?

Mr. JUMP. It is a leased wire, just the same as the Associated Press has at certain hours. Then at each of these cities we have an office, and in that office a mimeograph machine usually is one of the most important parts of the equipment, because the minute the stuff is taken off the wire stencils are cut and the material is mimeographed and put in boxes that are available in these markets. We have a box down here at the farmers' market—at least we used to have; I do not know that we still have one there—where anybody can go and get the Government report showing how many carload shipments, how many boxes of this, and how many crates of that, are received at that market that day and the prices that are prevailing. Other subscribers get the stuff in the mail; they get it the next day. It is put in the mail immediately. It is also given to the press, and is used quite extensively by the press.

The radio is being used more and more extensively; but the place where we run into a snag on the radio is that we can not collect news in that way, and a very essential part of this is to collect the news in these markets and put it on the circuit for the benefit of all the other cities. Omaha collects its news, it goes on the circuit, and every other city on the circuit gets it. Chicago collects its market report on the livestock market there in the yards in the morning, and all the others get that when that is put on the leased wire circuit. That is why we have to use the leased wire more

extensively than would seem to be necessary in considering just the dissemination. It is used for the collection, and it is the collection that makes the service expensive, because we have to have a man who knows the market, and who talks the language of the market, and who can get the information, and get it quickly and effectively.

Senator JONES of Washington. Let me ask you a question, Mr. Jump. If this leased wire were put in at Boise, as I understand it, the difference between the service in Boise, for instance, and in the Yakima Valley, Washington, would be that you would furnish all this news up to Boise free, while whatever news they get in the Yakima Valley from San Francisco they have to pay for?

Mr. JUMP. I am not sure of that. You see, we have an office in Portland, but that office is not on the leased wire. The telegrams are sent at our expense, and we have not the money to have a leased wire from San Francisco up to Portland. Therefore, we put that on the commercial wire, and also use the radio; and we pay for that ourselves, I am quite sure, although we have many different types of cooperative agreements under this work. We just have had to meet the local situation and do the best we could, and give them the best service we could, in keeping with their resources; so I can not answer offhand as to each arrangement.

Senator JONES of Washington. I should like to have you point out in the record, if this leased wire should be granted to Boise, what would be the difference between the service furnished there and that furnished in the Yakima Valley, Wash.

Mr. JUMP. We shall be glad to do that. In general, however, the difference would be that the complete service on this western circuit going out to San Francisco would be made available to the producers of Idaho from this tap that they would have up to the leased wire at Salt Lake, whereas the people who are not on the leased wire only get what is sent to them, special reports on special commodities; but I will put in the record a more complete statement from the bureau.

Senator OVERMAN. Who collected these statistics, say, at Raleigh, N. C., before they are sent out from there?

Mr. JUMP. I do not know that we collect anything at Raleigh, Senator. The collection I spoke of were usually at the larger terminal markets, such as Chicago, Philadelphia, Kansas City, etc.

Senator OVERMAN. Then take Washington. Who collects them here?

Mr. JUMP. We have a man here who goes down to the Potomac freight yards early in the morning. My recollection is that he goes to every yard around this city where there are large shipments coming in or passing through. We have a man here who does that.

Senator OVERMAN. Then he telegraphs that all across?

Mr. JUMP. That is put on the circuit down here. We have a circuit that goes thru' Washington, and that is put on there and goes simultaneously to a lot of the cities on that wire circuit.

Senator OVERMAN. I suppose that is done in every central market?

Mr. JUMP. It is done in most of the large markets covered by the present system; yes, sir.

Senator LENROOT. Senator Gooding, what portion of the year does your marketing period cover? Do you have fruit and potatoes? Are those the principal things?

Senator GOODING. Lettuce, fruit, and potatoes.

Senator LENROOT. What is the marketing period there—what portion of the year?

Senator GOODING. The marketing period for fruits starts in July. We have prunes and apples—it is continuous, you might say—and then butter and eggs and so on. The marketing report is used also for butter and eggs and cheese. We are becoming very heavy shippers of butter and eggs and cheese.

Senator KENDRICK. You ship vegetables the whole year around, do you not?

Senator GOODING. Pretty much. Potatoes, of course, are stored in the State and shipped out during possibly about nine months of the year.

Mr. JUMP. Nine months is the period that they mention in the memorandum I have.

Senator GOODING. I think nine months would cover the matter; but it seems to me this service is so important that it ought to be extended, of course, where it has not already been extended, to every part of the country. The Northwest would like to have it and should have it, of course, because they are a mighty factor in supplying the country with its fruits and vegetables of all kinds.

Senator McNARY. I will state to the committee that I have asked Mr. Dunlap to have Mr. Tenny—who has charge of the administration of this particular provision of the act—come up and appear before the committee. Thank you, Senator Gooding.

Senator Stewart is here on an item covering this matter. We will hear him, and then we will hear Senator Pepper.

(Senator Gooding submitted the following telegram for the record :)

BOISE, IDAHO, December 28, 1926.

Senator FRANK R. GOODING,
Washington, D. C.:

Respectfully solicit your support at Senate hearing to-day in favor \$50,000 appropriation forest insect, and \$25,000 fire warning work.

HARRY C. SHELLWORTH.

STATEMENT OF HON. DAVID W. STEWART, A SENATOR FROM THE STATE OF IDAHO

MARKET NEWS SERVICE

Senator STEWART. Mr. Chairman and gentlemen, I am here with a similar request for the livestock market at Sioux City, Iowa. The Government statistics show that in 1924 Sioux City received 835,741 cattle and calves, and in 1925 received 896,761 cattle and calves.

Senator McNARY. Will you pardon me just a minute, so that we may lay a proper foundation for your statement? Do you want a leased wire in there, or commercial service?

Senator STEWART. We want a leased wire, Mr. Chairman, that would run from Omaha.

Senator LENROOT. You had one at one time.

Senator McNARY. Yes; but this is what happened last year: Senator Cummins offered an amendment, which was pending. He was not able to be here, and we took up the matter and included it in the bill, but when it got in conference the House conferees caused it to be removed, and it went out of the bill.

Senator LENROOT. Senator Stewart, you had it at one time; did you not?

Senator STEWART. No, Senator.

Senator McNARY. No; they never had the service.

Senator LENROOT. There was a question of rentals that was involved there.

Senator McNARY. That was Des Moines.

Senator STEWART. Yes; that was Des Moines, Senator. Now, may I proceed?

Senator McNARY. Yes, Senator. What expense have you there?

Senator STEWART. The department says that it will cost \$14,500.

Senator McNARY. \$14,500?

Senator STEWART. Yes.

Senator McNARY. For leased-wire service. Are you going to cooperate?

Senator STEWART. Yes. I have no figures on that, Senator.

Senator McNARY. Does that \$14,500 include the cost of the wire and the cost of the salary of the operator and the rentals and the incidental expenses?

Senator STEWART. That is the entire expense; \$10,000 a year for the operating overhead and \$4,500 a year for the leased wire.

Senator LENROOT. I think once before we had the question up as to whether the station at Ames did not cover that.

Senator STEWART. Of course, that is impossible, because it has no connection, practically. If you will let me proceed and put my statement in the record then you will see the picture.

Senator McNARY. Very well.

Senator STEWART. In 1924 there were received at the stockyards at Sioux City 3,732,178 hogs, and in 1925 there were received at that market 3,395,934 hogs.

In 1924 Sioux City was the eighth livestock market for cattle and calves and fifth in hogs.

In 1925 Sioux City was seventh in cattle and calves and fourth in hogs of the entire United States.

In other words, Sioux City, as Chicago says, is the fastest growing livestock market in the country; it is increasing, and the reason that Ames can not serve us is because our trade territory extends northwest. We serve northwest Iowa, northeastern Nebraska, southwestern Minnesota, all of South Dakota, North Dakota, up into Wyoming and Montana, for cattle and calves; so that our territory runs in an entirely different territory than Ames. Ames is 200 miles east of us in the center of the State.

Senator McNARY. Is Ames a livestock market?

Senator STEWART. No; Ames is merely the seat of the State agricultural college, and it has the leased-wire service for the distri-

bution of statistics, while we want our leased-wire to give market service for the active aid of the individual producers and shippers who are shipping in there and for the aid of our local market. This year's receipts are exceeding last year's. At the yards this year they received over 800,000 hogs delivered by trucks; so that you see the value of this service to the individual farmer, who will receive it by radio. He will know the state of the market and the state of Chicago and Omaha and other markets to which he might ship, and can, on the next day, deliver his stuff on our market if the market is favorable to him.

Senator McNARY. Are they receiving partial service now?

Senator STEWART. Only what the last stock exchange and the stockyards company pick up for them and distribute through a daily paper issued by the livestock company called the Livestock Record.

Senator McNARY. Is that sent to the various farmers?

Senator STEWART. Yes; that is sent all through the trading territory there, and we have a broadcasting service through which they distribute grain and livestock service now; but of course not being on the leased-wire service we do not get the complete picture of all the markets of the country that we could get if we were on the leased wire service.

To give you an idea of the territory, Mr. Chairman, that our livestock market service covers, we serve a population of 2,000,000 people. We serve a total of 1,961,982 acres of producers in agriculture. We serve a territory of 213,304 square miles.

We paid last year to the agricultural producers \$180,908,000. At the Sioux City market we paid for livestock alone \$151,000,000.

These figures are to give you the idea of the importance of this market to that great trade territory out there.

In addition to this, I notice in the report of the hearings that some mention was made that the department was gathering information in regard to dairy products. Last year there was made at Sioux City 35,068,000 pounds of butter. Sioux City is one of the biggest dairy centers in the United States.

We paid for cream \$11,410,000 last year, and we paid for milk \$2,310,000.

We paid for poultry \$1,971,524.

We paid for eggs \$1,626,000.

In addition to that, Sioux City has now become a great grain center. We have our terminal elevators there, and we received at Sioux City 12,500,000 bushels of grain.

So that you see the complete service is needed for our trade territory; not only for the great livestock production, but the production of grain and the production of eggs and poultry and milk and cream.

Senator OVERMAN. If this was located at Sioux City, would it not do the same work as is done by the station at Ames?

Senator STEWART. No, Senator Overman. That station at Ames is used by the State agricultural college for the dissemination of information throughout the entire State. Of course a great deal of the State—not a great deal of it, but say one-half of the State—ships to Chicago because it is on the main line of the railroad going right into Chicago, and they have established trade connections in there. That is the reason that it does not serve us, because our trade territory goes up in through five different States, you see, draining right down direct from Montana, Wyoming, and the Dakotas and Nebraska and southern Minnesota, into Sioux City.

Senator McNARY. What is the distance between Sioux City and Omaha, Nebr.?

Senator STEWART. It is 200 miles by train.

Senator McNARY. It is closer than Ames?

Senator STEWART. Yes.

Senator LENROOT. Do they not get market information from Omaha?

Senator STEWART. Not except as the livestock exchange picks it up.

Senator LENROOT. How it is disseminated out of Omaha?

Senator STEWART. They disseminate it, I suppose, through their mimeographed letters and by charts and reports.

Senator LENROOT. By radio?

Senator STEWART. And probably by radio; but whether or not in the day time that would come up in that way; there are so many things interfering with their wave distribution, now.

Senator McNARY. Senator, if the law provided for cooperation at Sioux City in a service to meet the needs there, would there be cooperation?

Senator STEWART. Without authority at all to speak on that matter, I would guarantee that they would be very glad—the livestock exchange and the Sioux City stockyards company and the farmers' cooperative, and commission firms there, I am sure would be glad—to cooperate, especially in the matter of space, and things of that kind. I am sure there would be no rental charges.

Senator LENROOT. I would like to ask Mr. Jump if we did not have something at Sioux City a few years ago, and if the question of the lack of cooperation did not come up.

Mr. JUMP. I think what you have in mind is probably the grain office. They were about to close the grain supervisor's office there at one time and, as I recall it, Senator Brookhart came in with some communication from the chamber of commerce in which they were offering to provide space. This committee appropriated a small amount to continue that service. I think that is what you have in mind.

Senator LENROOT. I thought we had a service there and they declined to pay the rental, and wanted us to pay it.

Mr. JUMP. As I recall it, there was a reduction in the appropriation for the grain standards appropriation and we said, in order to meet that, that we would have to close up that office because we could not pay the rent at Sioux City. That was an office where we had just one man; and Peoria, Ill., was another one.

I am not sure, however, but that Sioux City did not have market-news service during the war. During the war this service was more complete. Mr. Tenny is the authority on this whole subject and is now in the room.

STATEMENT OF MR. LLOYD S. TENNY, CHIEF OF THE BUREAU OF AGRICULTURAL ECONOMICS

Senator McNARY. Mr. Tenny, we are discussing the market news service in connection with its proposed extension to Sioux City and Boise City. Senator Jones desires to ask you as to the quality of service, especially in the States of Washington and Oregon.

Mr. TENNY. We have been handling the service over our leased wire as far as San Francisco. From San Francisco, which is the present terminus of the wire, we are relaying that information by various kinds of commercial wires.

We have in the livestock business a type of service that is maintained by the wire people themselves, known as the C. N. D. service, which is a commercial service which we utilize. It gives a rather complete picture every hour or so during the day of the livestock markets, and we have an arrangement with the wire people by which they practically take our information and send it in that way, which is a reduced service. That is, they have many subscribers to the service, and by that method they get a cheap service.

Senator JONES of Washington. Do the subscribers have to pay?

Mr. TENNY. The subscribers have to pay; and in this particular case we are the subscriber, and we pay the C. N. D. charges. That is under our livestock work.

We maintain a livestock office in Portland which receives this information over the leased wire and collects additional information at Portland, and issues bulletins, and uses the radio and the press of Portland, maintaining there a fairly satisfactory livestock service.

Then we also maintain in the Northwest a fruit and vegetable service, in which case we just simply take off what is of interest, as much as we can, off of the leased wire, and send it to our northwestern fruit and vegetable and livestock offices.

Senator McNARY. Where are they located?

Mr. TENNY. We have one in Portland the year around; and then we maintain a service for apples only at Spokane.

Senator JONES of Washington. What about Yakima? Yakima is in the great apple region.

Mr. TENNY. They get service from Spokane.

Senator JONES of Washington. Why do you not send it to Yakima?

Mr. TENNY. It was simply a question of determining where we might best maintain our offices in connection with other offices we have. We have an office in Spokane for general service, and we have contemplated other offices up there, Senator, but for various reasons have not established them.

Senator McNARY. What is the difference between the present service on commercial rates on the commercial lines, and the full leased service?

Mr. TENNY. That depends, Senator McNary, on whether you are talking about the same service. If we have a leased wire we can increase the service. That is the primary importance of the leased wire. If we are sending just what we are sending now, we can send it cheaper by commercial wire than by the leased-wire system; but we can not, under that arrangement, of course, give a complete service such as we furnish on all leased-wire points.

Senator KENDRICK. In sending out your reports on the livestock markets to the newspapers, who pays for those reports?

Mr. TENNY. We deliver them almost in all cases to the local newspapers; the newspapers, primarily, in the markets. I do not think in the Northwest in any case we are sending wires to newspapers that are outside of our office city. If they want that service we send it to them, I think practically always, if not always, at newspaper rates, they paying the charges of the wire.

Senator LENROOT. I notice you have a leased wire at Hastings, Nebr. How does that come about?

Mr. TENNY. It comes about through the fact that we go through Hastings, and we made an arrangement there about a year ago—

Senator LENROOT. No, you do not go through there.

Mr. TENNY. Those diagrams such as you are looking at do not necessarily reveal exactly where the wires go. I will ask Mr. Kitchen about that. Do you know whether or not we have a little leg there, Mr. Kitchen?

Mr. KITCHEN. It is very small. The wire follows the nearest railroad mileage, and putting in this at Hastings, the only cost we incurred was the cost of the operator, and \$600 for the installment of the key; and the reason that we want it there is because they have one of the largest high-power radio stations in the Middle West; and we are serving that whole Middle West country through that radio station, perhaps more effectively than we could in any other way.

Senator LENROOT. Then is it true that with the exception of Ames, Iowa, our leased wires are only on through routes between great terminals?

Mr. KITCHEN. Largely so.

Senator LENROOT. Can you give us any estimate of what the cost would be to furnish a leased wire service to the country generally?

Mr. TENNY. I can not; because that all depends on what you mean by "generally." During the war we had practically a complete national service on market news. Mr. Kitchen, do you remember what the appropriation for that service was? Perhaps Mr. Jump can remember that.

Mr. JUMP. My recollection is that it was something over a million dollars.

Mr. TENNY. My impression was that it was \$1,100,000; but at that time we had what we have always had up to this year, a salary roll apart from the appropriation itself.

Mr. JUMP. The telegraph rates were very different, however. We had war rates from the American Telephone & Telegraph Co., and for the public service wires they are now on a commercial basis in their contract with the department.

Mr. KITCHEN. During the war the telephone and telegraph company came to us and gave us a 50 per cent rate; that is \$12 per mile per year. Then afterwards they put us on a commercial basis, at \$24 a year per mile. We can not, therefore, maintain nearly as great a mileage as we could then, even with the same appropriation.

Senator KENDRICK. Are your rates with these telegraph lines reasonable?

Mr. TENNY. They are the absolute commercial rates.

Senator KENDRICK. Then they make no concessions to the Government?

Mr. TENNY. At the present time none whatever on the leased wire basis.

Mr. KITCHEN. Those rates are filed with the Interstate Commerce Commission and are approved by them.

Senator JONES of Washington. Mr. Tenny, take the Boise City section in Idaho and the Yakima section in Washington; they have now substantially the same character of service, as I understand it? Neither one is on a leased wire?

Mr. TENNY. Yes, approximately so. Neither are on the leased wire.

Senator JONES of Washington. If a leased wire was extended from Salt Lake City up to Boise, and they gave them that service by leased wire, what would be the difference between the service for Boise and in the Yakima country? I mention the Yakima country because that is one of the great fruit sections of the Northwest, as well as being a great vegetable growing section. I think that its fruit and vegetables last year were reckoned at about \$60,000,000. I would like you to point out the difference in the service that would be given by leased wire in the Boise section and in the Yakima section.

Mr. TENNY. Boise would have a complete service while Yakima would be served from Spokane.

I would say as to the arrangements, in so far as they have been made on the part of the Idaho people, we have not committed ourselves, in the Department of Agriculture, to do anything more than to run into Boise, to put a drop there, and put an operator there. The state will then put up all the necessary funds to put the personnel into that office to digest the information, and to distribute it throughout the State of Idaho. That, according to our present understanding and our present estimate, will be done wholly by the State people.

Senator JONES of Washington. I am not concerned about that. What I am concerned about is, if you do what is asked for Boise, and leave Yakima as it is, what will be the difference in the service to the two sections?

Mr. TENNY. The Boise service will have on it all the service that is on our western leased wire, which will be a rather complete fruit

and vegetable service, including not only apples, but lettuce and other commodities that they grow in the Boise territory. It will contain quite a bit of information on livestock, and particularly on sheep, which can be distributed there if the State makes it available to the people.

Senator JONES of Washington. I understand that that will be done.

Mr. TENNY. Yes. It will contain the egg market of New York and some of the eastern markets, and San Francisco. It will carry the butter markets of the country in a broad, general way. It will carry all the information that is on our leased wire, which will be made available in Boise.

Senator JONES of Washington. That is not available in Spokane?

Mr. TENNY. That is not available in Spokane; and it would not be, therefore, available in Wenatchee or Yakima.

Senator JONES of Washington. That is all.

Senator LENROOT. Then I would ask, if we can give Idaho this service, would you refuse a like service, say, to the Imperial Valley and southern California, and to the Southern States? In other words, has Idaho any claim to be differentiated from these other localities?

Mr. TENNY. In our opinion, no. Our policy has been, and it has been strictly maintained, so far as the department's attitude goes, that the leased wire should be extended as much as is necessary to collect all the information; that it should be used for distribution to the main markets of the country, and from those main markets to as many people as we can reach.

Then, if a State is particularly interested, as certain States have been and are, in an intensive distribution of this market information from all the major markets of the country, it was primarily a State function.

Senator McNARY. Are you requiring the cooperation of the States in regard to this service in all instances?

Mr. TENNY. In the collection of the information, no; not at all. We not only are not asking for it, but we really do not want any. For the distribution, yes.

In addition to all this service I have been describing, which is hitched up with the larger markets, we have something like 30 stations in fruits and vegetables alone. Those stations are maintained there for the purpose of giving to the producers, the shippers, and other interests in the markets that are distributing the commodities out of that territory; daily, up-to-the-minute information on movements from that territory and competing territory, or arrivals in all the important markets, the number of cars unloaded each particular day, the number of cars that have arrived that are not unloaded, and the price movements during the day. We are giving that intensive service to a region like the Imperial Valley, for instance.

Senator McNARY. Is this information distributed throughout the country?

Mr. TENNY. Yes; pretty generally.

Senator McNARY. Will you not place in the record a statement showing where these stations are located?

MARKET NEWS SERVICE ON FRUITS AND VEGETABLES

Temporary field stations opened between July 1, 1925, and June 30, 1926

Turlock, Calif.: Cantaloupes	July 20-Aug. 18.
Macon, Ga.: Watermelons	July 20-Aug. 17.
Caldwell, Idaho: Potatoes	July 27-Aug. 20.
Fresno, Calif.: Grapes	Aug. 3-Nov. 14.
Grand Junction, Colo.:	
Potatoes	Aug. 4-Oct. 31.
Pears	Aug. 5-Sept. 30.
Peaches	Aug. 17-Sept. 12.
Onions	Sept. 8-Oct. 31.
Apples	Sept. 14-Oct. 31.
Rocky Ford, Colo.: Cantaloupes	Aug. 17-Sept. 23.
Spokane, Wash.: Apples	Aug. 24-Apr. 30.
Idaho Falls, Idaho: Potatoes	Sept. 2-Apr. 14.
Rochester, N. Y.:	
Apples	Sept. 4-May 29.
Pears	Sept. 4-Oct. 31.
Cabbage	Sept. 4-Mar. 12.
Onions	Sept. 14-May 1.
Peaches	Sept. 14-Oct. 3.
Celery	Sept. 16-Jan. 23.
Potatoes	Sept. 16-May 29.
Grapes	Sept. 21-Oct. 31.
Carrots	Sept. 23-May 15.
Presque Isle, Me.: Potatoes	Sept. 8-Mar. 26.
Martinsburg, W. Va.: Apples	Sept. 9-Oct. 30.
Waupaca, Wis.: Potatoes	Sept. 14-Mar. 27.
Benton Harbor, Mich.:	
Pears	Sept. 17-Sept. 26.
Apples	Sept. 17-Oct. 2.
Grapes	Sept. 17-Oct. 2.
Potatoes	Sept. 17-Oct. 2.
Peaches	Sept. 18-Sept. 26.
Onions	Sept. 22-Oct. 2.
Grand Rapids, Mich.:	
Apples	Oct. 7-Nov. 24.
Potatoes	Oct. 7-May 25.
Onions	Oct. 7-Mar. 20.
Orlando, Fla.: Citrus fruit	Nov. 2-Apr. 30.
El Centro, Calif.: Lettuce	Jan. 4-Apr. 2.
Sanford, Fla.: Celery	Jan. 22-Apr. 17.
Brownsville, Tex.:	
Cabbage	Feb. 1-May 8.
Beets	Feb. 1-May 8.
Carrots	Feb. 1-May 11.
Potatoes	Mar. 29-May 28.
String beans	Apr. 1-May 1.
Tomatoes	May 1-May 28.
Hammond, La.: Strawberries	Mar. 29-May 22.
Laredo, Tex.: Onions	Apr. 5-May 15.
Mobile, Ala.:	
Cabbage	Apr. 19-May 20.
Potatoes	May 18-June 12.
Hastings, Fla.: Potatoes	Apr. 22-May 22.
Crystal City, Tex.: Onions	Apr. 22-May 26.
Wilmington, N. C.:	
Strawberries	May 1-May 29.
Lettuce	May 6-June 3.
Potatoes	June 4-July 3.
String beans	June 1-June 26.
Cucumbers	June 21-July 3.
Judsonia, Ark.: Strawberries	May 10-May 24.
El Centro, Calif.: Cantaloupes	May 11-July 2

Pocomoke City, Md.:		
Strawberries		May 21-June 18.
Potatoes		June 14-Aug. 4.
Cantaloupes		Aug. 6-Aug. 14.
Sweet potatoes		Aug. 16-Oct. 9.
Charleston, S. C.: Potatoes		May 24-June 17.
Monett, Mo.: Strawberries		May 25-June 15.
Leesburg, Fla.:		
Tomatoes		May 28-June 25.
Watermelons		May 28-June 25.
Jacksonville, Tex.: Tomatoes		June 4-July 2.
Crystal Springs, Miss.: Tomatoes		June 5-June 30.
Macon, Ga.: Peaches		June 7-Aug. 10.
Elizabeth City, N. C.: Potatoes		June 7-July 3.
Valdosta, Ga.: Watermelons		June 29-July 17.
Phoenix, Ariz.: Cantaloupes		June 29-July 19.

In addition, service on North Carolina peaches, cantaloupes, and watermelons was rendered from the station at Raleigh, N. C., during the early part of the fiscal year beginning July, 1925, as indicated below:

Raleigh, N. C.:

1925	
Peaches	June 25-Aug. 8.
Cantaloupes	July 11-July 22.
Watermelons	July 24-Aug. 8.

In addition, cooperative offices in some of the States, such as the San Antonio office in Texas, issue market reports for growers and shippers in producing sections.

Mr. TENNY. Yes. Originally we started those field offices wholly as a Federal proposition; but as people began to come in and wanted additional service above our ability to give them, we started on the theory, if a community wanted that intensive service, that without having authority to sell the mimeographed sheets and use the money, we would ask the chamber of commerce or the shippers organization or the farm bureau, or what not, that might be there, to contribute a fixed amount up to a certain amount; and frankly, it was what we could get, what we thought would be a fair amount to ask from the territory, and what we could get out of it; so that at the present moment practically every one of these field offices is furnishing all the way from \$200 or \$300 up. I think the Imperial Valley furnishes around \$3,000 for the maintenance of that field service, which is that intensive service in a producing section away from the leased wire.

Senator LENROOT. That is a commercial wire?

Mr. TENNY. That is handled by a commercial wire; and usually the money that is contributed is used to pay for wire or to pay for clerks, or something of that sort, which does not appear at all in our expenditures. It is just extending the work that we can give through the technical men that we put there on our pay roll, and making the service more available to a large number of people, and making it more extensive. .

Senator OVERMAN. Do you maintain a man now at Boise city?

Mr. TENNY. No; we have no man now at Boise city. The only office we have put in Idaho is at Idaho Falls, the center of the potato district. During the season we maintained a field office. All of the field offices I have been talking about are not full 12 months a year offices. I think they are maintained from two or three or four months up to eight or nine months during the year. At Rochester, N. Y., for instance, where we have a great variety of products, running more or less throughout the year, we maintain an office for eight or nine months; but the majority of these offices are maintained only for three or four months during each year.

We maintain for about seven months a year one of these field offices at Idaho Falls for the potato business alone. We do not serve anything else but the potato growers there.

Senator McNARY. In Boise do they get the potato reports?

Mr. TENNY. They do not get those in Boise except as they get them out of Idaho Falls.

Senator McNARY. That is as far as you go in serving Boise?

Mr. TENNY. Except as an apple shipper in Boise may be on our mailing list from Spokane or Salt Lake City or Portland.

Senator LENROOT. At Sioux City what do you do in regard to gathering statistics from Sioux City with reference to livestock?

Mr. TENNY. We are giving practically no service there. We do, I think, collect the receipts there through some arrangement with a man who is working part time, who sends us a wire that is put on the leased wire, that gives us the receipts of cattle at Sioux City, but we are giving no service to the Sioux City people.

Senator McNARY. Did you furnish an extensive service at Sioux City?

Mr. TENNY. I think we have, at times.

Mr. KITCHEN. Sioux City is one of the largest western livestock markets.

Senator LENROOT. I would like to ask you with reference to changing from Ames to Sioux City. Is there any special reason why the State Agricultural College of Iowa should have a service when no other State college is having it? Might not that be furnished through Sioux City, and might they not be served in that way?

Mr. TENNY. That is a very difficult question for me to answer, because the service is so totally different. It was my understanding that the people at Ames wanted, through the extension service, to try out, as a part of extension work, the experience of putting on this leased wire and having a man that could digest this market information and utilize it through the regular channels of the extension service; and they came to Congress last year and got that specific appropriation for the opening of the Ames office.

Senator CAPPER. You have a leased wire service to Ames, but this map does not show any delivery to the agricultural college at Manhattan, Kans.

Mr. TENNY. We do not have one.

Senator CAPPER. Manhattan has one of the most wonderful radio stations in the country, and I wondered why it should not have this.

Mr. TENNY. It is the biggest question in the world as to how far you are going to extend your appropriations in regard to this matter of distribution of market information. There are many of the State colleges that would be sympathetic toward some kind of a program of distribution of market news more than they are doing at the present time.

Senator STEWART. I might suggest to the Senator from Kansas that he has two services to Kansas now.

Senator CAPPER. There is none so far as the State agricultural college at Manhattan is concerned. I think they have the largest following, among the farmers, of any radio station in the West. It has done more for the Kansas Agricultural College the last year or two than anything else I know of.

Senator McNARY. If this service was extended to Sioux City, would you require cooperation upon the part of that community?

Mr. TENNY. We might, to a limited extent. We would class that, however, as one of the large, important markets which we want to run almost entirely as a Federal proposition. We would take office space if we could get it; the furnishing of telephone service, and things of that sort. If we could make arrangements for those things, we would do so.

Senator McNARY. Are there any reasons why the service should be extended to Sioux City over and above any other portion of the country?

Mr. TENNY. Sioux City is one of the very largest livestock markets we have in this country. I think it is either fourth or fifth.

Senator STEWART. It is fourth in hogs.

Senator McNARY. It is about eighth in cattle.

Mr. TENNY. Then you understand that all the people of the United States, receivers and sellers, would like as near a complete picture of the prices and deliveries of livestock as they can get. Sioux City is so situated in our national service that we probably should feel—

Senator HARRIS. Do you cooperate with the bureaus of markets of the States? Do you get satisfactory cooperation?

Mr. TENNY. Yes; we cooperate, in a good many States, with the bureaus of markets. We cooperate particularly in every State where they have a specific appropriation for handling market news, and the set-up to handle market information. Not all of the State bureaus of markets are furnished with the personnel and the money to conduct a market-news service; but I do not know of a single market-news service conducted by a State bureau of markets that is entirely separate from our service. Pennsylvania is an illustration of where they are appropriating a large amount of money and conducting a large number of offices for market-news work, wholly apart from anything we are doing. But so far as we are in Pennsylvania, they are cooperating with us.

Senator McNARY. If this item in the bill is correct, you spend \$1,054,355 for this work.

Mr. TENNY. That is right; including the salary roll that has been put in it this year.

Senator McNARY. The item I referred to is on page 54 of the bill. The language there is very similar, but evidently does not include market-news service, and that is now on page 56, line 10.

Mr. TENNY. Yes; that is correct.

Senator LENROOT. How does it come that there is nothing at New Orleans? Is not that a good point?

Mr. TENNY. New Orleans had a leased wire in the war period. New Orleans has been interested in market-news work on fruits and vegetables, and we have considered quite seriously opening a fruit and vegetable office at New Orleans. We perhaps should do that; but weighing it with other things, we have simply not done it.

Senator LENROOT. As I understood your answer to the chairman, if any extension of leased wires is to be made, you would say that Sioux City would come first?

Mr. TENNY. Yes; I am inclined to think so. Considering all angles of it, I would be inclined to say yes, to that.

Senator CAPPER. That would be more important than a station at Manhattan?

Mr. TENNY. We could collect the information at Sioux City, and the other would be simply distribution work.

Senator McNARY. I think, unless there are some further questions, we will discontinue further consideration of this now. Thank you very much. Senator Stewart, is there anything else?

Senator STEWART. Might I just say a word, Mr. Chairman, before I leave, that I hope the committee will include this service. They included it in the bill last year and it was lost in the conference committee because of inattention; but I think that our right to a service has been very firmly differentiated by the department, Mr. Tenny just stating that the department itself had included this in its original preliminary estimate, because of the value of this service not only to the Sioux City trade territory but to the rest of the country, in giving the rest of the country the receipts at the Sioux City yards, one of the largest yards in the country. I thank you.

Senator KENDRICK. In case Senator Stewart's people cooperated with the Government, would that reduce the amount of the necessary appropriation, Mr. Chairman?

Senator McNARY. If the committee thought that were prudent, we would deduct so much as we thought the cooperation of Sioux City would amount to.

Senator LENFOOT. I would like to ask Mr. Tenny whether this \$14,000 estimate for Sioux City includes office rental?

Mr. TENNY. Yes, sir.

Senator LENROOT. How much?

Mr. TENNY. We are estimating \$750.

Senator LENROOT. That estimate includes the cost of the salary of the operators, and all?

Mr. TENNY. Yes.

Senator LENROOT. It is for a complete service, all of which would be paid for by the Government?

Mr. TENNY. That is correct.

Senator KENDRICK. Senator Stewart stated to the committee a moment ago that he would guarantee the cooperation of the people of Sioux City.

Senator STEWART. Yes.

Senator KENDRICK. In case that cooperation was forthcoming, would there be as much of an appropriation required here to take care of that situation?

Mr. TENNY. As Mr. Kitchen has just said, if that guarantee just included office rent, we would reduce it to the extent of \$750. That is what we are estimating for office rent.

Senator KENDRICK. Is that all the cooperation you would require from the people of Sioux City?

Mr. TENNY. You understand we will be guided in that by the action of Congress. For instance, if you should do what was done last year in connection with five eastern livestock markets, not put a proviso in the law itself, but have the discussion in such a way that we know the intent of Congress, we will follow out the intent of Congress.

We opened five new livestock offices in the eastern part of the country this year with the sum of approximately \$5,000 per office. We made it very clear to the committee that we were not giving them

a complete service. We are running no leased wires there; we are getting out no mimeographed circulars there; we are simply quoting the local markets in those cities, and sending them about one telegram a day.

Senator KENDRICK. It is your opinion, is it not, that Sioux City is entitled to full service?

Mr. TENNY. We feel—and I think we have been consistent in that—that if we go into Sioux City we should go in such a way that we could get the information we collected in Sioux City on the leased wire to be distributed all over the country; and in addition to that, we feel that we must of necessity give a mimeograph service. That provides for practically the entire service, and I think that answers your question. If we are going into Sioux City we had better go on a substantial basis.

Senator KENDRICK. Just one more question. Could you give the committee an estimate as to how much this appropriation asked for here would be reduced in case you had the cooperation of the people of Sioux City?

Mr. TENNY. Yes. Office space out would make the appropriation \$13,750.

Senator LENROOT. And you would understand, if we made the appropriation, that whatever reduction was made in the estimate, you would have to have cooperation to that extent?

Mr. TENNY. Yes; that would be our understanding. We want to make that very clear, now, that if that is the wish of the committee we would like to have you say it now, and we would like to have it understood that in case Sioux City failed to come across with the cooperation, we would do nothing there.

Senator McNARY. That has been the attitude of this committee for four or five years.

Senator STEWART. Thank you, Mr. Chairman.

STATEMENT OF SENATOR GEORGE WHARTON PEPPER, OF PENNSYLVANIA

Senator McNARY. Senator Pepper, you have an amendment on page 77 of the bill, after line 23, I believe.

Senator PEPPER. Yes, Mr. Chairman.

Senator McNARY. Will you please read that amendment into the record so that the committee may have something as a basis of your remarks.

Senator PEPPER. I am urging upon the committee, Mr. Chairman, the approval of an amendment proposed to be offered to the pending bill, by inserting on page 77, after line 23—which is another way of saying, at the end of that portion of the bill which deals with the Federal appropriation for highway construction—the amendment to read as follows:

For carrying out the provisions of the act entitled "An act to provide that the United States shall aid the States in the construction of rural post roads, and for other purposes," approved July 11, 1916, and all acts amendatory thereof and supplementary thereto, there is hereby authorized to be appropriated, in addition to the amounts normally and usually appropriated for such purpose, the sum of \$71,000,000, to be available until expended in accordance with the provisions of such act, as amended; but no appropriation shall be made pursuant to such authorization until such time as the volume, based upon value, of contracts

awarded for construction work in the United States, as determined from trade statistics, shall have fallen for three consecutive months to a level one-third below that of the average for the corresponding three-month period during the calendar year 1925.

In other words, Mr. Chairman and gentlemen, I am pressing upon the consideration of the committee at this time a matter which is familiar to every member of the committee. It is an attempt at this time to write into this appropriation bill a definite recognition of a principle on which, so far as I know, there is very little difference of opinion among those who have studied the subject. A measure of this sort has been specifically commended and indorsed by the President in public utterances. There is a perfectly definite declaration to the effect of this amendment, in the Democratic platform for 1920; and the heads of great departments, such as the Secretary of the Treasury and the Secretary of Commerce, have definitely advocated the authorization by Congress of future appropriations for Government construction to be made available by timely appropriations when emergencies arise, for the purpose of staving off or relieving the occurrence of depressed economic conditions; in other words, to establish what you might call a prosperity reserve in the domain of public construction, to the end that you may have both the economic advantage of being able to stimulate public construction by the Government in time when depression is imminent, and also the psychological value that a reserve always has, namely, of creating public confidence, which in itself has the effect of preventing a threatened depression from becoming real.

Senator LENROOT. Senator, I would like to hear you, first, on the question of whether that is not wholly outside of the jurisdiction of this committee.

Senator PEPPER. Mr. Chairman, the insertion of a provision of this sort is pressed on this committee for two reasons. In the first place because it is germane to the appropriation for highways, and in the second place because it aims to minimize or prevent a depression which, when it comes, bears most heavily upon the class with which this committee is primarily concerned, namely, those engaged in agriculture.

Senator LENROOT. I know, but this committee has no jurisdiction.

Senator PEPPER. It is subject to a point of order.

Senator LENROOT. We could not report it.

Senator PEPPER. It is subject to a point of order, as being legislation.

Senator LENROOT. Certainly.

Senator PEPPER. And what I am, in effect, asking is the approval by this committee of something which can not become law unless, so far as the Senate is concerned, it gets unanimous consent on the floor.

Senator LENROOT. But do you not think that this should be addressed to the proper committee, which has jurisdiction?

Senator JONES of Washington. Also, do you not think that it should be broadened to cover other public improvements than simply public roads?

Senator PEPPER. Mr. Chairman, answering Senator Jones's suggestion first, it seems to me clear that this principle is applicable not merely to Federal road construction, but to rivers and harbors

and to public buildings; and it would be my hope that if the principle is recognized at all, it would be recognized also in those fields. You have to make a beginning, however.

Senator JONES of Washington. Do you not think that beginning should be made by a separate bill, properly considered by the committee in whose jurisdiction it comes?

Senator PEPPER. Theoretically, yes; but unless as a practical proposition the thing can be related to some measure which, on account of its intrinsic importance and its immediacy, will command the attention of Congress, it has very little chance of passing simply as an academic pronouncement on the subject. If you gentlemen will include in your program as it is related to road construction a recognition of this principle, it seems to us that we will at least make a beginning.

Senator LENROOT. But we can not do it, Senator. All we can do is to carry out the law.

Senator McNARY. The point Senator Lenroot makes is that legislation of this kind should be initiated by the Committee on Post Offices and Post Roads, being legislative in character. Under the rules, this committee can make appropriations only.

Senator LENROOT. I think we would be subject to very severe criticism if we should undertake to do this.

Senator OVERMAN. It would result in sending the bill right back here..

Senator McNARY. This committee would carry this appropriation if it were authorized by an act of Congress reported by a standing committee having jurisdiction.

Senator PEPPER. Under those circumstances, sir, I take it that it would not be subject even to a point of order. I am conceding that this would be subject to a point of order.

Senator LENROOT. Both under the rules and upon the merits of its invading the province of another committee.

Senator JONES of Washington. The Appropriations Committee would subject itself to very severe criticism, I think, if it were to deal with this matter.

Senator PEPPER. I do not want to press it unduly upon the attention of this committee if the committee is of the opinion that its jurisdiction does not extend that far.

Senator LENROOT. Oh, I am sure of it.

Senator PEPPER. But, really, this question is one which is only nominally a matter of concern to a Committee on Post Offices and Post Roads. It is of as much concern to the Committee on Agriculture and Forestry as it is to any other; and it was because it seemed to me that when you are appropriating money for road construction it was germane to propose an authorization for future road construction that I ventured to bring the matter to your attention.

Senator JONES of Washington. You see, that is the Appropriations Committee.

Senator PEPPER. I appreciate that.

Senator LENROOT. We have nothing at all to do with authorizations. We can not have.

Senator PEPPER. I realize that; and yet we know that where the point of order is not made, authorizations do appear in appropriation bills.

Senator McNARY. It requires unanimous consent for this committee to carry this legislation.

Senator PEPPER. That is all I am interested in doing—testing the sense of the committee as to whether such unanimous consent as would be necessary is, as far as this committee is concerned, a possibility.

Senator JONES of Washington. I do not believe the Appropriations Committee should assume to deal with a proposition like that.

Senator McNARY. But, assuming that we did, I should like to have you discuss this point for a moment: Of course the idea in this proposal is to prevent depression and unemployment in times when there is a slowing up of the business of the country. How far would an authorization of \$71,000,000 go to prevent a situation of that kind; and is this just the first step you propose to take? If the policy were engrafted upon a statute by the Congress, would you take up other items, like rivers and harbors and internal improvements, and add them to this sum? I just want to get your thought.

Senator PEPPER. That is the case, Mr. Chairman; but, in addition to that, let me point out to you that the \$71,000,000 appropriation which this amendment carries, if matched by the States, making roughly between \$140,000,000 and \$150,000,000, constitutes one-tenth of the public construction of the country. In other words, an item of \$150,000,000, utilized at a time when acute industrial depression is in existence or is imminent, may have the same effect in avoiding a further commercial disaster as was had when public construction was pressed upon the attention of the country and engaged in in 1921 and 1922, to such an extent that in a period of depression there suddenly was developed an expanded program of public construction which played a very important part in solving the then pressing problem of unemployment. So I would answer your question, sir, by saying that this not only is a first step toward a greater measure of relief, but in itself the Federal road construction problem is an appreciable economic item to be rightly handled in a period of acute commercial depression.

The amendment is not one which I want to discuss with the committee if any member of the committee feels that as a member of the committee it would be his duty to object to its consideration. That would simply be to waste your time; but I did wish to bring it to the attention of the committee, Mr. Chairman, in the hope that it would be thought wise to consider it here and now.

Senator McNARY. Is there an authorization bill to come from the Committee on Post Offices and Post Roads this year?

Senator LENROOT. No; not on roads. We did it last year, did we not? We made an extension of two years?

Senator McNARY. Yes; covering 1928 and 1929.

Of course, Senator Pepper, the committee to which I have just made reference would have and has exclusive jurisdiction over the matter of authorization and expenditure of public money on roads. Theoretically, of course, this committee could write into the bill anything it wanted to, and theoretically it would go into law if there were no one to object, which would be a unanimous-consent proposition.

Senator PEPPER. Certainly.

Senator McNARY. It does seem, however, from the expressions among the members here to-day that there would be some opposition

to a committee of this kind, the Appropriations Committee, attempting to assume the jurisdiction to legislate in this bill.

Senator KENDRICK. If a member of this committee failed to object, he would have to sustain a loss through the activities of the man with the scythe on the floor of the Senate if we got by with it there; would he not? [Laughter.]

Senator PEPPER. That is true; but, on the point that Senator Kendrick referred to, it is to be observed that so far as the Budget officer is concerned he speaks as the representative of the President, and the President is on record on this proposition.

Senator JONES of Washington. I do not think he is on record in the way of authorizing the Budget officer to include this as a part of his program.

Senator PEPPER. That may or may not be, but that is a principle to which the President has publicly committed himself. But, Mr. Chairman, I want to thank you for giving me an opportunity to appear, and I will not press the matter in detail upon the consideration of the subcommittee.

Senator McNARY. We thank you very much. You have made very clear to us the merits of this proposition.

Senator LENROOT. Have you thought, Senator, of having a select committee consider the whole principle involved?

Senator PEPPER. I have thought, Mr. Chairman, of framing—in fact, I have taken a step or two in the direction of framing—such a measure as Senator Jones suggested a while ago, but I did not want to let a chance pass of pressing for such immediate consideration as would make one feel that a beginning had been made in moving toward what I think is a very desirable goal. I had not thought, Senator Lenroot, of the possibility of a select committee.

Senator LENROOT. But the principle does involve several committees. That is the reason why I asked that question.

Senator PEPPER. Yes; and it is just because it involves so many that it seems to me that possibly the objection you have made might not be pressed; but if it is pressed, I withdraw as gracefully as possible under the circumstances.

Senator McNARY. We are much obliged to you, Senator, for your very interesting statement. Is there any other item you wanted to discuss?

Senator PEPPER. No, Mr. Chairman. I just want to say that when the committee does take up the matter in which Mr. Henry N. Woolman, of Pennsylvania, and Dr. Frederick Rasmussen, the former secretary of agriculture of Pennsylvania, are concerned, I wish to bespeak for them your usual courteous consideration, as we think of them as among our greatest and most useful citizens at home.

Senator McNARY. Thank you, Senator.

STATEMENT OF R. S. KELLOGG, CHAIRMAN OF THE NATIONAL FORESTRY PROGRAM COMMITTEE

FOREST PRODUCTS LABORATORY

Senator McNARY. Mr. Kellogg, you were here earlier in the morning?

Mr. KELLOGG. I am entirely at your disposal, Senator.

Senator McNARY. Have you anyone else from out of the city but yourself to speak on this subject?

Mr. KELLOGG. No; I am the only one from out of the city. Mr. Compton is here with me. He wishes to say something. We do not want to take very much time.

Senator McNARY. On what item do you wish to be heard?

Mr. KELLOGG. With regard to the Forest Products Laboratory at Madison.

Senator McNARY. Perhaps you can complete your statement in a short time.

Mr. KELLOGG. We can complete it in a very short time. unless you wish to ask us questions.

Senator McNARY. You may proceed.

Senator OVERMAN. Please state your name and occupation.

Mr. KELLOGG. My name is R. S. Kellogg. I appear as chairman of the National Forestry Program Committee. I have been before this committee and other similar committees at various times in the past.

Senator McNARY. The item is on page 36, Senator Kendrick, line 11 and following—"Forestry Products Laboratory."

Mr. KELLOGG. I have a long detailed statement which I will leave with you, Senator, which probably nobody will read, but it has all the supporting data.

Senator McNARY. It will appear in the record.

(The statement is as follows:)

PRESENT SITUATION AND NEEDS IN FOREST PRODUCTS INVESTIGATIONS

[Presented to the Senate Committee on Appropriations for Agriculture and Forestry, by the National Forestry Program Committee, December 29, 1926]

Provision by the Federal Government for investigations in forest products is at present inadequate. The present situation in that respect, and the need for early and definite attention by the Federal Government to this phase of progress in wood utilization, are both urgent:

Efficient manufacture and use of forest products a cardinal feature of a national forestry program.—Increased efficiency in timber utilization and greater elimination of waste in the manufacture and use of forest products is, on the one hand, a cardinal feature of any comprehensive national forestry program. It constitutes, on the other hand, one of its most pressing problems at the present time. This fact has been clearly stated by the Forest Service and was, in behalf of the public welfare, earnestly presented to the wood-using industries and the public at large by the President of the United States at the national conference on utilization of forest products, November 19 and 20, 1924.

Progress in utilization less than in other cardinal features.—Under the encouragement and financial provisions of the Clarke-McNary and other laws, progress is being made in the acquisition of Federal forest areas through purchase, in cooperative forest fire protection, in the extension of reforestation, in industrial forestry on privately owned timberlands and wood lots, and in a comprehensive study of forest taxation. But no adequate provision is made in that law or elsewhere for forest products investigations, which are of at least equal importance. As a consequence little progress is being made toward complete timber utilization which is necessary to the realization of the other objectives of the national forestry policy.

Federal Government must supply much of scientific data now lacking.—There is still a great lack of fundamental scientific information on the properties, characteristics, and behavior of wood under varying conditions of use. Much of this can be supplied by agencies of the industries themselves, but there still remains much research of a fundamental and scientific type, such as has been conducted for many years by the Federal Forest Service at Madison, Wis., which is outside the bounds of the practical activities of any one company, organization, or industry to perform, or which involves information which is not available to private organizations however constituted. Research of that type, therefore, must, if done, be done by the agencies of the public. (See Exhibits III and IV.)

Estimated value of present preventable losses in forest products utilization over one-half billion dollars.—Each year that the Federal Government fails to recognize this need in a much more substantial manner than at present, the industrial waste bill of the public at large is increased through losses in forest products utilization by an amount estimated by the Government agencies themselves as equivalent to \$568,000,000. At the same time the annual return to the Federal Treasury from income taxes alone, exclusive of any increase in the capital value of Government-owned timber properties, or in the sales value of timber sold therefrom, in both of which a large increase would be obvious, is lower by nearly a million and a half dollars. (See Exhibit I.)

Federal appropriations for agricultural research equivalent to over 2½ cents per acre of cropped land, for forestry research, less than one-fifth cent per acre of forest land.—Commensurate with the importance and value of the forest industries the Federal Government is not doing, in the way of providing funds for research in forestry and forest products, what it is doing, for example, for the agricultural industries. Whereas the area used (cropped) in the United States (1925) for agriculture is about 372,426,000 acres and for forestry 469,475,000 acres, the amount spent annually by the Federal Government for agricultural research (fiscal year 1925), is over ten million dollars, or 2.7 cents per acre, and for forestry research (fiscal year 1926), only about three quarters of a million dollars, or 0.17 cents per acre. (See Exhibit II.)

Present exigency will continue to exist until frankly faced and provided for.—This is not the first time that the urgency of more adequate funds for forest products investigations has been presented to the Director of the Budget and to the Congress. Last year the timber and wood using industries and the consumers of their products asked for an increase in Federal appropriations to cover specific and timely forest products research problems of \$206,000. While an increase of \$20,000 was made in the Senate and approved by the Congress for the present fiscal year, the same exigency still exists and will so continue until frankly faced and provided for.

Proposed Federal research program does not include any scientific work that the industries can do for themselves.—The program for which Federal recognition is requested is the result of a comprehensive survey of the obstacles to more complete and economical utilization of forest products and of the existing information available to a solution of each of these problems. It does not contemplate that the Government, at public expense, will do anything in the interest of forest conservation that the timber producing and wood using industries and the consumers of their products are capable of doing for themselves. (See Exhibits III and IV.)

Investigative program of industries contemplates expenditure of \$3,000,000.—As direct evidence of this fact, manufacturers and distributors of lumber and the various wood-using industries of the United States are now raising funds, which will exceed \$2,000,000 a year, to be expended by them, beginning within a few months, for industrial research in lumber markets, and in trade promotion. These funds will be augmented by large sums being raised by the allied industries to be expended upon their marketing and utilization problems, and when taken in conjunction with the funds spent for like purposes by individual companies, the aggregate of expenditures will run further into the millions of dollars.

Government as the largest single owner of timber resources stands ready to benefit to a greater proportionate extent than any group of industries.—The Government of the United States is the largest single owner of timber resources, estimated to be worth \$1,000,000,000. Progress by it in the development and renewal of its timber properties, and the profitable utilization of the products therefrom, is as dependent, probably even more so than is any one group of private timber owners, upon the results of scientific forest products research. It is equally as important to the Government that it make adequate financial provision for this work in order to protect the value of its own property. Moreover, the fruits of the industrial research to be performed by the timber and allied industries and individual companies for themselves, aggregating millions of dollars, will be as readily available and usable to the Federal Government in solving its own problems, and their benefits will accrue just as much to Government-owned commercial timber, yet to the expense of these activities the Government contributes nothing, despite the fact that in the long run it is the principal beneficiary in its capacity as the nation's largest timberland owner.

Annual cost to Government would be only one-third of cost to industries and less than increased revenue to Federal treasury thus made possible.—The estimated annual cost for some years to come of the research services, otherwise unavailable to producers, distributors, and industrial users of forest products, is approximately \$1,000,000. The total sum the Federal Government is thus requested eventually to contribute to a solution of this pressing problem is only about one-third of that which the organizations in the timber and allied industries will themselves expend for industrial research, for educational work, and in an effort to realize the practical results of efficient utilization. Moreover, it is less than the Federal Treasury will, in the course of a few years, receive annually in increased returns from the Federal income taxes on the profits made possible by this research.

Million dollar Federal fund should eventually be made available through appropriate annual increases.—It is not expected that the Federal Government will for next year, nor should it, increase the appropriation, provided in the agricultural appropriation bill (H. R. 15008) for forest products investigations, by \$510,000. Nevertheless an appropriation of \$1,000,000 should eventually be made available annually, through appropriate annual increases, which for next year ought to be at least \$40,000 as is recommended in the estimates of the Bureau of the Budget.

The Government, owning nearly one-third of the timber resources, would then be contributing next year only about one-sixth of the expense of forest products investigations.—And under such a program, the Federal Government in expending for forest products investigations next year only about \$530,000, equivalent to about one-sixth of the sum likewise to be expended by the timber and allied industries in the interest of more efficient manufacture and use of forest products, would not be holding up by far its end of the forest-utilization problem as the owner of nearly one third of the timber resources of the United States.

EXHIBIT I

PROBABLE RETURNS FROM FOREST PRODUCTS RESEARCH

The estimated annual losses in forest utilization are equivalent to a stand of timber having a volume of over 14,000,000,000 cubic feet, and a present value of approximately \$1,300,000,000.

Of these annual losses over 5,000,000,000 cubic feet are believed, under present conditions, to be preventable. These preventable annual losses are equivalent to a stand of timber having a value of \$568,000,000.

This possible annual saving, however, can be accomplished only by a concerted effort of the forest-using industries and the consumers of forest products, and such an effort can not be effective unless it is based upon knowledge gained through research.

These possible savings of \$568,000,000 have a bearing not only upon the general welfare but also the Federal Treasury. Assuming that within 10 years there could be brought about an annual saving of only half of the total, or \$284,000,000, and assuming that the profits thereon would represent an average of 10 per cent of their value, a net increase in national income of \$28,400,000 would result. An average Federal income tax of 5 per cent on this amount would result in one and a half million dollars annual increase in Federal revenues.

This does not include any increase in the capital value of Government-owned timber properties, or in the sales value of timber sold therefrom, in both of which a large increase would be obvious.

EXHIBIT II

COMPARISON OF FEDERAL EXPENDITURES FOR RESEARCH IN AGRICULTURE AND IN FORESTRY AND FOREST PRODUCTS

Forestry with respect to its research problems, resembles agriculture, of which it is a part, in that it deals with the growing of organic products which are exceedingly diverse in kind, variable in external characteristics, and complex in chemical and physical constitution.

Research into the properties and uses of such products is nearly impossible for the average private producer, yet their very diversity, variability, and complexity makes research a necessary foundation for their efficient utilization.

It is, therefore, generally conceded that research in both agriculture and forestry is a proper function of Government. It is, however, the obligation of private producers of forests and forest products to organize to apply the results. Such organization among private producers of forest products is now under way.

Research in forestry and forest products started later than agricultural research, and in that respect is more pressing. The following table shows the comparative Federal expenditures in the two fields:

	Agriculture	Forestry
Area used.....acres.....	¹ 372,428,000	² 469,475,000
Annual value of products.....	\$8,611,839,000	⁴ \$1,494,462,031
Spent annually by Federal Government for--		
Research.....	³ 10,100,000	
Silvical investigations.....		⁶ 202,020
Range investigations.....		⁶ 40,320
Forest product investigations.....		⁶ 383,264
Total.....		625,604

¹ Agriculture Yearbook, 1925, p. 1358.

² Agriculture Yearbook, 1925, p. 1449.

³ Agriculture Yearbook, 1925, p. 1357 (farm value).

⁴ Commerce Yearbook, 1925, p. 313 (excluding remanufacture).

⁵ Agriculture Yearbook, 1925, p. 99 (excluding extension work).

⁶ Agriculture appropriation act, fiscal year 1926, p. 16 (excluding about \$40,000, \$20,000, and \$90,000 respectively, contributed from other appropriations).

EXHIBIT III

Summary of estimated increased appropriations needed for new fields of forest products investigations, fiscal year 1927-28

Field	Character of research	Estimated increased cost, 1927-28
I	Determination of wood properties..... Determine the range and average value of the 30 wood properties for the 160 principal commercial species of wood, both virgin and second growth, in each of the producing regions. Detail (by examples): 1. Weight. 2. Strength. 3. Hardness. 4. Toughness. 5. Shock-resisting ability. 6. Stiffness. 7. Resistance to splitting. 8. Resistance to abrasion. 9. Nail and screw holding power. 10. Workability. 11. Speed of drying. 12. Shrinkage in drying from green condition. 13. Plasticity. 14. Tendency to develop defects in drying. 15. Stability under atmospheric changes. 16. Resistance to weathering. 17. Resistance to decay. 18. Resistance to fungus stains. 19. Resistance to insect and marine borer attack. 20. Susceptibility to standard preservative treatment. 21. Susceptibility to standard painting and finishing treatments. 22. Gluing characteristics. 23. Heat insulating properties. 24. Sound insulating properties. 25. Electrical insulating properties. 26. Combustibility. 27. Resistance to acids and alkalies. 28. Permeability by liquids. 29. Tendency to leach water-soluble constituents. 30. Tendency to lose volatile contents, etc.	\$100,000

Summary of estimated increased appropriations needed for new fields of forest products investigations, fiscal year 1927-28—Continued

Field	Character of research	Estimated increased cost, 1927-28
II	<p>Control of wood properties. Make wood a more dependable industrial material by gaining control of its variable properties, either through selective tests, or through control of manufacturing processes, or through subsequent special treatments.</p> <ol style="list-style-type: none"> 1. Develop selective tests that can be applied to raw material before manufacture into lumber or before fabrication so as to insure that it possesses certain properties to the desired degree. 2. Devise simple methods of determining moisture content of lumber and wood products. 3. Adapt air-seasoning methods to climatic conditions and kiln-drying methods to wood of the same species produced in different localities, and to wood of different quality and of special size and shape, in order to reduce degrade and hasten drying. 4. Ascertain for each kind of wood the proper machining conditions, in order to reduce degrade in working. 5. Prevent fungus, chemical, and kiln stains, and discoloration of painted surfaces. 6. Improve methods of preparing raw material for, and of manufacturing and drying, veneer. 7. Improve fire resistance, and durability from attacks by other natural agencies. 8. Improve methods of handling and storage of lumber and other wood stock. 9. Control swelling and shrinkage, and loosening knots, and other effects on use of moisture in wood. 10. Neutralize objectionable colors, odors, and tastes in wood. 11. Regulate resiliency and resistance to abrasion. 12. Associate properties with growth conditions, etc. 	\$150,000
III	<p>Determination of use requirements. Ascertain quantitatively and qualitatively the requirements of the major uses of wood in terms of wood properties. Detail (by example):</p> <ol style="list-style-type: none"> 1. Building construction. 2. Building parts such as doors, sash, built-in woodwork, flooring, lath, outside paint coatings, etc. 3. Concrete forms. 4. Shipping containers. 5. Products of principal wood-using industries, etc. 	50,000
IV	<p>Design of wood products. Adapt wood properties to requirements of use. Detail (by examples):</p> <ol style="list-style-type: none"> 1. Assist in uniformization of building codes with respect to specifications for the use of wood. 2. Provide basic data for the use of industry in standardizing size and quality of wood stock required. 3. Redesign wood construction details to improve insofar as possible all features relating to design, stability, long life, safety, comfortability, and attractiveness. 4. Work out problems involved in the use of treated timber in bridges, culverts, and other structural purposes. 5. Develop general design formula for determining permissible combinations of wood characteristics and methods of fabrication of nailed wooden and wire-bound wooden boxes, of plywood panel boxes, and of wooden crates. 6. Apply available data on wood properties to the fundamental design problems of other important wood products, etc. 	50,000
V	<p>Development of accessory materials for use with wood. Develop ideal accessory materials, as accessory materials for wood. (For the most part the development in the past has been with wood as the accessory material.) Detail (by examples):</p> <ol style="list-style-type: none"> 1. Develop more effective wood preservatives. 2. Develop paint formulas adaptable to different woods and uses, treated wood, and climatic conditions. 3. Develop higher moisture-resistant coatings. 4. Develop more durable and water-resistant glues. 5. Develop water-resistant binders for moulded and synthetic products from sawdust and wood waste, etc. 	50,000
VI	<p>Development of more economical production processes. Improve, not only the quality by the preceding research, but the availability of wood as dependable industrial material, through research to develop new, less wasteful, or cheaper production processes. Detail (by examples):</p> <ol style="list-style-type: none"> 1. Survey the field for possible extension of integration of wood producing and consuming industries. 2. Study possibilities of cheaper production through semi or complete fabrication of lumber into parts or products at the sawmill rather than at the factory or on the job. 3. Determine what sizes of trees can profitably be logged and milled and what should be left to grow. 4. Improve mechanical efficiency of portable sawmills. 5. Design portable dry kilns. 6. Study possibilities of community portable sawmill, dry kiln, and preservative treatment plants in order to enhance the utility of farm wood lots, etc. 	100,000

Summary of estimated increased appropriations needed for new fields of forest products investigations, fiscal year 1927-28—Continued

Field	Character of research	Estimated increased cost, 1927-28
VII	<p>Conversion of forest materials into chemical and fibrous products Through the development of improved and new chemical-production processes undoubtedly lie great opportunities for materially reducing waste in the utilization of forest materials and for shortening the time required to grow merchantable forest crops. Detail (by examples):</p> <ol style="list-style-type: none"> 1. Complete the data on the pulping value of domestic commercial woods. 2. Determine pulping value of mill and wood wastes. 3. Produce higher yields and better quality of pulp. 4. Perfect the new semichemical and mechanical pulping processes. 5. Improve pulp-bleaching processes. 6. Improve methods of testing pulp. 7. Perfect a device for weighing pulp-wood chips. 8. Reduce fiber waste and stream pollution. 9. Study the chemistry of sulphite liquor, its use or recovery. 10. Develop the rod mill as a beater. 11. Study pitch troubles in pulp and paper mills. 12. Determine pulp suitable for rayon manufacture. 13. Develop means of conversion of sawdust and wood waste into lacquers, adhesives, alcohol, electric-wire insulation, and similar cellulose or molded products. 14. Study the chemistry of bark for valuable products. 15. Develop profitable uses for hardwood tar products. 16. Determine proper turpentining methods from standpoints of greatest yield of gum and least injury to value of tree for lumber. 17. Determine external characteristics of high and low yielding naval stores pines as a guide in turpentining operations, etc. <p>Total Federal funds required for forest-products research in addition to present appropriation of \$403,264</p>	\$100,000 600,000

EXHIBIT IV

CONDENSED LIST OF IMPORTANT PROBLEMS ILLUSTRATIVE OF THE URGENT NEED FOR ADDITIONAL RESEARCH IN FOREST PRODUCTS

FIELD 1. DETERMINATION OF WOOD PROPERTIES

There are about 150 important native woods, each possessing over 30 properties of commercial significance. For no one of these woods is reliable information on all of its properties available; for some of these woods no reliable information is available on any of their properties. The wood-using industries had a localized working knowledge of the main properties of these woods, which sufficed while the woods were being marketed only locally, when waste was of small consequence, and when use requirements were not exacting.

That phase of wood utilization is past. The problem industrial period has greatly complicated the utilization problem for wood—far more, in fact, than for the other principal materials of fabrication. Easy transportation has precipitated a war of species. Woods from all parts of the country are offered in the same markets. The consumer, in lieu of reliable knowledge of their properties, must be guided by conflicting opinions and prejudices in his choice of species. Too often the result is that wood suffers an unwarranted loss in standing as a dependable industrial material, just at the time when every incentive toward reforestation is needed. Waste caused by lack of technical knowledge of wood properties raises the price the public must pay for wood. New and more exacting use requirements develop which place wood at a disadvantage, not because of its unfitness, but because the properties of other raw materials are better known and hence are easier to specify.

The properties of some building and fabricating materials can be readily determined by their producers and verified with comparative ease by the consumers. This is not the case with wood.

Each of the 150 species of commercially important woods exhibits considerable variation in each of its 30 or more properties, such as hardness, shrinkage, and resistance to decay, not only throughout the species as a whole, but in each locality in which it grows.

Government tests thus far made indicate that the range in properties is so large that an approximate average value for a single species will not suffice for accurate utilization. Both producer and consumer need to know the range

in a given property that may be expected of a certain wood, both virgin growth and second growth, from a certain producing locality. This knowledge is not yet available.

The order in which the 150 species and their 30 properties should be investigated can not be arbitrarily designated in advance. It is dependent upon the extent to which each use requires the various properties in wood, the urgency of industrial needs, and the economical conduct of the research.

FIELD II. CONTROL OF WOOD PROPERTIES

The variability of wood can be made an asset by learning how to segregate wood of like properties and how to modify or prevent undesirable properties by special treatment. The following are illustrative of these needs:

Control of moisture content is of outstanding importance. To accomplish this, a machine should be developed to determine moisture content cheaply and quickly. Such a machine will tell how dry the wood is at any time.

Secondly, there is need of surveys to determine the moisture content of wood in various kinds of service. This will indicate how dry wood ought to be for a given use.

Thirdly, there is need of studies to determine for important woods the practicable limits of moisture tolerance—that is, the degree to which, under commercial conditions, it is practicable to supply wood of the same moisture content as the use requires.

Thus equipped the industries themselves should be able to shoulder the rest of the job of moisture-content control.

Of coordinate importance with control of moisture content in manufacture is the further treatment of wood to reduce shrinkage and swelling in service. Heat treatments, or impregnation with sugars, or combinations of the two, present promising leads and should be tried out.

Simple commercial tests for the segregation of wood of particular proportion are needed in many instances, such as: (1) To segregate hard boards suitable for flooring and structural members from soft boards, of the same species suitable for siding, trim, or like uses; (2) to identify figured wood in the log or tree; (3) to bring out invisible defects in structural wood; (4) to indicate degree of heat insulation.

Antidecay, fire, and insect treatments, especially for wood in buildings, are one of the most promising means for reducing deterioration of wood in service. In so far as possible, treatments should be devised which can be combined in a single operation and which do not necessitate reseasoning. The following are especially needed: (1) Paintable through-and-through decay treatments for millwork; (2) paintable fire and decay treatments for siding, sills, and dimension; (3) paintable, odorless decay treatment for refrigerator car lumber; (4) fire and weathering retardant treatments for shingles (5) fire retardant coatings to be sprayed inside of walls; (6) redesign of buildings to provide better fire stops.

Control of degrade during seasoning requires the following additional work: (1) Adaptation of air-seasoning and kiln-drying methods to the conditions typical of each region; (2) special methods of drying ready-cut small dimension stock; (3) prevention of brown stain and other chemical stains during drying; (4) further refinement of blue-stain prevention methods.

Control of weathering of wood and retardation of moisture changes through better paints and coatings requires a study of: (1) How to adapt paints to various woods, structural parts, and climates with a view to greater durability and protection; (2) how to treat knots and flat grain to prevent sealing off of paint; (3) how to prevent stains and pitch which discolor paints in certain species; (4) additional work to develop better moisture-resistant coatings or treatments.

The insulating value of wood in various structural combinations, such as walls, floors, and roofs, is not definitely known and offers an important opportunity to improve the use of wood in buildings, refrigerators, and railroad cars.

It is probable that the insulating value of wood could be easily improved by surface treatments or by better structural combination with other materials.

The possibility of successful medication of living trees to prevent blue stain or repel insects, disease, or decay should be explored.

FIELD III. DETERMINATION OF USE REQUIREMENTS

Converting the variability of wood into an asset obviously depends not only on knowledge of wood properties and their control, but likewise on knowledge of what properties the use requires.

With knowledge of that character, the wood industries have an excellent opportunity not only to control wood properties with a view to meeting recognized use requirements, but to set up, by research and education, new use requirements which will enable wood to be used with less waste and more satisfaction.

The established requirements which determine the use of knotty material, for instance, are in many respects arbitrary in that they are founded on long custom instead of scientific analysis.

Clear wood is required in many uses for the sake of appearance, whereas in some uses knotty wood may actually present a better appearance.

Clear joists are considered stronger than knotty ones. This is correct, but in small house construction it is stiffness rather than strength which should determine the selection of joists, and moderately knotty joists are just as stiff as clear ones. Rules for placement of knotty joists should be worked out so as to insure adequate strength and stiffness with the lowest possible grade of material.

The degree of decay resistance which should be required in window sash and frames, particularly window sills, is a question for which no convincing answer is now known. A survey of frames in service would disclose, for example, the extent to which untreated sapwood should be excluded from such uses.

Whether certain woods when used as shipping containers actually impart tastes or odors to foodstuffs is another question in need of definite determination. Chemical treatments to overcome such difficulties would probably be possible, once their origin were definitely determined.

A large-scale survey of container breakage in actual service is needed to determine the degree to which various types of containers of various materials are actually meeting the requirements of the use to which they are put. Such a survey should be in part financed by the other interests involved. The results would be of direct value to forestry, however, in stimulating the use of improved container designs and the best selection of materials.

A thorough study of the substitution of other materials for wood and of wood for other materials, is needed as a general background for forest products research and for forestry operations. Such a study should cover both the economic and technical aspects of substitution.

FIELD IV. DESIGN OF WOOD PRODUCTS

Wood properties and requirements of use seldom fit together of themselves. Adapting the one to the other so that there is neither deficiency nor excess of the required properties is a matter of scientific experimentation in the design of wood products. No other research field presents greater opportunities for economy in wood usage than this one of basic design.

Certain types of wooden boxes, for instance, have been redesigned by the Forest Products Laboratory in such a way as to give an equally serviceable box with half the material formerly used, or a box twice as strong with the same amount of material. A similar redesign of other types of wood boxes, as well as fiber boxes, crates, baskets, and barrels may be expected to yield appreciable benefits.

Redesign of furniture for greater serviceability, while subject to aesthetic limitations not encountered in containers, nevertheless could probably decrease the heavy breakage loss which now occurs.

There should be a revision of standardized plans and bills of material, particularly those issued by the Government, in such a way as to encourage wherever practicable the use of short and odd lengths of lumber and ready-cut stock.

Development of a formula for expressing how the strength properties of plywood vary with the number and thickness of plies is needed.

FIELD V. ACCESSORY MATERIALS FOR USE WITH WOOD

The efficient design of wood products is in turn dependent upon an accompanying technical development of glues, binders, preservatives, finishes, fastenings, and other accessory materials.

Cheaper carriers for preservatives, giving equal penetration with less cost, and methods of treating green wood in order to reduce the period of preliminary seasoning are two typical problems now in need of solution.

Most of the other needed materials have already been mentioned in connection with control of wood properties. These included:

New preservatives especially adapted for use in house parts, refrigerator cars, etc.

Paints particularly adapted to various species of wood and local climate.

Coatings for improved protection against moisture.

Glues which are water resistant and durable in humid tropical climates.

FIELD VI. MORE ECONOMICAL PRODUCTION PROCESSES

Converting wastes into salable products, or reducing production costs in any other way, obviously benefits the development of forestry in the same manner as advances in stumpage values. Moreover, economies in production are often attainable in short periods of time, whereas advances in stumpage must usually await the slow evolution of economic conditions.

Careful analyses of logging and milling methods in two cases have revealed (1) that in the hemlock-hardwood type of the Lake States small trees are being logged at a loss which should be left as the basis for a new crop; (2) that in the inland empire river driving of pine logs results in a heavy degrade often sufficient to finance a railroad. Similar analyses should be made in other regions. Such analyses are usually conducted jointly with the local forest experiment stations and commercial interests.

Grouping of forest industries in such a way that the waste from one plant becomes the raw material for another constitutes one of the most important recent developments in better forest utilization. A thorough study of the conditions under which such integration of industries is proving to be successful might reveal opportunities for further extension of the idea, especially in the development of industries dependent upon timber from the Government-owned lands. Government stumpage values and hence revenues from its timber lands are obviously affected by the kind and arrangement of plants using the products of those lands.

Better selection and operation of portable sawmills would result in preventing great production wastes, especially on Government-owned timber tracts. Because of the almost total lack of organization among portable mill operators and the small scale on which they operate, there is little chance that they themselves will conduct organized research for better methods. For this reason, and because Government stumpage values are directly affected on a large scale, the Forest Service should undertake such research.

FIELD VII. CONVERSION OF FOREST MATERIALS INTO CHEMICAL AND FIBROUS PRODUCTS

Research in chemical utilization is needed not only to develop the present established industries—pulp and paper, distillation, and naval stores—but to develop new chemical uses for wood.

Converting sawdust and mill waste directly into lacquers, adhesives, motion-picture film base, and binders for molded products, without any intermediate pulping process, is one of the possible new chemical uses.

Most chemical processes for using wood have been developed by research without any accompanying development of processes for the reclamation or disposal of the resulting effluents and wastes. The discharge of these wastes into streams and waters represents poor utilization, and must also in the long run prove injurious to the public standing of the wood-chemical industries and even of forestry itself. Research, to achieve a maximum of public welfare, must deal with these secondary wastes as well as with primary conversion problems.

Pulp mill sulphite liquor reclamation or disposal is one of the most pressing of secondary waste problems.

Extending the range of available processes for pulping woods and mill waste remains the most important research activity for preventing wastes by pulping.

Pulping resinous wood by the sulphite process, methods of advanced removal of resin from pulp-wood chips, and methods of preventing pitch troubles on the paper machine are illustrative examples of the kind of problems involved.

More work is needed on bleaching of pulps, especially pulps from high-yielding processes and from species of wood now yielding only dark material.

Hydrolysis of wood for alcohol should be further developed with a view to the utilization of now unfermentable sugars.

The rapid progress of forestry in southern pines necessitates further refinement of methods in the production of naval stores. Methods of realizing naval stores and lumber from the same stand of pines with a minimum of lumber degrade are especially important. Physiological studies of the resin production in the living tree would also undoubtedly lead to further economies in operating methods.

Senator McNARY. Tell us in a word what you want in the way of an increase.

Mr. KELLOGG. We are simply asking for the Budget figure. I will tell you in as few words as possible if you will leave me alone for just a minute.

We had not expected to have to come before this committee at all, or to bother you for a minute. We made our case before the Director of the Budget on the 26th day of October, and we got very nice treatment from the Director of the Budget. In the House, however, the item was not read at all when it came up for passage. It was passed, like a great many other items in this bill, without ever being read to the House. I am not here to criticize procedure necessarily, but I am simply stating the facts. As the bill passed the House, it cut \$40,000,000 from the Budget estimate for the Forest Products Laboratory at Madison.

We are simply here to ask that the Budget be sustained. We are thoroughly in favor of the Budget principle. We have worked for the Budget in general. We are all taxpayers. At the same time, as we told the Director of the Budget in October, from the standpoint of forest utilization in this country, we have gotten exceedingly tired of a policy, which has been going on for a great many years, of saving at the spigot and wasting at the bunghole; and that is exactly what has been happening.

Senator McNARY. Colonel Greeley was here yesterday, asking for the restoration of the Budget estimate, and he specified \$40,000 in three items—\$25,000 for wood utilization, \$10,000 for the conversion of southern pine to white paper, and \$5,000 for preservative treatment of lumber.

Mr. KELLOGG. I did not know that he was here.

Senator McNARY. I wanted to get that in the record. You are asking that the \$40,000 be used in the same manner, are you?

Mr. KELLOGG. Yes, sir; I will not raise any question at all as to that. I did not know that Colonel Greeley was here. I have not seen him, or anything of the kind. We came here entirely on our own initiative. We do ask that that amount be restored.

Senator McNARY. You have no objection to this allocation of money?

Mr. KELLOGG. No; we have not.

Senator McNARY. You want the item increased by \$40,000?

Mr. KELLOGG. Yes; we want the amount allowed by the Budget. The point is this: There are three things that the National Government can do in helping maintain and utilize a permanent timber supply in this country. No committee knows any more about it than the committee sitting around this table, because they have been working on this problem for a great many years, and we have come to them time and again, and they have treated us splendidly.

As I say, there are three things that the National Government can do. The first is the setting up of the required amount of timberland in public ownership—not by any means the total. The bulk of all

our timberland and all our forest products, as far as we can see, forever, is going to come from privately owned lands; but we must have the backbone of publicly owned lands to grow a good many of the larger sizes and older classes of timber that we can not possibly have grown under private ownership, and for the protection of watersheds; and we have the Government embarked on this long-time program of purchase and setting up national forests. That is one thing.

We have again, through the McNary-Clarke law, the basis for cooperation with the States in the protection of land, both public and private, from fire. We have to have the forest area in the first place. We have to protect it from fire in the second place or all this talk about forest planning and forest land and everything of that kind is wasted. You can not do it unless you protect it from fire and save it from burning up. That is the second thing.

The third thing the Government can do is to promote, through prolonged and very careful and painstaking and fundamental scientific research, the full utilization of our crop of timber after we grow it.

There are those three things that are absolutely fundamental, that we think are within the program and the proper province of the Federal Government to do.

We are making splendid progress in the first two. We have not yet done nearly enough on the question of utilization. It is for that reason that we have set up a program here which we are not pressing yet, but we can absolutely justify a program of at least a million dollars a year on the part of the Federal Government for fundamental research in the utilization of forest products. That is the program we set before General Lord. We told him we did not have any idea of getting it at this time, and that we were not asking for it at this time, but that that was the program toward which we were going to work, and we wanted him to go as far as he felt he could go in carrying out the President's policy of national economy, which we indorse. He treated us nicely; and we are simply asking now that this committee give us the \$40,000 that the Budget allowed, which means an increase over last year for the specific projects which you mentioned there, Senator.

As I say, we are asking you simply to restore that item; and we will not take any more of your time unless you wish to ask us questions. We have all kinds of supporting detail.

Senator McNARY. Colonel Greeley went over that matter very carefully yesterday. We are very glad to know that your organization, which is a large one throughout the country, are interested in this matter of timber conservation, and are back of the movement to restore the estimate of the Budget.

Mr. KELLOGG. This committee, as you may know, has been working on a consistent program for the past seven years covering all the main features of a national forest program for this country, and this is one of them. I am very glad to know that Colonel Greeley was here yesterday. I got into Washington this morning from New York, and did not know anything about it.

Mr. Compton, I think, would like to say a word, if you have time to hear him.

**STATEMENT OF WILSON COMPTON, SECRETARY OF THE
NATIONAL LUMBER MANUFACTURERS' ASSOCIATION****FOREST PRODUCTS LABORATORY**

Senator McNARY. Mr. Compton, give your full name, address, and occupation, and the association you represent.

Mr. COMPTON. I am a member of the National Forestry Program Committee, also, and the secretary and manager of the National Lumber Manufacturers' Association.

I realize that your time is short. In view of the circumstance that Colonel Greeley was here yesterday, I think it is not necessary that we should take any special time, because we are in sufficiently close touch with him to know that whatever he may have suggested will be well considered, and undoubtedly will be serviceable from the standpoint from which we ourselves should have approached the matter.

There are one or two facts, possibly, that might well be called to the attention of the committee.

The Government is, whether it wants to be or not, the largest timber owner in this country, and probably will continue indefinitely to be as large if not larger than it is now. At the present time it owns about one-third of the remaining virgin timber, the original timber; and its holdings, through the process of gradual acquisition by purchase, are continuing to increase; and those holdings are well cared for. The Government, therefore, is in the timber business. A considerable use is being made now of Government timber in the processes of forest industries, not only in the lumber but in the paper and pulp and miscellaneous industries; and the dependence will be more and more on the Government-owned timber as time goes on.

The Government, particularly the President, the Secretary of Agriculture, and various committees, have asked the forest industries to make progress in tackling this definite question of saving of wood waste. It is estimated by the Government itself that the preventable waste, the waste that is susceptible of saving through the processes that would result from the enlargement of this research program in wood products, is \$568,000,000 a year—the savable waste. I am not prepared to say that that figure is either right or wrong. Obviously, there is a substantial waste in the sense of materials that are not now being utilized which could be utilized if there were available the type of information which it is believed by those most competent to say would be procured by an enlarged program on the part of the Forest Products Laboratory; and the pending item of \$40,000, recommended by the Budget but not appearing in the House bill would be, of course, a substantial step in that direction.

Senator OVERMAN. What are the great lumber companies of the country doing toward this program?

Mr. COMPTON. I was just going to mention that as the third point which I wished to leave with this committee, Senator Overman. This program does not involve anything which the lumber industry itself or any of the forest industries themselves can do. It either involves a type of information which is not within the scope of the practical activity of privately conducted industry, either in this field or in any other, or else it is a type which is of such manifest public

advantage that it ought to be available to everybody. That is, if large expenditures are incurred by big companies, we all know that they want to have a proprietary control of them, in the sense, almost, of a patented restriction. That is not what we are talking about here. Those things are going on day by day; individual companies are making good progress, but they are patenting their discoveries; they are controlling them. Of course that is not the thing that is going to solve the broad question which is represented in this figure, if it is substantially correct, of \$568,000,000 a year of savable waste.

In response to the request, if you please, of the President, at the time when the Secretary of Agriculture called a conference of some 400 or 500 representatives of the wood-using industries and the distributors and consumers of wood products here in Washington about two years ago, he made a strong appeal that they should tackle this question. The industries have tackled it. The lumber industry, I might say—and I am more competent to speak for that than for any other single industry in this group—is spending about \$2,500,000 a year, and is expecting during the next year to add at least another million dollars to that, in putting to work just the results of this type of research, in solving or attempting to solve this problem of wood waste, and the efficient utilization of the products of the forest. We are not coming here in the sense that we are asking the Government to do for us something that we are capable of doing for ourselves; but the Government has assumed a position of leadership, and has requested the forest industries to do something. We are doing our part. We are going after this problem. We are putting up money, and putting up more money, and we have more to come. The fact is that the Government's part is lagging behind. We are waiting now on the Government, and we will continue to wait on the Government until this problem of wood utilization is tackled in a much more decisive way and given much more liberal treatment by the Congress, both in an authorization bill, possibly, and by the appropriations annually, than it has had at any time heretofore.

Whether or not the proposal of an authorization which Mr. Kellogg mentioned of a million dollars a year will be adequate, whether it is too much or too little, remains to be seen. Undoubtedly that question will have to be thrashed out on its merits; but it is very safe to say that the present situation in the field of forest products research conducted by the Federal Government can be fairly characterized as a lag on the part of the Federal Government in keeping up its end of the bargain.

Senator McNARY. Thank you, Mr. Compton, and Mr. Kellogg. I think we understand the item.

Mr. COMPTON. Thank you.

Senator McNARY. We have here some men from the dairy industry. Mr. Loomis, I observe your presence here. Is Mr. Woolman here?

Mr. LOOMIS. Mr. Woolman is here. I will make a very brief statement, if I may.

Senator McNary. And I think Mr. Rasmussen is here.

Senator KENDRICK. I have several telegrams here in connection with this particular item.

Senator McNARY. I have several, too. Let us see whether or not this is the item. Mr. Loomis, for the record, please state whom you represent.

STATEMENT OF A. M. LOOMIS, SECRETARY OF THE AMERICAN DAIRY FEDERATION

BUREAU OF DAIRY INDUSTRY

Mr. LOOMIS. My name is A. M. Loomis. I am the secretary of the American Dairy Federation, and am here with reference to the appropriation for the Bureau of Dairy Industry. I have not a copy of the bill before me.

Senator McNARY. That item is on pages 21 and 22.

Senator OVERMAN. Where are your headquarters?

Mr. LOOMIS. My office is in the city of Washington.

Senator McNARY. What increase are you asking?

Mr. LOOMIS. We want to ask for what the Budget has recommended.

Senator McNARY. That is \$21,700 in addition to what the House allowed?

Mr. LOOMIS. Yes; and we should like to have just a few minutes to tell the committee why we ask for it.

Senator McNARY. And I suppose you indorse the program which Doctor Larson gave to the committee yesterday so far as the allocation of the funds is concerned?

Mr. LOOMIS. Yes. The only thing we desire to do in addition to that is to make a very brief statement to the committee of our statement to the Budget Bureau which preceded that.

Senator McNARY. Very well.

Mr. LOOMIS. Mr. Henry N. Woolman, of Philadelphia, chairman of the American Dairy Federation committee on relations with the Department of Agriculture, will present the matter to you.

STATEMENT OF HENRY N. WOOLMAN, OF PHILADELPHIA, PA.

BUREAU OF DAIRY INDUSTRY

Mr. WOOLMAN. Mr. Chairman, I am a milk dealer of Philadelphia, and chairman of this committee of the American Dairy Federation.

I want to tell you, first, that the American Dairy Federation represents all parts of the dairy industry, which, as I understand, is an industry of some two and a half billions of dollars.

Senator McNARY. That is the gross business per annum?

Mr. WOOLMAN. Yes, sir.

Senator McNARY. How does that compare with other branches of the agricultural industry?

Mr. WOOLMAN. It is as large as wheat and cotton and potatoes.

Senator HARRIS. All three?

Mr. WOOLMAN. All three. I think that is about the size of the dairy industry.

Senator McNARY. Then it is the largest branch of the agricultural industry to-day?

Mr. WOOLMAN. Probably; very, very close to it.

Senator McNARY. What would come next?

Mr. WOOLMAN. I could not tell you, sir.

The Bureau of Dairy Industry has an appropriation of \$495,000 to carry on the work of this large industry. The American Dairy Federation appointed a committee a year ago, so that the industry would get in closer touch with the Bureau of Dairying and with the Bureau of Agricultural Economics. We gathered together here some 50 different representatives of the industry, and I want you to understand clearly that we are all united in this--the entire industry, probably with the exception of the cheese industry, who have a defunct organization. Every other industry--the different breeding associations, the producers and the distributors of milk, ice cream, and butter--some 19 different industries are represented, and we are a unit.

We came down last year and saw Secretary Jardine, and put before him our program. He sent us over to Doctor Larson. We worked out with him a suggestion that we ask the Budget officer for \$100,000 additional, \$50,000 to be spent upon production problems, the farmer's production, and the other \$50,000 upon the distribution and manufacture of dairy products.

We then went to see General Lord, and presented our case in detail to him, and he found available \$21,700.

We are here to ask you to reinstate that addition to the \$495,000. We want to stress the small amount of money that is being spent on the dairy industry in the department here in Washington, and that the industry is united in the belief that that \$100,000 could have been spent to the great advantage of the producers of milk in the United States.

Senator McNARY. Do you indorse the program which Doctor Larson outlined to the committee yesterday?

Mr. WOOLMAN. Yes; entirely, sir.

Senator McNARY. And so you are here, representing this great industry, asking for the restoration of \$21,700, to be used in the manner suggested by Doctor Larson in the hearing yesterday?

Mr. WOOLMAN. Yes, sir.

Senator McNARY. Just as a matter of curiosity, how many people are engaged, employed and interested in the milk industry and its products?

Mr. WOOLMAN. There are some 23,000,000 cows. I do not know; who can answer that?

A GENTLEMAN. There are about 6,000,000 owners of cows, but they are not all in commercial business.

Mr. LOOMIS. Professor Borland, the secretary of this committee, is scheduled to go on very briefly, and I think he can answer that question.

Senator McNARY. It is not very material. You say there are 19 different branches of the dairy industry?

Mr. WOOLMAN. Yes.

Senator McNARY. Does that include ice cream?

Mr. WOOLMAN. Ice cream, butter, and so on.

Senator OVERMAN. What is being done to disseminate information to the farmer who prepares the milk and brings it to market, so that you will get better milk?

Mr. WOOLMAN. That is being done through bulletins issued by the Bureau of Dairy Industry, and through the Bureau of Agricultural Economics. We found that they were giving out a great deal of information when we were here last year. We spent three days with them.

Senator CAPPER. Can you see that the dairy industry is getting any help from the appropriations heretofore made by the Government?

Mr. WOOLMAN. Oh, yes. They are leading us in questions of breeding, in questions of how properly to feed our cows, how to get more production per cow; and, then, when we go over to my side of the industry, the distribution of milk, they are continually studying and experimenting on how to handle milk, how to Pasteurize it properly, and how to take care of it properly. Also, they are looking into the economic questions of the loss of bottles, economic methods of running our Pasteurizing and bottling plants, and so on. They are, continually doing that. To show you the attitude of the industry we had this meeting last year, and we have another one scheduled for this spring, to come down here and spend two or three days with the two departments, to get better acquainted, and to make further use of the information which is already going out.

Senator McNARY. Doctor Larson yesterday wanted \$4,200 for ice-cream investigations.

Mr. WOOLMAN. Yes. Mr. Rasmussen is here to talk on ice cream.

I just want to say one word more, and that is that as far as I can see, in the years since the war, milk, relatively speaking, has been the best crop the farmer has had. Secretary Jardine said that three or four counties around his home town, in his corn section, would have gone entirely to the dogs if it had not been for the dairy cow in the last three or four years.

Senator OVERMAN. The cotton section is being urged to diversify by putting in cattle in the different fields of the South. Has that diversification been going on among the farmers?

Mr. WOOLMAN. I believe it has; yes, sir.

Mr. LOOMIS. The next speaker is Prof. A. A. Borland, secretary of our committee, and head of the dairy department of Penn State College.

STATEMENT OF PROF. A. A. BORLAND, OF PENNSYLVANIA STATE COLLEGE

BUREAU OF DAIRY INDUSTRY

Senator McNARY. What are your connections?

Professor BORLAND. I am head of the dairy department of Pennsylvania State College—the State College of Pennsylvania.

Senator McNARY. Where is that located?

Professor BORLAND. At State College, just about the center of the State. The State agricultural experiment station is located there, and the college is in connection with it.

I just want to take about two minutes to present one phase of this matter, and to bespeak your sympathy for the dairy industry. Doubtless it will not be necessary for me to do that; but I want to

emphasize one thing, and that is the close relation of the dairy industry to human welfare.

In the United States, according to the census, we have about 2,500,000 babies under 1 year of age, and about two-thirds of those, or about 1,800,000 babies, have to depend on cow's milk for food, either wholly or in part, before they are 1 year of age, so that that does make this industry one of tremendous importance from the standpoint of human welfare. Out of every dollar spent for food the average family spends about 20 cents for dairy products. For that 20 cents the average family gets about one-fifth of its protein, and about 40 per cent of the energy of ordinary, every day, human ration.

I might add one word further. Something over 79 per cent of all the farms of the United States are keeping dairy cows; so that the industry is a widespread one.

Senator McNARY. Doctor, I appreciate all that, and I think the committee does, but here is \$21,700 that is requested to be appropriated by this committee. Is it very important that this committee restore the Budget estimate in that respect?

Professor BORLAND. We feel that it is of very great importance that it be restored.

Senator LENROOT. I, as a member of the committee, should like to have some discussion by you gentlemen as to the importance of these items. We are all in sympathy with your general statement.

Senator McNARY. Doctor Larson itemized them yesterday, one by one. He wanted, in many instances, to employ a junior chemist, an assistant.

NUTRITION OF DAIRY COWS

Professor BORLAND. I can give you what we want in just a word. Part of that increase is asked, first, for the nutrition of dairy cows.

Senator McNARY. Yes; the first \$1,860 was for nutrition of dairy cows. That is the first item.

Professor BORLAND. From that standpoint, speaking very briefly, there is a tremendous lack of information concerning the nutrition of dairy cows, the effect of the ration upon the resulting product, the mineral nutrients of the milk, and the effect of feeding these cattle so as to make the product what it should be from an economical standpoint.

I will say just a word or two about this. Some other person may know more about it than I do.

For the dairy cattle breeding investigation, \$3,400 is requested.

Senator McNARY. Will you pardon me a minute before you go to that?

Professor BORLAND. Yes, sir; certainly.

Senator McNARY. We all realize the value of work in connection with the nutrition of dairy cows; but, according to my notes, there are two expert chemists employed in that work now. They want a junior chemist. Do you know whether it is important that they should employ this junior chemist at \$1,800? That goes to the root of the matter—not a general discussion of the value of nutrition.

Professor BORLAND. No; I should have to take Doctor Larson's word for that, because I am not well enough acquainted with the details to speak with certainty on it.

DAIRY CATTLE BREEDING INVESTIGATIONS

Senator McNARY. Very well. Now, you were speaking about \$3,400 for dairy cattle breeding investigations. That is the next item.

Professor BORLAND. Yes. What I can speak about is simply the importance of these various lines of work from the dairy industry standpoint. I shall have to leave the details of the dollars and cents to Doctor Larson himself, who knows what he needs to carry out this line of work. I do know that there is a tremendous need for dairy cattle breeding investigations, and that sort of things.

Senator KENDRICK. Have you had any experience with that kind of extension work in your section of the country?

Professor BORLAND. Any experience in dairy cattle breeding?

Senator KENDRICK. In this activity of the Government, in furnishing pure-bred sires to farmers, and extending the question of better breeding from their stations?

Professor BORLAND. We have had some experience right at our own institution along that line. We have been trying, in our own college dairy herd, to get these proven sires; and it is almost like looking for a needle in a haystack to get them without the evidence that the dairy bureau accumulates concerning the records of daughters of bulls in these cow-testing associations. There they get the evidence, and through the cow-testing associations we got one proven sire at our institution that is going to do us a tremendous amount of good. We found that a certain man had a bull whose 15 daughters had averaged over 500 pounds of butter for twice-a-day milking, and through the cow-testing associations we got a report on the bull; we got him, and brought him to our institution; and we expect to get tremendously good results from that particular bull. If that sort of thing could be spread around over the country as the dairy bureau intends that it shall be, there will be a tremendous impetus to better dairy cattle in the country. We got one through this particular sort of thing that Doctor Larson advocated.

Senator KENDRICK. Is it your conviction that by that process you will increase the average production of cattle, or that each individual will have to be tested and tried out as to its own merits, the same as is done now?

Professor BORLAND. The most promising thing in the country is to get improved production in that way. The average cow in the United States produces about 4,000 pounds of milk. Here were the daughters of this proven sire that averaged over 15,000 pounds of milk. If bulls like that can be discovered, think what it will do to lessen the cost of production per hundred pounds of milk. It is the most promising thing I can think of for improving the condition of the average dairy farmer. Better cows are the secret of lessened cost of milk production.

Senator LENROOT. I should like to ask some one whether that work is being carried on under the Bureau of Animal Industry also?

Professor BORLAND. No; I think not. The records of these dairy cows are being carried on through the Bureau of Dairy Industry primarily and altogether, so far as my knowledge goes. The Bureau of Dairy Industry has this cow testing.

I had better not take any more of your time unless there are some questions. I should be glad to go over those different items here, and speak of them, if you would like to have me do so.

Senator LENROOT. I should be glad if you would go over them.

Professor BORLAND. I do not think more needs to be said about the importance of this dairy bull proposition.

Senator OVERMAN. What about the pedigree of the bull? Is that an exploded idea?

Professor BORLAND. No; it is not exploded. Usually a bull whose dam and granddams were high producers is a bull whose daughters will be pretty good producers; but there are a good many exceptions to the rule. Some of the best bred bulls which seemingly ought to get good daughters get very ordinary daughters; so that as a rule the pedigree counts for considerable, but it is not in anywise a measure that can be depended on in the matter of proven sires whose daughters have actually demonstrated their ability to produce.

Senator KENDRICK. A pedigree, in other words, is absolutely essential, but not always dependable?

Professor BORLAND. Yes; that is it. It is highly desirable for a bull to have a good pedigree, with good production back of him; but there are a good many exceptions to that rule.

Senator McNARY. If the bull has a good pedigree, but his production is less than that of his ancestry, do you exterminate him, put him out of the breeding?

Professor BORLAND. Yes; he goes to the butcher.

Senator McNARY. Has not that been practiced from time immemorial among dairy men?

Professor BORLAND. Yes; to a considerable extent, although the unfortunate situation is that most bulls go to the butcher before the dairyman has found out whether they are good bulls or poor bulls; but, with the investigations of the dairy bureau and the cow-testing associations to get the records of those bulls before they go to the butcher block, we will know whether they properly should go, or whether they should be retained for breeding purposes.

Senator McNARY. Do you have to experiment further in that field?

Professor BORLAND. No.

Senator McNARY. Is not that a self-evident proposition that any prudent man ought to know in any industry?

Professor BORLAND. The unfortunate thing is that a good many farmers do not seem to have, perhaps, the prudence or the facilities for keeping these records. It takes quite a little bit of time. When you weigh the milk from each cow and test it for butter fat, and weigh the feed each cow eats, and figure out the profit or loss, and the value of the product, and the value of the food, etc., the average harvest hand is apt to say: "By gosh, I can't take the time to do this sort of thing."

Senator McNARY. You just want to do that for the farmer?

Professor BORLAND. Yes; they do that for the farmer in the cow-testing associations.

MILK-POWDER INVESTIGATIONS

A word about the milk-powder investigations:

Milk powder is a comparatively new thing in the dairy business. It has large possibilities for usefulness by taking out the water, the moisture from the milk, and then it leaves the milk-powder to be reconstituted in Africa or South America or wherever it may be shipped to. It is in its infancy, and so investigational work is needed.

Senator McNARY. Have they not been preparing desiccated milk for a great many years?

Professor BORLAND. Well, perhaps; I would not say for a good many years, but for the last five, six, seven, or eight years; but even yet it is very incompletely developed. It is still comparatively in its infancy.

Senator McNARY. What portion of the product is powdered?

Professor BORLAND. A very small proportion at the present time; somewhere in the neighborhood of probably 3 or 4 per cent of the milk at the present time.

Senator McNARY. There is no particular demand for it in this country, is there?

Professor BORLAND. Yes; there is quite a little demand, especially in the ice-cream industry. It has large possibilities there; and in the bread-baking industry they are using it in increasing amounts. We are just starting in an experiment at our Pennsylvania State College to find out its use for calf-feeding purposes. The man who sells his whole milk on the market has no skimmed milk with which to raise calves. Various substitutes have been tried. Up to the present time, skimmed-milk powder has been found to be the most efficient as a calf feed; so we are starting a rather extensive experiment in cooperation with the dried-milk industry at the present time to find out whether this dried milk may be fed directly to calves, and raise them in that way, rather than to put water into it, remix it, and get a sort of skimmed milk again. If dried milk will suffice for raising calves directly, fed dry, it will be quite a factor in the matter of raising calves.

Senator LENROOT. Is its use for ice cream, for instance, a benefit or an injury to the milk producer?

Professor BORLAND. It is an advantage in this way, that the dried milk contains the solids of the milk except the fat—the skimmed-milk powder.

In order to make a good ice-cream mixture it takes about 10 or 12 per cent of fat, perhaps, and about 10 per cent of solids not fat, which come from this skimmed milk. Now, a man can take skimmed-milk powder and mix it with his cream and get a mixture containing so many per cent of fat, so many per cent of sugar, so many per cent of milk solids not fat, and get a desirable ice-cream mixture in a very easy and efficient way by the use of dried milk-powder.

Senator KENDRICK. Have you any information as to how efficiently it is used in tropical countries and in hospitals and in places where fresh milk is not to be obtained?

Professor BORLAND. I have very little exact information that I could give you as to what is actually being done along that line. I can simply say that it has possibilities; there is no reason why it can

not be done in foreign countries and in hospitals where milk is not available, because it can be reconstituted readily.

Senator KENDRICK. I explained to the committee yesterday a personal experience on a hospital ship down in the tropics, where I was told by the doctors who gave this milk to their patients that our soldier boys found it very much more palatable and it was very much more desirable for them than any kind of condensed milk they could get.

Professor BORLAND. I think the committee has sufficient information to see the possibilities of it; and I think I should leave the ice-cream situation to Mr. Rasmussen, who is the secretary of the National Ice Cream Makers' Association.

As to the bacteriology and chemistry of milk, and the construction of buildings at the Beltsville dairy farm, I have no doubt Doctor Larson mentioned that. They do not have a manure-pit down there, and that is the proper thing to have.

I thank the committee for its kindness.

STATEMENT OF FRED RASMUSSEN, EXECUTIVE SECRETARY OF THE NATIONAL ASSOCIATION OF ICE-CREAM MANUFACTURERS

ICE-CREAM INVESTIGATIONS

Senator McNARY. Please state your full name, address, and occupation.

Mr. RASMUSSEN. My name is Fred Rasmussen. I am executive secretary of the National Association of Ice-Cream Manufacturers, with offices in Harrisburg, Pa. We have affiliated with the national association 23 State and regional associations, all of which are listed on the paper which I have handed to the reporter.

Senator McNARY. Very well. I suppose you want more or less to confine your remarks to the ice-cream item?

Mr. RASMUSSEN. I shall be glad to do so—whatever is your wish.

Senator McNARY. Very well. Doctor Larson yesterday was asking the sum of \$4,200 for ice-cream investigations.

Mr. RASMUSSEN. Yes. Ice cream, as you know, is a frozen product, run through machines where it is frozen into a semiliquid state; but after that it is put into hardening rooms where it is kept at a much lower temperature, and there is really where the freezing process takes place.

One of the great difficulties we find in the ice cream industry to-day is the changes that take place in ice cream after it is frozen, when it is in the hardening room, and as it goes out to the trade. That is an extremely complicated problem to study, because it involves the physical properties of every constituent that is in the milk. Those constituents include butter-fat and protein and albumen and sugar and minerals; and we have been unable to know what particular factor or what particular ingredient in the ice cream caused these changes. It is a study that will take a biochemist and a physicist to work out, and it can only be worked out by working on one particular factor at a time, with the elimination of other factors. Therefore it is a problem which will take unusual facilities, men of unusual training—not only one man, but a man who has an opportunity to associ-

ate himself in conference with other men who are working in physics and in chemistry.

Our industry feels that the problem is beyond the ability of any individual manufacturer to work out, and it is one that must be taken up in a place where there are the facilities and the brains available along many different lines; and we believe that they have those things in the Bureau of Dairy Industry.

It has been my privilege to know intimately the workings of the Bureau of Dairy Industry for 20 years. I should like to say here that to-day that bureau is finding the place which in our judgment it ought to fill in the industry, and that is to deal with fundamental research on some problems that are beyond the control of individual manufacturers, and even of individual experiment stations; because we do have in the Department of Agriculture many branches, and all of these men can contribute to the solution of these problems.

Some questions were asked in regard to skimmed milk and the use of other dairy products in ice cream.

There are to-day 4,500 wholesale ice-cream manufacturers in the United States, with a total investment of \$450,000,000. The production of ice cream in 1925 was 322,000,000 gallons, making a consumption of practically 3 gallons per capita. We fill a very unique place in the dairy industry, because we have our heaviest production at the time or right following the time of the heaviest milk production. In other words, 67½ per cent of all the ice cream manufactured is manufactured in May, June, July, and August; and we come along and take that surplus from the milk industry, from the butter industry, and the condensed and powdered-milk industry. We are using in the manufacture of ice cream to-day almost as much milk and milk products as are used in the manufacture of cheese in the United States. We are using more milk than is used in condensed and evaporated milk; so that ice cream as an industry has taken a very prominent place in the dairy industry as a whole.

Some one asked the question if it was a good thing to use skimmed-milk powder or whole-milk powder in the making of ice cream. It would be impossible to supply the necessary amount of ice cream without using these products. Take the great South, for instance, where the dairy industry is still undeveloped. They use large quantities of milk powder, butter of high quality, and condensed milk; and those products of good quality will make an excellent ice cream.

Senator McNARY. That is interesting. You say the combination of butter and desiccated or powdered milk will make a good ice cream?

Mr. RASMUSSEN. Yes, sir.

Senator McNARY. Without any other ingredient save the usual flavoring, and so forth?

Mr. RASMUSSEN. Water to dissolve the powder and flavoring etc. We have machines in the ice-cream industry that can take first-class butter, powdered skimmed milk, and water and make a cream of absolutely the same definite constituents that you would get out of a cream separator.

Senator LENROOT. Does that make as high a quality of ice cream as pure cream and milk?

Mr. RASMUSSEN. If all the constituents are A No. 1.

Senator McNARY. If all the constituents are A No. 1, what?

Mr. RASMUSSEN. Then it will make a very high quality ice cream.
Senator McNARY. As good as that made from fresh cream?

Mr. RASMUSSEN. Ice cream made in this way, when given to 25 people to taste in comparison with that made from cream, will call forth a great variety of opinions. There are men who claim, Senator, that the best product will come from the fresh cream; but, even with fresh cream, manufacturers add skimmed-milk solids to make a product that will carry, in about the same proportions as we find in milk, all the milk constituents, so that we get in ice cream about the same balanced food as we have in milk.

Senator LENROOT. Is not the greatest difficulty in the ice-cream business not the lack of knowledge, but the desire upon the part of so many of the manufacturers to use the cheaper products, and thus get a lower grade of ice cream?

Mr. RASMUSSEN. I do not agree with you in that. Ice cream is a product that is sold in a very large measure upon the basis of palatability. We eat it very largely because it is cooling, it is refreshing, and it tastes good. You can not make a good ice cream that will meet the demands of the market from anything except a good quality of these other products. You can not use poor butter. It tastes worse after it gets in a frozen condition in the ice cream than it does when you originally taste it.

Senator OVERMAN. As to its nutritive value, how is it if you make it out of cream, or make it, as you say, out of butter and skimmed-milk?

Mr. RASMUSSEN. The nutritive value would be identical, because there has been nothing done in the processing of any of these products that went into the ice cream that would take away any of the nutritive value.

Senator LENROOT. Is it not true, Mr. Rasmussen, that an analysis of ice cream sold at soda fountains, etc., shows very great variety as to quality and ingredients?

Mr. RASMUSSEN. I will answer that question in this way, sir: Every State in the Union except one, I believe, has a law that provides minimum requirements for ice cream. In very many States they have 8 per cent as a minimum of butter fat. In your State they have 12 per cent as a minimum of butter fat.

Senator McNARY. It is the same in Oregon.

Mr. RASMUSSEN. In Oregon it is 12 per cent; in California, 10 per cent. It varies from 8 to 14 per cent of butter fat. The fact is that even where they have 8 per cent butter fat prescribed as a minimum, analysis shows that there are very few people, and none of the larger manufacturers, that use as little as that.

Take, for instance, Pennsylvania, which has a requirement of 8 per cent. The average of the State will be between 11 and 12 per cent, which shows that the manufacturers are working toward finding the product that will give satisfaction in the trade; and they must depend on satisfying the palates of those people in order to sell the product.

Senator McNARY. The public demands a richer ice cream than one containing 8 per cent of butter fat?

Mr. RASMUSSEN. Yes.

Senator McNARY. That is the reason why you go above the standard fixed by statute?

Mr. RASMUSSEN. We want to cater to the public demand, and we believe that each manufacturer should find the character of product that will give satisfaction to his trade. In the South, for instance, there are many people who have the opinion that 12 per cent of butter fat would not be as desirable as a lower percentage, because of fat being somewhat of a heating product, and therefore they have held that it may be 10 per cent. Most of the Southern States have a requirement of 10 per cent.

Senator LENROOT. Take ice cream of the highest standard of manufacture: What are the ingredients?

Mr. RASMUSSEN. You want the chemical composition?

Senator LENROOT. Yes.

Mr. RASMUSSEN. The ingredients are from 10 to 12 per cent of butter fat, from 13 to 15 per cent of sugar, about 10 per cent of milk solids not fat, and then some manufacturers add one-half of 1 per cent of gelatine, and then, of course, the flavoring—whatever particular flavor it may be.

Senator LENROOT. Now as to the milk solids: In the highest type of manufacture, in what form are the milk solids procured by the manufacturer?

Mr. RASMUSSEN. Skim milk solids in condensed or evaporated milk and skim milk powder are used in most commercial ice cream.

Senator LENROOT. What percentage of milk solids would you get in cream?

Mr. RASMUSSEN. Of course that depends somewhat on the per cent of fat we have; but if we take 10 or 12 per cent, say, we probably would get about 8 per cent solids other than fat from the cream.

Senator LENROOT. And what did you say the milk solids were?

Mr. RASMUSSEN. The solids other than fat range from 10 to 12 per cent.

Senator LENROOT. Then pure cream furnishes both the fat and the solids?

Mr. RASMUSSEN. Yes, but not as much milk solids as are required to give the best product.

Senator LENROOT. You said you could get 8 per cent from cream.

Mr. RASMUSSEN. Eight per cent, yes; but there is a very distinct difference in texture, Senator, between an ice cream that has 7 to 8 per cent solids not fat and one that has between 10 and 12 per cent. From the standpoint of the public and from the standpoint of the dairy industry that is a very excellent way to save the milk solids not fat that the farmers and the creameries in many instances have let go to the sewer heretofore.

Senator LENROOT. From the standpoint of the farmer, is he not better off with as large a market as possible for his pure cream, combining both butter-fat and milk solids, than he is with a combination of butter and powdered milk which is composed of skimmed milk?

Mr. RASMUSSEN. Well, the question is the utilization of as large a total of milk solids as possible for human food.

Senator LENROOT. I am speaking now of the interest of the dairy farmer.

Mr. RASMUSSEN. The dairy farmer's interest is certainly enhanced by the use of milk powder where he can sell his skimmed milk or his whole milk and get an additional value for that in milk-powder consumed for human food.

Senator LENROOT. But he has a less market for his cream.

Mr. RASMUSSEN. Oh, no; he has no less market for his cream.

Senator LENROOT. Why not?

Mr. RASMUSSEN. This is used in addition to the cream. You can not get from the cream all the milk solids not fat that you want to get in your product.

Senator LENROOT. But you said you could take butter and milk powder and get your combination without cream.

Mr. RASMUSSEN. Yes; but before that butter and that milk powder were made, that was milk and cream.

Senator LENROOT. Oh, certainly.

Mr. RASMUSSEN. So that there was a market for that milk and cream to go into butter and to go into milk solids.

Senator LENROOT. I am just looking at the economic side of the matter. Do you say that the farmer would be just as well off if his milk were devoted to cream for the manufacture of butter and the manufacture of powdered milk as he is when he has a market for his pure cream?

Mr. RASMUSSEN. Of course, I am looking at this matter from a national point of view, and from the standpoint of the industry as a whole.

Senator LENROOT. I was inquiring from the farmers' standpoint.

Mr. RASMUSSEN. I do not know whether I can answer that question to your satisfaction, Senator, or whether I am able to explain it to my own satisfaction. Perhaps I had better put it another way.

Senator LENROOT. In other words, it is not altogether necessarily true that we are advancing the dairy interests by encouraging the utilization of butter and powdered milk for the manufacture of ice cream instead of pure cream?

Mr. RASMUSSEN. But, Senator, the manufacturers of ice cream always buy all the cream that they can get; but that supply is absolutely insufficient to furnish the requirements that go into making ice cream. If we should not use to-day butter, condensed milk, skimmed-milk powder and powdered milk in ice cream, I can not estimate how many million less gallons of production we would have, because ice cream would not be available.

You know, every summer they ship cream from Wisconsin down here to Washington and points south, even; and during July and August, when the flies begin to get on the cows, and the milk begins to drop off, and the heat comes along and dries the pastures, they can not get the supply of fresh cream. There is no lessening of the use of fresh cream because of the butter and the milk powder that are used. In fact, in many cases good whole-milk powder will cost more than you have to pay for the same ingredients in fresh cream; so that there is the problem. It is a question of getting the maximum sale of all dairy products. All dairy products originate with the milk.

Senator LENROOT. Of course the manufacturer is a business man, and he wants to get his materials as cheaply as possible.

Mr. RASMUSSEN. Yes.

Senator LENROOT. The dairy farmer wants to sell his products as dearly as possible, of course.

Mr. RASMUSSEN. Yes, sir.

Senator LENROOT. And from the standpoint of the economics of this matter, of course, if a combination of butter and powdered milk would mean a cheaper production to the ice-cream manufacturer, that is what he would employ if he could get the same result; but it might not follow that the farmer would get the same result from his standpoint.

Senator KENDRICK. It would follow, however, that the manufacture of this commodity in another form would furnish a wider and more dependable market for it.

Mr. RASMUSSEN. Absolutely. In other words, it is about April, May, and June that you have the largest production of milk, and the ice-cream men buy the surplus of fresh cream, as much as they can carry in storage houses, frozen, to meet that requirement. If they did not buy it, you would have the same condition that we had for many years, that when June came, the bottom went out of the butter market and the cheese market. Now we find that the butter prices and the cheese prices do not go on as much of a dip as they used to do.

Senator LENROOT. Is not butter higher now than it was last summer when you had this great demand for cream? Is not butter higher now than it was in June, July, and August?

Mr. RASMUSSEN. Oh, yes.

Senator LENROOT. And yet you say you had this very great demand for cream during that same time.

Mr. RASMUSSEN. Yes; certainly.

Senator LENROOT. And a less demand for cream now.

Mr. RASMUSSEN. But it does not mean that the ice-cream industry could buy up all the surplus cream or all the surplus milk in that form and store it during those months.

Senator LENROOT. No; what I mean is that based upon the law of supply and demand alone, the demand now is less, naturally.

Mr. RASMUSSEN. From our industry.

Senator LENROOT. From your industry.

Mr. RASMUSSEN. Very much so; but there is a tremendous difference, of course, in the production of raw milk at this time and in April, May, and June.

Senator McNARY. Does the large milk producer powder his product, or does he take it to a factory?

Mr. RASMUSSEN. Oh, he would have to take it to a factory.

Senator McNARY. How many factories are there in this country?

Mr. RASMUSSEN. How many milk-powder factories?

Senator McNARY. Yes.

Mr. RASMUSSEN. I really do not know.

Senator OVERMAN. Doctor Larsen spoke of eradicating sandiness from ice cream. Is it proposed to do that by some process of chemistry?

Mr. RASMUSSEN. Sandy ice cream is caused by the constituents in the ice cream while it is frozen, after it is in the hardening room, as we call it, going into a crystalline form. In other words, little particles of ice form in it. You may have tasted ice cream that was coarse. That has been practically eliminated by not putting in too high a percentage of milk solids not fat—that was one of the factors—and then, also, the conditions under which that cream was frozen.

Senator KENDRICK. Under favorable conditions of temperature, Mr. Rasmussen, how long is it possible to keep ice cream in a satisfactory way?

Mr. RASMUSSEN. I do not know that anyone could answer that question, because I do not think any tests have ever been made.

Senator KENDRICK. You ship it long distances, do you not?

Mr. RASMUSSEN. Oh, ice cream is shipped to Japan from the Pacific coast. They ship it over to Japan and to India, and I do not know how long it takes; and it goes on the steamers from New York to England and Europe and back again.

Senator KENDRICK. Is it ever kept in storage in warehouses for any length of time?

Mr. RASMUSSEN. Not in regular warehouses.

Senator KENDRICK. I mean, in refrigerating rooms?

Mr. RASMUSSEN. Every manufacturer has a large hardening-room; and in view of the fact that it is such a seasonal business—you may have a cold week, and then you may get three hot days in succession—he has to have a certain amount ahead to meet that hot weather, because during those three days his capacity for making ice cream might not be sufficient to meet the demand.

Senator KENDRICK. It just happens that the period of heavy milk production is coincidental with the period of heavy ice-cream consumption.

Mr. RASMUSSEN. Right following it, you see. April, May, and June are the heavy months of milk production. June, July, and August are the heavy months of ice-cream consumption. It immediately follows.

Senator McNARY. What are the keeping qualities of powdered milk?

Mr. RASMUSSEN. I think powdered milk, properly made and hermetically sealed, will keep almost indefinitely.

Senator LENROOT. Mr. Rasmussen, the smoothness of ice cream, or the lack of this sandy taste, is a very important factor in the marketing of the product; is it not?

Mr. RASMUSSEN. Very much so.

Senator LENROOT. And the greater the percentage of fat, the smoother it is apt to be?

Mr. RASMUSSEN. That does not follow at all.

Senator LENROOT. You just said that it was apt to be sandy because of a superabundance of milk solids.

Mr. RASMUSSEN. Yes; but it does not follow that the fat has anything at all to do with it. You might get that sandiness in ice cream that had 3 per cent fat, or you might get it in ice cream that had 16 per cent fat. The fat is not the important factor in sandiness.

Senator LENROOT. Is not a rich cream smoother?

Mr. RASMUSSEN. Not if it is sandy. I have had ice cream containing 14 or 16 per cent of butter-fat that was just as coarse and icy as it could be, especially if it lacked the proper amount of solids, because then there is a larger percentage of water in the product, and that goes into large crystals, and it becomes a very unpalatable product. There is a certain combination that is necessary. It is a very, very complicated product, because of the many constituents of different character that it involves, and because there are so many different constituents in the milk itself. You can have so many different combinations.

Senator LENROOT. What is the difference in taste between ice cream having a very low percentage of fat and ice cream having a

very high one if it is not in smoothness, if that has nothing to do with it?

Mr. RASMUSSEN. It will taste richer if the products were equally good, equally smooth. I thought your question referred to the question of iciness. If you have a rich product, high in fat, that of course tastes rich, just the same as cream that is high in fat tastes rich; but all our nutrition experts are opposed to a high percentage of fat standard in ice cream.

Senator LENROOT. There may be too much fat?

Mr. RASMUSSEN. That is the point. They claim that in the normal course of our dietary we generally get an excess of fat anyhow, and especially since ice cream is used largely for children, since that is a large market, they are encouraging us very strongly not to make it too high in fat.

Senator McNARY. Thank you very much, Mr. Rasmussen.

Mr. RASMUSSEN. I appreciate your courtesy very much.

Senator McNARY. Mr. Loomis, have you any more witnesses from out of the city?

Mr. LOOMIS. There is one more gentleman from out of the city that I should like to have you hear.

STATEMENT OF R. W. BALDERSTON, OF PHILADELPHIA, ON BEHALF OF THE NATIONAL DAIRY COUNCIL, AND OTHERS

BUREAU OF DAIRY INDUSTRY

Mr. BALDERSTON. My name is R. W. Balderston, of Philadelphia. My address is 1211 Arch Street, Philadelphia. I am representing one of the largest milk-producing organizations, and also the National Dairy Council.

Mr. Chairman, I represent about 22,000 farmers who are cooperatively selling milk in the southeastern part of Pennsylvania, and in New Jersey, Delaware, and Maryland. I am also here as a representative of the National Dairy Council, of which Mr. M. D. Munn, of Chicago, is the president.

You may be interested to know that the dairy industry itself, through the National Dairy Council and the regional councils throughout the country, is spending about three-fourths of a million dollars in educational work to inform the public of the importance of milk in its proper place in the diet, and also to work with the industry itself in educational movements for the improvement of the industry. We are spending in our own territory in Philadelphia about \$171,000 of which \$71,000 is spent in work to improve the quality of the product in its relation to the public. In connection with that work we have had a number of problems come up in the last three years on which we have had direct help from Doctor Larsen's group here; and I want to talk for just a moment in respect to the request for \$2,400 more than was given last year for work in bacteriology and chemistry of milk.

BACTERIOLOGY AND CHEMISTRY OF MILK

I thought you would be interested to know that we had a sudden outbreak of an obscure and mysterious off-flavor in milk which covered practically a whole county on the Eastern Shore of Maryland.

It was a bitter flavor. It was blamed on weeds and various things. We got a man from the Bureau of Dairying to help us out, and we discovered that it was caused by a rather obscure organism which was in the corn stover, the corn fodder which the farmers down there use for winter feeding. We found that we had to overcome that by having the farmers feed that immediately after milking, or in some such way, so that this organism would not affect the flavor of the milk. We need a lot more information with respect to the question of the flavors in milk, so that we will know how to produce milk of better and better quality.

Senator McNARY. Do you have any difficulty here, in the section which you represent, from the wild onion?

Mr. BALDERSTON. We have a great deal of garlic trouble in the spring, if that is what you mean. It is a similar thing. You have a little different kind in the West, I presume.

Senator McNARY. No; I am speaking about the wild garlic or wild onion.

Mr. BALDERSTON. We have a great deal of trouble in part of our territory; and we might refer with a great deal of satisfaction to the result of recent investigational work which the Bureau of Dairying put out in the form of a bulletin which showed how to conquer that trouble. We have used this very widely in our work in the garlic region throughout the past year. I am glad you brought that up.

Senator HARRIS. Has it been entirely successful?

Mr. BALDERSTON. We are successful where the farmers will obey the requirements which that bulletin sets forth. One of the things which that bulletin sets forth, which you might be interested in, was the fact that not only does the cow which eats wild onions or wild garlic have her milk contaminated but the cows that are alongside of her in the stable, and which breathe in the breath that she has breathed out. In just a few moments it will contaminate the milk of those adjoining cows; and that was one thing which the farmers had not appreciated until the Government, through its investigational work, brought it out.

Senator KENDRICK. Do the dairy interests have any difficulty in determining just what kind of water to put in milk? [Laughter.]

Mr. BALDERSTON. We put the water in the milk through the cow; and we do have a little difficulty, Senator Kendrick, in determining whether it is a Holstein cow or a Guernsey cow through which we shall put in the water. We are not agreed on that.

ICE-CREAM INVESTIGATIONS

I want to refer for just one moment to a question that Senator Lenroot asked Mr. Rasmussen with regard to this summer surplus of butter. I think perhaps it would be well for us to bear in mind that as large as the ice-cream industry is—and it is a very growing industry—it is the butter that goes into storage in the spring and comes out in the fall, that helps stabilize, to a much larger extent than anything else, the price of butter throughout the year, and, through that, the price of cream and other products.

Senator McNARY. Does the butter which is carried into storage go into ice cream?

Mr. BALDERSTON. That would not go into the ice cream so much. Senator McNARY. What would go? I did not get your thought.

Mr. BALDERSTON. Every spring we have a surplus of milk in April, May, and June. The ice-cream industry uses up a considerable portion of this by taking butter out of storage again through July and August; but another proportion of it goes into storage to stay until the winter months, to come out and be sold in the form of butter. As a milk-producer all my life, I am interested in seeing the price of milk stabilized throughout the year; and the ice-cream industry as well as the butter industry, as at present organized, do help very much to get it away from the old-time condition we used to have when I was first interested, when we had 90-cent milk in the spring, and 12 or 14 cent butter. So we are now a long way from the very serious situation which confronted the farmer before the days of the modern utilization of all the products that come out of the milk, and keeping them until they can be used to better advantage.

The farmers of this country are vitally interested in all these various investigations, but particularly in this question of the nutrition of the dairy cow, and the question of breeding work; and we are looking more and more to the Government for information with regard to all those items.

I do not think anybody here has referred to the splendid work which our farmers are getting done through the extension work of the Government in cooperation with our States, which does carry back to the farmer the results of this investigational work.

I happen to have been born and spent my active days as a milk producer in Chester County, Pa. The work which was started 20 years ago by the Government back there in helping us to improve the production per cow, and the question of better feeding, has had its results clear down to the present time—so much so that the results of the Government investigation last year showed that that was one of the very best counties in the United States, as I remember it, in the total receipts per farm in dollars and cents.

Thank you very much.

FURTHER STATEMENT OF FRED RASMUSSEN, EXECUTIVE SECRETARY OF THE NATIONAL ASSOCIATION OF ICE-CREAM MANUFACTURERS

ICE-CREAM INVESTIGATIONS

Senator LENROOT. I should like to ask Mr. Rasmussen just one question. Can you tell us anything about the annual consumption of butter in the manufacture of ice cream?

Mr. RASMUSSEN. I can not give you those figures. We have never taken them.

Senator LENROOT. Can you give us the approximate percentage?

Mr. RASMUSSEN. It would be very small out of the total of all, I imagine.

Senator LENROOT. Can you tell us anything about the quality or the grade of butter used in the manufacture of ice cream?

Mr. RASMUSSEN. Only the best.

Senator LENROOT. Only the best?

Mr. RASMUSSEN. Only the best. That is one thing I tried to emphasize, Senator—that we can not use old and inferior butter.

Senator LENROOT. Oh, yes; but would you use a dairy butter as distinguished from a creamery butter?

Mr. RASMUSSEN. Oh, no; we would not use dairy butter.

Senator LENROOT. You would use butter equal in quality in the highest quality of butter sold at retail?

Mr. RASMUSSEN. Yes; that is what I mean. Many of the ice-cream manufacturers get their butter from special creameries. I think a great deal of the butter that goes into ice cream comes from Wisconsin and Minnesota. I may say that the butter we refer to is unsalted butter, made especially for ice-cream purposes.

(Thereupon, at 1.15 o'clock p. m., the subcommittee adjourned until to-morrow, Thursday, December 30, 1926, at 10.30 o'clock a. m.)

AGRICULTURAL APPROPRIATION BILL, 1928

THURSDAY, DECEMBER 30, 1928

UNITED STATES SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The subcommittee met, pursuant to adjournment, at 10.30 o'clock a. m., Senator Charles L. McNary presiding.

Present: Senators McNary (chairman), Jones of Washington, Lenroot, Cameron, Overman, Harris, and Kendrick.

Senator McNARY. The committee will be in order. Mr. Holman, you may proceed.

STATEMENT OF MR. CHARLES W. HOLMAN

Mr. HOLMAN. For the purpose of the hearings here, my address is 1731 I Street. I am the secretary of the National Cooperative Milk Producers' Federation.

VALUE OF DAIRY PRODUCTS

Mr. Chairman, and gentlemen of the committee, these 38 organizations that form our national federation are all farmers' dairying business organizations. They are cooperative entirely, and they range from New England across to the Pacific coast. For example, every important cooperative dairy organization in the State of Washington, with one exception, is a member of this federation, and the more important associations in California are members.

The matter came up in the questions of the committee yesterday as to the real value of the dairy industry. The Department of Agriculture yesterday informed me that the 1926 farm value of milk, butter and cheese produced on the farms was \$2,747,000,000 this year. That is over a billion dollars greater than the value of any other farm product. The corn crop comes second.

Senator JONES of Washington. Does that include ice cream and things like that?

Mr. HOLMAN. That is between the farm and the consumer. Where you get ice cream and the manufactured products you can add another billion dollars to the value of the industry. That \$2,747,000,000 is the value of the farm raw material.

Senator LENROOT. That is what the farmers get?

Mr. HOLMAN. Yes, sir.

Senator KENDRICK. Is that estimate confined to the product that is commercialized and sold, or is it also the product that is used on the farm?

Mr. HOLMAN. If you take the farm value and add to it the commercialized value, you will have approximately five billions of dollars.

Senator KENDRICK. Then it does not include the product that is consumed at home on the farms?

Mr. HOLMAN. I do not think so.

Senator OVERMAN. I understood you to say before that this value was greater than that of the wheat and cotton crops combined?

Mr. HOLMAN. The value of the wheat crop this year is \$947,000,000, and if all of the cotton crop was picked and marketed at the present price, the combined value of the cotton and cotton seed would be \$1,170,000,000.

Senator OVERMAN. And the value of this industry amounts to how much?

Mr. HOLMAN. \$2,747,000,000; so that it is greater than the cotton and wheat crops combined so far as the farm value is concerned.

These business organizations that I represent, the 300,000 farmers who sell their products through these cooperatives, market approximately \$400,000,000 worth of these products. Some of that is in the raw state of milk and some of it is in manufactured form. Many of our cooperatives are very fast working into the manufacture of various dairy products. For example, the Whatcom County Dairy-men's Association, one of our units, in addition to butter and in addition to its fluid milk, has large sales on over 19 separate products of milk.

Senator JONES of Washington. That is in the State of Washington?

Mr. HOLMAN. That is in the State of Washington.

The dairy cattle on farms the first of this last year amounted to 222,290,000 cattle. The estimates by the department showed a shrinking in the number of calves of approximately 8.8 per cent, and they account for that by the fact the farmer at the first of the year does not always know whether he is going to feed out his calves or carry them into the milking age, and that estimate would depend entirely on the developments that occur later in the year.

Senator OVERMAN. Wisconsin is the greatest dairy State in the country?

Mr. HOLMAN. Wisconsin is a very great dairy State, one of the greatest in the Union. Minnesota happens to be the banner cooperative State of the Union right now. The Minnesota farmers market annually through their cooperations about \$250,000,000 worth of all products.

Senator OVERMAN. Do you know how it stands in the South?

Mr. HOLMAN. Dairy farming is beginning in a commercial way down in the Southeast States, in the Carolinas, and to a limited extent in northern Mississippi.

Senator OVERMAN. I know it is increasing in my State. The people there are no longer raising cotton alone. They are not suffering so much, because they have gone into the dairy business and are raising cattle.

Mr. HOLMAN. There is a very important small dairy cooperative at El Paso which draws butterfat for about 200 miles, going up into New Mexico and various points around there, and there are one or two beginnings around Dallas and around Fort Worth.

Senator OVERMAN. How is it as to Alabama?

Mr. HOLMAN. I am not advised as to the progress in Alabama.

Senator LENROOT. Could you give us any figures as to the quantity of production?

Mr. HOLMAN. I did not ascertain as to quantity of production. I would be very glad to furnish the committee this afternoon with the records as to quantity production.

Senator LENROOT. If you could, I would like you also to give the quantity production for five or six years past.

Mr. HOLMAN. I will be glad to insert a set of these statistics in the record.

(The statistics referred to are as follows:)

Total number of milk cows on farms on January 1, 1921 to 1926. (Including heifers two years old and over.) (Estimate United States Department of Agriculture.)

Years	Number	Years	Number
1921	21, 408, 000	1924	22, 255, 000
1922	21, 788, 000	1925	22, 523, 000
1923	22, 063, 000	1926	22, 280, 000

Population of the United States, as of July 1 (Bureau of the Census estimates)

Years	Number	Years	Number
1920	106, 422, 000	1924	113, 727, 000
1921	108, 445, 000	1925	115, 378, 094
1922	109, 893, 000	1926	117, 135, 817
1923	111, 693, 000		

Total production and total value of milk (estimates of the United States Department of Agriculture)

	Total milk production	Total farm value of dairy products		Retail value of milk products
		Pounds	Dollars	
1921	98, 862, 300, 000	2, 216, 765, 000	4, 432, 000, 000	
1922	102, 562, 200, 000	2, 096, 685, 000	4, 192, 000, 000	
1923	109, 736, 100, 000	2, 652, 419, 000	5, 304, 000, 000	
1924	114, 666, 200, 000	2, 586, 148, 000	5, 172, 000, 000	
1925	116, 505, 400, 000	2, 747, 000, 000	5, 494, 000, 000	

Per cent of total milk used in the various milk products (estimates United States Department of Agriculture)

Name of product	1921	1922	1923	1924	1925
Butter:	Per cent				
Creamery.....	22.408	23.619	23.963	24.923	24.541
Farm.....	18.807	12.797	11.673	10.988	10.685
Cheese, all kinds.....	3.599	3.656	3.636	3.645	3.841
Milk:					
Condensed and evaporated.....	3.703	3.489	4.044	3.708	3.772
Powdered.....	.034	.044	.048	.055	.061
Malted.....	.035	.029	.031	.031	.034
Sterilized.....	.005				.002
Chocolate.....	.041	.098	.136	.138	.196
Cream, powdered.....	.002	.002	.006	.017	.006
Ice cream.....	3.396	3.533	3.695	3.424	3.809
Total milk for manufacture.....	47.030	47.267	47.232	46.929	46.897
Fluid milk					
Household purposes.....	45.660	45.507	45.965	46.022	46.629
Fed to calves.....	4.310	4.226	3.803	4.049	3.474
Wasted.....	3.000	3.000	3.000	3.000	3.000
Total milk production.....	100.00	100.00	100.00	100.00	100.00

Total skim milk left on farms (estimates of United States Department of Agriculture)

	Pounds		Pounds
1921-----	32,103,000,000	1924-----	35,611,064,000
1922-----	34,103,000,000	1925-----	35,948,736,000
1923-----	34,192,000,000		

N. B.—The quantities noted above do not include the skim milk made into skim condensed and evaporated milk, milk powder, casein, and other products. Neither does it include the vast quantities of skim milk produced by the large milk-distributing plants in cities.

By and large, the quantity of milk produced has been increasing slightly and slowly each year. That is due to the relatively better price returns which the dairy farmers have been getting as compared with the producers of these field crops and crops which can be ultimately turned into dairy products. We think that our relatively better prices are due in part to our cooperative progress, and in part to the very liberal policy of protection which the National Government, in many different ways, has given to the dairy farmers of this country.

Senator LENROOT. Is the consumption increasing very rapidly?

Mr. HOLMAN. Consumption is increasing very rapidly, the consumption of fluid milk and cream particularly, and of ice cream, is increasing rapidly, as the result of a national cooperative campaign to increase consumption. In the city of Philadelphia alone, in the past two or three years, we have increased the consumption of fluid milk approximately 25 per cent above what it was before this educational work was started in the schools.

Senator McNARY. What has been the increase in consumption throughout the country since the adoption of the eighteenth amendment?

Mr. HOLMAN. There has been a material increase in the consumption there. Whether it was due to the amendment, or due to our educational work, I would not be in position to know.

This increasing production and the increasing consumption may in time—and in a very short time—tend to balance each other.

This prospect leads our people to think as far ahead and as clearly as they can into the future problems that may be facing the country; and that, from our point of view, calls for a wider utilization of milk and its products and ways and means of finding wider markets. I spoke of that because that has a direct application to the work of this Dairy Bureau which, as the Senators here will recall, was only about two years ago advanced from the rank of a little office in the Bureau of Animal Industry to the rank of a bureau itself. It is our newest bureau in the department.

Senator OVERMAN. Is that the bureau of Doctor Larson?

Mr. HOLMAN. Yes; that is Doctor Larson's bureau. The National Cooperative Milk Producers' Federation and the dairy groups in the American Dairy Federation have in mind a gradual, long-time, steady development of the research work that is going on in the bureau, because these scientific investigations make possible a wider utilization of not only the cream that is in this fluid milk but also the skim milk. One of the big problems is the handling of the skim milk, the development of powdered milk and semisolid butter-milk and skim milk.

Senator OVERMAN. That is what they give to the hogs?

Mr. HOLMAN. To the hogs and chickens; and all the skim milk at present is not being utilized that could be utilized.

Senator KENDRICK. When you give it to the chickens and hogs do you continue to use that name?

Mr. HOLMAN. I do not think they quite use the name, but they manage to make the chickens take it.

Senator OVERMAN. Is not more buttermilk used now than ever before?

Mr. HOLMAN. I am not sure that its use is increasing for human food. Its use in the South is greater than anywhere else. The South is a great consumer of buttermilk.

Senator KENDRICK. Is there not a great increase in the number of your dairy cattle in the country without an increased volume of the product?

Mr. HOLMAN. The increase in dairy cattle has lagged a little bit in the last two years, but the volume of the milk produced has increased steadily.

Senator KENDRICK. The decline in your number of calves is only incidental?

Mr. HOLMAN. It may be.

Senator KENDRICK. In connection with the beef breeds; the decrease or increase in those varies 50 per cent per annum?

Mr. HOLMAN. Yes; there has been a somewhat marked increase in the number of dairy cattle in those sections where the farmers have not been finding other crops as profitable. Whether or not that is a permanent or temporary situation will depend upon the farmers and the relative returns they get in this period of depression.

From the contact that we have had with the dairy bureau, we feel that this work, all of which is already under way, needs some little additional help. I will say frankly that we were disappointed when the supplemental request which the Secretary forwarded to the Budget, for \$100,000, was not granted. We had hoped that the Budget would see the desirability of granting that amount of money. But inasmuch as it granted only \$21,700, we did not feel that we should this year go over the head of the Budget officer, who has been very, very good and kind to us on other matters, and we are asking that this committee in its judgment will grant the full increase which the Budget allowed.

Senator McNARY. \$21,700?

Mr. HOLMAN. \$21,700. I believe that that concludes what I had to say. I will file with you a list of our member organizations.

(The list referred to is as follows:)

MEMBER ORGANIZATIONS

Berrien County (Mich.) Milk Producers' Association; California Milk Producers' Association; Chicago Equity-Union Exchange; Connecticut Milk Producers' Association; Cooperative Pure Milk Association of Cincinnati; Dairymen's Cooperative Sales Co.; Dairymen's League Cooperative Association (Inc.); Des Moines Cooperative Dairy Marketing Association; Farmers' Milk Producers' Association of Richmond, Va.; Indiana Dairy Marketing Association;

Inter-State Milk Producers' Association; Iowa Cooperative Creamery Secretaries' and Managers' Association; Kentucky and Indiana Dairies' Co.; Land o' Lakes Creameries (Inc.); Lewis-Pacific Dairy-men's Association; Maryland State Dairymen's Association; Maryland and Virginia Milk Producers' Association; Miami Valley Co-operative Milk Producers' Association; Michigan Milk Producers' Association; Milk Producers' Association, Chicago District; Milk Producers' Association of Summit County and Vicinity; Milk Producers' Association of Central California; Milwaukee Cooperative Milk Producers; New England Milk Producers' Association; Northwestern (Ohio) Cooperative Sales Company; Ohio Farmers' Co-operative Milk Association; San Diego County (Calif.) Milk Producers' Association; Seattle Milk Shippers' Association; St. Louis Pure Milk Producers' Association; Skagit County Dairymen's Association; Snohomish County Dairymen's Association; Stark County Milk Producers' Association; Twin City Milk Producers' Association; Twin Ports Dairy Association; Valley of Virginia Milk Producers' Association; Whatcom County Dairymen's Association; Wisconsin Cheese Producers' Federation; and Yakima Dairymen's Association.

STATEMENT OF MR. A. M. LOOMIS, SECRETARY OF THE AMERICAN DAIRY FEDERATION—(Resumed)

Mr. LOOMIS. I want to make just a very brief statement going rather to the details of what we have done about this, unless some of the members of the committee would like to ask me about the items themselves.

We have proceeded a little differently this year in trying to get this item into the bill, than the usual budgetary procedure, and I want to explain that to the committee for the purpose of emphasizing the fact that this effort to get more work and research in the dairy industry has its inception in the industry itself.

Two years and a half ago the industry took the action and asked Congress to raise this office of the department to a full bureau. We realized at that time that this industry was growing very rapidly, and that it was growing somewhat apart in its various industries.

We succeeded in drawing together these 19 sections of the industry into one section; and then the first thing we did was to ask Congress to create this bureau here.

This is primarily a research bureau. Research and introduction work is its task, and that research work in the dairy industry is of tremendous importance both to the farmers who produce the milk, who need to know these additional things about the nutrition and breeding of dairy cattle particularly, and to the whole public, which in this northern civilization of ours we have learned, through the vast amount of study which has been done by the human-food research people, has a food habit the healthfulness of which depends practically upon the products of the dairy cow. It is a large job, a long time job and one which must be based on fundamental research. Therefore, when we found that for two years the bureau had been going on without getting this story across, operating each year on even a little less money than before, the industry itself took

the matter up this year, and in April we brought 50 men here. I wish I had brought with me a list of their names. I would like you to see the character of the men we brought here. For three days we had that group of 50 men studying the work of the bureau in the Bureau of Agricultural Economics.

As a result of that study, a committee of three—two of whom were here and appeared before you yesterday—drafted a report; and upon the basis of that report we went to the Secretary of Agriculture in October and asked for permission to have given to us what we had never had before, and that is the requests which Doctor Larson had made of the department and of the Budget Bureau in previous years. We wanted to know what he was asking for. Under this Budget procedure we had not known. That program was placed before us, and we spent two days here in studying it. As a result, we went to General Lord and asked for \$100,000—\$50,000 to be devoted to a certain number of projects for the production of dairy products and the breeding of dairy cattle; \$50,000 to be devoted to the work of studying the losses which are operative in the manufacture and handling of dairy products from the producer to the consumer.

I hesitate about taking time on this matter, but those losses are tremendous. The preceding speaker has mentioned one of the most important ones, and that is the waste of skimmed milk, which absolutely has to be thrown away in vast quantities at this time, or if, not thrown away, has to be fed to animals, which is not the most important use which can be made of the solids which are found in skimmed milk, which are among the most essential and among the scarcest food products in the world—those nitrogenous and mineral elements.

Senator OVERMAN. You have named those, have you not?

Mr. LOOMIS. They are the milk proteins. I am not a chemist nor a food expert, but there are various animal proteins in skimmed milk which are the most useful proteins in the diet of the people of this hemisphere and this climate. There are mineral elements, particularly the lime and in a considerable measure the phosphorus, found in skimmed milk in forms which are more available for human nutrition than any other form of lime or any other form of phosphorus known. We are having the most astounding results in the study of the use of the limes in milk.

For instance, Doctor McCord, of Cincinnati, has found, through the course of a year's study, that the effects of lead poisoning, which is so common in the lead industries throughout the industrial world, can be practically nullified by introducing one quart of milk per day into the diet of the workers in the lead factories. The permanent disability in these factories in Cincinnati has been reduced absolutely to zero by the use of milk in the diet of the workmen in those factories—a piece of work which the National Dairy Council is carrying on at the present time.

We asked for \$100,000. A supplemental estimate was asked by the Bureau of the Budget, and that supplemental estimate for \$100,000 was sent to General Lord by Secretary Jardine as a result of this appearance of ours over there. I have been hoping that perhaps that might be secured and brought before the committee, not because we

are insisting on it or asking for it this year at all, but because it lays a foundation for the kind of work which we think the dairy industry should have.

I also want to say that there is no criticism whatever in our minds relative to this item being left out of this bill by the House committee. There was an unfortunate lapse there. We did not have notice as to when the hearings would be held in the House, and it so happened that they came at the exact time when we were holding our annual meeting in Chicago; so all of the people who were interested in this matter were in Chicago attending to our organization and association business, and we have had no opportunity to present this case to the House.

I should like that to appear, so that there may not be, later on, any evidence that we are criticising the House committee for leaving out the item. We have no doubt at all but that if we could have made the presentation that we have made here, the House committee would have included the item.

I want to say that the industry approves all of the work which Doctor Larson and his bureau have been doing. I also want to add that after having had four or five years of experience in this work here I am personally familiar with the items which are being asked for in this bill. While perhaps I am more familiar with some of them than with others, and I do not want to take the time to go into them now, I feel that if the members of the committee should wish to ask me any questions about the different items of the work I could make it very plain that these few thousand dollars which are asked for certainly can not be expended wrongly; that they will be expended correctly; and that the results which they will produce, like the results which have been produced over there, will add literally millions of dollars to the productiveness and the prosperity of the industry.

Senator McNARY. You commend the increase from \$500,000 to \$700,000, up to the estimate of the Bureau of the Budget, and the manner in which the money is to be allocated by Doctor Larson?

Mr. LOOMIS. We do, indeed.

Senator McNARY. Thank you very much.

I think we will take up now the chestnut-tree bark disease.

STATEMENT OF FRASER M. MOFFAT, PRESIDENT OF THE TANNERS' COUNCIL OF AMERICA

CHESTNUT BLIGHT

Senator McNARY. You may state, for the record, whom you represent.

Mr. MOFFAT. I represent, as president, the Tanners' Council of America, which is the national organization representing the producers of all kinds of leather in this country.

We are here relative to an appropriation suggested for the examination and correction, if possible, of the chestnut blight. The reason why I, as a tanner, representing the tanners, am here, is that the existing chestnut in the eastern Appalachian region represents our sole reserve of vegetable tannins.

Senator McNARY. What amount of money are you asking for?

Mr. MOFFAT. We are asking for an appropriation of \$45,000.

Senator McNARY. You want an increase of \$45,000, do you, or is that the whole sum?

Mr. MOFFAT. That is the sum which we are asking. That has been cut down to \$11,000.

Senator McNary. Let me see. In the House hearings you asked for an increase, and the House gave you \$11,095?

Mr. MOFFAT. Yes, sir; our original request was \$45,000.

Senator McNARY. Let us have the record straight. You want the \$45,000, less the \$11,000 allowed by the House; do you?

Mr. MOFFAT. We want the full \$45,000, if it may be allowed to stand.

Senator McNARY. Let me ask Mr. Jump about that. What is the full amount now being devoted to the chestnut-tree bark disease?

Mr. MOFFAT. I have a statement here, Senator, if I may make it.

Senator McNARY. Let Mr. Jump answer the question. What we want first, before we have any testimony, is to know exactly what we are expected to do in the matter.

Mr. JUMP. Approximately \$30,000 is being expended at the present time.

Senator McNARY. Under the current appropriation bill?

Mr. JUMP. Under the 1927 bill.

Senator McNARY. And the House allowed an increase of \$11,095?

Mr. JUMP. That is right.

Senator McNARY. So you will have, then, approximately \$41,000?

Mr. MOFFAT. Altogether.

Mr. JUMP. The sum of those two.

Senator McNARY. For next year, for 1928, you will have \$41,000?

Mr. JUMP. Yes, sir.

Senator McNARY. Now, Mr. Moffat, you want that sum further increased, do you?

Mr. MOFFAT. Yes, sir. The Department of Agriculture recommended to the Director of the Budget that the sum of \$45,000 be furnished for securing seed from blight-resistant trees in China and India. Investigations to date have proven that such seed can be secured in abundance. The Director of the Budget allowed us \$11,095 for this work. The reason why we are appearing here is to further the original appropriation of \$45,000 that we asked for.

Senator HARRIS. Do you want \$45,000 for the seed alone, besides what they are doing, Mr. Moffat?

Mr. MOFFAT. No. This sum of \$45,000 would be used presumably for the salaries of forest pathologists and assistants and the various members of foreign expeditions. These seeds must be brought from foreign countries. We are now in a very serious position. We are developing a domestic blight-resistant tree as far as possible. We know that there are blight-resistant trees in India, in China, and particularly in Korea.

Senator McNARY. Mr. Moffat, I am confused. Perhaps no one else is. You are now getting \$41,000, or will be getting \$41,000, for 1928?

Mr. MOFFAT. Yes.

Senator McNARY. What is the total amount you want and expect this committee to appropriate?

Mr. MOFFAT. We have asked an additional amount of \$45,000.

Senator McNARY. That can not be so. You want \$45,000 plus the \$30,000 now being used?

Mr. MOFFAT. Yes, sir.

Senator McNARY. But not \$45,000 plus the House allowance?

Mr. MOFFAT. I will make a correction, Senator, if I may.

Mr. E. A. BRAND. Congress has allowed to date something like \$19,000 for the domestic phase of the work—that is, making surveys of the standing timber, and making certain tests of the chemical content of dead chestnuts. That is one phase of it. That is being carried on in a very fine way by the Department of Agriculture. Now we are coming to you to ask for an appropriation of \$45,000 to secure blight-resistant seed from certain sections of the Far East; and the Department of Agriculture recommended that amount, but the Director of the Budget allowed \$11,095.

Senator McNARY. But you want \$45,000 less \$11,095?

Mr. BRAND. Yes, sir.

Senator LENROOT. You want \$33,905?

Mr. MOFFAT. Senator, we want an increase over the amount that was allowed by the Director of the Budget, and we are demonstrating why that should be granted. I shall be glad to answer any questions so far as the interests of the leather people are concerned.

Senator LENROOT. Mr. Moffat, in order to get the record straight, let me ask you this question:

The department asked for \$45,000, you said, for the procuring of seed.

Mr. MOFFAT. Yes.

Senator LENROOT. And you started in detailing that, and said something about the salaries of pathologists. Are you asking now for just what the department asked the Budget for?

Mr. MOFFAT. Yes.

Senator LENROOT. In the same way?

Mr. MOFFAT. Yes. We feel the importance of that.

Senator LENROOT. But what I am getting at is, your request now is exactly the request the department made of the Budget?

Mr. MOFFAT. Yes, sir.

Senator LENROOT. To be expended in the manner therein set out?

Mr. MOFFAT. Yes, sir.

Senator HARRIS. That means that you want \$33,000 more than is given?

Mr. MOFFAT. \$33,000 additional.

Senator McNARY. All right, Mr. Moffat. Make your statement, if you will.

Mr. MOFFAT. It is unnecessary to take your time, Senator, more than to mention the fact that representatives of the leather industry and also representatives of what is known as the domestic chestnut-extract industry are here to place before you a very serious situation.

All leather is tanned by two general tanning agents—a mineral agent and a vegetable agent—and the base of the vegetable agent to-day in this country is the ordinary chestnut of commerce. Various reduction and extract works are scattered throughout the East. They provide the tannin extract which comes from the chestnut tree, which reproduces itself, and up to the time of the appearance

of this chestnut blight, about 15 years ago, it was regarded as a continuous crop.

When the chestnut blight appeared it produced a most extraordinary situation. For instance, that is the way it looks. [Exhibiting map to committee.] It has destroyed the chestnut.

Senator LENROOT. Will you tell us how that is acquired from the trees—by tapping?

Mr. MOFFAT. No; it is a fungus.

Senator LENROOT. I mean, the extract.

Mr. MOFFAT. The tree is cut down, and cut into cord wood. Chestnut has a comparatively small lumber or timber value. Its main value, as we have found, is for the manufacture of leather. It is cut down, cut into cord wood, and shipped in the form of cord wood to the various extract plants. There it is chipped and reduced very much as you make tea, and then concentrated into a high tannin content, and shipped to the various tanneries throughout the country.

For instance, there are in the Appalachian region a number of extract works. They have had a very difficult time during these past few years, together with the leather industry. They concentrate this extract and ship it to Milwaukee, Chicago, New York, and the East, and as far West as the Pacific coast. They export some of it in various forms. The business is a very substantial one; but the tragic thing is that they see and the leather people see this reserve of vegetable tannin practically disappearing. In 15 years, so far as we can see, unless we have some remedy of the type which has been suggested here, this reserve of vegetable tannin will have disappeared, and we must then look for something else—what, we do not know.

I desire to take this opportunity to express also the great degree of cooperation which the Department of Agriculture has given to us. When we raised this question two years ago we found that they had already made certain surveys, but we pressed them to make others. They are a very great force and a very great help. We do not know what we would do without them. We face a very serious situation. I can not even magnify sufficiently the danger that is facing us.

Senator McNARY. I think anyone who goes about the roadsides of the country will observe the utter destruction of chestnut trees. I am curious to know if it is not a fact that all of the chestnut trees, or practically all of them, in the North and the Blue Ridge Mountains in Virginia are now destroyed, and that the remaining stand is being found now in the southern Appalachian Range through Tennessee, Kentucky, and the two Carolinas? Is that true or not?

Mr. MOFFAT. That is quite true, absolutely. I live in northern New Jersey.

Senator OVERMAN. I see that according to your map here you do not have any destruction at all in North Carolina.

Mr. MOFFAT. Oh, it is spreading very fast. I have here a representative from North Carolina.

Senator OVERMAN. I know it is; but I was looking at this map and the density shown here.

Senator McNARY. There is a little in the West. There is where it is found, Senator, in Asheville.

Senator HARRIS. This blight is destroying the chestnut trees all over the world—not only in the United States but all over the world. It is a world-wide blight; is it not?

Mr. MOFFAT. Yes, sir.

Senator OVERMAN. I advocated this appropriation for North Carolina. I was satisfied that it was needed for North Carolina, especially. As you know, some of the greatest plants of this kind in the world are located there.

Mr. MOFFAT. Yes, Senator.

Senator OVERMAN. And I know what is going on down in that section. Therefore, I was displeased at this map. It does not show what is happening there.

Senator McNARY. Can you get tannic acid from any other variety of wild tree life?

Mr. MOFFAT. Tannic acid exists in almost every known tree, but in a very minor degree. The normal chestnut tree will yield anywhere from—I think I am fairly accurate—8 to 12 per cent of tannic acid.

Senator McNARY. So there is no real substitute for the chestnut tree?

Mr. MOFFAT. There is practically none.

Senator McNARY. What variety comes next in line?

Mr. MOFFAT. Well, you see, one great reason why the chestnut tree is our stronghold is that it reproduces itself under normal conditions. Following that are the chestnut oak, of which the bark is used, and the hemlock, which does not reproduce itself and of which the forests have been cut down and have disappeared.

Senator OVERMAN. We had an item in the tariff bill, I remember, which provoked a great deal of discussion—quebracho. Is not that used in tanning?

Mr. MOFFAT. The leather industry are very dependent on foreign sources of quebracho. We use quebracho as a blend with chestnut. Quebracho by itself makes leather—I am speaking now of heavy leather, the leather you use in the soles of your shoes—but it is essential that it should be blended in about the proportion of 30 per cent, possibly, with our domestic tannings. Therefore, we regard this situation as so serious that it should receive important consideration.

Senator McNARY. Mr. Moffat, you do not want this money to be used further in attempts to control the blight?

Mr. MOFFAT. No, Senator.

Senator McNARY. You appreciate that in about 15 years the chestnut will have practically disappeared from this country?

Mr. MOFFAT. We feel this way, if I may speak very frankly: My own position is a fairly responsible one. Three years ago, when this question was brought up, I had to survey the situation. I could not assume the responsibility of not bringing it before the Federal authorities, because I realized that 15 years from now we would have no chestnut forests, and I did not know what would come; so we brought it forward. It is our responsibility. We have been spending our resources in the leather business like drunken sailors. We

have cut down the chestnut forests and we have cut down the hemlock forests, and we are stripping the country. For the past three years we have taken rather a different tack. Wherever reforestation is possible, wherever replanting is possible, we, like the paper producers, are trying to handle the matter upon a scientific basis.

Now I should like to speak about one other thing.

Before the House committee the question was raised as to the co-operation of the various States with the Federal Government. This is the main question here. The Federal Government must undertake this broad survey. To-day, as you know, Senator Overman, North Carolina is cooperating heartily with the Federal Government. The same thing is true of Tennessee and of Kentucky and to a certain extent of Pennsylvania, wherever these important tanning interests are gathered; so you may be assured that State interests are cooperating heartily, as is the industry. All our laboratories are working on this problem; and this particular plea is, since it is properly a function of the Federal Government—

Senator OVERMAN. Your idea is to get trees that will resist this fungus?

Mr. MOFFAT. Yes, sir; we must.

Senator OVERMAN. And you can get them from China?

Mr. MOFFAT. We think we know sources in China and in northern India. There are also domestic sources. In surveying the domestic sources, as you know, there are immune species of all sorts of things. There are people who are immune to typhoid fever, for instance, or to cholera. Just so in trees, there are immune species.

Senator OVERMAN. How does the chestnut tree in Korea and China differ from our chestnut tree?

Mr. MOFFAT. Only slightly. In conversation with Mr. Teas this morning, and with the representative of one of the departments of forestry, I understand that it has not quite the same timber content; it has possibly a little more spread; but the tree is a very substantial tree.

The American chestnut grows in this country at about a limit of 43° north. I do not know its exact southern limit, but it is about the limit of the southern Appalachians.

Senator OVERMAN. Have you tried to see, if that tree is brought here, whether it will resist the blight?

Mr. MOFFAT. Yes. There is now a plantation of the Chinese tree about 10 or 12 years old at the Government proving grounds. They have had these seeds, and, so far as we can see, that tree resists the blight. There are also immune domestic trees. I happen to live in northern New Jersey, and within 20 miles of my house there is a curious belt of immune domestic chestnut trees. These are all under examination by the Department of Forest Pathology, and the department is doing a fine piece of work in finding out what may be of service.

Gentlemen, I feel that I may be taking too much of your time.

Senator McNARY. Let me ask you one or two questions, Mr. Moffat. As I repeat, you do not want any of this additional increase to be used in an attempt to control the blight disease?

Mr. MOFFAT. No, sir. We are putting our finger on what we think is the important and urgent thing to be done.

Senator McNARY. In 15 years, then, there will be a practical disappearance of these trees?

Mr. MOFFAT. So far as we know.

Senator McNARY. Very well. Then you want the department to send some one abroad to collect varieties of chestnuts that are immune to this blight?

Mr. MOFFAT. Yes, sir.

Senator McNARY. And propagate them in this country?

Mr. MOFFAT. Yes, sir.

Senator McNARY. Very well. It will be 40 or 50 years before those trees are suitable for lumber or tanning; will it not?

Mr. MOFFAT. No; probably not as long as that—not 40 or 50 years.

Senator McNARY. How many years will it be?

Mr. MOFFAT. I should imagine a generation, 20 or 25 years.

Senator McNARY. Of course I do not know, but Doctor Taylor estimates it at from 40 to 50 years.

Mr. MOFFAT. I should defer to Doctor Taylor, of course.

Senator McNARY. Anyhow, there will be a hiatus of a number of years between the time when the American chestnut tree will disappear, in 15 years, and, we will say, 35 years from now, at least when these trees that have been transplanted from China will be of suitable age for timber and tanning.

Mr. MOFFAT. Very possibly; yes, sir.

Senator McNARY. What does the industry propose to do during that interval?

Mr. MOFFAT. That is a question that I can not answer. We are late in attacking this problem. We should have attacked it when the blight first came over, 15 years ago, but it was allowed to go; no attention was paid to it. The blight spread westward, beginning in Massachusetts and on Long Island, until, when we realized the situation, the whole thing was done, 12 or 15 years ago. We feel however, that it is "better late than never."

Senator McNARY. If Congress should provide funds for this expedition into China to do this commendable thing, will the tanning industry assist in any way?

Mr. MOFFAT. So far as we could, we would gladly assist. I can not give you an open order that we would, but you may be sure of our hearty cooperation, and I presume the hearty cooperation of the extract industry also, so far as it can be done.

Senator McNARY. I wondered if your associations had considered that phase of the problem.

Mr. MOFFAT. We have not considered that particular phase, because we feel that our own domestic problems are pretty serious; but we feel that this is an important thing.

Senator McNARY. Do any of your institutions or organizations maintain laboratories?

Mr. MOFFAT. We maintain what is probably the best equipped laboratory in the world as a research laboratory at the University of Cincinnati. It may interest you to know how we are tackling the problem; and I was very much interested to hear Doctor Loomis. He and I are going to cooperate on this thing.

Senator McNARY. Very well; go ahead.

Mr. MOFFAT. For instance, we can not increase the supply of hides for the leather business, but we can conserve them. That is what

our laboratory is doing. We are finding out how we can make more pounds of leather from a hide than we have ever done before. That is our job—to make leather. We have not tackled the tannin-content proposition of various types, because that is only one part of the tanning industry; but we do maintain, at a cost of \$50,000 a year, a laboratory with a corps of research men, and I am very proud to be able to come here and tell you that we are doing that part.

Senator McNARY. What amount of money are your institutions expending on this problem?

Mr. MOFFAT. On this particular problem?

Senator McNARY. Yes; the chestnut-bark blight.

Mr. MOFFAT. We are not spending any money on our part. No money is being spent by the tanners as an industry on this problem.

Senator McNARY. Who maintains this laboratory at Cincinnati?

Mr. MOFFAT. We maintain the laboratory, but that is applicable to processes of tanning.

Senator McNARY. But not to this problem?

Mr. MOFFAT. Not to this problem.

Senator McNARY. No money at all is being expended in co-operation with the Government in attempting to control the blight?

Mr. MOFFAT. Not on this problem, Senator.

Senator McNARY. The problem I refer to is the problem under consideration. No money at all is being expended, and no co-operation has been given the Government in any way in an attempt to control this disease?

Mr. MOFFAT. That is quite right. Although you make the statement pretty sweeping, I shall have to say "yes" to it.

Senator OVERMAN. You want \$45,000 to go over to China and Korea to get seed to transplant to the forests here. Why would it take so much money?

Mr. MOFFAT. I should have to let the bureau answer that question, but I presume traveling expenses are pretty heavy. I understand that the salaries of forest pathologists, stenographer, interpreters, guides, etc., will amount to \$26,000; travel expense, \$11,000; purchase of seed, \$7,000.

Senator HARRIS. Mr. Moffat, suppose these chestnut trees all die, and you have to go elsewhere to get what is necessary to manufacture leather: Would that increase the cost of shoes to a considerable extent?

Mr. MOFFAT. Senator, that is rather a larger order. I should say, offhand, that if we had to find another tanning agent, that would cost money. We are producing in this country probably the cheapest shoe of good quality that is known. I do not hesitate to state that, although my business particularly is with leather. A very important reason for that is that we have great natural resources, including these chestnut forests that the Senator says will not be existent 35 years from now. I assume that they will not be; but that does not seem to me to be any warrant for not trying to hold them.

Senator McNARY. Not at all.

Mr. MOFFAT. And, although we are late, we are using every scientific means that is known to help solve this problem.

Senator LENROTT. Mr. Moffat, what is it proposed to do with the seed after we get it?

Mr. MOFFAT. Doctor Taylor could tell you particularly as to the method of handling it. What they have done heretofore is to observe very carefully the germination of the seed, and to plant it in nurseries. In other words, we should attempt no general reforestation, simply scattering it through this devastated area; but these trees would then be planted again so that we could get their fruit into this part of the Appalachians that has been absolutely cut down.

Senator McNARY. We are obliged to you, Mr. Moffat.

STATEMENT OF DR. WILLIAM A. TAYLOR, CHIEF OF THE BUREAU OF PLANT INDUSTRY

CHESTNUT BLIGHT

Senator McNARY. For the purpose of clarifying the record, I am going to ask Doctor Taylor at this time to state specifically what uses are to be made of this money that was submitted in his preliminary estimate to the Director of the Budget?

Doctor TAYLOR. What the estimate contemplated, as submitted to the Bureau of the Budget, was, if I may so express it, a combing of the Orient for resistance chestnut trees, the disease being omnipresent there.

Senator McNARY. But what are the items, Doctor, that make up the \$45,000?

Doctor TAYLOR. About half of it is salaries; the remainder is travel expenses and purchase of materials.

Senator McNARY. Can you not make reference to your preliminary estimates as submitted to the Director of the Budget?

Doctor TAYLOR. I can give you the approximate figures.

Senator McNARY. Do so, please.

Doctor TAYLOR. I learned on the telephone last evening that two consignments of chestnuts from China had arrived yesterday; and I telephoned this morning asking that they send over a few samples, because I thought you might be interested in them. This is one from near Nanking, China, of which 200 pounds came yesterday. We do not know the exact stature of the tree; we have not yet received detailed information as to its rapidity of growth, and so on. This is a nearly related tree, one of the true tree chinquapins, which also is blight resistant, and which we have reason to believe is comparable in size with our American chestnut, though the nut is much smaller.

If I may aid the committee to get the idea clearly, it is this—

Senator LENROOT. Will you give us the figures first, Doctor?

Doctor TAYLOR. Yes. The figures, as I have them here roughly in pencil, provide for one pathologist at \$3,200, two at \$2,400, one at \$1,620, and four part-time employees to be employed in China at varying rates of compensation.

Senator McNARY. What amount did you estimate for that?

Doctor TAYLOR. Those are the ones that we estimate can be carried on under the appropriation as it stands now with the Bureau of the Budget. The total estimate provided for three pathologists at \$3,800, two assistant pathologists at \$2,400—

Senator McNARY. That is not conformable to your figures a moment ago.

Doctor TAYLOR. Those were the figures that relate to the amount as it stands in the bill.

Senator LENROOT. On the \$11,000 basis?

Doctor TAYLOR. On the \$11,000 basis of increase.

Senator LENROOT. We want them on the \$45,000 basis.

Doctor TAYLOR. I will give you the figures on that basis, then.

Senator LENROOT. I wish you would finish up on the \$11,000 basis first. You gave \$3,200 and \$4,800. What about the rest of it on the \$11,000 basis?

Doctor TAYLOR. The rest of it would be for seed and miscellaneous.

Senator LENROOT. What about traveling expenses?

Doctor TAYLOR. And traveling expenses.

Senator LENROOT. That would be \$8,000. How much would that allow for traveling expenses?

Doctor TAYLOR. That includes such balances as we would have from the present appropriation, our American work being reduced as our foreign work increased.

Senator LENROOT. Doctor, I, as a member of the committee, would like to know just what will be done in this matter with existing appropriations. How much can you spend?

Doctor TAYLOR. We would spend the \$10,000.

Senator LENROOT. I understand; but now you are talking about something else, too.

Doctor TAYLOR. Let me get it clear, then, Senator.

Senator McNARY. I would put it in this way: The House has allowed you an increase of \$11,000. You are asking now for an increase of something like \$33,000. If we should allow that and hold it in conference with the House, you would then have an increase of \$45,000 over the current appropriation.

Doctor TAYLOR. Yes, sir.

Senator McNARY. What are the items that make up the \$45,000, and how do you contemplate using it?

Doctor TAYLOR. Yes; I get that clearly. There would be three pathologists at \$3,800 each, which is the minimum pay of the salary grade; two assistant pathologists at \$2,400 each; four field assistants for four months at \$1,860 each, which would be a total of \$2,480 for the year; and miscellaneous labor estimated at \$4,800; making a total of \$23,480 for salaries and labor. The travel expenses are estimated at \$9,000; supplies at \$3,000, which would be the purchase of seed; miscellaneous equipment required, \$2,520.

Senator McNARY. That is equipment?

Doctor TAYLOR. Yes, sir.

Senator McNARY. Does that make your total of \$45,000?

Doctor TAYLOR. That makes the total I have in the itemized form; yes, sir.

Senator LENROOT. What about the balance?

Doctor TAYLOR. The balance would be for the purchase of such additional quantities of seed as could be located. You understand this is not a proposition of going to a market to secure seed.

Senator LENROOT. No; but you gave \$3,000 for seed.

Doctor TAYLOR. Yes, sir; for supplies, including seed.

Senator LENROOT. That makes a total of \$38,000.

Doctor TAYLOR. That would leave available, in the event that quantities of desirable material are secured, \$7,000.

Senator LENROOT. Then what is this \$3,000 item?

Doctor TAYLOR. That is estimated as the amount of seed that it would be desirable to purchase in any case.

Senator LENROOT. That is, whether they are blight-resistant or not?

Doctor TAYLOR. We know that they are blight resistant. It is a question primarily of locating those trees which are of strong growth and satisfactory blight resistance and of securing the crops.

Senator LENROOT. Why do you put this \$3,000 here, if you say there is \$7,000 more that you want to use for that purpose? What does this \$3,000 mean, Doctor?

Doctor TAYLOR. That \$3,000 is the estimated minimum purchase that would be desirable.

Senator McNARY. And if you found desirable trees, suitable supplies, you could spend the balance of the \$7,000, making \$10,000 altogether?

Doctor TAYLOR. Yes, sir.

Senator McNARY. Which takes up the \$45,000.

Doctor TAYLOR. We would not consider it advisable to purchase chestnuts merely because we have the money and because there were chestnuts there. We are seeking those which combine vigor of growth and blight resistance.

Senator McNARY. Doctor, has the department heretofore made any survey of China to locate blight-resistant trees?

Doctor TAYLOR. It has done incidental work such as that which is represented by these samples.

Senator McNARY. Who is there representing the department?

Doctor TAYLOR. These came from the professor of agriculture at the University of Nanking, who is a collaborator with the department, and who has been giving some incidental attention to "the matter—Professor Reiszner, a man of ability, not a pathologist, but an American who is interested in this work.

Senator McNARY. If you could purchase \$10,000 worth of seeds, what would you do with them?

Doctor TAYLOR. We would place them with the Forest Service at their Appalachian Experiment Station, in part for use in the national forests of the chestnut region. In part we would expect to develop cooperative arrangements with the owners of chestnut lands through which they would provide the land and carry the expense of planting and caring for the trees through the period of experimentation with them.

Senator McNARY. They would be grown in nursery in these forests, and the trees then, through cooperation, would be taken to private owners and planted out in private lands?

Doctor TAYLOR. Yes, sir. What we are doing at present, in the small way in which we are handling such material as this, is to grow the trees in our nursery at Bell, Md., 12 miles north of here, and place them under cooperative agreements with owners of chestnut land in numbers sufficient to plant half-acre plots in the chestnut country, where the blight is all about them, to get definite, practical tests of the vigor of growth and the disease-resistance.

Senator JONES of Washington. How old would the tree have to be before you would be satisfied as to its ability to resist the blight?

Doctor TAYLOR. In so far as we have experience to guide us, that would require probably a 10-year period, assuming the presence of the blight in the vicinity.

Senator LENROOT. How long would it be before the trees would begin to bear from seed which you plant?

Doctor TAYLOR. Before they would begin to bear nuts?

Senator LENROOT. Yes.

Doctor TAYLOR. They vary greatly in that respect, Senator, some of them starting in to bear at the age of four or five years from the seed. In general, they do not bear very much short of 10 or 12 years.

Senator LENROOT. Then, when they begin to bear at the end of 10 years, you would have a steady supply of seed?

Doctor TAYLOR. Then there would be an American-grown supply of seed in particular of the trees that were most satisfactory.

Senator OVERMAN. Doctor, I have in my yard a tree known as the horse-chestnut. What is the difference between that and the ordinary chestnut?

Doctor TAYLOR. It is quite a different tree. About the only similarity is in the name.

Senator OVERMAN. This nut looks very much like it.

Doctor TAYLOR. Yes; but the horse-chestnut is not edible, and the tree is of an entirely different botanical family.

I should like to be clear on this: The Department is not in position to guarantee to the tanning industry nor to Congress the finding and bringing here and establishing here of a complete substitute for the chestnut that we are losing; but it does look to us like the best chance that is in sight.

Senator McNARY. Do the Chinese grow these trees for this purpose?

Doctor TAYLOR. No; the chestnut in China, at least to the extent that we have yet explored, is planted only as a nut-bearing orchard tree in rather small areas. It is not planted for the timber; and these which are among the most promising from the timber standpoint are not in cultivation in China so far as we know. They are in the more remote portions of the country, up the Yangtse Valley, and in difficult territory. It is, in a large degree, a pioneering proposition, involving complicated and expensive arrangements for going into the back country, off of the beaten paths of travel.

Senator JONES of Washington. Is there a considerable amount of the blight-resistant chestnut tree over there?

Doctor TAYLOR. Apparently so, though it is a question of following clues and ascertaining the quantity of the timber that is there.

Senator OVERMAN. Are any of these chestnut trees found in Europe?

Doctor TAYLOR. Not of this blight-resistant form.

Senator OVERMAN. Are they the same as ours?

Doctor TAYLOR. No; there are several different species, none of them identical with ours. The European chestnut, of which we import the nuts in such large quantities, is as susceptible to the chestnut blight as our native chestnut; but the disease, so far as known, has not yet become established in Europe.

Senator McNARY. Doctor, if this money were allowed the department, could you finish the work of exploration in a year?

Doctor TAYLOR. That would depend considerably upon the conditions in China as to the portions of the territory that could be reached. Our general plan would be, as things stand in the news this week, to start in Japan, where conditions are practical for exploration, and where there are both orchards and forests, not of this exact type, but that are enduring in the presence of the disease; to shift from there to Korea, where conditions also are practical for exploration; and to get into the Chinese territory just as rapidly as the political and military situation makes it possible.

Senator McNARY. Have you made an estimate of the length of time required to make this investigation and survey?

Doctor TAYLOR. It probably would require two or three years to complete it.

Senator McNARY. We can expect to reappropriate this amount next year, then?

Doctor TAYLOR. I suspect that would be necessary for probably two years after this, at least in some degree. It might not require the full amount.

Senator KENDRICK. How many of these pathologists do you expect to send abroad, and how many do you expect to employ here?

Doctor TAYLOR. These would all be employed abroad, but probably one man would have headquarters technically in Washington as a matter of administration.

Senator KENDRICK. Would they be separate parties, if you got this increase?

Doctor TAYLOR. Probably so. Certainly when we got into the mainland it would be necessary to divide, though we find in such exploration work that it is usually desirable to have two men together as a matter of ordinary safety and of efficiency in operation.

Senator JONES of Washington. Has the blight attacked the trees in Europe?

Doctor TAYLOR. No, sir. They have a disease known as the ink disease in southern France and northern Italy which attacks their European chestnuts; but it is not this disease, and, so far as known, it has not been introduced there.

Senator JONES of Washington. Have you tried to ascertain where this disease came from here?

Doctor TAYLOR. Yes, sir; we know.

Senator JONES of Washington. Where did it come from?

Doctor TAYLOR. It came from China, by way of Japan.

Senator JONES of Washington. Oh, it came from China?

Doctor TAYLOR. It came from China; and that is why we head back to China for those forms of chestnut which have evolved in the presence of the disease.

Senator JONES of Washington. How do you account for the fact that it has never gotten into Europe?

Doctor TAYLOR. We do not know, except that they have been satisfied with their large-nutted native chestnut, and have not taken over, except in a very small way, the oriental chestnuts. This disease appears to have come into a nursery in the western end of Long Island in the neighborhood of 30 years ago on Japanese chestnut nursery stock.

Senator OVERMAN. We are going back to the place where the blight came from to get the trees to resist it over here?

Doctor TAYLOR. Yes, sir. It was not recognized as a distinct disease for several years. When it was first recognized, if we had had \$10,000 we could have cleaned it out.

Senator LENROOT. How does it travel?

Doctor TAYLOR. Both by air-floating of the fungus spores, and by carriage by birds and by squirrels—almost any living thing which inhabits the chestnut trees.

Senator OVERMAN. Whereabouts does it attack a tree?

Doctor TAYLOR. In the bark of the twigs—that is, of the younger growing twigs—and from there it spreads in the inner bark, so that it eventually girdles the twig. Then it gets back into the inner bark of the main trunk, and kills the tree down to the ground, not usually killing the tree entirely, but leaving the roots alive, so that a crop of sprouts come up. Those sprouts sometimes are not blighted for several years; but, in so far as we yet have observation, eventually they go down as the mother tree did.

Senator JONES of Washington. Have they tried pruning?

Doctor TAYLOR. Yes, sir; and in the case of ornamental trees, where expense is not important, and thoroughness of spraying during the growing season can be practiced, it will save the tree, in combination with the pruning-off of the few twigs that are diseased; but, of course, in the forests any spraying operation is out of the question.

Senator LENROOT. Doctor, I wish you would take the bill as it stands. You started to give us the figures, but you were interrupted. What would you do with the appropriations that will be available under the bill as it comes to us in this matter? Just go through the items.

Doctor TAYLOR. With the \$10,000?

Senator LENROOT. Just take the bill as it stands, with the \$10,000 and any other appropriation that would be available.

Doctor TAYLOR. We could send one pathologist at \$3,200, and two assistants at \$2,400.

Senator LENROOT. That would be how much—\$3,200 and \$4,800?

Doctor TAYLOR. Yes, sir.

Senator LENROOT. That would take \$8,000?

Doctor TAYLOR. That would take \$8,000.

Senator LENROOT. Now, what else?

Doctor TAYLOR. We could squeeze out the travel expense for those from the present appropriation.

Senator LENROOT. How much would that be?

Doctor TAYLOR. That would be in the neighborhood of \$7,500.

Senator LENROOT. What seed could you get?

Doctor TAYLOR. We could probably get \$1,000 worth of seed.

Senator LENROOT. That would be \$15,500?

Doctor TAYLOR. Yes, sir.

Senator LENROOT. The difference you would make up out of your general appropriation?

Doctor TAYLOR. Yes, sir.

Senator LENROOT. So you would expend, then, under the bill as it stands, approximately \$15,500?

Doctor TAYLOR. Yes, sir; and the question is, How much seed, how much steam, to put into the undertaking?

Senator JONES of Washington. How much seed would probably get with the \$1,000?

Doctor TAYLOR. That is merely a guess, for we have to pick it up as we can get it in the various places. We probably could get three or four thousand pounds of seed. That includes the transportation here, of course, which requires special packing in order to make sure that the nuts arrive sound and viable, as these have.

Senator McNARY. We are obliged to you, Doctor.

STATEMENT OF CHARLES C. SMOOT, ON BEHALF OF THE APPALACHIAN FOREST RESEARCH COUNCIL

CHESTNUT BLIGHT

Senator McNARY. What organization are you representing, Mr. Smoot, and what is your address?

Mr. Smoot. I represent the Appalachian Forest Research Council, and I am also a timber owner in North Carolina.

Senator McNARY. What is your address, for the record?

Mr. Smoot. North Wilkesboro, N. C.

Gentlemen, on this proposition of chestnut seed, the Appalachian Forest Experiment Station there has been cooperating, and the North Carolina Department of Forestry has been cooperating with this experiment station. I have been engaged for quite a number of years in the chestnut-manufacturing game in western North Carolina, and have been interested in this chestnut blight, and have followed it for 15 or 20 years.

At the present time, Senator, for your information, it has increased from 20 per cent year before last to nearly 60 per cent in sections through North Carolina. In the Blowing Rock-Watauga section, where probably there is the largest stand of uncut chestnuts still growing, year before last you had to look for the trees affected with blight. You have to know it when you see it. It takes a real pathologist, familiar with this particular blight, to identify it. The chestnut twigs are blighted, and so forth, from other causes, and year before last you did not notice it; but there is no trouble now in seeing it. If you go up in the Blowing Rock section to-day you will see hundreds and thousands of the trees that are blighted all through that section. It is spreading very rapidly through there.

Senator OVERMAN. Since you were here two years ago?

Mr. Smoot. I was before you two years ago, and got you to introduce a bill to have a survey made of how far it had extended. There had been no money expended.

Senator OVERMAN. Yes; and we gave you an appropriation.

Mr. Smoot. The Research Council has been very much interested in seeing this thing done, because if we can get the proper seed and can have them grown in these nurseries we know there will be no trouble then in having the forest owners plant them out, and get the work started. Very frankly, gentlemen, I do not think the present generation is going to get much out of this. The present chestnut tree is going to go; but it is something that will be looking to the

future, to rebuild the available supply not only of tanning materials but otherwise. Somebody said that the chestnut was not used for other things; but it is used quite extensively in the furniture industry. It is also used in the telephone industry for telephone poles. It supplies a large part of the telephone poles. Young chestnut trees are used extensively as a telephone-pole proposition, and also in the furniture game, and in interior finish. A large part of that is made out of chestnut. I understand that these trees that they have grown at Bell, Md., such as they have located, make a character of lumber that is very similar to what we have here, and the tannin content is also high; in fact, it is higher than in our native chestnut.

In North Carolina, of which I speak particularly, I know that the forestry department there is cooperating with the Government experiment station, not only in the State forest but in the national forest. They have men that have assisted in these surveys that have been made, and they have also assisted in growing these trees. I know that Kentucky, Tennessee, and Virginia had their men at the last meeting, and discussed this very problem; but the point is that at the present time we have not enough seed to go ahead with the work; and, as Doctor Taylor says, it is really largely a question of speed. If we go at it the way we are going now, it will be a very, very long time before we will have anything to take the place of the native chestnut. If we can get sufficient seed, we ought to be able to do something in a reasonable time.

Senator McNARY. Are private interests getting seed at all on their own account?

Mr. Smoot. That is practically impossible. You see what it would amount to, to have to send an expedition out to China, as Doctor Taylor says, to get a thousand pounds of seed; and they know that. There is no private interest that I know of that has men of the requisite ability to send over there for this work. They do not know what it amounts to yet. After we get the tree, and demonstrate that it can be grown here, I have no doubt that private interests all through the country, including the forest owners of North Carolina, would be willing to cooperate in this work. In certain sections of the country this is going to affect the stream flow very largely, on the Yadkin River and New River and so on, where 70 per cent of your trees are chestnut. They are going to go out, and unless you replace them with something else it is going to affect all those things.

Senator KENDRICK. Do you know any particular tracts of country in which the chestnut trees are growing where the trees seem to be immune from this blight?

Mr. Smoot. The only tract that I know of at all is the one Mr. Moffat mentioned in northern New Jersey, and then there are certain isolated stands that you find; but whether or not they have been subject to the blight may be due to air currents not carrying it there, or something of that sort. We can not say; but in northern New Jersey there are a few trees that do not seem to get it, and in every section where this has been you will always find isolated trees that do not seem to blight. The departments are using their present appropriation to study those trees and see what they can learn along that line. I should hate very much to see Doctor Taylor stop that work and take part of the present appropriation and do it on this

other end, because I think this is just as important. The fact of the matter is, I never have felt that that has been pushed as far as it ought to be pushed. I believe that if we had pushed the domestic end of it farther we would be farther along to-day.

Senator OVERMAN. Does the blight attack a young tree easier than an old tree?

Mr. Smoot. It starts on an old tree on a limb, a twig, and it eventually circles around there, and the tree dies; and then, when the young ones come up, it attacks those. That picture Doctor Taylor gave you is a very good one. It is a sort of orange mold that forms on the outside, and it is sticky, and it gets on the birds' feet and the squirrels' feet, and then it dries and blows.

Senator HARRIS. Does the altitude of the tree make any difference? You mentioned the Blowing Rock section.

Mr. Smoot. I have a cottage at Blowing Rock; I have had for a number of years; and the trees around my house were all attacked last year. That is at an altitude of about 4,500 feet. I have also seen it down in Wilkesboro, at our plant, where the altitude is only 900 feet. I have seen it on both sides of the mountain; so I do not think it makes much difference.

There was a time when we really were asleep on the problem. It advanced, you know, very rapidly through Pennsylvania, got into Maryland, and then it was very slow for several years in working down into Virginia. The tannin content seems to increase in the trees as you get farther south, and we were hopeful that the increased tannin content of the tree was having an effect in inhibiting the disease; but all of a sudden it started again, and in a year or so it jumped—in fact, it is clear into Alabama to-day. It jumps there as much as 150 miles at times.

Senator JONES of Washington. Have you tried pruning?

Mr. Smoot. I have tried it particularly on these trees that I have around the house there. I pruned it and burned it, and all that; I did it three times last year, and I still had the disease at the end of the year. I think the Government and the State of Pennsylvania together spent nearly a million dollars in trying to fight this thing in 1912, without success.

Senator KENDRICK. Referring to these trees located around your house that you described, do you note any of those that seem to be immune?

Mr. Smoot. Yes. There are probably 40 trees on the plot that I have there, and at the present time I do not think that over about 15 of them are infected. I do not know what I will find next year. Last year there were none. It just moved into that particular area last year.

Senator OVERMAN. Is that in Watauga?

Mr. Smoot. That is just in the edge of Watauga, Senator.

STATEMENT OF WILLIAM H. TEAS, OF MARION, VA.

CHESTNUT BLIGHT

Mr. TEAS. Mr. Chairman, I am a manufacturer of tannin extract. I can not say that I represent the manufacturers here, because I am simply here by invitation of the Tanners' Council. I have not any-

thing to add, except to accentuate the fact that this proposed work will not help any living extract manufacturer. It is simply a matter for your future supply, in case of war and in case of domestic requirements. Our chestnuts in most cases will be gone in 15 years. We will not have any left.

Had not the blight come in, the sprouts from the stumps would have taken care of the future supply of chestnuts; but the blight attacks the sprouts, too, as a rule. I have a summer home in Maryland, on Chesapeake Bay. I lost all my chestnuts there, and I watched the sprouts from the stumps carefully, and for six years the sprouts died. I now have two trees with two healthy sprouts on them that are two years old, so that eventually it seems as if the sprouts would become immune.

Senator KENDRICK. Is it your observation, as Senator Overman's question indicated a while ago, that these young trees are affected by the blight the same as the old trees?

Mr. TEAS. Yes, sir.

Senator KENDRICK. Are the chestnut trees at this time reproducing themselves in an orderly way as they did before the blight struck them?

Mr. TEAS. The stumps sprout, but the blight catches the sprouts. As I say, I have watched them year after year; and for six years on these particular stumps I have in mind the blight attacked the sprouts, and I would thin them out and leave two on each stump.

Senator KENDRICK. As our supply of this material used in tanning leather disappears, what other country do you assume we will have to draw upon for our supply?

Mr. TEAS. We are now getting quebracho from South America and myrobalan nuts from India. Myrobalan is a perennial crop, and it has been my personal opinion that we would have to come eventually to a crop of that kind.

Senator KENDRICK. Can those nuts, or whatever you term them, be produced in this country?

Mr. TEAS. No, sir.

Senator KENDRICK. Are they an entirely satisfactory substitute for chestnut bark?

Mr. TEAS. No; they are not. They are used only in small quantities. As a matter of fact, their total volume would be just a drop in the bucket compared to our requirements.

Senator JONES of Washington. What will be the result if you do not get a substitute for the chestnut?

Mr. TEAS. If the foreign supply holds out, we will have to depend entirely on the foreign supply.

Senator JONES of Washington. I thought you just stated, in answer to Senator Kendrick, that that was only a drop in the bucket.

Mr. TEAS. It is now, but that may be developed. Then there are wattle-bark forests in Africa from which we get a certain percentage of supply; and I understand that they have tried to plant and cultivate wattle trees in Australia and in other parts of foreign countries to insure an increased supply of that material.

Senator JONES of Washington. Has any attempt been made to grow those trees in any part of this country?

Mr. TEAS. There was a futile attempt made down near Morganton, N. C.—a couple of wattles—but they only stood two winters.

Senator KENDRICK. Do you know of any forests of chestnut trees in South America?

Mr. TEAS. No, sir; there are none.

Senator OVERMAN. How do foreign nations tan their leather?

Mr. TEAS. They use quebracho from South America, and they use the Indian products, and they use the chestnut from France and Italy. The forests in France and Italy, as I understand, are becoming exhausted, and the French are in China at this time trying to get species to import.

Senator OVERMAN. They are trying to do the very thing that we want to do now?

Mr. TEAS. Yes, sir.

Senator McNARY. Thank you, Mr. Teas, for coming here.

STATEMENT OF HON. PETER NORBECK, A SENATOR FROM THE STATE OF SOUTH DAKOTA

PREDATORY ANIMALS

Senator NORBECK. Mr. Chairman, there are only two matters that I want to speak about. One is an old, old subject, but the question is whether you can see your way clear to allow us any more or not.

Senator McNARY. What is the item, Senator?

Senator NORBECK. For the extermination of wolves.

Senator McNARY. Predatory animals?

Senator NORBECK. Yes; under the Biological Survey.

Senator McNARY. That is on page 48, line 11.

Senator NORBECK. I have nothing more to say on that subject, except that if you can see your way clear to increase the amount \$100,000 I believe it will be a good investment. We are just a little more than killing off the increase. If we could do away with the old stock also I think it would bring this appropriation to a close sooner than otherwise will be the case.

Senator CAPPER. What predatory animals do you have in mind?

Senator NORBECK. The coyotes and the cats, of course.

Senator CAPPER. We have made practically a total eclipse of the gray wolves in the West, have we not?

Senator NORBECK. Yes; the gray wolf has been done away with on account of the Government activity. Many a one has cost the ranchers \$5,000 or \$10,000 before they got him.

Senator HARRIS. You want the item increased from \$568,000 to \$668,000?

Senator NORBECK. Yes; if you can see your way clear to do it. I have been up here once a year on this matter, and I will keep coming as long as the wolves trouble us, just so that you do not forget it; that is all.

Senator LENROOT. This is an increase of \$15,000 over the estimate now.

Senator NORBECK. Yes. If I understand correctly, the survey has had to withdraw from some States where it has been working under cooperative agreements. They stay in a while, and then they drop out a while. They get a pretty fair start on the wolves, and then they drop out for a few years, and then the wolves get back as numer-

ous as they were before, and then maybe we will get an appropriation by which we will kill off some of the increase. The whole point is, I think it is bad economy the way it is going.

Senator LENROOT. What bounty does your State pay?

Senator NORBECK. I think \$6 on the coyote.

Senator LENROOT. We pay \$30.

Senator NORBECK. You pay \$30 on coyotes?

Senator LENROOT. Yes.

Senator OVERMAN. I did not know that you had any.

Senator LENROOT. Yes; and it is cleaning them out.

Senator OVERMAN. I imagine it would. That is the quickest way of cleaning them out.

Senator NORBECK. There are two arguments on that. There is no denying the fact that there are wolf hunters that will not kill the female wolf. They will leave her for the next year's crop, so that they can get more bounties. The Government hunter takes the female as the male when he hunts.

Senator OVERMAN. These other hunters want to keep up the supply?

Senator NORBECK. Why, yes; they want to keep up their business.

WIND CAVE NATIONAL PARK

Senator McNARY. What is the other item?

Senator NORBECK. That is in relation to the Wind Cave National Park.

Senator McNARY. Where is that?

Senator NORBECK. I can not tell you where it is in the bill.

Senator KENDRICK. You know where it is in South Dakota?

Senator NORBECK. Yes, sir.

Senator CAMERON. It would not be in this bill; it would be in the Interior Department bill.

Senator HARRIS. That is already passed.

Senator NORBECK. No; wait a minute, now. I am not telling the whole story. Part of the Wind Cave Park is in the Agricultural bill, but the Biological Survey has certain activities in the park. The park comprises about 10,000 acres, of which about one-half is fenced with a game-tight fence. It is well stocked with buffalo and elk. In fact, it is overstocked at the present time. They are selling them and killing them off now. The park itself is under the Interior Department, but the Biological Survey has control of the animals and the fencing there.

Senator McNARY. Mr. Jump, do you know anything about the matter of which Senator Norbeck is speaking?

Mr. JUMP. I do not know about that identical matter; but there is a big-game reservation in the Wind Cave National Park, the expenses for which are carried under the item for maintenance of reservations under the Bureau of the Biological Survey. I am attempting now to find the exact page here.

Senator McNARY. That is on page 47; is it not?

Mr. JUMP. Page 47—that is the item.

Senator McNARY. Is it under that item?

Mr. JUMP. Yes; that is the item of which the Senator speaks.

Senator McNARY. The item is \$64,000, an increase of \$4,000 over last year.

Senator NORBECK. That increase would refer to some other reservation. I had in mind the fencing of the remainder of the area, some four or five thousand acres, not for the purpose of carrying a larger number of elk or buffalo, but for the purpose of making an antelope preserve. We have a few antelope left in South Dakota, and there are just a few here and there scattered in various localities, all over the western part of the United States.

Senator McNARY. How much have you estimated for this?

Senator NORBECK. It would be about \$18,000 to take care of the fencing, and there are four or five thousand acres there.

Senator McNARY. That is for fencing the remainder of the Wind Cave Reservation?

Senator NORBECK. It would be better to say fencing and other improvements, because it is fencing and water, and so forth.

Senator McNARY. That is the Wind Cave Reservation?

Senator NORBECK. Yes. The clerk of the committee here can give you the proper description of the reservation. We have got to make a stand of some kind, somewhere, or the rest of the antelope will go for good, that is all there is about it.

Senator McNARY. Do you want to make this a preserve?

Senator NORBECK. I want to make it an absolute preserve for antelope.

Senator McNARY. All we could do would be to increase this under the language of the bill.

Senator NORBECK. Yes.

Senator HARRIS. What page is that on?

Senator NORBECK. It is on page 48. Some will say, Mr. Chairman, that you could start in a smaller way; but the fact is that antelope will not live in a small inclosure. You put an antelope in a pen, and he will just lie down and die. They must have a considerable area to range over.

Senator McNARY. That is their natural habitat?

Senator NORBECK. Yes; it is their natural habitat, and it is an ideal place, and it will not cost very much, because the man on the other side of the road, on the other half of the reservation, will handle this.

Senator McNARY. Are there any antelope in there?

Senator NORBECK. There are a few, but they have not done well, for this reason. You see, the elk are there, and the elk carries a tick which does not seem to hurt the elk, but when the antelope gets that tick on him, it will kill him. We have had as much as 300 head of antelope there, and now it has got down to 6 or 7.

Senator KENDRICK. There is a tick out West now that is killing more people than antelopes. It is absolutely deadly. They have that tick now in the Rocky Mountain region.

UTILIZATION OF COTTON

Senator HARRIS. Mr. Chairman, Doctor Tenny and Dr. Louise Stanley are here, and I want to get some information from them for the record.

Senator McNARY. All right.

Senator HARRIS. I talked to Senator Jones about a resolution I introduced in the Senate some days ago in regard to cotton. I had not intended to bring it up, but I learned yesterday afternoon when I got in touch with Senator Jones that the Agricultural Department is already doing some work on this matter of the utilization of cotton, and I wanted to find out just what they were doing.

Senator McNARY. What is the item?

Senator HARRIS. It is on page 54.

For acquiring and diffusing among the people of the United States useful information on subjects connected with the marketing, handling, utilization, grading, transportation, and grading—

And so forth.

This item took up more time in the House than any other in the bill, I think. There was more interest taken in it, I think, than in almost anything else in the bill, and there will probably be more on the floor of the Senate when it comes before the Senate.

We raised this year 18,000,000 bales of cotton and we are getting \$500,000,000 less for it than we got last year for 16,000,000 bales. Next year I am afraid we are going to raise a few million bales more than we need, and unless we can find some other way to use cotton, our people are going to be in great distress. In the House this item was defeated by two votes only, the reason given for voting against it was because they had not come before the committee and made a showing of the necessity for it. That was the reason they gave for voting against it in the House. I would like for Doctor Tenny to make a statement in regard to this.

Senator McNARY. Pardon me, Senator; the House seems to have inserted an amendment in line 24 on page 54, after the word "grades" inserting the words "staples of cotton."

Mr. TENNY. That is in another appropriation, Senator McNary; under another item.

Senator HARRIS. The House voted this down by a majority of two. If you would let Doctor Tenny do so, he will state what they are doing and what can be done in regard to the utilization of cotton.

Senator OVERMAN. This is to discover additional uses of cotton?

Senator HARRIS. Yes, additional uses of cotton. For instance, we spend in this country millions of dollars on jute. I think an investigation of the department would show that cotton covering would be better for cotton, and that would save us a great deal and increase the demand for cotton. There are other things along that line.

Some of the States are already on this work.

Senator McNARY. Do you want an additional appropriation?

Senator HARRIS. I would like to have an additional appropriation.

Senator McNARY. How much?

Senator HARRIS. \$25,000 for that part of it; and then for the Bureau of Home Economics, for the work in getting this all through the country and teaching the people to use cotton goods, and to show what can be done, about \$10,000. Doctor Tenny and Doctor Stanley are both here, and I would like to have their statements in the record to show just exactly what this is for and what can be accomplished.

Senator McNARY. I understand that on page 54 you want language inserted providing for an investigation to ascertain new uses for cotton?

Senator HARRIS. Yes.

Senator McNARY. And then on page 61, that is under home economics.

Senator HARRIS. Yes; under the Bureau of Home Economics. That is a different bureau. I would like to add, there, \$10,000. Doctor Tenny is at the head of one of these bureaus and Doctor Stanley is at the head of the other.

Senator McNARY. That would make a total of \$35,000 covering the same subject matter?

Senator HARRIS. Yes.

Senator McNARY. All right; we will hear Doctor Tenny.

BUREAU OF AGRICULTURAL ECONOMICS

UTILIZATION OF COTTON

STATEMENT OF MR. LLOYD S. TENNY—(Resumed)

Mr. TENNY. I wish to say that the Secretary of Agriculture has just within the last day or two received a letter from the Commerce Committee asking for an estimate under Senator Harris's resolution. That letter has not been answered as yet, and, of course, the letter will have to go to the Budget Bureau before its transmittal, so that anything I am saying is in answer to the question here, and in no way advocating an increase in this item, because it has not yet been submitted to the Budget.

Senator JONES of Washington. Let me ask you, why should that matter go through the Budget? This is merely a Senate resolution, and the letter to the Secretary asks him if he will suggest a form of a resolution, and it will not cost nearly so much as an investigation by the Senate would cost under the resolution as asked.

Mr. TENNY. I am only speaking from my own understanding of the matter. That resolution did carry an appropriation, as I recall it.

Senator JONES of Washington. Oh, no; the resolution of Senator Harris did not carry or authorize any appropriation. It was simply a Senate resolution.

Senator HARRIS. The Senate resolution was to find out additional uses that can be made of cotton, and I had it referred to the Commerce Committee.

Senator LENROOT. Did the resolution provide for an investigation by a Senate committee?

Senator HARRIS. No.

Senator LENROOT. An investigation by whom?

Senator HARRIS. By the Agricultural Department and the Commerce Department; and the Senate resolution went to Senator Jones's committee at my request, because it deals with the Agricultural Department and the Department of Commerce.

Senator OVERMAN. That investigation would have to be paid for out of the contingent fund, it is a Senate investigation.

Senator JONES of Washington. The resolution is asking the department to investigate it.

Senator HARRIS. Yes.

Senator OVERMAN. Then why should the resolution go to the Budget?

Mr. JUMP. Under a Budget order known as Circular 49, issued to the departments shortly after the Budget system was established, as a matter of coordination, and to provide for carrying out the spirit of the Budget and Accounting Act with respect to estimates, heads of Departments, in giving Congress their views on legislation that would involve, directly or indirectly, an increase in expenditures, are required first to submit their proposed report to the Director of the Bureau of the Budget in order that the head of the department may ascertain the relation between such proposed legislation and the President's financial program. It is required further that the views of the heads of departments when submitted to Congress shall be accompanied with a statement, as to the relation of the proposed legislation to the financial program. With that in view, we submit the proposed reports of the department on pending legislation to the Budget in advance and accompany our final report with a statement as to the budgetary aspect of it, for the information of Congress.

Senator JONES of Washington. This is not legislation.

Senator HARRIS. No; the law already provides for that. It is not a new undertaking.

Mr. JUMP. That may be, but it is the rule that the department shall not make recommendations to Congress or to the committee where expenditures are involved without securing the information about the financial program from the Director of the Budget Bureau. That is the established practice.

Senator HARRIS. In the House the reason given for voting down the appropriation was, that while they realized the importance of it, no one had not gone before the committee and given any information about it. What I would like to get is the information, so that the committee can act intelligently.

Senator McNARY. Very well. Doctor, will you resume your statement?

Mr. TENNY. I will say that in the appropriation that the Bureau of Agricultural Economics has for doing research work, there is now and has always been, so far as I know, the words "utilization of agricultural products," and we have had several projects that had to do with the utilization of various agricultural products; so that it is our opinion that we have ample authority to conduct the kind of work that Senator Harris has outlined to me, personally, that he has in mind.

Last spring when the surplusage of cotton began to pile up, pressure was brought to bear on us to start some work of this kind, and we went to Brown University, after making a very careful survey of the available men, and employed, through a cooperative arrangement with Brown University, Professor Killough, professor of economics at Brown University, and for three months this summer Professor Killough has been making a study for us that is preliminary as to the increased uses of cotton. In other words, we found immediately that there is a great dearth of information as to how much cotton is used, what it is used for, and the different commodities that are made out of cotton, and the first thing we did was to take an inventory, and I have before me a tabulation of some 8 or 10

large sheets which is the part of Doctor Killough's work, in which we are listing the basic fabrics of cotton and the uses of those basic fabrics. For instance, bags and baggings, and where the material is used, for automobile purposes and in rubber tires, and every conceivable place that we can discover in working with cotton textile manufacturing people, we have listed here. That is as far as we have carried the work at the present time. We did not have money enough to have Professor Killough on for the year around.

Senator McNARY. How long has he been working on it?

Mr. TENNY. He worked on it for three months, and is now off.

Senator McNARY. How much money have you devoted to that?

Mr. TENNY. I should say we have spent about \$1,500 during the past year on this project, including his salary and some travel and some clerical assistance.

Senator McNARY. Is that the first expenditure you have made on that?

Mr. TENNY. That is the first directly relating to the thing Senator Harris has in mind. We are also conducting in cooperation with Clemson College very extensive spinning tests on cotton, and that harks back to the question of grades and standards. We are finding out on the one side all of the different grades and standards we are working with, and then we are cooperating with Doctor Taylor's Bureau of Plant Industry in testing out new varieties of cotton, as to the spinning qualities of the cottons that are produced on those new varieties of cotton; but that only remotely relates to the uses of cotton.

Senator OVERMAN. Those articles you have there are already being manufactured for other purposes?

Mr. TENNY. These are being manufactured at present. What we would like to do when conditions permit is to make a study of these two groups, carrying from our standards these commodities, statistically, and the amount of cotton that is used, back through the channels of trade, and tracing the kind of cotton that is used in making these various goods; because we feel, in other words, if we are going to undertake this we should know not merely that cotton is being used but we should know that middling cotton or strict low middling or spotted cotton is being used. We should know the exact grade of cotton that is being used, and where those grades of cotton go in the processes of manufacture.

That resulted in our making a number of contacts with different organizations, and among those was the American Wholesale Grocers' Association; and that resulted in a meeting at Memphis some time this fall, which is reported in a magazine published by the American Wholesale Grocers' Association, a magazine entitled "Facts and Figures," practically the entire magazine being given up to the question of new uses of cotton, particularly with regard to the uses of cotton for cotton bagging for commodities in the grocery trade.

Senator McNARY. As a substitute for wooden boxes and paper?

Mr. TENNY. As a substitute for all other things; as a substitute for grocers' bagging in some cases, and for other materials in some cases.

At this meeting one of our men, Mr. Meloy, who has been doing considerable work along similar lines, gave a talk which is reported in full in this magazine.

Following that, the American Wholesale Grocers' Association wrote to us on November 26, on stationery that they have printed especially, in which you will notice that they have on their stationery, in the center of the page in large red letters, "Ship it in cotton." In other words, they are putting out that propaganda now as the result of this meeting, in the way of using more cotton, and in this letter the president of the association simply states as follows:

I grant that it is somewhat unusual perhaps to make a special mention in this way of addresses at a public meeting, but I feel that the Department of Agriculture, through Mr. Meloy, has rendered such a valuable contribution to the movement inaugurated at Memphis, Tenn., on November 17, in behalf of an increased consumption of cotton, that I should make mention of the fact here.

Then he goes on and mentions further Mr. Meloy's speech.

Senator McNARY. Are you taking into consideration the long and short staple cotton in this matter?

Mr. TENNY. Not up to the present time. That is what I am pointing at.

Senator McNARY. If this money was appropriated under the resolution of Senator Harris, would you take into consideration the two sizes of cotton?

Mr. TENNY. We would plan, in so far as we could, to take this chart—for instance, you take your rubber tires. There you get almost immediately into long staple. When we began to group those things, we would go back and determine how much, in the various channels of trade and so forth, of the long staple was being used.

Senator McNARY. A good deal of cotton is being raised on irrigated land now in the southwestern part of the country.

Mr. TENNY. Yes; and there has been an increase in the State of Mississippi.

Senator McNARY. Yes.

Mr. TENNY. Among the associations that are very much interested is the association of cotton textile merchants of New York. Doctor Killough made a contact with that association, and on the 11th of October they wrote to the secretary as follows. I would like to read this, because it seems to me it is a very important letter. [Reading:]

THE ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK,
70 Worth Street, New York, October 11, 1926.

Hon. WILLIAM M. JARDINE,

Secretary of Agriculture, Washington, D. C.

DEAR SIR: We recently had the pleasure of discussing at some length with Prof. Hugh B. Killough, of the department of economics, Brown University, the question of the number of different kinds of cotton cloth and their various uses. We also arranged for Professor Killough interviews with several of our members, and went into the matter with him in some detail. We understand from him and press accounts of his work that he is making some preliminary investigations in connection with a proposed project of your department for a "cotton utilization survey."

We understand that Professor Killough has submitted a report and that Messrs. Olsen, Palmer, and Youngblood, of your department, are familiar with the details of the project.

With the approval of our board of directors, I wish to place this association on record as being heartily in favor of the proposed survey, and we strongly urge that it be made. We believe that in order to have a proper understanding and appreciation of the problems and difficulties which confront the cotton

growers of the United States it is necessary to know, with some degree of accuracy, what cotton is used for.

The next sentence is a very astonishing statement, coming from an association that is interested in the cotton textile business. [Continuing reading:]

We have now only a vague idea as to its uses.

According to the latest census figures on the value of the principal field crops, cotton is second only to corn. This relation also holds true with respect to the value of the farms. Some economists hold that the favorable trade balance of this country is due to the exports of cotton.

We believe that if the Department of Agriculture can ascertain the thousands of different uses for American cotton it will have performed an invaluable service not only to the cotton farmers but to all of the vast industries that are built upon that crop. Literally millions of people make their living from cotton and its products. The cotton mills of this country alone employ more wage earners than any other manufacturing industry. This does not take into account the number of people engaged in the growing of cotton nor the people engaged in the thousands of establishments between the cotton mill and the consumer.

Naturally any survey of this kind must have to do largely with cotton cloth. If your department decides to make the survey, I can assure you of our complete support and cooperation in our branch of the industry, and I am sure you will met with the same reception in all other branches of the trade.

Senator HARRIS. How much appropriation would it require in the Bureau of Economics?

Mr. TENNY. We have estimated what looks like a fair piece of work, and yet not extensive, on the basis of \$25,000.

Senator HARRIS. How would you use that appropriation?

Senator McNARY. Did you present that estimate to the Director of the Budget?

Mr. TENNY. We have not done so. It has not gone to the Director of the Budget at all.

Senator HARRIS. I did not know, Mr. Chairman, that they had been at work on this, and I introduced my resolution and expected to get a hearing before the Commerce Committee before this appropriation bill came before us.

Senator McNARY. I wonder, if it is of such great importance, and if you had been doing some work, why you did not make an estimate to the Director of the Budget in your preliminary estimates.

Mr. TENNY. I can not answer as to that.

Senator McNARY. Can you tell us whether there was an estimate on that, Mr. Jump?

Mr. JUMP. A preliminary estimate on this cotton utilization?

Mr. TENNY. Yes.

Mr. JUMP. My recollection on that is that it is only recently that we have been considering the submission of a supplemental estimate for this cotton utilization work, to be considered for a deficiency bill, but that we finally concluded to defer it until the regular estimates for next year. That was our most recent discussion of the matter. That is the same matter Doctor Wood, you and I were discussing recently is it not, Doctor Tenny?

Mr. TENNY. Yes.

Mr. JUMP. It has not been sent to the Budget at all. Our plan was to submit it for the 1929 estimates.

Senator McNARY. Why should you modify the plan, then?

Mr. TENNY. Why should we modify it in the appropriation?

Senator McNARY. Yes.

Mr. JUMP. We have not recommended any modification of it.

Senator McNARY. Why did you want to defer it?

Mr. JUMP. We did not want to defer it, but it came up for consideration as a supplemental estimate, to be sent to the Budget a few weeks ago, and we considered whether we should submit an estimate for it then, but in view of the fact that it is necessary to restrict the estimates for the deficiency bill to things of an absolutely emergency character, it was decided to include the item in next year's estimates. It was recognized as a matter of importance, but, not having it definitely before us in the regular estimates, we did not feel that it could get through as an item for the deficiency bill.

Senator LENROOT. When did you employ this economist?

Mr. TENNY. In May or June.

Senator LENROOT. When were your estimates made?

Mr. TENNY. They were made approximately at that same time.

Senator JONES of Washington. In May or June? You mean your estimates for this year?

Mr. TENNY. Before the Bureau of the Budget: yes, sir.

Senator McNARY. I thought about July was the time of the year.

Mr. JUMP. July 15 is the date we submit our first estimates.

Mr. TENNY. You understand, that is when the Secretary's office does that; but we have to do it a month or six weeks ahead of that, because the department must have extended conferences with the bureau chiefs and must give careful consideration to all of their estimates and still leave Mr. Jump time enough to get the material all together and before the Budget Bureau by July 15.

Senator HARRIS. At that time, in June and July, we did not know that we were going to have the largest crop of cotton on our hands that there has ever been.

Mr. TENNY. At that time we were thinking that cotton was worth 18 or 20 cents a pound. With the increased crop coming on, the price has dropped very rapidly, until it is now down to 11 cents, about; so that the pressure for all this work on the utilization of cotton has been an increasing pressure, increasing very rapidly during the past three months.

Senator JONES of Washington. You have not any idea about what the work would ultimately cost, have you?

Mr. TENNY. That is the difficulty, for the reason that there is a tremendous field of work, both in agriculture and commerce, that might be done, that bears on this subject.

Senator JONES of Washington. Yes. I want to say that the Department of Commerce suggested to us, on the resolution introduced by Senator Harris, that to carry it out would cost over \$500,000.

Senator HARRIS. I want to say that I had a talk with Secretary Hoover yesterday afternoon. The Associated Press, several days ago carried an indorsement of this work by him, indorsing it enthusiastically. I saw Secretary Hoover yesterday and told him that it would be impossible to get this sum appropriated at this session. He asked me then, how much I thought we could get, and I said, "I do not think you can get over \$50,000." He said he would ascertain the very best they could on that amount. His department,

of course, handles a different side of it from the Agriculture Department.

Senator McNARY. Do you want those two departments working on the same problem?

Senator HARRIS. They are already working on the same problem; but I want, when my resolution comes before the Commerce Committee, of which Senator Jones is chairman, that the two departments should agree to coordinate their work, and avoid any overlapping. Senator Jones has asked representatives of both departments to come before his committee when the matter is considered. But in order to get an appropriation we had to have it under this bill. A resolution without an appropriation would be useless at this session. If you will read the discussion in the House, you will see that this took up more time than almost any other item, and this will probably be discussed in the Senate more than other items in this bill.

Senator LENROOT. How would the Department of Commerce coordinate unless they, too, had an appropriation?

Senator HARRIS. They will have to have an appropriation if they coordinate.

This surplus of cotton which we are trying to find some use for has brought this year \$500,000,000 less than the crop of last year, though this year's crop is 2,000,000 bales more than last year.

The farmers are not organized, and our only hope of benefiting them and preventing cotton next year from going even lower than now is by finding more uses for cotton. The Department of Agriculture and the Department of Commerce are already working on it. We pay out millions a year for cotton bagging that comes from India. What is called the tare is charged on every bale of cotton. They take off several pounds of cotton because of this jute bagging, which is not worth anything.

I suggested to Secretary Hoover that he get in touch with the head of the Cotton Manufacturers' Association and see if he could not get them to agree to pay more for cotton wrapped with cotton goods. That would increase demand for cotton goods and keep this money in this country which we send to India for jute bagging.

Senator OVERMAN. We tried, when cotton was at 5 cents a pound, to use cotton, and a great many did. I do not know why it did not result in the general use of it.

Senator HARRIS. In some of the States now the States are spending a good deal of money to find additional uses for cotton goods, and Doctor Stanley, who is here, can tell you just what work the Bureau of Home Economics is doing. All the Department of Agriculture county agents are under her, and she can get them to advocate the use of cotton goods, and show how to save money in buying goods and creating demand for cotton. When Doctor Tenny gets through I would like to have Doctor Stanley make a statement to you.

Mr. TENNY. I simply will say this, on the cotton bagging: The only feature of that we are working on is the question of the strength of the cotton, and various other features that would have to be used to make bagging that would be satisfactory, and then to run tests in the various gins of the country, using various types of cotton bagging that might be developed. We have a project, for instance, with the Bureau of Chemistry—a joint project—in which they are trying

to find methods of waterproofing this cotton cloth, and making it mildew proof. We want to take the results of their work and put it in to practical experiments through the mill and in various gins. We estimate, if we could develop a cotton bagging, it would use approximately one-half million bales of cotton, at a very conservative estimate.

The second project is this, which has to do with the American Wholesale Grocers' Association in connection with the use of cotton, in developing new uses for cotton, coming back probably to the raw cotton, running it through in various mills, making tests in various types of products, salt and sugar and other types of commodities that the grocery people handle.

The third great use is that which Doctor Stanley has, for the use of goods in the home, and we would keep off of that work because she has a definite program, which she will explain, in which cotton is playing a small part.

Then we have letters here for investigation, by somebody, of the governmental uses of cotton. We are disposed to believe that it is worth investigating, to see whether twine and various things that are purchased in very large quantities by the Government, and many of which commodities are imported commodities, might be shifted over to the use of cotton. In other words, we would like to make an investigation of that possibility.

So far as we have outlined the projects, those are the four projects that have been suggested. There are many others that could be added.

Senator OVERMAN. Do you think cotton could be made to take the place of sisal, of which we import so much?

Mr. TENNY. Possibly; sisal and jute.

Senator HARRIS. I think you said it would require a \$25,000 appropriation. You did not finish telling us how you would spend that amount of money.

Mr. TENNY. If that is the wish of Congress, and that amount is appropriated, we would put on one man, who would be Doctor Killough if we could secure him, and we have reason to believe Doctor Killough would be available for full-time work.

Senator HARRIS. He has been on that work?

Mr. TENNEY. Yes; he has been on that work. That would be about a \$5,000 position.

Then we would appoint two technical men under him in the \$3,800 grade.

Then we are estimating for perhaps one statistical worker and one stenographer, and clerk-stenographer, both about \$1,500.

Then, in that estimate, we would figure about \$3,000 for travel for these men; and we figured a large amount, the balance of \$6,400, I think it is, for supplies and material. That would largely be spent probably in the purchase of cotton that would be put in special mills to be milled according to our specifications and Doctor Stanley's specifications, and she will describe some of the things where she thinks there might be increased opportunity for the use of more stylish cottons in cotton goods; and we would run through the mills this cotton, and the two bureaus then would carry on the project of testing out the practicability or wearability and the serviceability

of those goods that were manufactured according to specifications for us.

Senator HARRIS. The mills would do this without charge?

Mr. TENNY. I think we would have no difficulty in getting the cooperation from the mills without cost other than for the raw cotton.

Senator LENROOT. How long would it take before you would get any practical results?

Mr. TENNY. I think with the preliminary work that has been done, we would begin to get practical results immediately. In fact, I think we are getting practical results. I think that the work of the Wholesaler Grocers' Association in their publicity work, in their campaign, and the Memphis meeting, all is having a little influence, and it will be our idea to stimulate just that kind of work all over the country.

Senator LENROOT. You were speaking more particularly of research. That is propaganda.

Mr. TENNY. Yes; but we want propaganda based, so far as we are concerned, on pretty substantial facts, and I would say when we began to get milling or spinning tests it will take six or nine months to make the cooperation and to get the cotton. Then, of course, when you go into the wearing features of it, that is something that is going along for a year or two.

Senator McNARY. Would you continue this, irrespective of the recovery in the price of cotton to a profitable level?

Mr. TENNY. There are two lines of work. First, there is the survey, the ascertaining of facts, in which we are very weak at the present time. That would be done practically once.

Then the additional uses of cotton is something that in my opinion might be carried on more or less indefinitely. I would like to hear Doctor Stanley's reaction on that, but so far as much of our work is concerned, I think it would take some several years.

Senator McNARY. You have not gone into this endeavor before, because cotton has been at a profitable basis in the world's market?

Mr. TENNY. Yes; that is true.

Senator McNARY. And the emergency is what has prompted this action?

Mr. TENNY. Yes.

Senator McNARY. If the emergency is removed, would you go on and make the investigation a permanent part of the work of the bureau?

Mr. TENNY. I would say to a reasonable extent; yes, Senator, because I think it is a line of work that might well be undertaken by the Federal Government in cooperation with the States, as we would be cooperating with the States.

Senator LENROOT. Is not the greatest difficulty not a lack of knowledge on the part of the people of the value and uses of cotton, but is it not because of a desire to use something else?

Mr. TENNY. I think Doctor Stanley can throw some light on that.

Senator HARRIS. Before Doctor Stanley goes on let me make this statement: What I am afraid of is that this condition is going to last for years; for this reason. England is taxing every bale of cotton that is being manufactured; the millions that we send over there to be manufactured they tax, every bale, and that money is

used to encourage or promote the cultivation of cotton in the English colonies. They have recently built another dam on the Nile in Egypt. Those of you who went to the lecture the other night in the National Geographic Society series saw pictures of the dam which would increase the production of cotton on the Nile largely. England is increasing cotton production in many places, so that that will make our surplus greater and greater unless we can increase the demand for cotton goods. If you were interested in farming in the South, this would appeal to you as it does to the producers down there, and you would realize the necessity of it. We are all dependent upon cotton.

Senator McNARY. I realize it; but I was thinking that if this was prompted by an emergency situation, it was a question whether you would want to continue it as an activity of the department, indefinitely.

BUREAU OF HOME ECONOMICS

STATEMENT OF DR. LOUISE STANLEY, CHIEF OF THE BUREAU OF HOME ECONOMICS

UTILIZATION OF COTTON

Doctor STANLEY. This type of work we have been doing and are authorized to do comes under our appropriation of \$125,000 for last year, and of that we are spending \$48,000 for textile studies, part of which is going already into cotton work.

Senator Harris asked me this morning what we were doing. I might say, as introductory, that we have two types of work. I think one is of the group and class that Senator Lenroot would call propaganda work. It is not altogether propaganda work, however, because we keep in touch with scientific information and interpret it and put it out in a form so that the housewife can use it and make an application to home problems. One of the first bulletins we prepared, as a new bureau, was on cotton fabrics, because this material was not assembled in the form in which the housewife could use it. These facts were not based on research in the bureau, but we went to the other departments of the Government and brought together the information which the housewife could use in the selection of cotton fabrics.

Senator JONES of Washington. How many copies of that bulletin have been published?

Doctor STANLEY. I can not give you the figure, but it is the regular farmers' bulletin which is put out to the usual distribution. I can give you the exact figures.

Senator McNARY. What was the date of that?

Doctor STANLEY. It has been out for a little over a year, I believe. No; it was issued on March, 1926. I think this must be the second print of it.

Senator McNARY. March 26 of what year? When was it published?

Mr. JUMP. March, 1926.

Senator McNARY. How many copies have you on hand?

Doctor STANLEY. I have not any idea.

Senator McNARY. You have not any idea how many you have distributed?

Doctor STANLEY. I could not tell you offhand, but I would say about 300,000.

Senator McNARY. Have you had any favorable reaction from the public on that?

Doctor STANLEY. Yes; it is used very extensively by the extension division and the county agents, the country over.

Senator JONES of Washington. Have you had much response from the farmers' wives of the country?

Doctor STANLEY. Yes; we get requests from them all the time for bulletins of this type.

The second bulletin is one which is just out, on window curtains, which is the other extensive use of cotton in the home; and for this bulletin the work was all done in the bureau.

There are two other types of study needed, one of which we have under way. First, we need studies to see if it is possible to use more satisfactorily cotton in the home. That is the cheapest fabric that is available, and it is the one which is most easily cared for. I mean, it has hygienic qualities, washes readily; but we have not been able to get back into cotton underwear the finish that is so desirable in other products, and that is one of the problems we are working on now, that is to put back into cotton after laundering a satisfactory finish which will make it more satisfactory for underwear use, and for dress uses, and which will also keep it from soiling so readily. That is one of the reasons that silk has been more popular than cotton. It does not soil so readily. We feel that by getting a satisfactory finish put back into cotton, that can to a certain extent be overcome.

We also know that it has not held up satisfactorily under modern laundry methods. We feel that that should be tackled from the two ends. For instance, as to modern laundry methods, we are studying those now, and the effect of the various cleansers that are being used on cotton goods; and second, the effect of ironing on cotton. Both these problems seem to be extended.

The other types of problems are those to which Mr. Tenny referred. We feel that from the home angle there are certain modifications which can be made in cotton cloths which will make them more satisfactory for home use, both from the point of view of beauty and of general usefulness, both hygienic and artistic.

It is very well known that we have adapted now cotton goods to certain uses. There has been less study of designs and the application of designs to cotton goods than to other types of fabrics, and that needs to be studied both from the point of view of design in the fabric, and the effect—

Senator HARRIS. Why is that, that cotton is neglected in this country?

Doctor STANLEY. I do not know; but I think the cotton manufacturers themselves have been slow in doing that; they have been slow to recognize the need of it. That is not a problem in which we can do very much except in cooperation with manufacturers.

Senator HARRIS. How much appropriation would be necessary for you to carry out what you have in mind?

Doctor STANLEY. \$10,000 we have estimated.

Senator HARRIS. How would you spend it?

Doctor STANLEY I would spend about \$9,200 of it for personnel. That would give up approximately four scientific people.

Senator HARRIS. What would they do?

Doctor STANLEY. They would like first to cooperate with Doctor Tenny in following these various cotton grades into the cloth, and testing the satisfactoriness of the cloth for various uses. And then they should to be able to hurry up what we have already under way.

Senator HARRIS. Is the Alabama college doing some work along that line?

Doctor STANLEY. Yes. Various States are doing propaganda work which needs to be backed up with these great detailed uses; and this is the type of work which has come from Alabama. But they are going to put on special propaganda programs in various States which will culminate, as I understand, in April, encouraging the use of cotton cloth. I think a good deal can be done along that line.

Senator McNARY. Do the cotton mills cooperate in this work?

Doctor STANLEY. Yes; we have gotten splendid cooperation whenever we have asked for it; and I would like to say, in regard to the Bureau of Standards, that we have been working with the Bureau of Standards, too.

Senator McNARY. In what way have they cooperated?

Doctor STANLEY. They have cooperated in sending materials when we needed them. We have been cooperating with one of the textile mills that has been working with Doctor Tenny's bureau, in the matter of laundry. We had to have special materials to work with there, and they sent them to us. They have put any amount of information we want at our disposal.

Senator HARRIS. Have they not had men at the Bureau of Standards?

Doctor STANLEY. At the Bureau of Standards, those are special men, who are called, I believe, industrial fellows; and we have gotten a good deal of cooperation from them.

Senator McNARY. Are the textile mills spending money on their own account in making investigations along this line?

Doctor STANLEY. Yes, they are. The industry is supporting some research people at the Bureau of Standards.

Senator McNARY. Looking for new uses for cotton?

Doctor STANLEY. For new uses.

Senator McNARY. How extensive is that work?

Doctor STANLEY. Not very extensive at the present time.

Senator McNARY. Have they a laboratory, or do they have people in the field, or what kind of work are they doing?

Doctor STANLEY. I know that some people, for example, are financing a man at the Bureau of Standards, and I think in that cooperative arrangement they pay the salary of the person who does the work there, and works with the technician on their force.

Senator HARRIS. You understand, of course, that the mills are not interested in this, quite as much as the cotton producers. When cotton is lower the mills can make money, but the farmer can not.

Senator McNARY. I thought there was a very strong argument to the contrary. If the uses of cotton were decreased it certainly would decrease the output of the mills, and it certainly would decrease the profits from the mill properties.

Senator HARRIS. But the decrease in the price of cotton hurts the farmer, and does not hurt the mill in the same way. The mills can sell at a profitable price and are organized.

Senator McNARY. I think it is obvious that there is a difference, but it is obvious that they are interested, or they would not be doing this work.

Doctor STANLEY. I think they are interested, Senator Harris.

Senator HARRIS. I am sure they are interested, but they are not interested financially to the same extent that the farmer is. They can stop their mills anytime cotton goods are below the cost of production, but when the farmer prepares the ground, uses fertilizers, and makes the crop his investment is lost if cotton goes too low.

Senator McNARY. Certainly not.

Senator LENROOT. They have a greater financial interest, a purely financial and selfish interest, in aiding this work of course.

Doctor STANLEY. I would like to answer the question asked, whether this is a temporary problem. I would say no, that from the standpoint of the consumer, it is not. Much of the cotton cloth which has been put on the market could, through study, be much better adapted to home uses, and that is a problem I foresaw was coming along, before this present emergency arose. Many of the fabrics can be put out in a form which would be much more satisfactory for home use, and if studied from that point of view, and that type of study has not been made.

Senator LENROOT. I would like to ask you if there is not a disinclination on the part of the public to use cotton, and do they not prefer some other material?

Doctor STANLEY. I think that has been promoted by—

Senator LENROOT. I am just asking you for the fact. I do not care how it is promoted.

Doctor STANLEY. I think that is a fact, at present. First, there was a very wise promotion on the part of certain agencies; and in the second place, it is due to the fact I mentioned a while ago, that we do not yet know how to handle cotton as satisfactorily as we should. I think we can produce fabrics made of cotton which can be made much more popular than those now on the market and much more adapted for use.

Senator LENROOT. If cotton stockings could be made equal to silk in every way, the people would still buy silk, would they not?

Doctor STANLEY. I do not believe so, if you can produce a cotton which will have the softness and sheen; and I think that could be done.

Senator OVERMAN. In looking over this bulletin I do not see anything new on the use of cotton. You go into any home in Georgia, or in my State, and you will find they are using these same things, and have been for hundreds of years. Have you brought out in your bulletin anything new on the use of cotton goods?

Doctor STANLEY. That bulletin was not prepared with the idea of bringing out new uses of cotton. That is a bulletin on draperies, and that is one of the ways in which a very large amount of cotton is used in the home.

Senator OVERMAN. This is nothing new, in this bulletin.

Doctor STANLEY. That is one of the bulletins which I said was the result of compilation.

Senator McNARY. Up to, say, three to five years ago, what was the practical use of cotton?

Doctor STANLEY. I could not tell you.

Senator McNARY. I read recently a very interesting story in a magazine dealing with that. I know the decrease in the use of cotton has been amazing. It was amazing to me, and the increase in the use of silk was also amazing.

Doctor STANLEY. I might say that the decrease in the use of cotton was not entirely explained by the increase in the use of silk, but it is due to a difference in the construction of garments. There is less cloth used.

Senator McNARY. Of course, in the nature of clothes, and quantity of materials used. That is very interesting. Is there anything further?

Senator OVERMAN. I was wondering why this bulletin was published. It is very pretty. It gives the home, and shows how these materials have been used for 100 years. Why was it published?

Doctor STANLEY. It was published at the request of a number of home demonstration agents who felt the need of it; and also because we have been feeling that one of the important elements in the farm home is beauty and general attractiveness.

Senator OVERMAN. It is very pretty.

Doctor STANLEY. We felt that it was worth while.

Senator OVERMAN. These things have been used in all homes.

Senator KENDRICK. Not in all homes.

Doctor STANLEY. Many homes are lacking in beauty, and that is what we had in mind.

Senator OVERMAN. I was talking about new uses for cotton. I wanted to know whether you have discovered any way for the housewife to use cotton in which it has not been used?

Doctor STANLEY. I think we can do two things—we can suggest new uses and we can stimulate those uses which already existed and direct them along the right channels, and this is a bulletin of this type.

Senator OVERMAN. I am in favor of finding out any new uses for cotton, but these are old uses. If this is only for the purpose of beautifying the home, that is all right.

Doctor STANLEY. That was the purpose of this bulletin, but it is working right in with the cotton campaigns they are putting in in the States.

Senator KENDRICK. Are you not having an increased and increasing demand all the time for these bulletins published by the Bureau of Economics?

Doctor STANLEY. We distributed a million and a quarter last year.

Senator KENDRICK. And is not the demand for them very greatly increased?

Doctor STANLEY. Very greatly increased. I would like to say we are putting out a good deal of this information over the radio.

Senator OVERMAN. I wish you would put them in every home in the United States.

Senator HARRIS. I would like to make this statement, Mr. Chairman. The cotton manufacturers will cooperate fully in this matter, I am quite sure.

Mr. TENNY. I do not think there is any question about that.

Senator KENDRICK. Will Doctor Tenny be here this afternoon, Mr. Chairman?

Senator McNARY. Yes.

Senator HARRIS. I should like to have Doctor Stanley place in the record the statement of per capita consumption of cotton by years, and also the total consumption of cotton by years.

(The statements are as follows:)

Per capita consumption of cotton by years¹

Year	Cotton	Year	Cotton	Year	Cotton
	Pounds		Pounds		Pounds
1920.....	30.2	1922.....	27.1	1924.....	25.4
1921.....	22.7	1923.....	30.1	1925.....	27.3

	United States	United Kingdom	France	British India	China
1912-13 ²	23.3	15.4	10.5	4.4	6.7
1920-21.....	20.4	7.3	0.8	1.7	3.7
1921-22.....	24.4	9.4	7.7	2.4	2.6
1922-23.....	25.9	6.5	11.3	3.3	3.3

¹ Taken from cotton report, Department of Commerce, and census figures, counting weight of bales as 500 pounds and dividing by total population.

² Department of Agriculture bulletin on cotton prices and markets now in press.

It is estimated from the analysis of the above figures that the use of the above cotton is distributed as follows:

	Per cent
Clothing.....	60
Industrial uses.....	34
Home uses.....	16

Total consumption of cotton by years

Year	Total bales used	Year	Total bales used	Year	Total bales used
1914.....	5,193,659	1919.....	5,765,986	1924.....	5,688,111
1915.....	5,598,798	1920.....	6,425,344	1925.....	6,193,417
1916.....	6,395,397	1921.....	4,892,672	1926.....	6,450,987
1917.....	6,788,505	1922.....	5,911,914		
1918.....	6,591,336	1923.....	6,668,092		

(Thereupon, at 1:05 o'clock p. m., the subcommittee took a recess until 2 o'clock p. m.)

AFTER RECESS

At the expiration of the recess the subcommittee resumed its session.

ENFORCEMENT OF TEA ACT

Senator McNARY. I have here a letter from the secretary to Senator Smith of South Carolina, who is a member of this subcommittee, and I shall read it for the record:

MR. CHAIRMAN: In Senator Smith's unavoidable absence I would like to call to the attention of the committee the decrease in the appropriation proposed for the enforcement of the tea act. Senator Smith has always manifested considerable interest in the enforcement of this act; and since he is not here to bring the matter to the attention of the committee in person I would like to ask the committee to inquire of Mr. Jump whether the Department of Agriculture can absorb the proposed decrease in appropriation for this work, in the amount of \$2,690. See page 370 in the Hearings of the House.

CHAS. E. JACKSON,
Secretary to Senator Smith.

Senator Smith is a member of this subcommittee.

Senator OVERMAN. His secretary spoke to me about it, and said that Senator Smith is very anxious to have the amount restored.

STATEMENT OF GEORGE F. MITCHELL, SUPERVISING TEA EXAMINER

Senator McNARY. This item is on page 67, lines 16 to 22. Doctor Mitchell, you are here on this item, I was told by Mr. Jackson, secretary to Senator Smith.

Mr. MITCHELL. I am in charge of that work.

Senator McNARY. For the record, will you not state your name and occupation, and your connection with the department?

Mr. MITCHELL. Yes, sir. My name is George F. Mitchell. I am supervising tea examiner. I came here at the request of Mr. Jackson, acting for Senator Smith.

Senator, for this item we had last year \$40,690. We have that in the current year, also.

Senator McNARY. You had \$43,745 last year, and that is the estimate of the Budget for this year; but the House decreased it by about \$2,000.

Senator LENROOT. No; the House gave them the estimate.

Senator JONES of Washington. The estimate was \$41,000.

Senator LENROOT. I thought the estimate was the same as last year's appropriation.

Senator JONES of Washington. No.

Senator LENROOT. Very well.

Mr. MITCHELL. The tea act is a mandatory act. When the teas come into the country they have to be placed in bonded warehouses until samples of every line and every invoice are taken and examined by expert tea-tasters. We might not need this full amount; again, we might need every bit of it. It is very dangerous to reduce this item to a point where we would not have sufficient money to draw all the samples required by the law. It does not work like many other laws, where we can take as many samples as we want to; but the law distinctly says that we must take samples of every line and every invoice. We have six tea-examining stations in different parts of the country.

Senator KENDRICK. At what places?

Mr. MITCHELL. At New York, Boston, Chicago, Tacoma, Honolulu, and here in Washington.

Senator JONES of Washington. Are you running behind in the current year?

Mr. MITCHELL. No, sir; we are not running behind in the current year. We have, as I say, \$40,690.

Senator JONES of Washington. \$43,745.

Senator LENROOT. That must be a mistake.

Mr. MITCHELL. There must be a mistake there, because the record before the House committee does not show that. Shall I look it up?

Senator JONES of Washington. Well, you are running along all right with forty thousand and some dollars?

Mr. MITCHELL. \$40,690; yes, sir. It has been reduced to \$38,000.

Senator McNARY. Mr. Jump, let me ask you about that. You are the budget officer. How much have you for the enforcement of the act to prevent the importation of pure and unwholesome tea in the current appropriation?

Mr. JUMP. The appropriation for the current fiscal year is \$40,690; but in addition to that—

Senator McNARY. There is a mistake somewhere.

Mr. JUMP. I was just about to explain the apparent discrepancy. In addition to that there is an assignment of salaries from the old statutory roll of \$3,055. The House committee this year has abolished that old statutory salary roll and added the amounts to each appropriation, which will be a very helpful arrangement to everybody concerned in the future, because we can all see just what is being spent for every activity; so that really this year for the Lea Act they have \$43,055—\$40,000 plus this \$3,055 that the House committee has added.

Senator KENDRICK. That is a reduction of \$1,000?

Mr. JUMP. No, sir; the reduction is \$2,690, is it not?

Mr. MITCHELL. \$2,690; yes sir.

Mr. JUMP. The actual reduction is \$2,690.

Mr. MITCHELL. Mr. Chairman, I did not know about this addition. I was simply giving you what we had.

Senator McNARY. The bill of 1928 carries \$2,690 less than the current year's appropriation?

Mr. MITCHELL. For this work; yes, sir.

Senator JONES of Washington. You say that the salaries of some of the officials are transferred around from different places in this bill. There is \$41,055 carried in one item in this bill. Are there also provisions in other parts of the bill for these people?

Mr. JUMP. Not now. There are during the current fiscal year; but beginning in 1928 we are on a basis where the amount appropriated for each purpose will be shown in one place. The action taken by the House Appropriations Committee is very helpful and will eliminate much confusion that has existed in the past on this point.

Mr. MITCHELL. There are a great many propositions about the enforcement of the tea law that are very uncertain. For instance, in 1925 our importations were 95,500,000 pounds. This last fiscal year they were 98,500,000 pounds. We have had the importations run up as high as 148,500,000 pounds, so you can readily see that if, during the coming year, our importations were to be increased materially, it would be absolutely necessary for us to have additional samples in order to enforce this law properly.

Senator JONES of Washington. Suppose the importations decrease?

Mr. MITCHELL. If the importations decrease, we will do exactly what we did in 1925; the money will be covered back into the Treasury.

Senator JONES of Washington. That is, you will save some of the money? You will not spend all of it?

Mr. MITCHELL. Yes, sir. The money is not spent unless it is actually necessary. It is of great interest to know that at the present time the Indian Tea Association are spending a quarter of a million dollars in this country every year trying to increase the consumption of tea; the Japanese are spending \$200,000 a year; and the Formosa interests are spending from fifteen to forty thousand dollars. Of course, that is a very little bit, but the others are large items; and this amount of money is to be spent over a period of 10 years. So it is quite possible that during the coming year we shall have a considerable increase; and it would put me—I am in immediate charge of enforcing the act—in a very peculiar position if we have not sufficient money to draw samples from every line and every invoice, as required by the law. If we fail to do that, there probably will be teas getting in here that are substandard.

Senator JONES of Washington. If that happened, you would use the money as long as it lasted, and then you would come in here for a deficiency; would you not?

Mr. MITCHELL. I do not know about that. Mr. Jump would have to speak about that.

Mr. JUMP. That would be our plan. If we had more than we could handle under this appropriation and could not make any other arrangement we would have to go to the Budget Bureau next December and ask for a supplemental amount. The work must be handled, of course.

Senator McNARY. Doctor Mitchell, is the consumption of tea increasing rapidly in this country?

Mr. MITCHELL. No, sir; it is not increasing rapidly. We really are not consuming as much tea as we have in the past, except in the last two or three years; and I think that is due to the fact that we are using more East India teas, which go farther, in making the infusion. Then there is another reason: We think there is quite a good deal of saving in teas because they are now using so many of these tea balls. I was very much interested this morning in hearing the discussion about cotton, because the manufacture of these tea balls is quite an item now in the use of cotton. A new factory for manufacturing the material has just been placed down in Georgia, so that is quite an item in the use of cotton.

Senator KENDRICK. What are your findings in your examinations as to the standard of teas that you investigate?

Mr. MITCHELL. In the form of adulterations, they are very often adulterated with Prussian blue and soapstone to make them have a grayish-green color, and to improve their appearance, although recently we have not had very much of that. We have practically broken that up by our strict inspection. Then our law also provides for fixing a standard of quality; and the tea board which is appointed by the Secretary selects physical teas which are fixed as standards, and all teas coming into the country have to meet these standards, both in purity and in quality. We accomplish that by having these experts at the different ports take samples of the teas, and they draw them—that is, they make a cup of the tea in question—and taste it against the Government standard.

Senator KENDRICK. Do you find it necessary to condemn any great amount of tea that is imported?

Mr. MITCHELL. Yes, sir. We have condemned as much as 2,000,000 pounds out of 100,000,000 pounds of importation during some years. We do not have anything like that now, because the importers are learning to obey the law better, and they know how dangerous it would be to bring in teas so near the standard that they might be rejected.

The reason why it is very necessary that we have this inspection uniformly carried out is because this standard really, in a way, fixes the price. If the tea-standard is worth 16 cents for congou teas, and a man happens to bring in a tea that was substandard, it would be so near that he would get 16 cents for it just the same, and he probably might have paid several cents less for it on the other side. So, for that reason, we have to protect the trade as well as the consumer, and we have to be very vigilant in our inspection, and we certainly have to know that we are going to have sufficient money to draw all the samples that are required by the law.

Senator HARRIS. Condemning that 2,000,000 pounds probably saved you from condemning a good deal since then.

Mr. MITCHELL. Yes, sir; it has.

Senator McNARY. What is the annual consumption of tea in the country?

Mr. MITCHELL. At the present time it is about 100,000,000 pounds a year.

Senator McNARY. What part of that do we raise in this country?

Mr. MITCHELL. We do not raise any tea in this country now, Senator.

Senator McNARY. I thought we had a little experiment here a year or two ago with a substitute for tea raised in North or South Carolina.

Mr. MITCHELL. Yes, sir.

Senator McNARY. That was cassina, was it not?

Mr. MITCHELL. Cassina; yes, sir. We carried on those experiments, and I came before this committee at a time when I think practically all the members were present with a promise that we would only utilize the money for one year, and we did it; and so far as the department is concerned I feel that we have proved that cassina can be manufactured and be used like tea and coffee. We have also found that it makes a very wonderful soft drink to be used like Coca Cola and ginger ale and drinks of that kind. I think Senator McNary last year had a drink of that.

Senator HARRIS. Is the industry developing, or not?

Mr. MITCHELL. It is an industry that will have to be protected by patents on the processes of manufacturing. At the present time we are trying to secure those patents, so that whoever goes into it and invests quite a lot of money will be protected. It will require certainly a hundred thousand dollars, at least, to get started; and with that investment whoever goes in it ought to be protected for 17 years, anyhow. This plan grows wild down South. We think it offers a big substitute for tea.

Senator McNARY. We understand that your petition is to restore the current appropriation, which has been reduced by \$2,690?

Mr. MITCHELL. Senator, I only came up here at the request, as you understand, of Senator Smith, who is interested in the matter.

Senator McNARY. I know that. Senator Smith, through his secretary, asked, as I view it, for the restoration of the \$2,690 which has been subtracted from this year's appropriation. I understand from you that you can get along with this, and that if there is a necessity of further inspection and further funds you will get that in a deficiency bill, Mr. Jump says.

Mr. JUMP. If we run short. I do not know that we could get it, but I know that we could ask for it.

Senator McNARY. Of course you could get it.

Senator LENROOT. It is a proper subject of deficiency.

Mr. JUMP. I think it would be entirely proper to get it that way, if necessary.

Senator JONES of Washington. You will not have any trouble in getting what is necessary to carry out the terms of the law.

Senator OVERMAN. Did you use all this money last year?

Mr. MITCHELL. No, sir; we did not. We covered back into the Treasury, I think, about \$3,500; but, as I say, last year we really had a small year; and it is a question of the danger that we will run short, and the harm that might be done by it.

Senator OVERMAN. Is that the reason why the House reduced it—because you had a surplus last year?

Mr. MITCHELL. The House did not reduce it, sir. The Budget reduced it.

Senator OVERMAN. I mean the Budget.

Mr. MITCHELL. Yes, sir.

Senator McNARY. Thank you, doctor.

Mr. MITCHELL. I am obliged to you.

FURTHER STATEMENT OF W. A. JUMP, BUDGET OFFICER

PREVENTION OF GRAIN-DUST, ETC., EXPLOSIVES

Mr. JUMP. Mr. Chairman, may I suggest the insertion of three words that have just come to my attention on page 40, line 25? It is a very simple matter and will take only a minute.

We have here an appropriation for investigation and development of methods for the prevention of grain-dust, smut-dust, and other plant-dust explosions, etc. The House Committee on Appropriations added \$10,200 to that amount in order to provide for investigations as to the causes and prevention of farm fires. In connection with that we are asking for the insertion, after the words "cotton-oil mills" and just before the amount, of the words "in cooperation with individuals, associations, or corporations." If we can have the authority to cooperate with underwriters' associations and some of these "safety" and conservation organizations we can make that \$10,000 do a good piece of work, if it is authorized by Congress.

Senator LENROOT. Just how will it read then?

Mr. JUMP. It will read then:

For the investigation and development of methods for the prevention of farm fires and of grain-dust, smut-dust, and other plant-dust explosions and resulting fires, including fires in cotton gins and cotton-oil mills, in cooperation with individuals, associations, or corporations, \$42,743.

Senator LENROOT. Are you sure that would be limited to cotton gins and cotton-oil mills with that language?

Mr. JUMP. That it would be limited to that, you say?

Senator LENROOT. Yes.

Mr. JUMP. We did not want to limit it.

Senator LENROOT. It seems to me you could not spend any money under that paragraph except in cooperation.

Mr. JUMP. Then we would suggest the words "and otherwise" after "corporations." Do you think that would fix it? We do not want to be limited in the way you suggest; and I think you are correct in that my amendment is defective, Senator.

Senator JONES of Washington. But you do want to have cooperation wherever you can get it and wherever it is proper?

Mr. JUMP. Yes, sir; or we could put in the words "wherever feasible," or "wherever practicable," or something like that. If you will let me work that out with Mr. Rea I will give it a little further thought, rather than take the time of the committee; but that is the idea we are after.

Senator McNARY. Have you or Mr. Dunlap or Doctor Tenny any further suggestions on this subject?

Mr. JUMP. No, sir. Senator Harris wanted to ask Doctor Taylor, and asked me to remind him, about the pecan insects before Doctor Taylor leaves.

INSECTS AFFECTING PECANS

Senator HARRIS. Mr. Chairman, I took up with the department some complaints from the pecan people about a new pest that is giving them trouble; and the department estimates that it will require how much to have an extra man?

Mr. JUMP. As I remember, it was \$6,000 to cover both salary and expenses. Doctor Taylor, I think, has the information.

Senator McNARY. Where is that item?

Mr. JUMP. It is under deciduous fruit investigations, Bureau of Entomology.

Senator HARRIS. What page is it on?

Mr. JUMP. It is on page 43, line 12—"investigations of insects affecting deciduous fruits." The chief of the Bureau of Entomology is not here, but Doctor Taylor is familiar with the matter in a general way, and I think he can answer the Senator's inquiries.

FURTHER STATEMENT OF DR. WILLIAM A. TAYLOR, CHIEF OF THE BUREAU OF PLANT INDUSTRY

INSECTS AFFECTING PECANS

Senator HARRIS. Doctor, if you will, please explain this matter to the committee.

Senator McNARY. Is that found between lines 12 and 13? Is that the place?

Mr. JUMP. That is it, Senator. The amount is on line 13.

Senator McNARY. It has been increased \$5,000.

Mr. JUMP. That is for another purpose—for spray residue work on orchard fruits.

Senator HARRIS. That was not for this purpose. We are asking \$6,000. That was the amount you said would be necessary, Doctor Taylor, to have an extra man, was it not?

Doctor TAYLOR. That was the amount determined by the entomologists, as I understand, when it was considered on the basis of your correspondence with them.

Senator McNARY. Is that for pecan culture?

Doctor TAYLOR. This would be for pecan-insect control.

Senator McNARY. How much of that money are you spending on the pecan industry now?

Doctor TAYLOR. Let me be perfectly clear about this, because the work of two bureaus is involved.

In the Bureau of Plant Industry we are spending about \$10,000 on the production problems of pecans, breeding, varietal adaptation, cultural practices, etc. Under another subappropriation of plant industry we are using about \$10,000 in the investigation of diseases of the pecan, most of which are of a fungus character, and involve spray and similar control. This feature which is in the Bureau of Entomology is the one under which all of the work on insects that trouble pecan trees and the nuts is done. The work interlocks considerably, because in some instances we find certain disease conditions that are traceable to the punctures of the insects, and so I happen to be somewhat familiar with what they are doing.

As I understand, there has developed farther north in Georgia and Alabama than the Thomasville field station of the Bureau of Entomology, where their present insect work is done, a serious damage by two different insects. One of them is a borer which attacks the tree, bores into the bark, eats into the cambium layer or inner bark, and weakens the vitality and eventually kills the tree. The other is a weevil which attacks the nuts, laying its egg by puncturing through the hull or shuck of the green pecan as it is growing, which results in a very large proportion of faulty nuts, which, of course, are unmerchantable and are a loss. My understanding is that the Bureau of Entomology, after considering the question as it was put up to them and as their field man at Thomasville reconnoitered, find that specific localized work is necessary to determine the life histories of those insects and, if possible, to develop controls for them.

Senator HARRIS. It is a new insect which has been giving them trouble for a year or two.

Doctor TAYLOR. It is a thing which has not been previously encountered by them. Of course the pecan industry is an infant industry in the true sense, in so far as cultivated pecans are concerned. The pecan is a wild tree which has been climbing over the farm fence into the orchard, into the cultivated fields, for about 30 years now, and in which very considerable investments have been made in the Gulf States; and the problems encountered are new in comparison with those encountered in our longer-established orcharding, where we are dealing with trees and vines that man obtained a good while ago, so that it represents an extensive development in portions of northern Florida and in Georgia, South Carolina, Alabama, Mississippi, Louisiana, and Texas, with some orchard beginnings in Arkansas and Oklahoma, and a little in North Carolina.

Senator LENROOT. Is this matter under your direct jurisdiction?

Doctor TAYLOR. No, sir. I am speaking merely in the absence of representatives of the Bureau of Entomology.

Senator LENROOT. Then you would not know what is being done now. I should like to know, however. It seems to me that every time a new insect is discovered we have to have a new appropriation, and nothing ever seems to be finished. I wonder how long that is going on. I should think that out of these appropriations that are made for special purposes and that have been carried on each year, this general fund should be used occasionally for these new things.

Doctor TAYLOR. I am very confident that in the Bureau of Entomology, as in the Bureau of Plant Industry, the majority of the new problems that are put up to the department are taken care of in the way you suggest; but there is a continuing procession of pests which can not be adequately coped with on the basis of the earlier appropriations and work. That is one of the difficult administrative problems in the scientific bureaus, particularly those which deal with the pests.

Senator OVERMAN. The question is, Have you got the money to cope with this?

Doctor TAYLOR. They think not, and I would agree with them in so far as I know the situation.

Senator HARRIS. I sent the letters from the people who own these pecan farms to the department, and they said they could not give them the desired relief without an additional appropriation. They sent a man down there who did splendid work. I imagine that there has been more progress made in the pecan than in any other nut within recent years from a commercial standpoint. Is not that the case, Doctor?

Doctor TAYLOR. The pecan has come into commercial importance more quickly than any other nut that we know anything about.

Senator HARRIS. The Department of Agriculture has done a great deal toward bringing that about.

Doctor TAYLOR. I think that is true, sir.

Senator McNARY. Doctor Taylor, the leading commercial nuts are, of course, the pecan, the walnut, the almond, and the filbert in this country?

Doctor TAYLOR. Yes, sir.

Senator McNARY. Are you spending money on any of these other nuts save the pecan?

Doctor TAYLOR. In the Bureau of Plant Industry we are at work upon the almond and the walnut, and on the Pacific coast we are doing a very little incidental work on the filbert. I do not know as to the insect pests.

Mr. JUMP. The Bureau of Entomology is spending \$15,000 of this appropriation on nut insects, of all kinds, including the pecan.

Doctor TAYLOR. Most of that must be on the pecan.

Senator McNARY. That is what I have understood in past years when we have had this matter up. We have been increasing the amount of many allotted to the pecan, I sometimes think to the great neglect of the culture of other varieties of nuts. What are the States doing? For instance, the agricultural college of my State is located at the town of Corvallis. It is a great fruit and horticultural State in the western part. Emanating from that college are all the ac-

tivities that go into whatever horticulture the farmers are in. I do not know whether the Government has ever lifted its beneficial hand in that whole western country.

Doctor TAYLOR. I do not know that they are at work upon any of these problems.

Senator McNARY. Senator Harris, is that all you wanted?

Senator HARRIS. Yes; that is all I wanted.

ELIMINATION OF GRASSHOPPERS

Senator KENDRICK. Mr. Chairman, right here I want to ask Doctor Taylor, because of the remark made by Senator Lenroot a moment ago as to the discovery of new insects, what has been done in the past and what the department is doing now toward the study of some plan for the elimination of grasshoppers.

Doctor TAYLOR. The Bureau of Plant Industry is at work upon a fundamental research problem affecting grasshopper control which has not yet at all reached the stage where a practical control is in sight, but which involves the study of the eelworm organisms or nematodes which have been found in grasshoppers in particular places where there has been an abundance of grasshoppers, and then a sudden decline in the number and the destructiveness of the insects.

Senator KENDRICK. I assume to say, because of that fact—and that suggested my inquiry—that there has been more damage done to agricultural crops by grasshoppers in the last 50 years than any other insect in all that time; and I have always believed that they could be held in control or practically destroyed in so far as the danger of their coming to a section as a scourge is concerned by the use and study of parasites that would destroy them.

We in certain parts of the West have had grasshoppers destroy the crops over entire counties for successive periods of from three to five times before we would ever get free. Twice or three times in my experience I have found it necessary—and everybody else in the country—to gather our livestock and even ship them hundreds of miles away from home in order to carry them through winter, on account of the devastation of the grasshopper. Now, we apparently are taking no interest whatsoever in that particular insect; and as I have sat around the committee table for the last few years and listened to the discussions of these other insects, and helped to vote appropriations for them, I have come to realize that we are neglecting one of the most important studies in connection with all agricultural production.

Doctor TAYLOR. We have a project directed exactly in the direction that you suggest, Senator. It is not far enough along so that we say very much about it, but we have on hand some very interesting data accumulated during the last two years.

Senator KENDRICK. Are you making a study of it? I am asking for information. If you are not making a study of it, is there any reason why it should not be made a matter of intensive investigation and study—not a senatorial investigation, but a real scientific inquiry?

Doctor TAYLOR. We feel that it is important. I think it is proceeding at about the rate and with about the personnel that is

available for it. It requires, first, a minutely exact study of the organisms themselves which are found in the grasshoppers during these periods of decline of the grasshopper population, a determination of what their habits are, where they breed, and how they come up in numbers sufficiently to cope with the enlarged grasshopper population. We do not know very much yet about the feeding habits and the breeding habits of those organisms; but that is being worked on intensively.

Senator McNARY. Are you doing any work at all under this item regarding the grasshopper?

Doctor TAYLOR. This is the Bureau of Entomology item that you have reference to?

Senator McNARY. Yes.

Doctor TAYLOR. The expenditure on the type of control work which Mr. Jump has mentioned, and which has just been discussed, I see is scheduled at an expenditure of \$25,000 for the present fiscal year 1927. The sum carried for it is the same for the next fiscal year.

Senator McNARY. Senator Kendrick, do you want the activities speeded up or the appropriation increased?

Senator KENDRICK. I must rely altogether on the judgment of these gentlemen who are responsible for the investigation.

Doctor TAYLOR. The question which I discussed in response to the Senator's question was that of the study of the parasites. That is still in a numerical way and financially small, but I think it is adequate for the present situation until we get a broader base for it.

Senator KENDRICK. I am perfectly willing to let it rest as the House has it in this bill; but let me tell you something: Attempting to poison those grasshoppers is just fooling with a really serious problem instead of fighting it. That is just the difference.

Senator McNARY. Doctor, Senator Jones has a matter to ask you about.

Senator JONES of Washington. I suggested here, day before yesterday, that I should like to obtain certain information. I think the doctor can furnish it.

ORNAMENTAL-PLANT DISEASES

I have received letters and petitions and telegrams from the fruit growers of various parts of the State asking for different things. Now, here is one: They want \$15,000 to investigate ornamental-plant diseases. I want to find out how much, if anything, there is in this bill to deal with that problem. Doctor, can you tell me where we will find it?

Doctor TAYLOR. This would be in the Bureau of Plant Industry, on page 25 of the Senate print, line 10.

Senator JONES of Washington. I have that notation here; but page 25, line 10, reads:

For the investigation of diseases of cotton, potatoes, truck crops, forage crops, drug and related plants.

How does that deal with ornamental plants?

Doctor TAYLOR. The ornamental plants are interpreted as related to these others. They comprise the bulbs, the roses, and the general

range of plants which are grown in gardens and as decorative features. There is no specific authority.

Senator JONES of Washington. You hold that under that language you can investigate the diseases of ornamental plants, do you, and you are doing that?

Doctor TAYLOR. We are spending a few hundred dollars in the incidental investigation of certain diseases of ornamental plants, particularly of bulbs.

Senator JONES of Washington. I have another item down here about bulbs.

Senator McNARY. That is this ornamental shrubbery such as we find in our yards, is it?

Senator JONES of Washington. I presume so—"ornamental-plant diseases." They want \$15,000 for that. You are not spending that?

Doctor TAYLOR. No, sir.

Senator JONES of Washington. You have nothing anywhere in this bill for that?

Doctor TAYLOR. No, sir.

Senator JONES of Washington. You have \$167,570, however, in this item on page 25.

Doctor TAYLOR. Yes, sir.

Senator JONES of Washington. You say you have only a few hundred dollars of that for this purpose?

Doctor TAYLOR. Yes, sir.

Senator McNARY. Doctor, I do not see how this language can be construed to authorize you to expend money in the treatment or investigation of ornamental trees. You have, first, a specification of certain definite species. The phrase "and related plants" goes back to those heretofore specified and enumerated, none of which could be called an ornamental plant.

Doctor TAYLOR. We run into such uniting and connecting links as this: Squills is a drug plant in so far as its bulb use is concerned, and it is an ornamental plant in so far as its blossom is concerned. We have a number of such cases. We have not, however, in the past formulated plans and estimated for work on ornamental plants other than trees, which are covered under our forest appropriation.

Senator McNARY. Take the ordinary rose and the lilac. Could you investigate the diseases of those ornamental shrubs through being related to cotton or potatoes?

Doctor TAYLOR. No; but in relation to drug plants, plants used in the pharmaceutical trade, we could investigate the rose. It is, I admit, a very loose and a very broad construction.

Senator LENROOT. And a very dangerous construction.

Doctor TAYLOR. The reason for the absence of mention of ornamental plants is the fact that we have not had funds or personnel to devote to it.

Senator McNARY. If you are engaging in the field of ornamental shrubs, I think it should be distinctly set forth in proper language.

Senator JONES of Washington. I think I understand your situation in regard to that.

Senator KENDRICK. In connection with that appropriation, Mr. Chairman, did we not have an appeal last year to make provision for some work of this kind to meet a situation that had occurred up

in New Jersey? Did not Senator Wadsworth appear before us in reference to it?

Senator McNARY. Senator Bingham was here regarding a new disease of shrubs.

Senator KENDRICK. Yes; ornamental plants.

Senator McNARY. It related to the Japanese beetle. That affected the shrubs.

Senator HARRIS. Grass, too, as I remember.

Senator McNARY. Yes; the larvae.

Senator KENDRICK. I thought we included an appropriation to be used for studying that.

Senator McNARY. We did, Senator.

Senator JONES of Washington. That was to meet a peculiar situation there.

Senator McNARY. What does this language cover on page 24, line 10:

For the investigation of diseases of forest and ornamental trees and shrubs?

Doctor TAYLOR. That covers our work on ornamental trees and shrubs as such. Of course there is some apparent overlapping between that paragraph and the one covering fruit trees. It covers diseases of orchard and other fruits. You get the rose and the apple and the whole tribe of rosaceous plants linking in together; but by administrative direction and by mutual understanding we actually separate the work of the two groups of workers from each other.

Senator JONES of Washington. I was asking you if you had any money to investigate ornamental-plant diseases. Would not that be covered by this language on page 24, for the investigation of diseases of forest and ornamental trees and shrubs?

Doctor TAYLOR. I think, however, Senator—in fact, I am quite sure—that what your people have in mind is the diseases of bulbs.

Senator JONES of Washington. No; I have another item about bulbs later on.

Doctor TAYLOR. There are a number of troublesome diseases of bulbs.

Senator JONES of Washington. I am coming to that directly, Doctor. I am talking about this \$15,000 item to investigate plant diseases first. It seems to me that that ought to be covered by the item on page 24.

Doctor TAYLOR. That would cover the work on trees and on shrubs.

Senator JONES of Washington. What about the ornamental plants?

Doctor TAYLOR. If the language is "ornamental plants"—

Senator JONES of Washington. That is the language I have here. It is "ornamental trees and shrubs" in the bill.

Senator LENROOR. I do not believe you could construe a plant to be a shrub. How about it Doctor?

Senator JONES of Washington. Can a plant be a shrub, or a shrub be a plant? I should think, with the liberality which which they apparently construe the bill, that they could cover that all right.

Doctor TAYLOR. "Plant," of course, is the broad generic term which may be said to cover everything from bacteria to big trees; but in the sense in which it is used in practical horticulture the plant is the herbaceous thing, the thing which is not woody nor perennial in its top.

Senator JONES of Washington. Do you think you have any paragraph or item of appropriation in this bill that you could use for the investigation of ornamental-plant diseases?

Doctor TAYLOR. In so far as bulbs and herbaceous material are concerned, I think so. If you were to provide that much money for an investigation of ornamental plants with the intention of covering that whole range of vegetation, we have not authority to do that.

Senator LENROOT. Senator Jones, I should like to call your attention to page 23, line 11:

For investigations of plant diseases and pathological collections, including the maintenance of a plant-disease survey.

Does not that cover it?

Senator JONES of Washington. It seems to me as though it would, but that is what I am trying to find out.

Doctor TAYLOR. Perhaps you have found something that we have overlooked, Senator. If you interpreted "plants" in one paragraph in the broad generic sense and in the other paragraphs in the narrower sense, I think it would.

Senator JONES of Washington. How does the Department deal with these matters? My people are going to ask me whether there is any appropriation to investigate ornamental-plant diseases. I want to know what to tell them.

Doctor TAYLOR. There is not any money available at the present time.

Senator JONES of Washington. There is not in this bill?

Doctor TAYLOR. No, sir.

Senator LENROOT. What about this language?

Doctor TAYLOR. Those funds are fully allocated.

Senator LENROOT. I am speaking of the language.

Doctor TAYLOR. Oh! The language?

Senator LENROOT. Yes.

Doctor TAYLOR. We could spend any amount of money under that language for investigation of diseases of anything, but the money is now obligated on projects which it would be uneconomical to interrupt.

Senator JONES of Washington. They want \$15,000. You put in no estimate? No estimate has been submitted by the Budget covering anything like that?

Doctor TAYLOR. No, sir.

CURLY-TOP DISEASES OF TRUCK CROPS

Senator JONES of Washington. The next one is \$10,000 to investigate curly-top diseases of truck crops, etc. The cause of the curly-top is the leaf hopper, I understand.

Senator McNARY. Yes.

Senator JONES of Washington. I think you want to extend that somewhat; but I want to find out where there is any appropriation in this bill covering that, if there is any. You have marked "lines 10 and 11, page 25," the same thing that we spoke of first. Is the leaf-hopper, etc., covered by lines 10 and 11 on page 25?

Doctor TAYLOR. You have raised a very interesting question, to which, if you had asked it three months ago, we would have said

"no." Curly top is a virus disease long known to be troublesome in the sugar-beet fields of the West, transmitted by an insect, the leaf hopper, from wild plants which appear to be the native host of the virus. There have been various distempers or disorders of vegetables, including tomatoes, beans, horse-radish, squashes, and a wide range of cultivated vegetables, which have had troubles that have not been worked out and that have not been specifically identified.

Senator JONES of Washington. Doctor, I want to ask you whether or not there is any money included in this bill to investigate curly-top diseases of truck crops?

Doctor TAYLOR. As I was endeavoring to say, if you had asked me that question three months ago I would have said "no." We were working on yellow blight of tomato, a troublesome and serious disease the cause for which had not been determined, and we were working on curly-top disease of sugar beets under our sugar-beet appropriation. Within the last three months it has been determined almost beyond peradventure that the same virus—we have not an organized entity yet located—causes yellow blight of tomatoes, a brooming of horse-radish, a stunting and killing of various squashes and of certain types of beans and of a wide range of vegetables or truck crops such as you have here. So that as the research work has progressed we find ourselves with apparently two groups of workers attacking the same disease on different crops—one on sugar beets, the other on the truck crops.

I think that is as nearly as I can answer the question. We are doing a certain amount of what now appears to be curly-top disease on truck crops, particularly on the tomato, under the label "yellow blight", which has been very troublesome in California and in portions of Utah.

Senator McNARY. Recently I had occasion to examine into this subject matter, and I found that two departments were studying the question of the curly-top as it affects sugar beets and other varieties of vegetables. The Bureau of Plant Industry, last year and under the present appropriation, is spending \$15,000.

Doctor TAYLOR. Yes, sir.

Senator McNARY. The Bureau of Entomology is spending \$9,000.

Doctor TAYLOR. They are at work upon the leaf hopper, which transmits the disease.

Senator McNARY. Affecting all crops, irrespective of what they are—sugar beets or whatever other vegetable it may be?

Doctor TAYLOR. Yes, sir.

Senator McNARY. I have here a letter asking for an increase of \$10,000 in that item affecting sugar beets because of this known fact; that industry has not been progressing successfully west of the Rocky Mountains for the last 10 years, due to the ravages of the leaf-hopper, which brings the virus into the organic matter of the beet and causes curly top and destroys the leaf. Out in Yakima, Wash., there has been an abandonment of three establishments or factories, one in southern Oregon, one in eastern Oregon, and seven in Idaho, running as far east as Colorado.

I am going to ask for this \$10,000 to make a study along the Oregon and Washington coast, to see if there is the presence of a plant that is host to the virus which inoculates the hopper, which in turn car-

ries it into the beet and the other vegetables. I think it is a splendid work, a work that has not progressed as it should, and it affects a large industry. If I am correct in that statement, as I believe I am from investigation, I think you might well extend your activities into certain portions of the West that never heretofore have been surveyed or investigated.

Doctor TAYLOR. I think you have stated the situation precisely as we understand it.

Senator McNARY. I concede that it would be impossible to find a poison for the leaf hopper. You must find a country where there is nonpresence of the host plant of the virus, and when you do that you have found a sugar-beet country. That is what I want this \$10,000 for—to make a field survey to see if there is the presence of the wild plant where this virus is found and carried by these messengers to the vegetables.

Doctor TAYLOR. We have under way a line of attack upon that which we consider promising also for the regions where both the host plant and the hopper are present, namely, in the breeding of resistant strains and types of beets. That is a long-time proposition which is just on the way.

(Senator McNary submitted for the record the following communication on the subject under discussion:)

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY,
OFFICE OF ASSOCIATE CHIEF OF BUREAU,
Washington, December 1, 1926.

Hon. CHARLES L. McNARY,
United States Senate.

MY DEAR SENATOR: Mr. J. E. Graf, in charge of the work on truck-crop insects of the Bureau of Entomology, and Dr. E. W. Brandes, in charge of work on sugar plants of this bureau, have asked me to submit to you their combined estimates of funds necessary for enlarging investigations on the curly-top disease of sugar beets with special reference to the question of sugar-beet production in the Willamette Valley.

Since the nearest area in which the Bureau of Plant Industry has field headquarters for work of this character is Riverside, Calif., and the Bureau of Entomology, at Twin Falls, Idaho, it would be impossible to work very effectively without establishing field headquarters either independently at some point in the Willamette Valley or possibly utilizing the facilities of the State Agricultural Experiment Station at Corvallis, Oreg., and from that point working out through the Willamette region. Approximately \$10,000 is the minimum which either bureau could use to advantage in initiating work under these conditions and naturally much more effective work could be accomplished if a \$10,000 item could be provided for each bureau.

Very truly yours,

K. F. KELLERMAN,
Associate Chief of Bureau.

NEMATODE DISEASES OF BULBS, ETC.

Senator JONES of Washington. Then, Doctor, the fruit growers also want \$5,000 for nematode diseases of bulbs and other crops.

Doctor TAYLOR. That would be specific with reference to bulbs and with respect to these organisms which I mentioned, the nematodes.

Senator JONES of Washington. Have you any money in this bill covering that?

Doctor TAYLOR. Not that could be diverted to the phase of the work out there which they desire to have done. We are working on the laboratory phases of the matter here.

Senator JONES of Washington. You are working on the laboratory phases?

Doctor TAYLOR. Yes, sir.

Senator JONES of Washington. You have not however, anything, in this bill that you could use for these purposes?

Doctor TAYLOR. No, sir.

HANDLING OF FRUIT IN TRANSPORTATION

Senator JONES of Washington. For the proper handling of fruit in transportation in winter they want \$20,000; and I have gotten a number of telegrams, letters, etc., on this subject especially from Wenatchee. Mr. Jump or perhaps the Doctor here, can tell us about that. You are carrying on a certain class of work at Wenatchee, in the apple section there?

Doctor TAYLOR. Yes, sir.

Senator JONES of Washington. Do you know how much is in this bill that can be applied there?

Doctor TAYLOR. To those problems?

Senator JONES of Washington. No. First I want to know about the work at Wenatchee that has been carried on for three or four years. We had \$10,000 in the current year. Is there a similar amount in this bill?

Doctor TAYLOR. Yes, sir.

Senator JONES of Washington. For the next year?

Doctor TAYLOR. Yes, sir. There is no change in that.

Senator JONES of Washington. Now, is there anything in this bill to investigate the matter of the proper handling of fruit in transportation in winter? Our people on the Pacific Coast of course are very much interested in that, especially in the transportation of apples.

Doctor TAYLOR. We are doing a little; we are being pressed to do more; but we are unable to enlarge to the basis that would be adequate for that. It involves the study of the whole question of heater-car service and the effect of heater-car service on the products, both to protect them from cold and to do that without injuring them with combustion-fumes and overheating, etc.

Senator JONES of Washington. On page 29 of this bill we have an appropriation of \$192,660 for various purposes, including changes in fruits and vegetables during the processes of marketing and while in commercial storage.

Doctor TAYLOR. Yes, sir.

Senator JONES of Washington. That looks as though it covers this proposition.

Doctor TAYLOR. The authority is there.

Senator JONES of Washington. You have \$192,660 for that purpose. Do you use any part of that to study this problem?

Doctor TAYLOR. Yes, sir. We are using a total of about \$52,000 in studying these transportation and storage problems for the entire country; but that covers the South, the East, the West, and the North.

Senator JONES of Washington. What consideration are you giving to the problem of transportation of apples, for instance, from the

Pacific coast, which have to come across the mountains through the winter, in the cold, to the Atlantic coast?

Doctor TAYLOR. We are doing as much as we can on that; but what we need to do, and what must be done before the question is settled, is systematically to conduct experimental carload shipments through the varying weather conditions that are experienced in the course of a winter.

Senator JONES of Washington. Can you not do that in cooperation with the people who actually ship the fruit?

Doctor TAYLOR. If we have the personnel to handle it. The shipments must be personally escorted; they must have the temperature and humidity determining equipment in the cars. The product must be carefully inspected and its reactions ascertained.

Senator JONES of Washington. You are not doing anything of that kind now?

Doctor TAYLOR. No. We are endeavoring to arrange for one such shipment this coming winter.

Senator JONES of Washington. Out of this \$192,660?

Doctor TAYLOR. Yes, sir.

Senator JONES of Washington. Can you tell me about how much you plan to expend on that?

Doctor TAYLOR. Probably some \$750.

Senator JONES of Washington. You think \$750 will probably take care of one shipment?

Doctor TAYLOR. Yes, sir; perhaps one such trip. Of course it involves bringing the men and taking them back, and the various incidental expenses that grow out of it. The situation up there is acute now, because of other complicating factors to which we are giving attention under this, also, one of which is the cleansing of spray-residues from fruits which have been sprayed to protect them against insects and fungus injury.

Senator JONES of Washington. Yes; I know that that is a very serious matter.

Doctor TAYLOR. We are looking into the whole question of the reaction of the fruits to the cleansing treatment, and the effect it has on their storage life and marketability later.

Senator JONES of Washington. Did the department submit to the budget any estimate to cover this situation?

Doctor TAYLOR. No, sir.

Senator JONES of Washington. Notwithstanding the very great importance of it?

Doctor TAYLOR. The keen interest in that subject has developed during the summer and autumn of this year, as they have appreciated that they must store tremendous quantities of fruit there, and transport it east in cold weather. Our estimates were made up earlier in the year.

WIREWORM

Senator JONES of Washington. For the wireworm, you have about the same amount in this bill for the next fiscal year that is in the bill for the current year?

Doctor TAYLOR. That would be in the Bureau of Entomology. I think perhaps Mr. Jump could tell about that.

Mr. JUMP. I can not tell you what that amount is, Senator; but there is no change, so far as I know, in that item. My recollection from our discussion last year is that it is about \$17,000. There has been no discussion of it this year, so that I am satisfied there is no change one way or the other in the funds.

Senator JONES of Washington. In the current bill we provided for the extension of that work to Walla Walla as well as the Yakima Indian Reservation.

Mr. JUMP. Yes.

Senator JONES of Washington. I do not want that work slowed up. Mr. JUMP. There is nothing in the bill that would slow it up, so far as I know.

Senator McNARY. Thank you, Doctor Taylor.

STATEMENT OF CHESTER H. GRAY, WASHINGTON REPRESENTATIVE OF THE AMERICAN FARM BUREAU FEDERATION

Senator McNARY. Mr. Gray, I believe you wanted to present some matters briefly.

Mr. GRAY. Yes, Mr. Chairman. My name is Chester H. Gray. I am Washington representative of the American Farm Bureau Federation.

GENERAL STATEMENT

The authority which I have to come before your committee, Mr. Chairman, is found in a resolution of our last annual meeting, which says that the American Farm Bureau Federation reiterates its well-known position in favor of adequate appropriations for all bureaus and divisions of the Department of Agriculture. That is a pretty broad and inclusive statement.

Senator McNARY. That is about as broad as the bill is.

Mr. GRAY. Our interpretation of what adequate appropriations might be largely lies with the recommendation of the bureau and division heads and chiefs, although we do not accede to that in its entirety. We find that our own membership, scattered all over the Nation, has a lot of ideas about how much money is necessary for various works in the Department of Agriculture, and we feel that it is perfectly proper that we should come to the committees of Congress and make suggestions that the committees can act upon favorably if they desire.

In a general way, I wish to state that the appropriation bill for agriculture as it seems to be coming through this year is very satisfactory. However, there are some points that I do wish to call to your attention, all of which relate to increases beyond the amounts which now stand in the House bill. I have six of those to which I want to call your attention as briefly as I may.

BUREAU OF DAIRY INDUSTRY

First, in the Bureau of Dairy Industry, the American Farm Bureau Federation wants to join with the dairy groups in regard to the \$21,700 item which you have heard so much about. I will just dismiss it by saying that we should like to have reinstated the amount of money which the Budget allowed and which the House eliminated. I do not think I need to say anything more about that.

PINK BOLLWORM

The second item is in regard to an item of the Federal Horticultural Board and relates to the appropriation for the eradication of the pink bollworm. In the House bill that suffered a \$50,000 decrease.

Senator McNARY. What line and page is that?

Mr. JUMP. Page 63.

Senator McNARY (reading) :

To enable the Secretary of Agriculture to meet the emergency caused by the existence of the pink bollworm of cotton in Mexico, * * * \$242,800—

Which is a reduction of approximately \$48,000.

Mr. GRAY. I have it on my notes as a reduction of \$50,000; but it is not that exactly, I know. I am advised, however, that the pink bollworm situation has been very greatly curtailed by rather large appropriations, by an intensive and quick and businesslike method of control, check, and eradication; so that it is a very good sample of what the Federal Government can do when it goes into an eradication program on an intensive scale. I am advised, too, that the pink bollworm has newly appeared in a section of Texas, I believe, where, with the proper intensive method of eradication, it can be stamped out, as it has been nearly, if not entirely, elsewhere.

Senator McNARY. Let us see what the department says about that. Mr. Jump, are you responsible for this decrease?

Mr. JUMP. The decrease came about in this way:

Last year when the Thurberia or Arizona cotton weevil situation became acute we secured authority from Congress in the deficiency bill to utilize not to exceed \$35,000 of the pink bollworm appropriation for 1927, so that when the appropriations for 1928 were framed, the department being able to function without the \$35,000 during 1927, it was probably the natural assumption by the Budget that we could get along without it during 1928 also. So \$35,000 of the reduction, I think, is explained in that way, because now we are carrying in the bill a separate appropriation of \$35,000 for the Thurberia cotton weevil, whereas this year it is being financed from the pink bollworm appropriation. That left a decrease of \$15,000 over and above the \$35,000 borrowed from the appropriation for the bollworm.

I do not know anything about this new outbreak. That is something very recent. Doctor Woods, our director of scientific work, who has come into the department during the past summer, has just told me that there is a new report of an outbreak of pink bollworm. I do not believe he is familiar with the details, but perhaps he can speak of it in a general way.

Senator McNARY. What about that, Doctor? Give your full name for the record.

Mr. JUMP. Doctor Woods, prior to his appointment in the department was president of the University of Maryland and also has served as president of the Minnesota State College of Agriculture and as president of the Land Grant College Association.

Doctor Woods. A. F. Woods, director of scientific work, Department of Agriculture.

I had a conference yesterday with the entomologists in Philadelphia. Doctor Marlatt, being present, reported to me this new out-

break in Texas, quite outside the area of the former invasion. He said he had at once organized his force to clean it up, but the cost of doing that can not be determined at the present moment. It may be a large job and it may not be; but at the time of the hearings before the Budget Bureau this outbreak was not known. It is just within the last few weeks that it has occurred. The danger of a possible outbreak was called to the attention of the Budget Bureau; and the idea was that in case it should occur we would go ahead with the money we had, and then, if we did not have enough, we would come in for a deficiency. The situation is now upon us, and we have a new outbreak of unknown proportions.

Mr. JUMP. We have always had the general understanding with the Budget Bureau and with the House committee on this item that if an outbreak occurred when Congress was not in session we would go ahead and do all we could with this money, and as soon as Congress convened we would go to the Budget Bureau with a supplemental estimate, because of course we could not do much with this money in case of a real outbreak. This money has been used merely for surveying and resurveying and maintaining certain zones and quarantine lines. In the event of a real outbreak this money would go very quickly. The matter necessarily would have to be considered as an emergency measure.

Senator McNARY. What is the next item?

Mr. GRAY. Just another word about that matter before we drop it.

The outbreak that Doctor Woods speaks of is evidently the one that has come to my attention; and I had no thought of calling it to your attention prior to the last half week, when I learned of this new outbreak. The pink bollworm has been held in very definite check, primarily, perhaps, on account of having enough funds to do it with; and we do not want that pest to get started and spread over the cotton area, nor do we want the thurberia weevil to spread over the cotton area. All that the American Farm Bureau Federation is interested in is having the money available so that the work can go on. If it takes \$40,000 in this bill to guarantee that, our request is that you put it in. If it can be secured by other departmental procedure, that is sufficient, of course.

Senator KENDRICK. Is it not true, in connection with that, that the southwest border there against old Mexico, between old Mexico and Texas, is the principal line of exposure?

Mr. GRAY. It is so. Unless we have a Hindenburg line there, so to speak, we shall be subject to invasions periodically.

FORAGE-CROP INVESTIGATIONS

Senator McNARY. What is the next item?

Mr. GRAY. The third point relates to the Bureau of Plant Industry, forage-crop investigations. I think you will find there that the House bill provides a \$2,000 increase over what we had last year.

Senator KENDRICK. What page is that on?

Senator LENROOT. Page 30, line 19. There is a \$2,000 increase.

Mr. GRAY. I am suggesting an increase of \$50,000; and I am doing that in keeping with the wishes of the American Society of Agronomy and the International Crop Improvement Association.

Senator McNARY. I can not believe that that is the item, on page 30, line 19.

Senator LENROOT. It reads:

For the investigation and improvement of grasses, alfalfa, clover, and other forage crops.

Senator McNARY. Above there is "purchase, propagation, testing, and distribution of new and rare seeds." What is your item? Go ahead.

Mr. GRAY. Forage-crop investigations, in the sense in which I wish the subject to be considered—and I think you will find it in your Budget—are along this line. Of course, they have various methods of approach, but I am thinking of the subject in these terms:

Last year we passed the so-called Gooding-Ketcham seed-dyeing bill. It was incorporated as an amendment to the Federal seed act. That amendment, to become operative, is based upon hearings before the Department of Agriculture to prove the adaptability or unadaptability of foreign seeds of the legumes, the alfalfas and clover.

In American agriculture we have barely scratched the surface of ascertaining the adaptability of foreign seeds and grasses and forage crops, as well as domestic ones. Michigan needs to know whether the Arizona alfalfa is adaptable to her climate. Tennessee needs to know whether the Kansas common is adaptable to her conditions. The far South needs to know whether the Middle West seed is adaptable. We have hardly scratched the surface, as I say, in ascertaining that I may be permitted to surmise that the seed importers—some of whom did not want the seed-dyeing bill to go into effect, although the Department of Agriculture has now issued regulations putting the stamp of inadaptability on certain foreign-grown legumes—will, as years go by, seek by proof to have those orders rescinded. The American Farm Bureau Federation is interested in accumulating more and more data to prove the inadaptability of foreign-grown seeds as well as the inadaptability of domestically grown seeds for the benefit of American agriculture.

That is what I am thinking of, and that is what the American Farm Bureau Federation is thinking of, when we speak of forage-crop investigations—to find what seeds of the legumes are adapted and what are inadapted for use here when they are moved long distances from foreign countries into this Nation, or long distances in our domestic activities as well.

I have here a telegram from the secretary of the American Society of Agronomy, as follows:

PHILADELPHIA, PA., December 29, 1926.

CHESTER H. GRAY,

Munsey Bldg.:

American Society of Agronomy urgently recommends that additional funds be appropriated for the forage crop investigation work of the United States Department of Agriculture in order that more necessary work with these important crops may be taken up in individual States to the advantage of agriculture in general.

P. E. BROWN, *Secretary.*

I also have a telegram from the secretary of the International Crop Improvement Association, as follows:

EAST LANSING, MICH., December 29, 1926.

CHESTER H. GRAY

Legislative Dept., Munsey Bldg.:

International Crop Improvement Association representing 19 statewide feed growers organization urgent appropriation of \$50,000 to Bureau of Plant Industry for forage crop investigate.

H. C. RATHER, *Secretary.*

Senator McNARY. Mr. Jump, do you want any more money? Did the department make a recommendation or an estimate for any sum in excess of that allowed by the House?

Mr. JUMP. Our original recommendation, as I recall it, was for \$10,000 for the purpose of making tests of clover and alfalfa seed, in order to enable the Secretary to make the determinations which he is required to make and promulgate under this new seed act. Is that \$10,000, Doctor Taylor, in accordance with your recollection, or was it \$25,000? My record shows two items.

Doctor TAYLOR. It was \$10,000, of which the Budget approved \$2,000, and which is in the bill as it passed the House.

Senator McNARY. All right, Mr. Gray.

Mr. GRAY. Of course there are other phases of that matter which will come up in the corn-borer bill, which will be a special bill asking for a large appropriation.

Senator McNARY. The corn-borer item is carried in this bill.

Mr. GRAY. But that is a research item. The Congress is going to have before it, if the corn-borer is not checked, a measure carrying millions of dollars for a much more intensive clean-up and eradication program, which will appear in a separate bill later, Mr. Chairman. If that does not clean up and check the corn borer, we may need more intensive investigations on forage crops in the Corn Belt than we have ever thought of heretofore.

Senator KENDRICK. We could put the corn-borer bill as an amendment on the McNary bill. [Laughter.]

Mr. GRAY. That might be done.

CATTLE GRUBS

The next item that I have for your consideration is, I believe, so far as appropriation goes, Mr. Chairman, entirely new. It relates to the Bureau of Animal Industry and is not in your Budget at all.

Senator McNARY. What is the item?

Mr. GRAY. It relates to the control and eradication of cattle grubs.

Senator McNARY. That matter seems to be found on page 18, line 23, and page 44, line 14:

For investigations, identification, and systematic classification of miscellaneous insects, including the study of insects affecting the health of man and domestic animals, household insects, and the importation and exchange of useful insects —

Is that the item? Mr. Jump, under that item do you take up the work of classification of the grub?

Mr. JUMP. That, I think, is probably the item that Mr. Gray has in mind. It is a part of the hide-improvement campaign. We have

heard a great deal about that from the industry. They are very much interested in it.

Senator McNARY. But what is the item in the bill?

Mr. JUMP. It is the item you have just read—the miscellaneous-insect item.

Senator McNARY. You are doing no other work than under that item?

Mr. JUMP. No other work on the grub from the entomological standpoint; that is correct.

Senator KENDRICK. You are dealing with an old acquaintance of mine now; and I want to ask what line of attack you expect to make on the cattle grub?

Mr. JUMP. I think Doctor Woods probably knows in a general way about what they are doing.

Senator McNARY. Before that is discussed, Mr. Gray, do you want an increase on this item?

Mr. GRAY. I am not referring to that particular item. That is in the Bureau of Entomology. That is for research work in ascertaining what kind of an animal—if I may be permitted to drop into a colloquialism—the cattle grub is. What I am talking about is the control and eradication of the cattle grub, which would have to come, as I judge, under the Bureau of Animal Industry.

Senator McNARY. Where would that be?

Doctor Woods. I think I can explain that, Mr. Chairman.

Senator McNARY. Very well.

Doctor Woods. The life history of this grub is pretty well known. It causes millions of dollars of damage, not only to hides but to the production of meat, and also to dairy cattle in the production of milk, in the effect it has on the animal. A point has been reached in the study where it is believed that by the application of control methods on a county-wide scale it may be practicable to accomplish something. We did prepare an estimate, which was presented to the Bureau of the Budget, for a county-wide test, or a test over quite a large area; but it was not deemed sufficiently urgent to allow it. It was, however, recommended by the Secretary as a very desirable thing to do in the interest of reducing the losses to stockmen because of this pest, which is really a very serious pest, and, on the whole, causes very large losses, mounting into something like \$60,000,000 a year.

Senator McNARY. How much did you ask the Director for?

Doctor Woods. I think it was \$25,000 for this county-wide test that we asked for.

Senator KENDRICK. Your plan of action is intended as a preventive, is it?

Doctor Woods. A preventive, rather, to kill the insect before it attacks the cow.

Senator KENDRICK. Rather than making an inquiry as to the source?

Doctor Woods. We have pretty well studied the life history of the insect; and the entomologists and the animal husbandry people believe that if they could make a large test, covering a considerable area, they could demonstrate that it would be practicable to control the thing as they control other similar diseases, by spraying and

dipping and that sort of thing; but it would cost about \$25,000 to make the practical test, and that is what this money was asked for.

Senator KENDRICK. I was just going to state, briefly, that there is no question whatsoever about the damage done by this insect. There is no question about the increasing destructive force in the country to-day, nor the increased interest in it. No longer than perhaps six months ago one of the western feeders who had been winning prizes in the national and international livestock shows, made inquiry of me as to whether he could obtain in our north country such ages and classes of cattle to put on feed that would be free from this very insect and grub. He pointed out that even these cattle with which he had won such magnificent prizes in the yards had been found defective on this very account, and he was casting about, trying to find some place in the country where such a class of cattle could be had that when they were fattened as these had been they would not have these terrific borers or grubs under their hides, on their backs, that they found on those he had been feeding, and yet they were young cattle; so that it is an important inquiry.

Mr. GRAY. May I say further, Mr. Chairman, that in company with Doctor Brand—who was here this morning with some gentlemen from the tanning trade interested in chestnut preservation—I went to the Director of the Bureau of the Budget in the summer asking for \$75,000 for this particular project. It was not incorporated, as Doctor Woods has said, in the report of the Director of the Budget. The tanning trade is just as much interested in this as the farming trade is, because it constitutes a serious loss to the leather industry, because up and down the backs of these animals from 1 to 30 holes will be bored by these grubs when they emerge from the pupa stage; so they are interested in this, and could testify in this regard if they were present. Copying after some experience in the tuberculosis work, and acceding to what Doctor Woods has just said, about the only way that we can do this thing and get it started is on the area plan.

My thought has been that the eastern section, where the dairy industry is hurt by these grubs, the midwestern country where I live, where the feeding industry is hurt, and the far western country or range land, which is hurt also, each should be tested out by demonstration. We will have to take a county, or two or three counties, in each section, and, by various methods in the Bureau of Animal Industry as well as the Bureau of Entomology, embark on the process of exterminating and controlling this cattle grub. The nearest estimates I could get were that \$15,000 would be necessary in each area—\$15,000 for the east, \$15,000 for the mid-west, and \$15,000 for the far west or range territory—and the range territory would be the hardest to handle, we all concede, on account of the conditions out there. That would make \$45,000. Therefore, I am suggesting to the committee an appropriation of \$50,000.

Senator KENDRICK. Mr. Gray, I understood Doctor Woods to say that they had reasonable information about the source and origin of these pests. In the absence of real definite information, do you not believe that the plan of taking one location, and trying it out as an experiment, would be safer and more satisfactory than to attempt to spend money in three or four different places at the present time?

Mr. GRAY. It might be better. I am not insisting upon the plan, only, I do request that something more intensive than has been done by the Department of Agriculture be put into vogue and operation on this grub.

Senator McNARY. What would your area plan involve, eradication, or control of the grub? Does the fly attack the animal and lay the egg in the hide?

Mr. GRAY. It lays the egg on the hide or in the hide, which hatches out and travels up through the subcutaneous structure and emerges some weeks or a month later right along the backbone.

Senator McNARY. What do you propose, in your area plan?

Mr. GRAY. By dipping processes, particularly in the egg laying season; and then during the pupa stage, when the grub is giving the most excitement to the animal, either by incision and removal, which is easy in the dairy regions because the animals are tame, or by injection of the poison which will kill, as it stays in the body of the animal. The better method, of course, is to destroy the egg.

Senator KENDRICK. Let me say for the information of the committee that the grub in that stage of its existence is very easily located in the animal's back.

Mr. GRAY. Yes.

Senator KENDRICK. And as an illustration of what might be done, I think it might interest the committee to know that a few years ago there was a disease of cattle in the Southwest, in which fever was prevalent in the cattle, and by study and investigation, I think perhaps by the Agricultural Department, or if not in some other way, it was determined that this fever was due to a tick; and then a process of eradication was begun. I am not sure, but I believe that the line of the Texas fever has been driven, in places, almost or quite to the border of Mexico. Can you tell us about that, Doctor Woods?

Doctor Woods. Yes; there was a very large area cleaned, and I think only about one-third of the original area remains to be cleaned. The rest of it is all clean.

Senator KENDRICK. And the movement is under way to gradually eliminate it from the whole country. Originally, because of the movement northward and northwestward of enormous herds of cattle, the losses imposed by the spreading of that fever to the herds in other States, such as Kansas, were perfectly terrific. They ran into millions of dollars.

Senator McNARY. Are there any other items, Mr. Gray?

Mr. GRAY. Yes; just a word on this. I understand that the furthest along that the department has gotten in this cattle grub work is in an area in Kansas where some work of the kind mentioned is now under way; but not as accurate and intensive as some of us think it should be.

MARKET NEWS SERVICE

The next item I want to call to your attention relates to the Bureau of Agricultural Economics, the feed, seed, and hay division, and refers specifically to an extension of the grain market news service.

Senator McNARY. That is on page 53. You do not mean the market news service item, do you?

Mr. GRAY. Yes; the grain market news service. This service now is being spread among the people through about 500 dailies, and over about 30 broadcasting stations.

Senator JONES of Washington. What do you want?

Mr. GRAY. We would like to have an increase of \$25,000 to accentuate that grain market news service.

Senator CAPPER. How would you do that?

Senator McNARY. Just a minute, please. We discussed yesterday quite at length the extension of the market news service. Is this the same service? Is this the distribution of crop reports, and so forth?

Mr. GRAY. I do not know. I was not here when you were discussing the other item, so that I would not be able to answer.

Mr. TENNY. This is the same item we were discussing yesterday, Mr. Chairman.

Senator McNARY. Market news service?

Mr. TENNY. Market news service; but it will need a little explanation, probably, on our part when Mr. Gray is through, because this is somewhat different from the work that has been presented to the committee.

Mr. GRAY. Out on the Pacific coast, Mr. Chairman, the grain market news service needs to give more attention to barley, which is an important crop, and that is not covered as accurately as it should be.

In the southeastern section, the mill-feed and the rough-feed quotations, supply and demand, need to be spread over that country better.

In the Pacific southwest, in Arizona and New Mexico, there is a particular need for more information in regard to hay.

In the Northeast it is very similar to what it is in the Southeast, mill feed; and from the point of view of the farmer-consumer, who buys the mid-western and far western supplies.

I have had prepared a chart which shows the possible development of this service, filling the wants that are coming in. It totals, if it is compiled with wholly, \$38,500. I have just shaved that arbitrarily horizontally, and am asking for \$25,000 to give more accurate, more timely, and a little more complete market news service in regard to seed, hay and feed. It will cover the whole United States. In the central Northwest, the Minnesota west, the service if accentuated will be able to give the farmers more information relative to the protein content, and will gradually help to sell wheat on protein content rather than as is now the case; being education in this regard.

A great deal of this money will be occupied in additional personnel.

Senator McNARY. Mr. Tenny, what do you say to that?

Mr. TENNY. Mr. Chairman, the market news work of this division, which covers the commodities that Mr. Gray has outlined, has been developed on the basis of not need of a complete up-to-the-minute report such as we have for fruits and vegetables and live animals and butter, but has been more in the nature of weekly, semiweekly, and sometimes three times a week reviews. We did not put very much money into grain-market news work in the early days for the reason that there were a number of commercial agencies, chambers of commerce, boards of trade, and newspapers that

were pretty adequately covering the market reports on grain, and were reasonably accurate. But during the last two or three years we have found that there were a great many newspapers, particularly, that were not wholly satisfied with the grain-market news that they were getting from commercial sources, and as the result of that we have developed out of our appropriation a small project that gives the market reports and reviews and trends, marketing, etc., of some of these major commodities, and we find that we are getting very excellent reaction all the time for that kind of work.

Very little of this information is collected and distributed over the leased wire. Some of the general reports go out over the leased wire to our branch offices and are distributed at those points, but it is not that rapid market-news work that I was describing yesterday.

I might say that one of our very interesting small projects has been the development of a service for the dairymen in the East here, in which we are collecting prices of ground feeds and mixed feeds, and putting it on the basis of delivered prices; that is, not what those prices are in Chicago or where the milling is done, but giving the prices at certain review points within a State. I think New Jersey was the first state that asked for the service, and we put on a service giving Philadelphia delivered prices, and that gave, the dairyman, the feeder, a figure that was before him once a week at least, against which he could check the prices that the local man charged him; and the dairy people there felt that it had a very marked influence in reducing the prices, in some cases, of mill feeds for the dairy producer.

That has been extended to a number of States. New York has quite an adequate service. There I think we are putting the prices on Buffalo, Syracuse, and New York on mill feeds.

All of that work developed to such a point that in preparing the estimates this year the Secretary asked for \$10,000 additional money, and that was not allowed by the Budget Bureau, and the matter has been closed, so far as we are concerned with that.

AGRICULTURAL EXTENSION SERVICE

Senator McNARY. Now, Mr. Gray?

Mr. GRAY. There is one more item which relates to the agricultural extension service. The original appropriation of the Smith-Lever Act reached its limit in 1921. I think it was, and there were some supplemental acts which have been added to it later. It is now at its maximum, which will continue on indefinitely until the entire set of acts is repealed, which we hope will never be.

There are a great many counties which are asking for county agricultural agents.

Senator McNARY. You have referred to the Adams Act, the Hatch Act, and the Purnell Act.

Mr. GRAY. Yes; and the original Smith-Lever Act.

Senator McNARY. Yes.

Mr. GRAY. Many counties are asking for home demonstration agents; but more particularly there is a request and a need for club agents with the four-H work, the boys' and girls' club work. That is perhaps the one of the three services in the agricultural extension which is least developed, and which perhaps fundamentally, and from a long time point of view is the one that ought to be developed.

Senator OVERMAN. What do you call that?

Mr. GRAY. The four-H work. Just call it the boys' and girls' club work.

Senator HARRIS. Why do you call it the four-H work?

Mr. GRAY. It means health, heart, hand and home.

Senator JONES of Washington. What are you urging?

Mr. GRAY. We in the farm bureau adopted a resolution recently which asked for large appropriations, beyond that which the Smith-Lever Act and other acts provide, for agricultural extension work, and in keeping with that resolution—which I could not present to the Budget because I had no authority to do it until our annual meeting in Chicago about a month ago—I am now asking that the item of agricultural extension, which stands under the House bill at \$1,300,000, I believe, be increased by \$500,000.

Senator McNARY. Making \$1,800,000?

Mr. GRAY. \$1,800,000. That will be able approximately to take care of the requests which are now in, for home demonstration agents and for boys' and girls' club agents; and for county agricultural agents, and will provide the facilities to go ahead and enlarge this work, throughout the term of this appropriation bill.

Senator KENDRICK. The Smith-Lever bill is a cooperative measure, is it not, providing for cooperation between the States and the Federal Government?

Mr. GRAY. Yes; it is one of the so-called Federal aid bills.

Senator KENDRICK. In the cases of the counties that you have referred to, have they got the assurance of their States that they will receive the necessary cooperation?

Mr. GRAY. These which are asking for agents?

Senator KENDRICK. Yes.

Mr. GRAY. They can not receive that assurance unless the Federal Government starts the machinery by giving this additional \$500,000; and then a State, to get it, in those States where those counties lie, will offset that by State appropriations.

Senator KENDRICK. They get it where they offset it?

Mr. GRAY. They get it where they offset it. These requests come mostly, I may say, from the South.

Senator McNARY. What States have done that since we adopted the Purnell Act?

Mr. GRAY. Under the Purnell Act?

Senator McNARY. All acts?

Mr. JUMP. The total funds this year will be \$19,748,327 from all sources. The Federal part of that is approximately \$7,200,000, or about 35 per cent.

On page 54 of the House hearings you will find a very excellent analysis of the whole question of funds for the agricultural extension work. There is a tabulation by States, sources of funds, and the total also. The figures I put in the record are the totals.

Senator HARRIS. What did you recommend to the Budget this year? What did the department recommend?

Mr. JUMP. My recollection is that the department did not include an increase this year for the extension work.

Senator LENROOT. Would this \$500,000 increase asked for by Mr. Gray be authorized under the Smith-Lever Act? That is, is the expenditure in that manner authorized, as requested by Mr. Gray?

Mr. JUMP. The question is the same as was before you when you provided this \$1,300,000.

Senator LENROOT. But this \$1,300,000 confines it to whatever is authorized by those acts.

Mr. JUMP. So would the amount asked by Mr. Gray.

Senator LENROOT. But if that does not authorize it, that \$500,000 increase would not be effective. That is the point.

Mr. JUMP. There may be no legislative authorization for an additional \$500,000, but it is in the same position as the \$1,300,000. As I understand it Mr. Gray merely proposes that you increase the amount.

Senator LENROOT. I do not mean the amount, but I mean the purpose.

Mr. JUMP. It would be just the same as this \$1,300,000.

Senator LENROOT. It says here:

To be allotted, paid, and expended in the same manner, upon the same terms and conditions, and under the same supervision as the additional appropriations made by the act of May 8, 1914.

That is on page 9 of the bill. So that he would propose simply to increase the supplemental funds payable to the States which are governed by the same act, and part of this \$1,300,000 to be used for the purpose which Mr. Gray now proposes to use the \$500,000.

Mr. JUMP. It is now being so used. It is all paid to the States. This particular fund is not used by the department at all.

Senator LENROOT. I do not quite understand, because I understood him to say that this was an additional purpose or use which he wanted this money for.

Mr. GRAY. The additional purpose is to enlarge the work, to make it possible for these States which are praying for the home demonstration and county agent work and boys' and girls' clubs to get them.

Senator LENROOT. But it will be the same method exactly of expenditure as is now employed?

Mr. GRAY. There will be no change, in my estimation, except in enlargement.

Senator HARRIS. You recommend how much additional?

Mr. GRAY. \$500,000. I have a sketch of those requests which are in now from various States and various parts of the country. Most of them come from the South.

Senator KENDRICK. Have they been included in the House hearings?

Mr. GRAY. No; I had no authority to make such a request until after the last annual meeting, at which there was passed a specific resolution authorizing the American Farm Bureau to ask for more money for these purposes. I did not have that authorization until about a month ago, and this is the first opportunity that I have had to present it to any committee of Congress.

Senator HARRIS. Will you give us the list of those who are requesting this service and who can not get it on account of lack of appropriation, so that it may be put in the record?

Mr. GRAY. I can do it and leave it for the record. I have it right here and will leave it for your record. I will not take the time now to go over it.

Senator HARRIS. No.

Mr. GRAY. Mr. Chairman and gentlemen of the committee, then I wish to call your attention to these six points, all of which we have gone over somewhat hastily, and I will leave this with the committee for your future reference, and thank you for your time.

Senator McNARY. Does the department desire to make any further observation or suggestions to the committee?

Mr. DUNLAP. I think not. I think we are through.

Senator McNARY. Does any member of the committee desire to propose any further modification or offer any observations? Then we will stand adjourned until to-morrow morning at 10.30 o'clock, when we will go over the bill.

(The papers submitted by Mr. Gray are here printed as follows:)

Additional county extension agents, Eastern States—1926

	Home demonstration agents	Club		Home demonstration agents	Club
Connecticut.....		4	Pennsylvania.....	5	5
Delaware.....	2	-----	Rhode Island.....	1	1
Maine.....	1	5	Vermont.....	4	-----
Maryland.....	4	-----	West Virginia.....	6	-----
Massachusetts.....	3	1	Total.....	36	29
New Hampshire.....	2	1	Grand total.....		65
New Jersey.....	3	5			
New York.....	5	7			

Estimated number of additional agents that would be employed during 1927 if all the salary of the county extension agents were paid from State and Federal sources

State	County	Home demonstration agents	Club	State	County	Home demonstration agents	Club
Illinois.....		1	5	Nebraska.....	1	2	2
Indiana.....	1	2	10	North Dakota.....	1	1	1
Iowa.....	1	5	8	Ohio.....	1	2	4
Kansas.....	2	5	5	South Dakota.....	1	5	1
Kentucky.....	2	8	1	Wisconsin.....	2	3	2
Michigan.....	2	3	3	Total.....	21	47	61
Minnesota.....	3	3	5				
Missouri.....	3	3	1				

Additional county agents desired in the Southern States—1927

	County agents	Home demonstration agents	Negro		County agents	Home demonstration agents	Negro
Alabama.....		6	4	Oklahoma.....		5	4
Arkansas.....	6	7	2	South Carolina.....	6	6	4
Florida.....		5	-----	Tennessee.....	4	6	-----
Georgia.....	5	6	3	Texas.....	5	6	5
Louisiana.....		7	4	Virginia.....		6	6
Mississippi.....	6	4	4	Total.....	26	71	40
North Carolina.....		5	4				

Expansion planned by Western States in county extension agents on basis of paying entire salary from State and Federal sources

[Expect to take 8 years for completion]

	Agricultural agents		Assistant county agricultural agents	Home-demonstration agents		County club agents
	County	District		County	District	
Arizona.....	2		5	3	1	2
California.....	4		8	23		
Colorado.....	18	5		5	14	
Idaho.....	13	4			8	
Montana.....	9	7		7	10	
Nevada.....		2	1		3	
New Mexico.....	8		4	6		
Oregon.....	7		7		12	14
Utah.....	6				6	
Washington.....	13		14	17		
Wyoming.....	5	1	1	1	7	
Total.....	85	19	40	62	67	16
						289

Average 8 years to make above increase.

(At this point the subcommittee adjourned.)

FOREST PRODUCTS INVESTIGATIONS

UNITED STATES DEPARTMENT OF AGRICULTURE,
Forest Service, Washington, December 30, 1926.

Hon. CHAS. L. McNARY,

United States Senate.

MY DEAR SENATOR: Following my testimony before the Senate committee on the pending supply bill for the Department of Agriculture, on December 28, and on checking over the record, pages 74 and 75, I realize that I did not state with sufficient accuracy the intentions of the Forest Service with respect to the increase of \$40,000 proposed for investigations of forest products.

In my testimony before the House Committee and in written material furnished by the department, it is stated that we propose to use \$5,000 of the increase for investigations directed from the Forest Products Laboratory dealing with the production of naval stores from southern pines. This would make the distribution of the \$40,000 increase as follows:

Surveys of logging and mill wastes.....	\$25,000
Studies of developing white paper from southern pines.....	5,000
Laboratory studies for the more efficient production of naval stores.....	5,000
Preservative treatment of construction lumber.....	5,000

The foregoing is a correct statement of how the Forest Service proposes to use his increase, if it is allowed. In my testimony I overlooked the proposed use of \$5,000 for naval stores work and indicated that \$10,000 would be devoted to the production of white paper from southern pines.

I have made some slight changes on pages 74 and 75 of the record to bring this out; but I could not do so with sufficient clearness without distorting the record. Hence I desire to make the matter clear by this letter, particularly as it may have a bearing up on your action in connection with the amendment proposed by Senator Fletcher. If the increase of \$40,000 is incorporated in the bill, \$5,000 of that amount will be used for laboratory investigations bearing upon naval stores, which would be in line with the plan advocated by Senator Fletcher. If any additional amount for naval stores research is provided, in line with Senator Fletcher's recommendation, it will be used in the field operations of the Southern Forest Experiment Station for extending our research on silvical methods of handling pine stands tapped for naval stores and for developing the most effective and least destructive methods of obtaining crude gum from the trees.

The only increase for my of these purposes approved by the Director of the Budget is the \$40,000 in the forest products item, included in the original estimates from the department.

If you approve, I would appreciate your incorporating this letter at the end of my testimony bearing upon the matters involved.

Very sincerely yours,

W. B. GREELEY, *Forester.*

WEST COAST LUMBERMEN'S ASSOCIATION (INC.),
Seattle, Wash., December 28, 1926.

Hon. CHARLES L. McNARY,

Senate Office Building, Washington, D. C.

MY DEAR SENATOR: I observe that the Agricultural Appropriation Bill (H. R. 15008) passed the House without carrying a \$40,000 increase for forestry research work, as recommended by the Director of the Budget and as greatly desired by the lumber industry of the United States, which, among basic industries of this country, ranks second or third in the number of employees, third in the amount of wages paid, and ninth in the value of its manufactured product—a great industry, very much in need of research work, but so highly competitive within itself that self-financed research seems, at this time, an impossibility.

I assume that the bill is now before the Senate Committee on Appropriations for Agriculture and Forestry, and as a member of that committee, I bespeak, for the \$40,000 additional appropriation for forestry research, your very serious consideration. The work, for which this comparatively small appropriation is contemplated, is in public interest, not only by reason of the fact that the Government owns approximately ninety million acres of timberland, but also from the standpoint of eliminating waste and thus conserving present timber resources.

Wishing you a prosperous New Year, I remain,

Cordially,

ROBERT B. ALLEN, *Secretary-Manager.*

NATIONAL ASSOCIATION OF
EGG CASE AND EGG CASE FILLER MANUFACTURERS.
December 31, 1926.

Hon. CHAS. L. McNARY,

United States Senate, Washington, D. C.

DEAR SIR: Our association has used quite freely the services of the Forest Products Laboratory at Madison, Wis. We have found their work very practical; it applies particularly to the lumber interests and the paper-mill business in which the members of our association are interested.

We understand that the Budget Committee approved an additional appropriation of \$40,000 for this laboratory for the coming year, but that the House cut out this item, which leaves the laboratory with \$20,000 less money than they had last year. The matter is now before your Senate committee and our association wants to go on record as urging you to restore this \$40,000 additional appropriation. It is a small amount, and when contrasted with the valuable nature of the work that the laboratory performs we feel that there is hardly any other agency through which an amount of money of this kind could be expended, that would bring more beneficial results.

We trust that you will give this laboratory your most generous support when this bill is being further considered.

Very truly yours,

NATIONAL ASSOCIATION OF
EGG CASE & EGG CASE FILLER MANUFACTURERS.
E. P. LANNAN, *President.*

AGRICULTURAL APPROPRIATION BILL, 1928

FRIDAY, DECEMBER 31, 1926

UNITED STATES SENATE,
COMMITTEE ON APPROPRIATIONS,
Washington, D. C.

The committee met, pursuant to call, at 10:30 o'clock a. m., in the committee room, Capitol, Senator Charles L. McNary presiding.

Present: Senators McNary (chairman of subcommittee), Warren, Smoot, Jones of Washington, Lenroot, Keyes, Cameron, Bingham, Overman, Harris, McKellar, and Kendrick.

STATEMENT OF HON. RALPH H. CAMERON, A SENATOR FROM THE STATE OF ARIZONA, AND E. A. SHERMAN, ASSOCIATE FORESTER, DEPARTMENT OF AGRICULTURE

ROAD FROM MAIN, ARIZ., TO THE GRAND CANYON

The CHAIRMAN (Senator McNary). On page 75, under the caption "Special items, forest roads and trails," Senator Cameron has proposed an amendment of \$143,000.

Senator MCKELLAR. To carry out the provisions of the act?

Senator McNARY. Yes. On page 76 there is the same item.

Senator OVERMAN. The amendment is to increase the appropriation out of the road fund?

Senator McNARY. Opt of the road fund. It provides that out of the \$7,500,000 annually appropriated and carried in this bill, \$143,000 shall be specifically set aside out of this fund to construct a road from Main, Ariz., to the Grand Canyon.

Senator Smoot. That would interfere with the general division of the money for the roads in all the forests. Somebody else would have to suffer.

Senator OVERMAN. Have you a road to the Grand Canyon?

Senator CAMERON. I might state, for the benefit of the committee, that on January 29, 1925, at the annual conference at Phoenix, between the district engineer of the Bureau of Public Roads, the State highway engineer of Arizona, and the district forester, it was recommended that the sum of \$106,479 be set aside for the purpose of beginning construction of an approach road from the National Old Trails Highway to the south boundary of the Grand Canyon National Park.

Senator MCKELLAR. What is that distance?

Senator CAMERON. The distance altogether in the national park is 45 miles. There is a strip of 14 miles that is on public domain, which I have not included. That is on public, Government land.

The total distance to the south boundary-line of the Grand Canyon National Park would be 59 miles. The Tusayan National Forest Reserve was the second forest reserve, I believe, that was established in the United States. The Grand Canyon Forest Reserve was established under President Harrison's proclamation in February, 1892, I think.

Senator SMOOT. Before that, if it was under President Harrison.

Senator CAMERON. No; I think it was in 1892.

Senator MCKELLAR. He went out in 1892.

Senator CAMERON. Yes. He established this reserve just before he went out.

Senator OVERMAN. I went out there about that time, and got off the train at a place called Williams. Is that on the road?

Senator CAMERON. No. The Old Trails Highway goes across Arizona. That is a national road. It connects with Washington and all the other States between here and Oregon and Washington, on the coast, and California. They designate the road half-way between Williams and Flagstaff. Between Williams and Flagstaff it is 32 miles. The station that they call Main, which used to be a post office, and used to be a lumber camp at one time, is where the road connects with the Old Trails Highway to run north up to the Bright Angel Trail or the Grand Canyon National Park at the present time. Of course the park end of it is taken care of. There is 45 miles of this road in the forest.

Senator MCKELLAR. Has any work at all been done on the road?

Senator CAMERON. There is a road there, but it has not been surfaced.

Senator MCKELLAR. Has it been graded?

Senator CAMERON. It has been graded to some extent; yes. It is not what you would call a first-class road. There are more people, I presume, that travel over this branch of the road—tourists going from here to California, or from California and the west Pacific coast back—that anywhere else in the West. Nearly everybody takes this side trip. The \$106,000 that I refer to was agreed on January 29, 1925.

Senator WARREN. Agreed on by whom?

Senator CAMERON. By the district engineer of the Bureau of Public Roads, the State highway engineer of Arizona, and the district forester. That was in 1925.

Senator SMOOT. They agreed that that was the cost of it?

Senator CAMERON. No; they agreed that they would apply that much on the cost, to commence the construction of this road; but the Forest Service took this money and transferred it to what is known as the Strawberry road, in the mountains south of Flagstaff, down into the Tonto Basin, and down through that country.

Senator OVERMAN. Does the Lincoln Highway go anywhere near there?

Senator CAMERON. The Lincoln Highway runs north of there. This is what we term the old Santa Fe Trail. They call it the Old Trails Highway now. I wired to Engineer Wright, the county engineer, to ask how much it would cost to build and construct this road. He says the estimated cost of a standard surfaced road is

\$187,000. That is according to the county engineer, who is a good man. I have known him for a great many years, and know that he is a good man.

There is 45 miles of this road that ought to be built; and, according to his estimate, \$143,000 would put in good shape the road on the forest reserve, 45 miles long to the northern boundary of the Tusayan National Forest; and I should like to have it adjusted in some way so that they can commence building on this road in another year.

(Senator Cameron submitted for the record the following telegrams on this subject:)

FLAGSTAFF, ARIZ., December 30, 1926.

Hon. RALPH H. CAMERON,
United States Senate.

Your wire distance to North Forest boundary 59 miles including 14 miles public land. Estimated cost to build county standard 18-foot surfaced road for entire distance is \$187,000.

J. B. WRIGHT,
County Engineer.

FLAGSTAFF, ARIZ., December 28, 1926.

Hon. RALPH H. CAMERON,
United States Senate.

Re your wire distance Main to Park boundary 59 miles. Included in this 14 miles through public lands. Estimated cost standard surfaced road \$187,000.

J. B. WRIGHT,
County Engineer.

Senator Smoot. From what national forest do you want to take that amount? Who is going to suffer?

Senator CAMERON. I do not know who is going to suffer, but I know this, Senator—

Senator Smoot. Somebody will have to suffer.

Senator CAMERON. I know that this road is one of the most desirable roads in the country, and I know that there has been no disposition on the part of the Forest Service to start building on this road after they have had instructions from the district engineer of the Bureau of Public Roads and the State highway engineer of Arizona.

Senator WARREN. Let me ask you a question. The Forest Service have a certain percentage of all the income from the public lands, and forests, etc.; and they spend it on roads, etc.?

Senator CAMERON. Yes; at their discretion.

Senator WARREN. What you want to do is to take money out of the general Treasury and build roads in the forests?

Senator CAMERON. Yes, sir; this is a forest road altogether.

Senator McNARY. Oh, no; not that. He does not want to take the money out of the Treasury. He wants, out of the \$7,500,000, enough to construct this road from Main to Williams.

Senator WARREN. But who owns the \$7,000,000? It is not forestry money.

Senator CAMERON. Absolutely.

Senator McNARY. It is money appropriated out of the Treasury for the construction of forest roads.

Senator Smoot. Yes; but that money is allocated to all of the forest roads in the States, and I should like to have a statement of what road is going to suffer if we do this.

Senator McNARY. Mr. Sherman, how much money out of the annual appropriation of \$7,500,000 is allocated to the State of Arizona?

Mr. SHERMAN. From what we call the forest highway fund there would be about \$279,000, and from the forest development fund \$135,000.

Senator Smoot. That is, they get that under the appropriation bill?

Mr. SHERMAN. They get that under the appropriation bill.

Senator Smoot. Now, they want this much more?

Senator CAMERON. No.

Mr. SHERMAN. As I understand, that is not the case; it is an allocation to this particular project.

Senator OVERMAN. Senator Cameron wants to take the money out of the Arizona fund and put it on this road?

Mr. SHERMAN. Yes.

Senator McNARY. Arizona gets about \$400,000 from the two sources out of the same fund?

Mr. SHERMAN. Yes.

Senator McNARY. Now, out of that \$400,000, Senator Cameron wants this committee or Congress to say that \$143,000 shall be expended on a road from Main to Grand Canyon?

Mr. SHERMAN. On this specific project.

Senator CAMERON. That is the idea.

Senator Smoot. Then the question is this: Under the allocation that has been made, this money would not be spent on this particular road in Arizona; but Senator Cameron wants an appropriation for some other part of the roads in Arizona deferred, and that amount of money spent on this particular road.

Senator CAMERON. That is the idea exactly.

Senator McKELLAR. It is allocated to that road?

Senator CAMERON. It is allocated to that road.

Senator McKELLAR. Has the department any objection to that?

Senator McNARY. Mr. Sherman, let me ask you a question: Have you any objection to using enough of the amount that goes to Arizona to construct this road as suggested by Senator Cameron?

Mr. SHERMAN. At this time; yes. We have objected to doing it at this time. It is merely a question of priority. Eventually this road will be constructed, and should be constructed; but with the other projects before them the highway engineer of the State of Arizona and the Bureau of Public Roads and the Forest Service feel that out of the money that is being appropriated we can not begin the construction of this road. We have other roads that are more urgent.

Senator McNARY. In the State of Arizona?

Mr. SHERMAN. In the State of Arizona.

Senator CAMERON. I might state for the benefit of the committee that this \$106,479 that was agreed upon in 1925 should have been used on this road, but it was transferred by the Forest Service to a road known as the Strawberry Road. Now, they can do that indefinitely. It is a matter in which the Forest Service can do as they please with the money that is collected in the different States. They can allocate it to any division or road that they see fit.

Senator OVERMAN. How many people go over this road to the Grand Canyon?

Senator CAMERON. I presume 25,000 or 50,000 a year. More people travel this road than any other road in the West.

Senator SMOOT. Mr. Sherman, if the statement is correct, that more people travel over this road than any other place in the West, why do you object to spending the money on that as against other roads?

Mr. SHERMAN. It is probable that more people do travel this road than any other.

Senator CAMERON. There is no question about it.

Mr. SHERMAN. They are not, however, residents of Arizona. They are transcontinental tourists; and the State of Arizona, the Forest Service, and the Bureau of Public Roads believe that this forest-road money that is being appropriated largely in lieu of taxation should be spent where it would be of more benefit to the people of Arizona, and develop Arizona's resources, rather than furnishing a pleasure route to the people of other States.

I will say that this matter of the \$106,000 that the Senator refers to as having been agreed upon is something of which I have no recollection or knowledge.

Senator CAMERON. I have the record here of the hearings.

Mr. SHERMAN. The apportionment, however, the approval of the projects, is made by the Secretary. The Secretary does not approve the program of projects for construction until a survey and an estimate have been made. A certain amount of money was authorized for surveys, and has been put upon this road for a survey. I endeavored this morning to get from the Bureau of Public Roads an estimate as to what the cost of this road would amount to. All that we had had before was a guess of \$800,000. I was not able to get the figures. They have not tabulated them yet. I may be able to get them in a few minutes. The program for the State, however, is always arrived at at a joint meeting and conference between the State highway commission or State highway engineer—as the case may be in the different States—the Forest Service, and the Bureau of Public Roads. That is then put up to the Secretary, and approved by the Secretary; and so far as our assistant engineer here is aware, no such allocation of funds as \$106,000 for the construction of the road from Main to the Grand Canyon was ever approved by the Secretary of Agriculture.

Senator MCKELLAR. Mr. Sherman, is this road to be built entirely out of this fund, or does the State put up part of it?

Mr. SHERMAN. It would be built, I believe, entirely out of this fund.

Senator MCKELLAR. Then, if it is to be built entirely out of this fund, and if more people go over this road than any other road, it seems to me your objection that local interests might be better served by building other roads is not well taken, because this is national money, and the road is to be used as a national road.

Senator LENROOT. Fourteen miles have to be constructed here to connect this road.

Senator CAMERON. I did not include the 14 miles of road. The 14 miles will have to be constructed by the State and county—

Senator MCKELLAR. To the extent of 14 miles, that would be true.

Senator CAMERON (continuing). Unless there is a special appropriation made by Congress, which I doubt if they will make.

Senator SMOOT. Let us see: If that road runs from Main up to the north rim of the canyon, do you mean that there is 14 miles from Main—

Senator CAMERON. There is 14 miles of road from the north rim of the Grand Canyon to connect with the Grand Canyon National Park.

Senator SMOOT. Oh, well, that is a different thing. That is not in this road.

• Senator CAMERON. No, no. From Main it is 45 miles to the north rim of the Tusayan National Forest. Those are the figures.

Senator SMOOT. But do you say that it is 14 miles to the forest from Main?

Senator CAMERON. No, no.

Senator SMOOT. That is what we are trying to find out. I did not think it was.

Senator CAMERON. The strip is on the north end. The strip is between the north end of the Tusayan National Forest and the Grand Canyon National Park, just like this: Here is Main—

Senator MCKELLAR. You have a map here.

Mr. SHERMAN. I have a map here which shows it. It is not at all as the Senator states.

Senator CAMERON. This is the county engineer's statement.

Mr. SHERMAN. The 14-mile gap is here, between two divisions of the Tusayan National Forest. Main is down here.

Senator CAMERON. On the Old Trails Highway.

Mr. SHERMAN. And this green area is one division of the Tusayan National Forest.

Senator CAMERON. That is correct.

Mr. SHERMAN. Then up here is another division, and there is a gap of 14 miles of public land in between there, which, however, is included in the forest highway system, and would be built out of forest highway funds instead of State and county funds, as the Senator stated.

Senator CAMERON. I did not suppose you would build off the forest reserve. That is the reason why I made the statement.

Mr. SHERMAN. That is put on the program as part of the forest highway system.

Senator CAMERON. I am very glad to know that.

Senator LENROOT. Do we build forest roads outside of national forests?

Senator SMOOT. Oh, yes—connecting links.

Mr. SHERMAN. Where it is a necessary connecting link, we do. It would be useless to build a road part way and have a gap in there unconstructed.

Senator CAMERON. I am very glad to know that the Forest Service takes that view.

Senator MCKELLAR. Here is something that strikes me with some force: This money is appropriated by the National Government for national roads and trails because the parks belong to the Government; and, when you say that you have appropriated these funds heretofore to other roads of local interest, it seems to me that you are going outside of the purpose of this act. I remember that when we prepared this act it was said that the forest trails were to be

built for the benefit of the whole country, because the forest was public property.

Senator WARREN. The first thing was to protect the forests.

Senator MCKELLAR. To protect the forests—that is true—but Mr. Sherman says that devoting the money to another purpose will help build up certain communities in Arizona to a greater extent, and therefore they were allocating it for that purpose. I think he has a wrong purpose in view.

Senator CAMERON. I might state for the benefit of the committee that there is not any road in Arizona, nor will there ever be, that will be used one-half as much as this road is. When anybody travels from Utah to any other State of the Union, and goes out west or comes back from the northwest, he uses this road.

Senator SMOOT. I want to know where that 14 miles is.

Senator CAMERON. Right in there [indicating].

Senator SMOOT. That is not 14 miles. That is less than 6 miles. These are 6-mile sections here.

Senator CAMERON. Senator Smoot, I have just given you the county engineer's telegram. He says, "Distance to north forest boundary 59 miles, including 14 miles public land."

Senator SMOOT. That can not be, or else this map is wrong.

Mr. SHERMAN. No; I think, Senator, that these squares are townships, so that is a gap of two townships.

Senator SMOOT. You mean this is a township [indicating on map]?

Mr. SHERMAN. Yes; these are townships. You see, here are the townships numbered.

Senator SMOOT. Then that is 6 miles.

Mr. SHERMAN. Yes; that is.

Senator CAMERON. He states that it is 14 miles.

Senator SMOOT. It would be about 14 miles.

Senator CAMERON. This is the county engineer's statement.

Mr. SHERMAN. It would be two townships in width, or 12 miles.

Senator SMOOT. Six times 9 is 54, and that would be 59 miles.

Senator CAMERON. That is what it covers—59 miles—and the gap is 14 miles wide.

Senator KENDRICK. Mr. Chairman, it was very properly suggested here that it would establish something of an unhappy precedent, it seems, for the committee or the Congress to direct where the expenditure of forest funds should be made in a State, and that that authority had better be left with the Forester. I am wondering if, under those circumstances, and in view of the very real need, as has been made clear by Senator Cameron, there could not be worked out between Senator Cameron and the department some compromise that would relieve us of any responsibility for assuming to direct what shall be done here.

Senator MCKELLAR. I think that is a very happy suggestion. I see that they are talking together now, and I hope they will agree to it.

Senator McNARY. In allocating this money, the road is not left to the Forest Service. That is an error that is frequently made. Senator Jones made it yesterday. It is left to the Forest Service and the Bureau of Public Roads and the State highway department; and they allocate the money, they select the road to which it shall go, primarily not for tourists but for the interests of the State, because this money is given in lieu of taxation.

Senator CAMERON. I will tell you, gentlemen: There has been a controversy with the national park management, and for some reason they have fought this road. We had hearings on this matter in the Public Lands Committee last year, and this was brought out, I asked this question:

Isn't it a fact that the national park officers, either by letter or verbally, have requested the Forestry (Service) not to appropriate any money for the approach road from the main line of the Santa Fe to the south end of the Grand Canyon National Park?

Colonel GREELEY. I am not aware of any such request.

Mr. POOLER.—

The district forester at Albuquerque—

Absolutely no.

Senator CAMERON. There has been no intimation on the part of the park officials to your department?

Mr. POOLER. Absolutely no.

Senator CAMERON. That is authentic?

Mr. POOLER. Positively.

Now, there has been a controversy. I do not know whether it has been done verbally, or how it has been done. Mr. Greeley and I talked over this matter, and talked it over here the other day. Unless we get some stipulation in some way, by Congress or in some other method, that it shall be done, part of this money that is collected in Arizona will not be distributed on the Grand Canyon Road for a good many years. I am satisfied of that; and I am going to try in some way to make this clear before this session of Congress adjourns.

Senator McNARY. Mr. Sherman, on that point, under your present scheme, and in your conferences with the Highway Commission of the State of Arizona and the Bureau of Public Roads, when do you anticipate that you are going to undertake the construction of this road?

Mr. SHERMAN. I should not be able to say definitely.

Senator McNARY. Oh, no—not definitely.

Mr. SHERMAN. But I will say within a very few years; that is certain. I can show the committee what our program is, what the projects are that the money is going to be put on for the coming year. We are getting pretty well along with the Arizona program, and we should be able to reach this road easily within five years, but I do not know just when.

Senator CAMERON. It might be five years, and it might be ten.

Mr. SHERMAN. I should like to show the committee the projects upon which work is to be done this year,

Senator CAMERON. I should like to ask Mr. Sherman if he thinks there is any road in Arizona that is more necessary to the people of the State and the Nation than the road from the National Old Trails Highway up to the Grand Canyon?

Senator KENDRICK. Senator Cameron, may I ask you whether or not there is a bridge across the canyon where this road intercepts or strikes the canyon?

Senator CAMERON. No; there is no bridge at the rim. There is a bridge across the canyon, but you have to go down in the canyon to cross it.

Senator KENDRICK. I mean to say, a bridge crossing the Colorado River at or near that point, over which travel could continue north into Utah?

Senator CAMERON. Yes, sir; there is. There is a trail down into the canyon on the south rim, there is a bridge across the canyon, and there is a trail out on the other side, the north rim, that goes up through the Kaibab Forest and on to Fredonia and on up into Utah or Colorado, anywhere you want to go.

Senator KENDRICK. I can easily believe, under those circumstances, that it would be a very much-traveled route. What do you think of that, Senator Smoot?

Senator Smoot. Of course if I were going to speak for Utah's interests as against those of all the other States, I would say build this road, because it goes right through.

Senator CAMERON. It goes right through your country.

Senator MCKELLAR. If there are more citizens of the United States who travel this road than any other road in the State, why would it not be to the best interests of the people of the State to build it? It looks to me as though Senator Cameron has made out a very excellent case. I am surprised that the road authorities have not built this road before, if it is the most important road out there.

Senator Smoot. They are not building it on the same theory on which we are talking. If I were going to speak for the wishes of the people of Utah I would say, why, yes; they would rather that this road should be built than a road in any other part of the State; but the road department and the State officials here and the Forest Service allocate the money with a view of benefiting the people of Arizona. That is the theory of it, because of the taxes that they pay to the Government. On that theory I am not prepared to judge; but that question has been passed upon by these three Government agencies, and they say that that is what ought to be done for the people of Arizona.

Senator CAMERON. I should like to answer Senator Smoot. It does not seem to make any difference whether they agreed on it or not. As I stated here a few moments ago, on January 29, 1925, at the annual conference at Phoenix, between the district engineer of the Bureau of Public Roads, the State highway engineer of Arizona, and the district forester, it was recommended that the sum of \$106,479 be applied to this road. It was not applied, however. After this agreement it was applied to another road south of Flagstaff.

Senator Smoot. Applied by whom?

Senator CAMERON. By the Forest Service or some one, I do not know whom; but it was not used after they had reached an agreement. If we had had the \$106,000 expended, we would have the road now. I am appealing for something that I know thoroughly about. If this road is not built now, and we do not get some indication that it is going to be built by some stipulated time, we will not have it in 10 years; and I say it is the most desirable road in Arizona or any other State.

Senator Smoot. Then, Senator, some other road in Arizona will have to suffer.

Senator CAMERON. I have been all over Arizona this fall. I spent eight weeks in an automobile, and I know Arizona from A to Z,

and I know that this is the most desirable and the most needed road to-day in the State.

Senator LENROOR. Senator, what is the attitude of your State officials on it?

Senator CAMERON. They are for it. They have been for it for years.

Mr. SHERMAN. Here is a letter signed by the State highway engineer—

Senator CAMERON. I do not know what the new State highway engineer has signed, but I know that I have been getting letters and telegrams, and I was roasted out there because I did not get this appropriation.

Senator WARREN. Let me ask Mr. Sherman a question. If this statement, as I understand, is absolutely correct about the meeting that provided for this money, what does the Forest Service say in regard to that, if there was a misplacement of that money, or it was taken away from the engineers after they had decided upon it?

Mr. SHERMAN. Before answering the Senator's question, I should like to answer Senator Cameron's question.

Senator WARREN. Certainly.

Mr. SHERMAN. If I leave it unanswered, my silence might be interpreted as acquiescence. He asked me if in my opinion this road from Main to the Grand Canyon was not the most important road in the State of Arizona. My answer is that in my opinion it is not, and in the opinion of the State highway engineer it is not, and in the opinion of the Bureau of Public Roads it is not, and in the opinion of the Forest Service it is not.

Senator CAMERON. Well, what is?

Mr. SHERMAN. There is the program, agreed to by all three parties after sitting in conference at the State capital at Phoenix.

Senator CAMERON. When was that meeting?

Mr. SHERMAN. That meeting was held on the 8th of December.

Senator MCKELLAR. But, Mr. Sherman, as I understood you just a few moments ago, in answer to another question by Senator Cameron, you said that it was the most traveled road in Arizona.

Mr. SHERMAN. I say that.

Senator MCKELLAR. If it is the most traveled road in Arizona, it is the most useful road.

Mr. SHERMAN. I say that it will be traveled by more people than any other, but they are people who are on pleasure trips, whereas these other roads that are to be constructed are roads that will be traveled by people who are making their living in the State of Arizona out of the resources of the State.

Senator CAMERON. I do not know who is making a living in Arizona now under these conditions.

Mr. SHERMAN. One road would be for tourists from outside the State, and the other road would be for citizens of the State of Arizona; and therefore the highway engineer of the State asked that it be put on these roads here. [Indicating on map.]

Senator OVERMAN. This money is appropriated out of the general fund for the benefit of everybody in the United States.

Mr. SHERMAN. I beg your pardon; the money that is appropriated for Federal roads, for interstate use, comes under the Federal-aid proposition, and is put upon the 7 per cent system here. Those are

the interstate roads. The appropriation for forest roads, the main Federal obligation, is in lieu of taxation within the State, these lands being withdrawn from taxation. The Department originally advocated this appropriation upon that theory, upon that Federal obligation, and upon the development of the Government's property here, these forest properties. These are roads that the State itself would build if the land were subject to taxation.

Senator McKELLAR. I was very much struck with the suggestion make by Senator Kendrick a moment ago. Of course ordinarily we do not want to direct what shall be done in cases of this kind, but in cases of manifest justice probably we ought to. To avoid that, Mr. Sherman, why do not you and Senator Cameron agree right here that this road will be put in, say, two years from now, out of this fund?

Senator KEYES. How can they agree?

Senator McKELLAR. They can get an agreement out of it if they want to. I think Senator Cameron has made out a good case. I do not think the action of the department is defensible, and I expect to vote that way if it comes to a vote; but I do not want to do it unless it is necessary, because I do not think we ought to interfere unless it is absolutely necessary.

Senator LENROOT. I should like to ask Mr. Sherman, if this direction should be made, what road would lose the money under the project?

Mr. SHERMAN. Of course, it would depend upon what the three parties in interest—the Forest Service, the Bureau of Public Roads, and the State highway engineer—would agree to; but it probably would mean the abandonment for the time being, and perhaps for a number of years to come, of what is known as the Strawberry-Clint's Well project here—that is in here [indicating on map].

Senator CAMERON. There are not 50 people a year that go over it.

Mr. SHERMAN. And a connection in here between Winslow and Young's and Globe. There is a gap in there to which the \$175,000 is being allocated.

Senator LENROOT. What special service will be rendered by that road to the people of the State?

Mr. SHERMAN. That makes interconnection between all of these roads in here.

Senator McKELLAR. How many people go over that road, or probably will go over it when it is built, in a year?

Mr. SHERMAN. A great many. I would be unable to say.

Senator McKELLAR. What is the comparison between the number of people that would travel that road and the number that would travel the Main road?

Mr. SHERMAN. Oh, there would be a great many more traveling the Main road. There is no doubt about that.

Senator CAMERON. There would be nine times as many going over the main highway as there would be going over any of these roads that Mr. Sherman has mentioned.

Senator McKELLAR. Do you agree to that—that there would be nine times as many?

Senator CAMERON. I do not know whether he would agree to that or not, but I know.

Senator McKELLAR. Mr. Sherman, do you agree to that statement?

Mr. SHERMAN. That is a guess. Of course it would depend upon the way the travel would develop.

Senator MCKELLAR. This other road is a by-road, and the road from Main, that Senator Cameron speaks of, is a through road; is it not?

Mr. SHERMAN. No; the road that I speak of would make a through connecting route between this main line east and west highway and this east and west highway [indicating on map].

Senator McNARY. For the record, what are those two main highways—transcontinental?

Mr. SHERMAN. Those are two transcontinental highways.

Senator McNARY. What are their names?

Mr. SHERMAN. The northern one is the Old Trails Highway, and the southern one is known as the National.

Senator KENDRICK. Do you mean the Santa Fe Trail?

Mr. SHERMAN. Yes; it is called the Old Trails Highway. It follows the general line of the Santa Fe.

Senator McNARY. The road about which you speak now will be a connecting link running through the State?

Mr. SHERMAN. It would make one connecting link in there. The road that the Senator is advocating would be a side road to the Grand Canyon. As for its being a through road north and south to Utah, there being no bridge there—

Senator CAMERON. There is a bridge.

Mr. SHERMAN. There is no bridge upon which you can take an automobile across.

Senator CAMERON. Oh, no; there is no automobile bridge. You could not take an automobile down into the canyon.

Mr. SHERMAN. There being no way of getting wheeled vehicles across, it becomes a road just to go up to the Grand Canyon and back. It is a side trip for tourists.

Senator KENDRICK. Mr. Sherman, you have had this matter under discussion for some time. It is a controverted question that has been raised before. I am wondering whether, in the course of your consideration of it in the past, your department has not a fixed plan in mind as to when you will reach this road in your plan of construction?

Mr. SHERMAN. It is quite likely that the district people would be able to tell when they would reach it. I can not answer that off-hand, though.

Senator KENDRICK. Possibly within one or two more years?

Mr. SHERMAN. Possibly so. It depends also upon the cost of this project. As I say, we have not yet gotten the figures from the Bureau of Public Roads.

Senator WARREN. Mr. Sherman, I should like to ask you this question; or perhaps I ought to ask Senator Cameron, instead of you. I should like one or both of you to say what has become of the old difficulties that existed about roads and improvements in national parks. We used to get that question in the sundry civil bill. There was always a difference every year, and sometimes, as far as the feelings expressed were concerned, there was a pretty desperate struggle over it. Has that anything to do with this?

Senator CAMERON. No; this has nothing to do with the national parks. The national park is only about 2 miles this side of the south rim of the Grand Canyon.

Senator WARREN. What is their concern in it now?

Senator CAMERON. I should think they would be glad to have it built, because they have a tourist hotel out there, and they are running the Grand Canyon National Park.

Senator OVERMAN. How much has been appropriated for forest roads and trails?

Senator CAMERON. On this road?

Senator OVERMAN. In general, for forest roads and trails? There is a separate appropriation for parks for forest roads and trails; is there not?

Mr. SHERMAN. Yes, sir.

Senator OVERMAN. How much is that? Do you know?

Mr. SHERMAN. I do not recall; but I remember that so far as the area is concerned, acre for acre, it is about ten times as much as we are getting. Their acreage is small, however.

Senator OVERMAN. My recollection is that about \$10,000,000 has been appropriated.

Mr. SHERMAN. Something like that.

Senator LENROOT. How far would the road have to be constructed in the park to make it of value from the scenic standpoint?

Senator CAMERON. About a mile and a half; that is all.

Mr. SHERMAN. Mr. Chairman, I have just received telephone word from the Bureau of Public Roads that their estimate on the cost of the road proposed by the Senator—this is their tentative estimate—is \$1,200,000, which includes \$90,000 inside the park.

Senator CAMERON. There is quite a discrepancy between the county engineer's statement and that one. The county engineer claims that the road can be built through to the north boundary of the national park for \$187,000. There is a pretty good road there now, you know.

Senator Smoot. Oh, you mean a gravel road?

Senator CAMERON. No; he says a surfaced road.

Senator Smoot. They can not do it for that.

Senator CAMERON. Well, I do not know; I am not an engineer.

Senator Smoot. Fourteen miles?

Senator CAMERON. I know that we will never get the road built unless we start.

Senator Smoot. Yes; that is true.

Senator CAMERON. We started it once, and thought we had it settled. That was in 1925; and Mr. Sherman made the statement a few minutes ago that he thought it would be five years before they would get to it.

Now, I want to take a few minutes, and then I will not take any more of your time.

The road from Winslow and Long Valley down to the Mogollon rim, down through Strawberry and Peyson to the Tonto Basin, is used occasionally. It is a very rough country, and it goes through a belt of timber. There were at one time quite a number of stock men in this section of the country. To-day there are very few. They are nearly all of them out of there. As you know, the cattle-men of Arizona have nearly all failed, and most of them have been

closed out, and there are very few cattle in there. Of course I am for all roads; that goes without saying; but I say to you gentlemen who are deciding this question that there is no more important road in any State in the Union at the present time than the road I have mentioned here to-day. The national highways and the national forests are not built for any one community.

Senator McKELLAR. Senator, in your judgment, what caused the highway commission and the national road officials to develop or build a road of so little importance as you say the one is that has been mentioned, and refuse to build this one that is specified?

Senator CAMERON. That is what I am trying to get at.

Senator McKELLAR. Are there any particular interests out there?

Senator CAMERON. Not in Arizona, no; because all the people in northern Arizona want this road built. They have been after me, and even voted against me because I had not secured the appropriation. I am not here for that purpose, because I am licked and out; but I am telling you right now that it is a matter that they have had up ever since I came here, and even before I came here, and they are desirous of having this road built. Every man, woman, and child in Arizona is interested in this connection between Main and the Grand Canyon, and every man in the Nation, or every one who travels out in that part of the country.

Senator OVERMAN. Do you know how much money has been allocated to Arizona out of the trails and forest roads appropriation?

Senator CAMERON. I could not answer that. Mr. Sherman might know.

Senator OVERMAN. Do you know, Mr. Sherman?

Mr. SHERMAN. The total, do you mean?

Senator CAMERON. I should like to finish my statement, if I may.

Senator OVERMAN. Let us see, first, how much money they have allocated to Arizona.

(A pause.)

Senator McKELLAR. While they are hunting for that, let me ask a question.

Senator CAMERON. Possibly there has been more money collected out of Coconino County by the Forest Service from timber sales than any other county in the State. Eighty-nine per cent of the public domain of Coconino County has been withdrawn either for national parks, national monuments, national forests, or game preserves and Indian reservations.

Senator McNARY. What per cent?

Senator CAMERON. Eighty-nine per cent. I think that Coconino County, without hesitancy—and I could not say definitely how much it has been—has paid more money into the Forest Service treasury from grazing fees and the sale of timber than any other county in the State.

Senator OVERMAN. Let us get those figures, now. How much is it?

Mr. SHERMAN. There has been appropriated from the forest highway fund a total of \$1,589,585.

Senator OVERMAN. That is the highway fund. I am talking about forest trails and roads.

Mr. SHERMAN. Then for forest development there has been appropriated \$777,522; and the 10 per cent fund has amounted to \$477,991.

Senator OVERMAN. It will be some time before it will reach a million dollars, which they say this road will cost.

Senator CAMERON. It will not cost \$1,000,000. That is all foolishness. The present road is a pretty good road. It has been pretty well surfaced up; and right along the road we have the best gravel cinder beds in the world with which to gravel roads.

Senator OVERMAN. What will it cost you a mile to build the road?

Senator CAMERON. I am just taking the county engineer's statement. I have two telegrams from him. He claims—and they have made a survey of it; he is building the roads all over the county, and has been there for eight years—he claims that \$187,000 will build the road, including the 14-mile gap.

Senator KEYES. Fifty-nine miles in all?

Senator CAMERON. Fifty-nine miles in all. A gap of 14 miles out of it will leave 45 miles.

Senator OVERMAN. You can not build a highway for that.

Senator BINGHAM. That would be only \$3,000 a mile.

Senator CAMERON. I appreciate that; but, still, there is a pretty fair road there now, a dirt road. They would not have to go to work and build a new road. The road has been laid out there and used for years.

Senator OVERMAN. A hard-surfaced road will cost more than that.

Senator CAMERON. That is practically the only road into the Grand Canyon.

Senator LENROOT. That cars use?

Senator CAMERON. That cars use.

Senator LENROOT. From the south?

Senator CAMERON. Yes. They do go out of Williams on a V-shape, you know; but the county authorities have built that road themselves.

Senator LENROOT. And they join this same road?

Senator CAMERON. They join this same road; yes.

Senator KENDRICK. Does the travel going north to the Canyon from the station on the Santa Fe find it necessary to return over the same road?

Senator CAMERON. Absolutely. They go in on the road, and come out on the road.

Senator MCKELLAR. You say there are 10 people that pass over this road to one on the other?

Senator CAMERON. Yes; I should judge even more. I believe it is a still larger percentage. I know that country; I have lived in it 44 years, and I have just made a thorough canvass of it, and I know the road conditions. I know that they have a splendid road from Clifton up to Holbrook, the main line, now. I came over it; and I know that they have a road from Ashfork down to Prescott and Phoenix; and those intermediate roads are used to some extent. I am for them, but I am not for them as against a road in which everybody is interested.

Senator McNARY. Senator Bingham, have you there the letter of the State engineer?

Senator BINGHAM. Yes.

Senator McNARY. Will you read it?

Senator BINGHAM. Yes. This letter is from the district forester, Frank C. W. Pooler, inclosing the agreement.

Senator CAMERON. He has been against this road from the beginning. He is the only man that was at this meeting that did not approve of it.

Senator BINGHAM. Do you wish me to read the whole letter?

Senator McNARY. The material part of it.

Senator BINGHAM. The material part of it, as it strikes me, is this part:

We were very fortunate in securing the Bureau and State's approval to an allotment of \$193,000 for the Strawberry-Clint's Well section of the Winslow-Pine project, which sum is expected to complete the project.

That appears to be the only large construction project; and they include in the letter this agreement, dated Phoenix, Ariz., December 9, 1926, and addressed to the Chief of Bureau, the Forester, Washington, D. C.:

At a conference held in Phoenix on December 8, 1926, by the undersigned, it was agreed to recommend the following projects for inclusion in the Arizona forest highway program for the fiscal year 1928:

A. Maintenance:

1. Prescott-White Spar forest highway route No. 8-----	\$10,000.00
2. Flagstaff-Angel forest highway route No. 4-----	7,000.00
3. Fredonia-Grand Canyon forest highway route No. 1-----	10,000.00
4. Clifton-Springerville forest highway route No. 19-----	9,000.00
5. Snowflake-Pinetop forest highway route No. 17-----	7,800.00

B. Construction:

1. Strawberry-Clint's Well forest highway route No. 12-----	175,000.00
2. Young section of forest highway route No. 12-----	10,000.00

Then follows a small item for a survey; and this is signed by the State engineer of Arizona, the district forester, Albuquerque, and the district engineer, San Francisco.

Senator CAMERON. That only appropriates \$185,000.

Senator OVERMAN. Have you got a highway commission in your State?

Senator CAMERON. Yes.

Senator OVERMAN. What do they say?

Senator CAMERON. They have always been for it. This is a new engineer. I do not know anything about that, but I am saying to you from personal knowledge that I am not opposed to these other roads. As I understand that report, there is \$185,000 allocated to it.

Senator BINGHAM. \$193,000 altogether.

Senator CAMERON. All right. Then there is \$400,000 of our share this year.

Senator LENROOT. They have got maintenance here. Suppose you read this.

Senator McNARY. Where is the balance going to?

Mr. SHERMAN. There is a considerable amount there going to maintenance.

Senator McKELLAR. The difference between \$193,000 and \$400,000 does not go to overhead, does it? If it does, we had better look into it.

Senator KEYES. Do you mean of the roads already built?

Senator OVERMAN. Mr. Sherman, what does the highway commission of that State say?

Senator CAMERON. Senator, the board consists of the Bureau of Public Roads, the State highway engineer, and the district forester, Mr. Pooler, who was at that meeting. He used to be up there at

Flagstaff; and for some reason has never been in favor of this road. At this meeting that was held on January 29, 1925, his was the only dissenting voice against the building of this Grand Canyon road, and he will always be against it. He always has been against it. It is so stated in the record here that we took last year. So, if we are going to be bound down by one man's view—

Senator OVERMAN. I am not asking about one man. The highway commission acts in cooperation, as I understand, with these other officials.

Senator CAMERON. They did there, I see, but then they have only appropriated \$193,000.

Senator BINGHAM. Shall I read the whole letter? Perhaps it will be clearer.

Senator McNARY. Senator Overman has asked a question of Mr. Sherman. Let us have the answer.

Mr. SHERMAN. Let me have the letter, please.

I will read the joint letter addressed to the Chief of the Bureau of Public Roads and to the Forester, Washington, D. C. This is a copy which is furnished us by the representative of the Bureau of Public Roads located at Phoenix. This letter is dated December 8, 1926, and reads as follows:

Gentlemen: At a conference held in Phoenix on December 8, 1926, by the undersigned, it was agreed to recommend the following projects for inclusion in the Arizona forest highway program for the fiscal year 1928:

A. Maintenance :			
1. Prescott-White Spar forest highway route No. 8.....	\$10,000.00		
2. Flagstaff-Angel forest highway route No. 4.....	7,000.00		
3. Fredonia-Grand Canyon forest highway route No. 1	10,000.00		
4. Clifton-Springerville forest highway route No. 19.....	9,000.00		
5. Snowflake-Pinetop forest highway route No. 17.....	7,500.00		
B. Construction :			
1. Strawberry-Clint's Well forest highway route No. 12.....	175,000.00		
2. Young section of forest highway route No. 12.....	10,000.00		
C. Survey :			
1. Springerville-Alpine-state line, parts of forest highway routes Nos. 19 and 20, approximately 54 miles.....	17,000.00		
			243,500.00

The above recommended program totals \$243,500.00, and is to be allotted from any balance remaining in fiscal year 1927 authorization and an expected fiscal year 1928 authorization of \$278,446.

The forest highway allotment of \$9,000 recommended for maintenance of the Clifton-Springerville forest highway (route No. 19) is to be supplemented by an allotment of \$9,000 forest development funds.

The Forest Highway allotment of \$7,500 recommended for maintenance of the Snowflake-Pinetop Forest Highway (Route No. 17) is to be supplemented by local cooperation of \$5,000 from Navajo County.

The \$10,000 proposed for the Young Section of F. H. Route No. 12, is in addition to the \$10,000 allotment in the fiscal year 1927 program recommended December 8, 1926.

It was further agreed to recommend holding in the unprogrammed contingent the sum of \$10,000 until such time as the desirability of a survey on a proposed Forest Highway route leading from F. H. Route No. 1 to the proposed Lee's Ferry Bridge over the Colorado River (for which Congress has already appropriated \$100,000) is determined in the summer of 1927.

That definitely programs \$234,500 out of the expected allotment of \$278,446.

Senator BINGHAM. Something was said about \$400,000. Where does that come from?

Mr. SHERMAN. That is the other fund, which goes into the minor roads and trails in the forests, and is not under consideration here; and that holds \$10,000 in the contingent fund for a prospective survey.

Senator CAMERON. Mr. Chairman, I will state for the benefit of the committee that I have been over every one of these roads that have been just mentioned in the last three months. As I said before, and I say now, I am in favor of all the roads we can get in any State; but the roads that have just been mentioned are in an outlying country, a district where there are very few people. There is only one road that has been mentioned in this report that is used to any great extent. That is the Springerville road, that connects at Holbrook, with the Old Trails Highway. It goes out by St. Johns and Springerville, across Morenci, and goes over into New Mexico. On the other hand they branch off up in the top of the White Mountains, and go on down across the mountains to the Gila River below Clifton, and then they come up to Clifton with a very good road. Then the road goes on across the mountains or the hills over into the Gila Valley, and there they connect with the Globe Highway road, and go up to Globe, and go over either way. They can go by way of Miami over into Phoenix, on a beautiful road that is built from Miami to Phoenix and Globe, or they can go over the Apache Trail by way of Roosevelt.

The roads are all in good condition. Of course any road needs to be kept up more or less, but I am talking about something that is important to the people; and the way they are distributing this money around in driplets we do not get anywhere.

Senator OVERMAN. Do these roads go by any of the towns?

Senator CAMERON. No; just small settlements and out into the country, out into the forest reserves. Over on the White Mountains they have a big standing belt of timber which is very accessible now, under the road conditions, from every angle.

Senator MCKELLAR. That is Government timber?

Senator CAMERON. Forest-reserve timber and Indian-reservation timber.

Senator MCKELLAR. Can any of it be taken out?

Senator CAMERON. It can not be bought unless you buy it from the Government.

As I said a few minutes ago, Coconino County has possibly paid into the Treasury from the national forests more than any other county in the State, from timber sales and from stock-grazing. It is a big sheep country up there, and at one time it was a big cattle country, as Senator Kendrick is fully aware.

Senator OVERMAN. You say these roads will be of very little benefit to the people of Arizona?

Senator CAMERON. All roads are a benefit, but nothing in comparison with this road. More people travel the Santa Fe trail or the Old Trails Highway than any other road across the continent. I believe there are as many that travel that highway as travel on the Lincoln Highway through the north. Consequently, they all go to the Grand Canyon. The Grand Canyon is the one great scenic wonder of the world, as everybody knows; and people going out, either going or coming, will go one way or come the other in order to

make this trip. There are thousands of people, too, that go up there every year on the train. There is only one inlet or outlet to the canyon, and that is the one I have in mind.

I realize that the Forest Service is prejudiced. I say that without any intention of hurting the feelings of my friends over here; but I know that Mr. Pooler, who is in charge of the national forests at Albuquerque, which Arizona comes under, has been against this road—for what reason I do not know—and he is against it now.

Senator LENROOT. Senator Cameron, I should like to ask if this would not be a solution of the matter—if there could be an understanding that this money should be allotted to this road as soon as the State authorities of Arizona should so recommend?

Senator CAMERON. Senator Lenroot, I always try to be fair in everything, but I know the situation here. I have been in committees where the district forester was present, a man like Pooler—a nice fellow, and very smooth, and always looking for what he wants, and a man who generally gets it. This other man is in charge of the State highways out there. I do not know who he is. He is a new man. That is the national highway man. He just came in there about two months ago, and the new State engineer I am not acquainted with; but I know that the people of Arizona want this road built. I think 99 per cent of them would vote for it.

Senator McNARY. What is your proposal, Senator Lenroot?

Senator LENROOT. That there be an understanding between the department and this committee that funds should be allotted to this road whenever the State authorities of Arizona should approve of such allotment.

Senator McKELLAR. How about that, Mr. Sherman?

Senator CAMERON. I do not get anywhere either way, so it does not make any difference.

Senator McKELLAR. That is what I want to find out.

Senator CAMERON. It would not make a bit of difference, because we had \$100,000 allotted to that road in 1925, and they never used it, and transferred it to this Strawberry road that they are talking about. That is in the record.

Senator OVERMAN. Who transferred that?

Senator LENROOT. If necessary, Senator Cameron, we could put it in the bill.

Senator CAMERON. That is what I should like to have done.

Senator McNARY. Mr. Sherman, what do you think about that proposal of Senator Lenroot's?

Mr. SHERMAN. That, of course, is not a proposal that I could agree to, since the existing law places the authority over these projects entirely in the hands of the Secretary of Agriculture.

Senator McKELLAR. But you are representing the Secretary of Agriculture.

Mr. SHERMAN. Although the present Secretary of Agriculture might agree to it, he could not bind his successors. The law is what would have to govern.

Senator LENROOT. Of course if we put into the bill a provision that an allotment should be made for this road whenever the proper State authorities of Arizona should so recommend, that would settle it.

Mr. SHERMAN. Which I feel, Senator, would be a very dangerous precedent to establish.

Senator KEYES. It seems to me it would be a very dangerous precedent.

Mr. SHERMAN. Now I should like to address myself for just a minute to what the Senator has remarked about Coconino County.

The Federal Government has taken a good deal of money out of Coconino County from timber sales in the past but 35 per cent of those receipts have gone back to the county's roads and schools. The amount of money taken out of Coconino County has not been as great however, as the amount which has been expended there. Upon the highways in Coconino County a great deal of Federal money has been expended.

Senator CAMERON. I should like to ask a question there.

Mr. SHERMAN. It has been expended upon the main through road there, the Old Trails Highway, which, you will see, has been made a part of the forest highway system, and upon which a great deal of money is being expended at the present time, and was expended in past years. I think we have expended about \$300,000 on the main road through there. I am speaking about the main highway through here [indicating on map].

Senator CAMERON. The only money you have expended on the main highway was from Flagstaff to the edge of the forest east of Flagstaff; was it not?

Mr. SHERMAN. Flagstaff-Angel, and I think there was money spent in both directions there.

Senator CAMERON. If it was on the forest reserve, it is bound to be spent in that way; but you have got national highway assistance on this road and State assistance.

Mr. SHERMAN. I beg the Senator's pardon; it is not on the Federal-aid system. It is on the forest system entirely. The roads in blue on that map are on the Federal-aid system; and in order to help out Coconino County that section of the main transcontinental route was put upon the forest highway system, so that the State of Arizona would not have to contribute a dollar toward it, as they would have to match money under the Federal-aid system; and that road, excepting what was constructed by the State prior to the passage of the Federal road act, was built entirely out of the Federal road system.

Senator LENROOT. What about that road? [Pointing to another road on map.]

Mr. SHERMAN. It is not completed to standard.

Senator LENROOT. But it is under Federal aid?

Mr. SHERMAN. But it is under Federal aid. You will notice that the cross-hatched part of the road from Flagstaff east, not colored solid, which is now under construction with forest highway money, is being surfaced out of the forest highway fund. You will notice, also, that the allocation here proposes to allot \$7,000 to maintenance of that road, so that that road is being carried on the forest highway system without the expenditure of a dollar from Coconino County or the State of Arizona. Therefore I feel that the charge that District Forester Pooler is prejudiced against Coconino County is unwarranted.

Senator CAMERON. Why, Mr. Sherman, you have been compelled to build this road. This is a part of the National Old Trails Highway, is it not?

Mr. SHERMAN. Yes.

Senator CAMERON. You could not help yourself.

Mr. SHERMAN. I beg the Senator's pardon.

Senator CAMERON. I do not think you could.

Mr. SHERMAN. It could be put upon the Federal-aid system.

Senator CAMERON. It could; but you have taken the timber, you have taken the grazing fees, and you have taken everything we had, all our public domain, and should you not give them something back, when it is paid into the Treasury by citizens who live in that county?

Mr. SHERMAN. I am not questioning that, Senator.

Senator CAMERON. Then why do you press so much on this argument? You should build these roads. You have gotten the money out of the county.

Mr. SHERMAN. The roads should be built, and they are being built.

Senator CAMERON. I undertake to say here that there is no place on earth where a road can be built as cheaply as in Coconino County, because that is what we call a cinder gravel road, and there are cinder hills galore all along this road, and from this road to the Grand Canyon. That is why it can be built so cheaply. It is the finest ballast in the world. Even the Santa Fe Railroad Co. use it for their main line through Arizona, and there are millions and billions of tons of it right along the road. That is why they can build the road so cheaply. This talk about its taking a million dollars to build that road is absurd.

Senator BINGHAM. What does the "standard surface" that is mentioned in that telegram mean?

Senator CAMERON. I think about 6 inches of these cinders on top of the roadbed.

Mr. SHERMAN. That was not used on the Flagstaff-Angel road. It was not acceptable.

Senator CAMERON. I do not know about that; but it has been used between Flagstaff and Williams, because I know it very well. I have been over it many a time.

Senator McNARY. What is the character of the roads you have been building out of this fund in the State of Arizona?

Mr. LAUTZ. Just ordinary dirt, gravel roads. Where it was absolutely necessary they would be surfaced with gravel.

Senator McNARY. What has been the average cost per mile of all roads built in the State of Arizona from forest-road funds?

Mr. LAUTZ. To June 30, 1926, the average cost was \$4,384 a mile.

Senator McKELLAR. How many miles have you actually built?

Mr. LAUTZ. In Arizona the total number of miles actually built was 746.6 miles up to June 30, 1926.

Senator LENROOT. I should like to have the figures for such roads as this contemplated road, so that we will get some comparison of cost.

Mr. LAUTZ. Up to June 30, 1926, we have actually constructed 265 miles of such roads at an average cost of \$10,400 a mile. The total

cost to the Federal Government was \$2,128,000. The balance was local cooperation.

Senator BINGHAM. Do you know how much the county has spent on this 59 miles of road already?

Senator CAMERON. I could not give you that offhand. I can get the information; but they have built the road and kept it up.

Senator OVERMAN. Are any of these roads concrete roads?

Senator CAMERON. No; we have not any concrete roads except in the southern part of the State. It is not necessary. The dirt roads answer all purposes.

Senator OVERMAN. A concrete road would cost a million dollars, of course.

Senator CAMERON. That would mean a concrete road. The finest road I ever traveled over anywhere is a dirt road from Tombstone to Nogales. It is about 110 miles long. It is a dirt road graveled with decomposed granite; and there is no better concrete road, and there is no better road in the country.

Senator MCKELLAR. Have you that kind of material?

Senator CAMERON. We have cinders, which we have used, and we have lots of decomposed granite, too, and lots of lime rock. We have all kinds of rock with which to build roads. I do not know what they have on that other road. I know that the contractor who had it had all kinds of trouble with it.

Senator LENROOT. The county keeps up the whole 59 miles out of its own funds; does it?

Senator CAMERON. I understand that they do.

Senator LENROOT. The Forest Service contributes nothing to this road, does it, Mr. Sherman?

Mr. SHERMAN. I think there is no fund being allocated to this project.

Senator LENROOT. I see that you have it in red, indicating that it is—

Mr. SHERMAN. It is on our system, and we expect to construct it.

Senator BINGHAM. I may not have heard, but I have not been conscious of any answer to the question as to why, when the three parties agreed to spend \$106,000 on this road, they changed their minds.

Senator CAMERON. It was agreed that \$106,479 should be set aside for the purpose.

Senator MCKELLAR. What was the reason, Mr. Sherman?

Mr. SHERMAN. As I previously stated, I question that statement.

Senator MCKELLAR. It is in the record.

Mr. SHERMAN. I question that statement as ever having been agreed to. You will notice that the Senator read that it was "recommended."

Senator CAMERON. I will read the whole thing through. I do not know; I did not make this statement. It is in the record, and here is a discussion over it. It came before our committee, and I supposed it was made correctly.

Mr. SHERMAN. This is a letter—

Senator CAMERON. Read it all through.

Mr. SHERMAN. This is a letter dated Grand Canyon, Ariz., March 27, 1925, addressed to Hon. Ralph H. Cameron, United States Senate, Washington, D. C., and signed by I. I. Harrison, adjutant.

Senator CAMERON. Read the letter.

Mr. SHERMAN. Who is I. I. Harrison?

Senator CAMERON. I do not know who he is. He came before the committee when we were holding these hearings. These were public hearings.

Senator McNARY. Let us have one at a time, now, Senator Cameron.

Senator CAMERON. He asked me the question.

Senator McNARY. You make the statement, and when you conclude you are through.

Mr. SHERMAN (reading) :

GRAND CANYON, ARIZ., March 27, 1925.

Hon. RALPH H. CAMERON,
United States Senate, Washington, D. C.

MY DEAR SENATOR CAMERON: On January 29, 1925, at the annual conference at Phoenix, between the district engineer of the Bureau of Public Roads, the State highway engineer of Arizona, and the district forester, it was recommended that the sum of \$106,479 be set aside for the purpose of beginning construction of an approach road from the National Old Trails highway to the south boundary of Grand Canyon National Park. At that time the district forester alone opposed this recommendation, and from what we can learn is still "consistently and persistently" opposing the allocation of funds to be spent on such a road.

As we understand it, the recommendation of the triangular conference has been forwarded to the Secretary of the Department of Agriculture, for his approval or disapproval. From past correspondence you know that John Ivens Post No. 42, the American Legion, at Grand Canyon, Ariz., is strongly in favor of the construction of an approach road from the National Old Trails Highway to the south boundary of the Grand Canyon National Park, and as our Representative in the United States Senate, may we not ask that you support the recommendation of the district engineer of the Bureau of Public Roads and the State high engineer? May we also ask that you bring to the attention of the Secretary of the Department of Agriculture, the fact that this post, as well as the entire community, are strongly in favor of seeing work on such a road begun at the earliest possible moment and carried through to a speedy conclusion?

We also protest most vigorously against the above-mentioned sum being diverted to any other project and the efforts of the district forester in trying to have the money placed on other projects.

Respectfully,

I. I. HARRISON, Adjutant.

In other words, taking this at its face value, it was recommended at that time by the State highway engineer and by the Bureau of Public Roads, but was not concurred in by the Forest Service, and was never approved by the Secretary of Agriculture, and no funds were ever allotted to the project. Instead of that, the Secretary approved what was known as the Springerville-Greenleaf Road, running through the forest there, and serving certain settlements.

Senator McNARY. Are there any further questions you desire to ask Mr. Sherman?

Senator LENROOT. Mr. Sherman, you stated that you thought this would constitute a dangerous precedent if the suggestion were followed out. Do you not distinguish between this, which is in a sense a national matter, where the road will be used almost wholly by residents of other States, and the ordinary matters occurring within a State?

Mr. SHERMAN. This road certainly is different from the usual forest road, in that it is of nation-wide importance. There is no

doubt about that; and it might even justify a special Federal appropriation for constructing the entire project.

Senator LENROOT. In view of that fact, if the State should agree to this expenditure as being a national matter, is there any reason why it should not be done?

Mr. SHERMAN. That is a question that, I should say, would depend upon priorities. If the State should agree to it and urge that as the most important project from the State standpoint, I think there is no doubt that the Forest Service and the Bureau of Public Roads would acquiesce.

Senator KEYES. Would not that happen without any legislation?

Mr. SHERMAN. That would happen, also, without legislation.

Senator MCKELLAR. It has not happened yet, and they all knew that it was.

Senator KEYES. But the State highway department has not recommended it.

Senator MCKELLAR. Yes; it seems that the State Highway Department has recommended it, but somebody vetoed it.

Senator McNARY. Mr. Sherman, you may retire now. The committee is about to have an executive session.

Mr. SHERMAN. Mr. Chairman, just one minute. I have the average cost of the major projects of forest highways in Arizona—\$10,400 a mile.

Senator LENROOT. Does that include opening up the highways?

Mr. SHERMAN. That includes everything.

Senator LENROOT. Cutting and grading?

Mr. SHERMAN. That includes everything—reconstruction.

Senator McNARY. As supplementary thereto, in the House hearings on the bill now under consideration testimony was given by Colonel Greely that taking the Forest Service as a whole these roads are built at an average cost of about \$1,200 per mile.

Mr. SHERMAN. Those must be the minor roads built from the forest development fund.

Senator MCKELLAR. I should like to have you put in the record the amount that is used in Arizona for overhead expenses.

Mr. SHERMAN. We shall be very glad to do so.

Senator MCKELLAR. And separate from that the amount that is used for maintenance and building of the roads.

DATA SUPPLIED BY MR. SHERMAN

Total amount Federal funds allocated to forest roads and trails in Arizona, all appropriations up to June 30, 1926, \$3,521,121.23. Of this total \$195,157.59 was expended on trail construction, \$58,238.60 trail maintenance, \$148,985.95 road maintenance, and a total of \$182,601.10 for administrative overhead.

(The hearings were thereupon announced closed and the committee went into executive session.)

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