



INDEPENDENT OFFICES
APPROPRIATION BILL FOR 1931

J.E.G.
FEB 27 1931

HEARING
BEFORE
SUBCOMMITTEE OF HOUSE COMMITTEE
ON APPROPRIATIONS

CONSISTING OF

MESSRS. EDWARD H. WASON (CHAIRMAN), JOHN W. SUMMERS
JOHN C. ALLEN, RICHARD B. WIGGLESWORTH
THOMAS H. CULLEN,¹ AND CLIFTON A. WOODRUM

IN CHARGE OF

INDEPENDENT OFFICES APPROPRIATION BILL FOR 1931

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FEB 24 1941



order to try to get them all there at one time, so that that conference really answers many purposes, as far as the manufacturers are concerned.

FRIDAY, JANUARY 10, 1930.

SMITHSONIAN INSTITUTION

STATEMENTS OF DR. C. G. ABBOT, SECRETARY; DR. ALEXANDER WETMORE, ASSISTANT SECRETARY; DR. W. deC. RAVENEL, ADMINISTRATIVE ASSISTANT TO THE SECRETARY, NATIONAL MUSEUM; DR. M. W. STIRLING, CHIEF BUREAU OF AMERICAN ETHNOLOGY; HON. R. WALTON MOORE, AND HON. ROBERT LUCE, REGENTS; AND H. W. DORSEY, CHIEF CLERK

SALARIES AND EXPENSES

Mr. WASON. We have with us the representatives of the Smithsonian Institution. Doctor Abbot, will you proceed?

Doctor ABBOT. Mr. Chairman, you will begin, I suppose, with the item salaries and expenses, Smithsonian Institution.

Mr. WASON. Yes. The first item is:

For expenses of the general administrative office, Smithsonian Institution, including an additional assistant secretary at \$9,000 per annum during the present incumbency, compensation of necessary employees, traveling expenses, purchase of books and periodicals, supplies, and equipment, and any other necessary expenses, \$37,804.

Doctor ABBOT. This estimate covers certain salaries and expenses of the general office of the Smithsonian Institution which is concerned in the administration of the Government branches which have been placed by Congress under the direction of the institution. The appropriation requested is the same amount as that granted by Congress for the current year, with the addition of \$1,800 to cover one additional clerk, CAF 4, for the Smithsonian library.

ADDITIONAL CLERK IN LIBRARY

The appropriation for 1930 is \$36,004. The Budget estimate for 1931 is \$37,804, an increase of \$1,800 granted by the Budget. This is to compensate one additional clerk in the Smithsonian library. We have a great many periodicals and publications coming from abroad, and it is necessary to carry on in connection therewith a good deal of correspondence, and this item is for a correspondence clerk in connection with that work.

A great deal of this work, as you know, is in connection with the Library of Congress. You will recall that many years ago, when the Smithsonian Institution began to carry on its exchanges of publications with foreign countries, we collected, and have been collecting ever since, a very considerable scientific library, which now amounts to nearly three-quarters of a million volumes. About 1870 an arrangement was entered into between the Smithsonian Institution and the Library of Congress whereby such of these publications as are not immediately needed for the work of the institution, but only as reference from time to time, are deposited in what is called

the Smithsonian deposit in the Library of Congress. That has grown until it amounts to something over half a million volumes, and it is one of the principal scientific reference libraries of the country; and possibly of the world. It is in connection with the keeping of the periodicals, filling up sets, and such work as that, that this correspondence clerk is required.

Mr. WASON. And with that slight increase you will be able to function properly?

Doctor ABBOT. I think so, sir.

INTERNATIONAL EXCHANGES OF PUBLICATIONS

Mr. WASON. The next item is:

International exchanges: For the system of international exchanges between the United States and foreign countries, under the direction of the Smithsonian Institution, including necessary employees, and purchase of necessary books and periodicals, and traveling expenses, \$52,297.

What have you to say about that?

Doctor ABBOT. This appropriation is to provide for the transmission of governmental and scientific publications between the United States and foreign countries in accordance with the treaty of Brussels. The increase of \$1,000 is necessary to meet the additional cost of shipping packages abroad, the total weight of which increases from year to year.

The appropriation for 1930 is \$51,297. The Budget has approved for 1931; \$52,297, making an increase of \$1,000. This is altogether on account of the increased work of the international exchanges, and is in payment for additional freight handled.

Mr. WASON. How many countries do you exchange with in the course of a year?

Mr. DORSEY. The number of full sets of United States documents—that is, all the documents that are printed by Congress that are exchanged—is 62, and the number of partial sets, which are sent to other countries which do not send a full equipment, 47, making a total of 109 countries to which we distribute these documents.

Doctor ABBOT. That would not cover all the distribution, because there are other countries which are not in this international exchange relation specifically, but to which publications are from time to time sent through the international exchanges.

Mr. WASON. Have you any further explanation that you want to make of that particular item?

Mr. DORSEY. Only to say, Mr. Wason, that during the first six months of the current year there has been an increase of 23,000 packages over the corresponding period last year. So this is just to take care of this normal growth in freight.

ETHNOLOGY RESEARCH AMONG AMERICAN INDIANS AND NATIVES OF HAWAII

Mr. WASON. The next item is entitled:

American ethnology: For continuing ethnological researches among the American Indians and the natives of Hawaii, the excavation and preservation of archaeologic remains under the direction of the Smithsonian Institution, and so forth, \$68,800.

Doctor ABBOT. This appropriation is for the scientific study of the American Indians and the natives of Hawaii, including their customs, languages, tribal organizations, and archaeological remains.

You will observe, Mr. Chairman, that the appropriation for 1930, \$68,800, is identical with the Budget estimate for 1931, \$68,800. There is no change.

Mr. Stirling, chief of the Bureau of American Ethnology, is here. It may be that there are some items that he would like to bring before the committee.

Mr. WASON. Just make a brief statement of the major items of your work, for the record.

Doctor STIRLING. The principal work that the bureau is doing is research work in archaeology and ethnology among the American Indians. Most of the archaeological projects that are being conducted at the present time are in the southwestern and southeastern sections of the country—Arizona, New Mexico, Florida, Alabama and Mississippi—endeavoring to work out the prehistory of these areas.

In addition to that, the ethnological work consists of researches among the living Indian tribes which still preserve their aboriginal customs, and where these tribes are losing those customs we are trying to find out from the older living Indians the customs that formerly were practiced by those people. At the present time we are conducting some rather interesting researches among tribes that are on the very verge of disappearing, where only a few of the very old Indians are still living who remember the customs that their ancestors followed, and we are taking these down and recording them, and preserving their languages and their social and political organizations.

That, in a very general way, is the work of the bureau. Of course, what we are trying to do is to reconstruct the prehistory of the American Indians, and also to record the changes that are taking place in the customs of the Indians upon contact with civilization, with a view not only to making these facts a matter of record, but also of trying to make that knowledge available to such organizations as the Indian Office, that are trying to deal with modern Indians problems of administration, and which problems, of course, are very difficult to successfully carry out unless the psychology of the Indian is understood and unless there is a good understanding of his conception of things. It is rather hard to inflict modern laws on the Indian unless there is a mutual understanding between those who are proposing those laws and the conceptions of the Indian.

Mr. WASON. Do your activities help the present generation of Indians in any way?

Doctor STIRLING. They help them, I would say, principally in so far as they give us a sympathetic understanding of the practices that these Indians still carry on at the present time. I think that a great deal of the difficulties with the Indians in the past has been the result of misunderstandings due to a failure of the white people to understand the underlying psychology and beliefs of these Indians or to get a real intelligent understanding of the explanations of certain of their activities. Of course innumerable concrete examples could be given.

I think one instance of the early difficulties with the Indians, which began in Colonial days, was in the matter of the difference of opinion or lack of understanding of their conception of the owner-

ship of land. The Indians, of course, never had any idea of individual ownership of land, or even of tribal ownership of land, as such. They usually recognized boundaries within which a certain tribe had certain rights; but no individual in a tribe, no chief or any one else, had the right to dispose of that property, according to their customs. When the whites came in to get hold of property, they overlooked that fact. They made what purported to be documentary deals with head men of various Indian tribes, taking possession of the land. The Indians never recognized any change of ownership there, and naturally friction took place; and I think that was at the bottom of a great many of the early Indian wars.

Now, almost all of those troubles could have been prevented at that time, had they understood the Indian's views concerning these things; but due to lack of knowledge of the language and difficulty of bringing about a mutual understanding, those things were not done, and that same sort of misunderstanding has continued to take place right up to the present time in many instances of Indian administration.

These researches that the Bureau of Ethnology is conducting have done a very great deal to shed light on that matter, and are making available the knowledge that will enable legislators who deal with the present-day Indian to more intelligently dispose of his problems.

MR. WASON. Do the Indians cooperate willingly and cheerfully with your aides in getting the information that you describe?

DOCTOR STIRLING. Yes, sir. The Indians are very anxious to do that. In fact, in some instances it is almost pathetic to see the eagerness that they have to be understood, particularly some of the older Indians. When they discover that the ethnologist working with them actually has an intelligent and sympathetic knowledge of the beliefs that they have been so accustomed to seeing laughed at, or so totally misunderstood, and when they realize that they are understood, and when it is explained to them that this work is being done in their interest and that it is an attempt to make permanent and record the beliefs of their fathers and to bring about a more sympathetic understanding with the white people, they are not only willing to give that sort of information, but will put in more time than the ethnologist can usually find at his disposal to give to it.

ACCOMPLISHMENTS RESULTING FROM ARCHAEOLOGICAL EXPEDITION INTO NEW MEXICO

DOCTOR ABBOT. Mr. Chairman, I think it would be interesting for you to hear something of the work which Doctor Roberts has done in his expedition in northern New Mexico this last summer.

DOCTOR STIRLING. Yes. At the present time there are some very interesting developments in archaeological work.

Archaeology, as you probably know, is that phase of the study of anthropology which deals with the prehistory of the Indians. By excavating the ancient ruins, mounds or village sites of the Indians that formerly lived in various sections of the country, but who have since disappeared, we are able to reconstruct their history through obtaining knowledge of the types of dwellings in which they lived, the kinds of pottery, and so forth, that they made, and the sort of art that they practiced.

In the Southwest, largely as a result of the work that has been carried on for a great many years by the Bureau, sufficient perspective has been gained in the different regions of the Southwest that they have finally been able to arrange a very definite sequence of cultures for that area. We know now, for example, that the first peoples that lived in the southwestern section of the United States were a people known as the basket makers; that physically they had long, narrow heads and various other traits that a physical anthropologist could readily recognize. They made no pottery. They did not use the bow and arrow as a hunting or fighting weapon, but used an instrument known as the spear thrower instead, with which they propelled rather light javelins, and with which they did all of their hunting and fighting. They made baskets of an excellent sort, which was their highest achievement in a cultural way.

Following these people came the first of the peoples that we call the pueblo peoples, from the Spanish word for "town," because they were a sedentary town or city dwelling people. These people built stone and adobe houses in which they lived. They brought with them the bow and arrow, with which they did their hunting and fighting. They also brought with them advanced agriculture, and they raised corn, beans, and squash as their principal plants, and built these marvelous community apartment houses, the ruins of which are so abundantly scattered over the Southwest.

The work that Doctor Roberts has done in northeastern Arizona has done much to give us information of the earliest period of this pueblo invasion. The pueblo period of occupation has been divided into five different sections, which have been numbered, respectively, as pueblo 1, pueblo 2, pueblo 3, pueblo 4, and pueblo 5, according to the different kinds of houses that they built, the different kinds of pottery that they made, and the different sorts of implements that they used; each showing a gradual development and advance from the earliest to the latest type.

The first of these pueblo peoples lived in subterranean houses. They dug out circular pits in the ground, about 8 feet in depth and 10 feet in diameter. The roofs of these were almost flush with the ground, and the entrance was through a hole in the roof. Then later, at the beginning of the second pueblo period, they began to build single rectangular structures on the surface of the ground. Then they began to combine these rectangular structures into houses of several rooms, in which a number of families would live; and finally they began to elaborate upon these structures until we have the really impressive structures such as Pueblo Bonito and the Mesa Verde ruins of the Southwest, where they would have as many as 800 different families living in the same structure, really a gigantic aboriginal apartment house.

There are, of course, a great many extremely interesting details that we now know about the lives of these people that have been reconstructed from archaeological work on these various sites, and it is very interesting to see. We notice a gradual advance in their civilization and culture from this first period—these pueblo peoples, who had round heads instead of the long heads of the basket makers, and whose bones are easily recognized when found; that that advance is to be found not only in the type of house construction, but in all of their arts and industries; and that gradually, just before the period

of the Spanish invasion of the Southwest in the sixteenth century, that civilization had begun to decline somewhat. It began to disintegrate rapidly after the establishment of the missions and the contact of the Indians with the whites in that region, until we come to the final pueblo period, which we call pueblo 5, or the historic period. And yet, in spite of the fact that these Indians have been the longest in contact with the whites of almost any Indians in our country, they are to-day probably the most conservative; that is to say, they preserve their aboriginal customs in greater purity than do any other tribes within the boundaries of the United States; so that even at this date they are about as interesting a group for the ethnologist to work with as we have.

Doctor Robert's work, of which I made specific mention in the last season, has given us a vast wealth of detail concerning the lives of the two earliest of these pueblo periods, and has established the fact that they were outside invaders that evidently came at first peaceably into the country of the basket makers who previously lived there, and intermixed with them to a certain extent at that time, and that it was not a warlike displacement, as had been suspected before; because we find the bones of these two types of peoples buried in the same burial places; we find in the very earliest of these dwellings a certain intermixture of the cultural art effects of the two different groups.

DETERMINATION OF DATES WHEN RUINS WERE OCCUPIED

Doctor ABBOT. Mr. Chairman, I think it may interest you to know that quite recently the dates of these cultures have been approximately obtained.

Doctor STIRLING. Yes. That is probably the most interesting single discovery that has been made in the last 25 years or more of archaeological research in America. This work was inaugurated very largely through the efforts of Mr. Judd of the National Museum, who in his work on Pueblo Bonito, which was financed partly by the National Geographic Society, became interested in the possibility of dating these rooms by studying the growth rings in the trees that were used for beams in building the houses; and he made this suggestion to Doctor Douglas of the University of Arizona, an astronomer who had been particularly interested in this matter of growth rings, with the result that Doctor Douglas began that work several years ago, working with the trees of the region, the largest and oldest trees that he could find; finding that each dry year was marked by a narrow ring of growth, and a wet year by a correspondingly larger one, and the medium years would have medium rings. Sometimes there would be two periods of growth in one year, giving a double ring. The various combinations of these, after one has worked with a great many of these trees and beams, become very easily recognized. You might have, for example, in 1896 a very wet year, followed by two dry years, followed by a double ring, or a year with two periods of rainfall and growth, and so on. There are certain conspicuous combinations of that sort that are easy to recognize.

It is possible, beginning with the trees that we can trace back from the present growing trees, back a matter of 200 years or more, to overlap them with the rings that are obtained from the latest dated

historical ruins of the early Spanish missions; then, through archaeological evidence, we had already known the chronological sequence of the various ruins there, because of the kinds of pottery and other things that we find in them; so we would know that in carrying this back the next step in the ring series should be found in a certain group of ruins.

Work has been intensively carried on for the last couple of years, trying to fill the various gaps of this sort, until finally the entire ring series has been carried back from the present time to a date about 700 A. D., many centuries previous to the Spanish conquest. That is so accurate that we are able to tell the exact year in which any given beam was cut and presumably placed in the structure, and where there are a number of beams that can check that, we can say with absolute definiteness that the construction on this particular ruin was started in the year 346 A. D.

That is a very interesting point, I think, not only to archæologists, but to all laymen as well, because it has always been my experience in working on archæological sites that the very first question that is asked is, "How old is this ruin?" or, "How old are these people?" We have never been able to answer them with any degree of certainty. We could only say, "It is about 500 or 600 years old." But now, as far as these southwestern ruins are concerned, we can say exactly; and furthermore, there remains the possibility of expanding that dating by correlating the cultures of these ruins with other cultures that will spread out this series until we can carry it over a large part of America, and in this way date eventually the entire aboriginal occupation.

Mr. SUMMERS. Some question might arise as to what condition you find those beams in; or do you find beams there that date back to the period that you are referring to?

Doctor STIRLING. Yes; we find them even much earlier than that. On account of the arid climate in the southwest, vegetable materials are rather surprisingly well preserved. Even in the large open ruins, the rainfall is usually heavy while it falls, and it runs off of the surface. It does not penetrate very deeply; so that wooden beams that are buried in open sites like Pueblo Bonito have been excellently preserved. But perhaps the finest examples are those that are found in the dry caves of the region. The cliff dwellers, as you know, built in the shelter of wind-blown caves and the rock walls of these canyons of the southwest, and their materials of that sort are preserved with surprising freshness. Even such delicate things as feather robes, made out of the downy feathers of birds, that are many centuries old, look almost as fresh as on the day they were made. You remember, Doctor Wetmore, that robe that Earl Morris had. Did you identify the bird?

Doctor WETMORE. This feather robe was discovered by Earl Morris in northern New Mexico last summer, in a burial dating back to the basket-maker period.

Doctor STIRLING. Yes. It is a very old burial.

Doctor WETMORE. The robe is composed entirely of filaments taken from the feathers of the golden eagle, stripped off and woven into a strand, and then treated and made into a sort of robe. A tremendous number of birds were used in making this one covering, we do not know how many.

The golden eagle was held in high reverence by these people, apparently, and it would seem that this old medicine man had this covering made entirely from the feathers. The identification from the feathers is possible through an examination of the microscopic structure of the individual filaments.

Doctor STIRLING. That is just one instance of the sort of detail that one can get on account of the arid climate that we have in the Southwest.

Mr. WASON. How can you fix the date of these fine-feathered birds?

Doctor WETMORE. The date is not ascertained from the feathers, but from the other materials found in this particular location, from the pottery and from the implements and the site in which this particular man had been interred.

The site, as I recall, was in a cave, a covered crypt, so solid that no dust could enter into it. Everything was clean and bright. The feathers had been stained brown, in some way; they had apparently been dyed to give this color.

Doctor STIRLING. That, I think, explains this point that Doctor Abbot mentioned as being of particular interest, the fact that this year, for the first time, we have been able to finally complete this question of the date of these very historic archaeological ruins, a project which, I think, if it had been mentioned 15 years ago would have been laughed down as being utterly impossible, but which has now been demonstrated by any number of cross checks, so there is simply no question at all remaining about the validity of the system.

And not only does it enable us to date all of these Southwestern ruins, but it has also the possibility, as I said before, of being extended throughout the country.

Mr. WASON. From your research, are you able to state that the Southwestern portion of the country was the scene of the early settlement of our present domain?

Doctor STIRLING. No; not necessarily. It has furnished us the most abundant information, because of the peculiar climatic conditions that enable materials to be preserved, and therefore it is a logical region to work out in detail first.

Then comparisons can be made with other cultures, where the remains are more fragmentary.

It is still very much of a problem as to which section of the country was first settled, or where the oldest settlements are to be found.

The theory at this time, of course, is that the American Indian belongs to the same stock which is also the ancestral stock of the mongoloid peoples of Asia, and that they have trickled over into North America through long centuries, by way of Alaska and the Bering Straits, and then following the line of least resistance toward the south, have multiplied and expanded internally until both of the Americas had been populated before the sixteenth century.

But that had taken place a great many thousand years ago, and certain local centers of development took place, where characteristic cultures arose within America, and apparently entirely without any outside influence, such regions as Mexico and Peru and our Southwestern States being three conspicuous centers of that nature.

The anthropologist, in working either in archaeology or ethnology, generally fixed these so-called cultural centers as units on which to work. He will make studies of the civilizations of these various

cultural focal points and work them out and relate them, if possible, one with the other, both on account of the similarities that exist in their customs, the utensils that they used, the weapons they had, their clothing, and so forth.

Mr. SUMMERS. Do you find any archæological evidence in other parts of the United States going back to anything like the period of these Southwestern areas?

Doctor STIRLING. No. As yet, these Southwestern ruins are the only ruins in America of prehistoric times that we are able to date. We can surmise the age of certain others.

We know, for example, in digging into an archæological site in Florida, that if we find only evidences of native manufacture, implements of shell and stone and bone, and pottery of native type, it is a very safe assumption that that site was abandoned before the time of the Spanish conquest, which means it was abandoned before the sixteenth century. We have something to work on there in going to a site of that sort.

There are many sites in Florida in which we find evidences of Spanish manufacture. Perhaps these sites are mentioned by some of the early historians of that region, in the sixteenth or seventeenth centuries.

So, beginning with a site like that, of which we have a particular date, it may have been visited by DeSoto in the sixteenth century. We may know that definitely. Therefore we can tell what is the native pottery, the native type of decoration and implements we find in there associated also with objects of European manufacture.

Then we find another site, somewhere else, perhaps 20 miles away, in which there are no objects of European manufacture, but there are some objects on the upper layers of this mound or site, which are exactly similar to the native objects in this historic site. Then, digging below that, we will find a different type of decoration on the pottery, a different sort of pottery, with different methods, and we can assume there was a change that took place in there, that this sort of culture that was prevailing in this region at the time the Spaniards first came had superseded an earlier culture that preceded it. So that we might find still a third site, where we would find only the kind of artifacts found in that lower level, and we can assume that this one represents only that earliest period, and that is perhaps older, or at least of equal age, with the beginning of the second site.

You can see how those different areas can overlap one with the other, and we can gradually carry them all back.

We can make a rough approximation of the age of these sites by estimating how long it will take a certain accumulation of shells to accumulate, estimating the population of the region because of the depressions that mark the dwellings of the sites, and we can roughly estimate how many oysters and conks those individuals would eat, and what the rate of deposition of those discarded shells would be, and therefore, if we have a shell height of 40 feet, we can figure out roughly how long it required that 40 feet of oyster shell to be accumulated.

Mr. SUMMERS. There might have been an oyster house there.

Doctor STIRLING. There certainly were some oyster houses in Florida, although they were not very particular. They seemed to

eat almost any shell fish that came along, and I suppose any other kind of animal they could get their hands upon.

Mr. WASON. From your study up to the present time of this ancient subject, I take it you figure that the earliest settlement of primitive man was out in the Southwest.

Doctor STIRLING. No. Those are the earliest dates we can get. I do not believe any anthropologist at the present time would attempt to say in what region we have the oldest remains.

In the last year or two there have been some exceedingly interesting finds made, where artifacts of human manufacture, different from any made by the Indians of which we know anything, were found associated with the bones of extinct Pleistocene animals at Folsom, N. Mex., and some time ago a deposit of the bones of an extinct form of bison were found buried about 15 feet below the surface of the ground.

This bone deposit had been cut away by a little rim on the hillside, exposing the bone. In excavating these bones certain curious flint implements were found in immediate contact with the bones and in the same stratum in which they existed, and a great number of archaeologists, including Mr. Judd and Doctor Roberts, of the Smithsonian Institution, went down and examined this find, and they all reported that there could be no question but that these artifacts were in definite association with the bones.

What is evidently represented there is a single kill of these bison that had probably been eaten at this point, at least they had evidently been skinned, which fact was deduced from the fact that there were no bones of the tails of any of these animals in connection with the skeletons, which were complete in every other respect, and it was assumed that they were skinned, and the skins, together with the tails, carried away.

These implements differed from the ordinary flint knife or arrowhead that the Indians make in so much that each one had two longitudinal pieces running almost the entire length of the implement, knocked off on either side. They all had this characteristic, which is a characteristic that the Indians never used.

That opens up a very interesting question of the possibility of a pre-Indian people having lived in America either in late pre-Pleistocene times or else it brings us to the conclusion that the Pleistocene fauna existed in America up to much more recent times than the paleontologists have been willing to admit in the past.

At the present time there has been an apparently similar find made at the beginning of this winter season in Nebraska, and Doctor Strong, the anthropologist of the University of Nebraska, under this Smithsonian cooperative fund, is going to excavate this bone deposit this coming spring, when the weather permits, and we have great hopes that this is going to be a similar find, because the bones of the bison there belong to identically the same species as those in which the Folsom artifacts were found.

EXCAVATION OF DEPOSITS IN ALASKA

Mr. SUMMERS. Have you made any study of the very large number of animal skeletons being excavated down near bed rock, in Alaska?

Doctor STIRLING. I do not know that I know anything about them.

Mr. SUMMERS. Large quantities of those are being taken out by the dredges there.

Doctor WETMORE. Those deposits are of Pleistocene origin; they go back to the ice age. They consist of bones of animals of various kinds. With them there have been found some stones with peculiar rings around them that seem to indicate that they were made by man. That is not yet wholly certain, and that statement we are not prepared to fully substantiate. But there is that slight indication that man was present in Alaska and in New Mexico and also in Florida during the Pleistocene age or shortly thereafter.

Mr. SUMMERS. What is your explanation of those rock beds of skeletons that they find there?

Doctor WETMORE. There are two suppositions with regard to them, one that they represent old quicksand in which creeks became imbedded, and the other that they are eddies, that these various animals were destroyed through floods and washed down there and deposited in these eddy formations in the streams.

The fact that they are found at perhaps some elevation on the land does not necessarily bear out that explanation, since as we know these stream beds will wander about over the plains and are continually cut down below their present levels. So an ancient stream bed may be now fairly high up on the cliffs that bound a stream valley on either side.

Mr. SUMMERS. The ones I have in mind, I think, were in the neighborhood of 1,500 feet elevation above sea level and about 70 feet below the surface at bed rock.

Doctor ABBOT. You will recall, perhaps, Mr. Chairman, that in the Grand Canyon of Arizona we have found marine shells at a level of 6,000 feet at the present time, showing that the ocean was at one time up to that level, or at least those were at one time down to the level of the ocean.

Doctor WETMORE. There are similar formations not far from Washington, on the shores of Chesapeake Bay, particularly in Calvert County, Md. and near Nomini, Va. There are cliffs of clay in which we find the teeth of sharks and the fossilized bones of whales that were deposited during Niocene periods, which date back 6,000,000 years ago.

Since that time that land has been elevated above the sea, and now the water is cutting back into these cliffs and laying bare these ancient bones deposited there during that early period. It is possible to walk along the beach and find fragments that have washed out.

Mr. SUMMERS. Will you tell us how far back these Alaskan deposits you refer to go?

Doctor WETMORE. The Alaskan deposits are supposed to date back to the Pleistocene age. The Pleistocene age is the ice age, or the period that immediately precedes the one in which we are living. The close of the Pleistocene age has been variously estimated to be from 125,000 to 500,000 years ago. The authorities are in variance as to the exact time of termination.

Mr. SUMMERS. That is near enough for all practical purposes, so far as we are concerned.

Doctor ABBOT. Mr. Chairman, I call your attention to the presence with us of two of the regents of the Smithsonian Institution, Mr. Moore, of Virginia, and Mr. Luce of Massachusetts. It may

be that their convenience would be better served if we took up the item in which they are perhaps particularly interested, which is the one that would naturally come at the end. It is not in the book of estimates. There was a supplemental request we made of the Bureau of the Budget in relation to the salaries of the employees.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE

Mr. WASON. Before we go to that item, suppose we take up the item for the International Catalogue of Scientific Literature, for which you are asking \$7,885 for 1931. That is the same as the appropriation for the current year?

Doctor ABBOT. Under this appropriation the Smithsonian Institution conducts the Regional Bureau for the United States of the International Catalogue of Scientific Literature, which is a cooperative international organization for the publication of an international catalogue of the scientific literature of the world.

The appropriation requested, including the reappropriation of the 1929 unexpended balance, is the same as that for the current year.

Mr. WASON. The work is progressing satisfactorily along the same lines as heretofore?

Doctor ABBOT. We are still engaged in collecting information, but as has been reported to you for the last two or three hearings they have not succeeded as yet in reconstructing that international organization by which the work was published. We are working upon that, and we would like to have the appropriation continued, turning back to the Treasury so much as is not used. That has been the custom for the last two or three years.

ASTROPHYSICAL OBSERVATORY

Mr. WASON. The next item is for the Astrophysical Observatory, for which you are asking \$36,720 for 1931, the same as the appropriation for the current year.

Doctor ABBOT. There is no change there. The Astrophysical Observatory is engaged in the study of solar radiation, on which all forms of life on the earth depend.

Mr. WASON. And the work is going along satisfactorily?

Doctor ABBOT. I thought in relation to that item you would be interested to see the bearing that the work has. I have here some charts which show how variable the temperature of such a station as that at Bismarck in North Dakota may be. These lines [indicating on chart] indicate the results for 22 years, and these lines [indicating on chart] represent separate single year intervals. You can see how these temperatures run and what the variations were. On the whole, it was very cool in that particular year. But here [indicating on chart] was a year when it was very warm. Here is another year [indicating on chart] when on the whole it was very cool. By looking at that chart you can see what great fluctuations there are in the temperature.

If you take another station in the East, say Albany, N. Y., you can see how variable the rainfall is, and also the barometric pressure, and also the temperature.

The work of the Astrophysical Observatory for many years has consisted in making a series of observations of the intensity of the radiation of the sun, on which the temperature of the world, the rainfall, the life of everybody present, and the life of the trees and plants depends.

It is our purpose to continue this series of observations through a period of years so as to lay a fundamental groundwork with which we can compare such fluctuations as these which I have shown, and it is hoped that through such a comparison we shall be able to go far enough along to decide upon and forecast to some degree the sort of changes that will come about, which as you see are very marked and very important.

It is, of course, impossible to do this without laying such a basis of observation as I have spoken of, measuring from day to day the intensity of the radiation of the sun, on which all things depend.

For that purpose we carry on two astronomical stations, one at the top of Table Mountain in California, and another at the top of Mount Montezuma in Northern Chile.

We selected these regions because they are situated in places where the rainfall is exceedingly small and the cloudiness very slight, so that we have been able to observe at each of these stations during 80 per cent of the days of the year.

If we made measurements in Washington, for instance, there would not be more than 20 days in the year which would be suitable, whereas in these cloudless regions we have from 275 to 300 days of the year in which the atmospheric conditions are very suitable for this work.

So we are carrying on this continual series of measurements of the radiation of the sun and have been doing so almost daily for the past 10 years, and we hope to keep up this series of measurements for ten years yet to come, so by that means we shall have this sound fundamental basis of comparison with the climatic conditions of the different stations, and it may be that that will enable us to forecast in a very useful way not only for agriculture but for nearly every other kind of art and science, where predictions of weather conditions for some time in advance are of importance. That is the kind of work which the Astrophysical Observatory is doing.

The appropriation estimated for by the Bureau of the Budget for 1931 is the same as the appropriation for the current year.

Mr. SUMMERS. Are those men still living up there in those stations alone?

Doctor ABBOT. Yes, sir. We have to exchange observers about every three years. We find that is about the limit of human endurance.

To send them down into a desert where they see scarcely anybody and live on top of a mountain where the sun shines upon them day after day, far away from their homes, is a pretty trying thing, and at the end of 3-year intervals we have to exchange observers. That, of course, makes some expense, but it is not possible for human endurance to keep on with these steady, daily operations much more than three years at a time.

FURNITURE AND FIXTURES, NATIONAL MUSEUM

Mr. WASON. Your next item is for furniture and fixtures, for the National Museum, for which you are asking \$33,240 for 1931, the same as the appropriation for the current year.

Doctor WETMORE. This appropriation provides for cases, furniture, fixtures and appliances, including pasteboard boxes, trays, glass jars and vials, and other similar things needed in the care and preservation of national collections, which are now estimated at over 12,000,000 specimens.

Mr. WASON. This provides for your file cases, fixtures, and appliances.

Doctor WETMORE. The item for furniture and fixtures carries the same estimate as the amount of the current appropriation.

Mr. WASON. Can you get along with that amount?

Doctor WETMORE. Yes, sir.

HEATING AND LIGHTING, NATIONAL MUSEUM

Mr. WASON. Your next item is for heating, lighting, electrical, telegraphic, and telephonic service, and traveling expenses, for which you are asking \$92,160 for 1931. That is an increase of \$2,000 over the appropriation for the current year.

Doctor WETMORE. This appropriation provides for the heating, lighting, electrical, telegraphic, and telephonic service for the Museum. The amount requested is the same as that granted by Congress for the current year, with the addition of \$2,000 for the purchase of an electrically driven fire pump in the Natural History Building. This is recommended by the fire marshall as a precaution in case of need since water pressure on the third floor and attic of this building is frequently not sufficient for use in fire hose. The pump in question is a necessary precaution.

The item for heating and lighting for the National Museum includes the operation of the plant that supplies heat and light for all the buildings in the Smithsonian unit.

Under our existing operation our heating plant is closed down for the summer months, as it is not required that it be operated at that time. During the winter, when the plant is in operation, we have a steam-driven pump that gives fire protection in the two upper stories of the Natural History Building. In the summer time with the steam plant closed that protection is not available. The building is so high that the water pressure at times is low in the third and fourth stories, so it is the recommendation of the fire marshal that an electrical pump be provided to give fire protection during the summer period. It is simply a matter of precaution, and is something we should have.

Mr. WASON. You would like to have it there in case you need it.

Doctor WETMORE. In case of need; yes, sir.

PRESERVATION OF COLLECTIONS

Mr. WASON. For continuing preservation, exhibition, and increase of collections from the surveying and exploring expeditions of the Government and from other sources, including necessary employees, travel, purchasing, and supplying uniforms to guards and elevator

conductors, and all other necessary expenses, and not exceeding \$5,500 for preparation of manuscripts, drawings, and illustrations for publications, you are asking \$582,993 for 1931, which is an increase of \$12,909 over the appropriation for the current year.

Doctor WETMORE. This is the main appropriation for the maintenance of the National Museum and covers all expenses not specifically appropriated for otherwise. It includes the main salary roll for the scientific staff and guards, as well as the labor and char force. Under it, therefore, there is covered the work of identifying, classifying, and exhibiting the national collections, the preparation of books and memoirs presenting the results of study of the collections, expenses in connection with new additions to the collections, and the cost of maintaining the extensive public exhibits of the Museum.

ADDITIONAL EMPLOYEES

The entire amount of the increase requested of \$12,909 is allocated for the salary roll to cover four additional employees, and certain readjustments on the rolls due to reallocations of positions.

The first of the employees to be added is one special executive officer C. A. F. 14 at \$6,500 per annum to assist in handling the steadily increasing administrative routine. To 1928 the heads of the administrative staff for the Smithsonian consisted of the secretary, two assistant secretaries, and one administrative assistant. With the death in that year of the secretary one of the assistant secretaries was appointed as the new secretary, leaving only three persons for the work formerly performed by four. Another highly competent man is required for the proper handling of the necessary administration of the institution.

One senior stenographer C. A. F. at \$1,620 is required for service in the museum library. The work of this unit is important and requires the indicated additional assistance as at present it is falling in arrears.

Two additional guards (watchman) Cu-3 at \$1,200, a total of \$2,400 are demanded for service in the museum buildings where the guard force is at present undermanned. Not only are there insufficient men for the work required but at present it is possible to allow our regular men only two days absence per month to compensate for Sunday and holiday service throughout the month.

Reallocations in positions through the Personnel Classification Board have brought an increase of \$2,420 to the regular salary rolls.

The total of the above is \$12,940 so that there has been required a decrease of \$31 in other items to make the \$12,909 indicated.

This appropriation is the principal one under which the National Museum is operated. It carries the salary rolls for the staff and provides for the general care and upkeep of the collections. The estimate for 1931 carries an increase of \$12,909, which is an increase that was allowed by the Bureau of the Budget over the appropriation for the current year. The increase is entirely on the salary rolls.

There are provided four new positions. The first is that of an executive officer, an administrative officer, at \$6,500 per annum.

Our administrative work is increasing and we feel the need of another person, a competent man to share some of the responsible routine administrative work that is required.

The matter was examined carefully by investigators from the Bureau of the Budget and this allowance for increase for this additional position was made.

Mr. WASON. And you think that ought to be allowed?

Doctor WETMORE. I feel that it is essential and quite necessary. Another new position, one senior stenographer, CAF 3 at \$1,620, is a person to be placed in the library for assistance in the work of the librarian.

The Bureau of the Budget again has examined into the existing personnel situation in our library and has approved the inclusion of two additional places, one under this appropriation and one under the first appropriation for salaries and expenses for the Smithsonian Institution. The employee provided here is to serve as a stenographic assistant to the librarian, who now has no such help.

ADDITIONAL GUARDS

The other two positions are two guards at \$1,200 per year each. In our present situation we are undermanned on the guard force. We require our men to work Sunday afternoons and on the afternoons of most holidays. In lieu of that service we are able to give only approximately two days per month off, and it is not fair to the men, and is a situation that should not continue.

The two additional positions here included will not entirely alleviate that condition, but will help it somewhat.

Furthermore, we do not have enough guard assistance to handle our visitors and care for the buildings as they should be cared for. These two additional positions are designed to help in that.

Mr. WOODRUM. Are the employees of the Smithsonian under the civil service?

Doctor WETMORE. Yes, sir.

Mr. WOODRUM. All of them?

Doctor WETMORE. With the exception of a few in the secretary's office, the secretary, the chief clerk, and the editor. All the others are under the civil service.

Mr. SUMMERS. As I understand it, you do not have enough guards to permit them to have Sundays or the equivalent off?

Doctor WETMORE. That is true.

Mr. SUMMERS. They have to work half of Sundays.

Doctor WETMORE. On the average they get only two days off per month in lieu of that service.

Mr. WOODRUM. They work every Sunday afternoon and the afternoons of holidays?

Doctor WETMORE. With regard to holidays, for the last three years we have closed all Christmas Day and New Year's Day. The number of visitors coming to the halls on those days was so small that it did not seem legitimate to hold our people there to keep the buildings open.

Mr. SUMMERS. Taking a month of 30 days, how many days do these guards work?

Doctor WETMORE. Twenty-eight days.

Mr. SUMMERS. Twenty-eight days out of 30?

Doctor WETMORE. Yes, sir.

Mr. SUMMERS. How many hours a day?

Doctor WETMORE. Eight hours. The watch force is divide into three watches of eight hours each, and the men stay on duty until they are relieved by those who follow.

Mr. SUMMERS. They actually work for eight hours and not seven or seven and a half hours.

Doctor WETMORE. They are actually on duty for eight hours.

Mr. SUMMERS. I do not know of any reason why those guards should be required to work on Sundays and to work a full eight hours per day when literally thousands of others are working seven and a half hours or seven hours, and never working on Sundays or holidays. How many people would be required in order to give them all their Sundays off, or the equivalent?

Doctor WETMORE. It would take 10 additional men beyond these 2 I am including in the estimates to change that condition.

Mr. SUMMERS. At what salary?

Doctor WETMORE. At \$1,200 each per annum. This question was argued before the Bureau of the Budget, with the result that the two new men included were allowed for the next fiscal year.

Mr. WOODRUM. How many did you ask for?

Doctor WETMORE. In the estimates I submitted to the Budget a 3-year program that called for an addition of eight men each year for three years. This, when consummated, would allow the giving to all of leave for Sundays and holidays, and would also increase the guard force to the number we properly require for properly guarding our collection. There would be a total addition of 24 new positions in three years.

Mr. WOODRUM. Then, you asked for eight men this year instead of two.

Doctor WETMORE. Yes, sir; for 8 men this year; 8 more were proposed for 1932, and another 8 for 1933.

Mr. SUMMERS. Eight men would not give them Sundays off at the present time.

Doctor WETMORE. No, sir; it would not.

Mr. WOODRUM. You could not give Sundays off and you could not give the equivalent.

Doctor WETMORE. That is true.

Last year Representative Newton, then a member of Congress, introduced a bill providing for leave in lieu of holiday and Sunday services. At that time I had the matter figured up for our own force and found that it would require 12 additional men to put its provisions into effect, as regards the National Museum.

SALARY REALLOCATIONS

There is one further item of increase on the salary roll, and that is \$2,420 due to reallocations made during the past year by the Personnel Classification Board. Those reallocations are now in force without proper appropriations to carry them, and need to be provided for in the appropriation for 1931. The figures I have given you total \$12,940, but to bring that sum within the total allowed in the estimates, it has been necessary to make a decrease of \$31 on other items, so that the actual increase here requested is \$12,909.

CARE AND INCREASE OF COLLECTIONS OF MUSEUM

Before passing from this item, if I may take a moment, I may say that this is the principal appropriation dealing with the care and increase of the collections of the National Museum. We are receiving large numbers of highly valuable specimens, as examples of which I have brought with me for display a very few of the striking things that have come in with the idea that this committee might be interested to view them briefly.

Our work in the National Museum is, of course, planned directly for the increase of human knowledge, and we do not claim for it direct economic application. Nevertheless, ultimately all of the new facts that we discover are applied economically. For example, the shells in this bottle are rather ordinary looking, but they are of considerable importance in relation to human life. This last summer Dr. Paul Bartsch, of the museum staff, made an expedition from Porto Rico clear down through the Lesser Antilles, collecting mollusks of various kinds. He obtained 200,000 specimens, among them these that are shown here. This species of mollusk which lives in water is the secondary host of a parasitic blood fluke that produces a disease in man that is often fatal. The young of the blood fluke leave these shells when developed and live in the water where they are taken into the blood through drinking water or through bathing. Doctor Bartsch found these mollusks from Porto Rico clear down to Trinidad, so that the disease caused by the flukes may occur all through that region. It was found that the shells live in alkaline water in limestone regions. Changing the water from alkaline to slightly acid with a little copper sulphate exterminates the mollusks and so exterminates the parasite, thus eliminating the disease. Water so treated can be used safely for drinking purposes. I simply give this to you as an example of some studies that are apparently purely scientific in their nature, without direct relation to economic purpose, but which are, at the same time, of highly practical value.

REPAIRS AND ALTERATIONS OF BUILDINGS, ETC.

Mr. WASON. The next item is:

For repairs and alterations of buildings, shops, and sheds, including approaches and all necessary labor and material, \$53,080.

Your current appropriation for this purpose is \$21,080.

Doctor WETMORE. This appropriation covers all repairs and alterations to roofs, walls, ceilings, floors, and windows of the Museum buildings, comprising the natural history building, the arts and industries building, the aircraft building, the south shed, and such portions of the Smithsonian building as are used by the Museum.

The estimates for 1931 are \$32,000 more than the appropriation for 1930.

STORAGE GALLERY IN MAMMAL HALL

The first item in this increase is the sum of \$25,000 for a gallery in the mammal hall to provide additional storage for the study collections.

Prior to 1917 the study collections of mammals of the United States National Museum were on the ground floor in the north and west ranges in the natural history buildings, adjacent to the offices

of the division of mammals. During the World War these halls were requisitioned for war activities, necessitating the removal of the collections to two large halls previously used for public exhibits on the second floor. In the time that has intervened the collections in question, which now comprise more than 200,000 specimens, have shown so much growth that they are expanded to a point where they can not be accommodated in the floor area on the ground floor, except by construction of an overhead gallery which will give the floor space needed.

At the present time the storage cases of mammals on the second floor occupy 13,500 square feet, while the floor area of the ranges on the ground floor is only 9,950 square feet. In addition, at the present time the cases are stacked so high that the upper rows are accessible only with considerable difficulty.

The space occupied now on the second floor is highly valuable for public exhibition and should be released for that purpose. In addition, the cases should be placed adjacent to the offices concerned with their study, since under the present arrangement, whereby the collections are two stories above, the work of that division is considerably hampered.

The figures for expense is based upon the cost of a similar gallery built two years ago.

FIREPROOFING OF INTERIOR OF AIRCRAFT BUILDING

For fireproofing the interior of the aircraft building \$7,000 is necessary.

The historically important collections of aircraft, including the round-the-world flyer *Chicago*, the first transcontinental nonstop machine, the Pan American good-will flyer *San Francisco*, to mention only a few, are now in a shed the interior of which is finished only in building board, subject to easy destruction by fire at any time. The interior finishing should be replaced by an asbestos preparation. The cost of rendering the inside of this structure sufficiently fireproof for safety is estimated at \$8,000, of which \$1,000 will be provided by absorption in the current appropriation.

The matter has been gone into with great care by the investigators of the Bureau of the Budget and has resulted in the inclusion of this item in our estimates.

This building is of sheet-iron construction, with a cement floor, built during the war as a laboratory for experimental work on aircraft. At the close of the war it was turned over to us for use in the exhibition of airplanes and similar things. It is finished inside with a paper building board, which is something like pasteboard in its composition. We have the building wired, but are afraid to use electricity in it because of the great danger from fire. The collection of aircraft housed in this building is historically important. It includes such planes as the round-the-world flyer *Chicago*, the first transcontinental nonstop machine, and the Pan American good-will flyer that made the trip through the Latin American Republics some time ago. Those machines, among other aircraft and accessories of a similar kind, are kept there. Those four are of great interest to the public. We believe that that collection should be more carefully housed. There is a serious danger of fire at any time, and we are

asking for \$7,000 to replace this building-board material with an asbestos board that will be fireproof and give the desired results.

Mr. WASON. Will there be sufficient space there to store any other interesting inventions without constructing another building? In other words, what you have provided for in this estimate will serve the purpose you have in mind, will it not?

Doctor WETMORE. This item will cover what we have in mind. This building is not a permanent building, but it is one that will meet the present purposes for years to come. It is a fire hazard and menace at the present time and should be put in a better condition.

Mr. WASON. Will there be any additional space provided to store any new inventions?

Doctor WETMORE. No, sir; it is full now. The walls at present are covered with a sort of cardboard material, and we want to replace that with asbestos board.

Mr. WASON. And that will cost how much?

Doctor WETMORE. Our estimate of the cost of it is \$8,000, and we are asking an increase of \$7,000 with the idea that the additional \$1,000 will be supplied by a retrenchment in other items in the regular appropriation.

Mr. WASON. You think you can make the building fireproof on the inside?

Doctor WETMORE. Yes, sir.

Mr. WASON. It is not fireproof on the outside?

Doctor WETMORE. Yes, sir; it is. The building is built of corrugated metal and has a cement floor.

Mr. WASON. Then it would be fireproof.

Doctor WETMORE. Yes, sir.

Mr. SUMMERS. That work is included in this estimate.

You will note in connection with this item that there is one word added in the wording of the act. That is the word "approaches." This word has been inserted because of the necessity of repairing certain service roadways and entrances about the buildings, which come under one jurisdiction. We were asked to have this word included by the comptroller's office, so that such matters may be properly handled.

PURCHASE OF BOOKS, PAMPHLETS, ETC.

Mr. WASON. The next item is for the purchase of books, pamphlets, and periodicals for reference, \$3,000. Your current appropriation for this purpose is \$2,000.

Doctor WETMORE. This fund allows the purchase of necessary books and periodicals for use in the naming of the national collections and the scientific work of the organization in general. The fund is of great importance to our work and the full amount indicated is required.

The new scientific books necessary annually for the work of the National Museum have steadily increased in number with an addition of considerable in cost; in some cases this latter has amounted to 100 per cent. The additional sum is urgently needed and will care for part of our essential requirements.

The increase of \$1,000 is essential to the progress of our work. We obtain many books and periodicals through exchange. There

are many others, however, which must be purchased. The current appropriation of \$2,000 is below our needs.

Mr. WASON. This will take care of your needs fairly well.

Doctor WETMORE. Yes, sir.

POSTAGE STAMPS AND FOREIGN POSTAL CARDS

Mr. WASON. For postage stamps and foreign postal cards, your estimate is \$450, which is the amount of the current appropriation.

Doctor WETMORE. There is no change in that item. This fund covers the cost of postage to foreign countries where the Government frank will not carry. The full amount is required for the transaction of our necessary foreign correspondence. The amount requested for 1931 is the same as the current appropriation.

NATIONAL GALLERY OF ART

UNIFORMS FOR GUARDS

Mr. WASON. I think you have explained this new language for uniforms for guards, on page 161. That is in connection with the estimate of \$44,653 for 1931:

For the administration of the National Gallery of Art by the Smithsonian Institution, including compensation of necessary employees, purchase of books of reference and periodicals, traveling expenses, uniforms for guards, and other necessary incidental expenses.

Mr. DORSEY. Some of the guards of the Freer Gallery of Art are paid from the National Gallery roll, and there is no authority in the act to furnish them uniforms. This language is requested so as to make it uniform.

Mr. WASON. Does that account for the increase?

Mr. DORSEY. No.

Doctor ABBOT. Are you speaking of the National Gallery of Art?

Mr. WASON. Yes.

Doctor ABBOT. The National Gallery of Art, which is the legal custodian of all objects of art belonging to the Government, is administered by the Smithsonian Institution. At present the gallery which contains art works valued at many hundreds of thousands of dollars is, pending the erection of a separate building, housed temporarily in the Natural History Building of the National Museum.

INCREASE IN ESTIMATE ALLOCATIONS FOR FREER ART GALLERY

The increase of \$9,800 is to cover items for the Freer Gallery, a unit of the National Gallery of Art, as follows:

Increase in force:

1 principal stenographer C. A. F. 4.....	\$1,980	
1 administrative assistant C. A. F. 8.....	3,000	
1 senior mechanic CU 7.....	1,860	
		\$6,840

The three employees above indicated are required for the work of the Freer Gallery. The first will serve as an assistant in labeling and cataloguing; the second as superintendent of building; and the third as cabinetmaker and carpenter for work in the shop in preparing cases and other similar work necessary in the installation of exhibits.

Miscellaneous supplies and materials:

Mechanical, engineers' and electricians' supplies.....	\$150	
Lumber and wood products.....	500	
Paints and painters' materials.....	250	
Miscellaneous educational and other supplies.....	500	
Special and miscellaneous services.....	1,560	
		\$2,960
Total.....		9,800

The current appropriation for the National Gallery of Art is \$34,853, and the Budget estimate for 1931 is \$44,653, an increase of \$9,800. This increase was made necessary by the study which has been made of the Freer bequests. Mr. Freer, of Detroit, as you will recall, gave to the Smithsonian Institution for the public his great collection of oriental art and built a building for it. Under his will he stipulated that the upkeep and the custodial service in connection with the great collection which he gave for the use of the public should be paid by the National Government. It was stipulated that in the event of any emergency income from the Freer endowment might be used for these purposes, but not otherwise. Now, the legal committee of the Board of Regents of the Smithsonian Institution, composed of Mr. Hughes, as chairman, Senator Robinson, and Mr. Moore, have examined the will and all the papers relating thereto, and determined that we had been carrying on the income from the Freer fund certain expenses which under the terms of Mr. Freer's will ought not to have been carried there, and that ought not to be carried there except in an emergency. This committee has held that properly these expenses should be carried by the National Government. This was brought to the attention of the Bureau of the Budget, and this additional sum of \$9,800 was allowed by the Budget Bureau to pay the salaries of employees and to purchase the necessary supplies, all of which are now being paid for from the income of the Freer fund. This includes three employees, with total salaries of \$6,840, and an item of \$2,960 for materials and supplies. That is the reason for that increase.

Mr. WASON. You say that some lawyers have held that that expense should not come out of the Freer estate?

Doctor ABBOT. Judge Hughes, of New York, formerly Secretary of State, is the chairman of the committee, and Senator Robinson and Mr. Moore are the other members. They are members of the Board of Regents of the Smithsonian Institution.

Mr. MOORE. Primarily, the examination was made by Judge Hughes. There was a conference in which Senator Robinson and I participated, and all of us agreed that the will must be construed as placing this expense on the Government, rather than upon the Freer fund. The opinion, which is a quite elaborate one, was prepared by Judge Hughes. We would have been glad to have reached the opposite conclusion, because the funds were ample to take care of this expense, but the terms of the will were such that we found it impossible to do that.

Mr. WASON. I think this committee will not question the ability of the three gentlemen who participated.

Mr. MOORE. As I said, Judge Hughes prepared the opinion.

Mr. WASON. I still insist that my remarks shall go into the record.

EXHIBITION, ETC., IN NEW YORK OF THE GELLATLY ART COLLECTION

Doctor ABBOT. Another new item under the National Gallery of Art was inserted this year, of \$20,000. Mr. John Gellatly, of New York, has been making for 50 years a collection of paintings of American artists, of jewelry and other objects, valued in total at several million dollars. Last June he presented this entire collection to the Smithsonian Institution for eventual exhibition in the National Gallery of Art, stipulating, however, that it should remain in the Heckscher Building in New York City until the expiration of the lease which he has on the quarters it now occupies there. The cost of the lease, the cost of the curator, and the cost of the lighting and proper janitor service for the building, amounting to eighteen or twenty thousand dollars a year, was necessarily taken on in accepting this very great and valuable collection for the public, and this item has been allowed by the Budget to cover that item of expense in connection with this Gellatly collection.

By the terms of the deed of gift of the Gellatly art collection the value of which is estimated at several million dollars, the collection is to remain and be maintained by the Nation in New York City, under its present curator, for a period of four years. The yearly expense is estimated as follows:

Lease of gallery in Heckscher Building.....	\$11, 000
Pay of curator.....	5, 000
Repairs, upkeep, travel, and miscellaneous expenses.....	4, 000
	20, 000

By congressional joint resolution approved June 5, 1929, the institution was authorized to include in its annual estimates an item for such amount as may be necessary for the preservation and maintenance of this collection.

Mr. SUMMERS. How long does that lease run?

Doctor ABBOT. About four years. It is not quite four now; it is approximately that.

Mr. LUCE. Perhaps, Mr. Chairman, I should put in the record, on behalf of the Committee on the Library, from which the bill authorizing this acceptance came, that we perfectly understood that the collection was to remain in New York during this term, and that the gift was accepted with that expectation in mind, and with the understanding in mind that the collection would have to stay in New York for that term.

Mr. MOORE. That was a condition of the gift.

Mr. LUCE. It was a condition of the gift, and it happened to be, from our point of view, not an unwise situation, because at the moment we understand that they have no place to put the collection, and it is the hope that by the time the collection can be transferred here there will be suitable quarters for its housing.

Mr. DORSEY. The Bureau of the Budget has already forwarded to Congress an item in the urgent deficiency bill to take care of this rental up to next July—a similar item to this.

Mr. WASON. So all you ask for is an amount to cover the next fiscal year?

Mr. DORSEY. The fiscal year beginning next July.

Mr. SUMMERS. Before we leave that Freer Gallery entirely, I would like to have an answer to my question about guards and uniforms in the Freer Art Gallery.

MAINTENANCE AND GUARDING OF FREER ART GALLERY

Doctor WETMORE. Mr. Chairman, the question of the responsibility of the Government for the maintenance of the Freer Gallery has been up before. The stipulation was that the collection should be guarded and cared for at governmental expense. It developed a few years ago that further guards were necessary for the maintenance of the Freer building. These were then provided in the appropriation for the National Gallery of Art, and this matter of responsibility on the part of the Government was explained at that time. Since then, through the examination of the Freer deed of gift, it has developed that further additions to governmental responsibility and upkeep are necessary. The latter is anew item that is contained here. The guards are already provided in the previous appropriations.

PRINTING AND BINDING

Mr. WASON. The next item is for printing and binding, \$99,000.

Mr. DORSEY. Mr. Chairman, the appropriation for the current year is \$95,000, and the Budget has forwarded to Congress an item of \$99,000 for 1931, an increase of \$4,000. That was put in as a supplemental estimate which was allowed by the Bureau of the Budget, and was to provide for the publication of volume 5 of the Annals of the Astrophysical Observatory, of which Doctor Abbot is the director. These are printed at irregular intervals as the results of the work accumulate and to make them known. We have constantly received requests from specialists around the country for the results of the work of the observatory, which require a great amount of trouble to furnish; and it is to bring the work up to date that they propose to publish the later results of the work, which will be volume 5. The manuscript now is nearly complete, and this increase is to provide for that.

The last volume was published in 1922.

Doctor ABBOT. This appropriation provides for the printing of the Smithsonian Annual Reports; the Bulletins, Proceedings, and Reports of the National Museum; the Bulletins and Reports of the Bureau of American Ethnology, and for miscellaneous printing and binding; also the report of the American Historical Association.

These Annals of the Astrophysical Observatory, containing the results of the researches carried on under the observatory, are published at intervals of from five to seven years. This is the only observatory in the world that is making a daily record of solar radiation, and the contents of these volumes are of great importance to meteorologists and others. The manuscript for Volume V, containing the results of observations made since the 1922 publication is now ready for the printer. The observatory is called on frequently for data relating to these researches, which will be made available in this volume.

Mr. WASON. I know that I can say for the committee that we are glad to have the two regents or directors here, and we would like to hear from the gentleman from Virginia for about three minutes.

SALARY INCREASES FOR EMPLOYEES

Mr. MOORE. Mr. Chairman, I will not take more than three minutes, so far as I am concerned.

There is just one matter that Representative Luce and I would be very glad for the committee to consider, and that is a proposed small increase toward the payment of the salaries of the employees of the institution.

I requested to be prepared, and I have here, a memorandum which I will read into the record, which states the case very briefly, but I think very clearly.

The average of the salaries of the employees of the Institution is third from the lowest among 35 Government departments and establishments, as shown on page A-130 of the Budget, and many of the employees who have satisfactory efficiency ratings are still paid below the average of the salary of their respective grades, notwithstanding the changes effected by the Welch Act. The relief granted by the Appropriations Committee in 1927 and 1928 by appropriating funds for one step-up of qualified employees at that time had a marked effect on the morale of the service, and it is deemed highly important and hardly more than justice that one step-up be provided for in the appropriations for 1931, which will bring the majority of the employees up to the average salary of their respective grades. This would entail the following increases in the several appropriations above the figure in the Budget as submitted to Congress:

Itemization of amounts of proposed salary step-ups over Budget estimates

Salaries and expenses, 1 rate step-up for 7 employees.....	\$460
International exchanges, 1 rate step-up for 5 employees.....	353
American ethnology, 1 rate step-up for 9 employees.....	1,480
International Catalogue of Scientific Literature, 1 rate step-up for 3 employees.....	260
Astrophysical observatory, 1 rate step-up for 9 employees.....	840
National Museum:	
Furniture and fixtures, 1 rate step-up for 7 employees.....	500
Heating and lighting, 1 rate step-up for 15 employees.....	960
Preservation of collections, 1 rate step-up for 107 employees.....	10,055
Building repairs, 1 rate step-up for 6 employees.....	360
National Gallery of Art, 1 rate step-up for 3 employees.....	220
Total, 1 rate step-up for 171 employees.....	15,488

The total number of employees who would get the benefit of the one rate step-up, if it should be allowed, is 171, and the total increase would be \$15,488.

Doctor Wetmore and Doctor Abbot, of course, may amplify this statement if it is desired.

Mr. WOODRUM. That would be one step-up according to the classification act?

Mr. MOORE. Yes.

Doctor WETMORE. It will include one step-up for those persons with the proper efficiency rating who are eligible under the provision that does not permit promotion of the average in a given service above the average of the grade. We have a few cases in which the compensations under the various appropriations are now at the average, but not many.

Mr. WASON. How many persons would be affected by this proposition?

Doctor WETMORE. 171, sir.

Mr. WASON. And it would cost how much?

Mr. DORSEY. \$15,488, Mr. Chairman.

Mr. WOODRUM. What are the average increases per employee? Have you any idea of that, Doctor?

Doctor WETMORE. In the lower grades the increase will be \$60 per annum; in the intermediate grades, \$100; and there are a few—not many—who would receive \$200. The latter include a few men on the scientific staff.

Mr. WOODRUM. None would receive greater increases than \$200?

Doctor WETMORE. There is one instance only in which the increase would be \$500. The great majority of our people are in the lower grades. There are a few P-5 positions concerned that will receive \$200, and one P-7 who would receive \$500. Of the total of 171, approximately 150 would get either \$100 or \$60.

Mr. WOODRUM. Are these 171 employees people who would have been entitled to this step-up under the terms of the Welch Act, had you had sufficient appropriation?

Doctor WETMORE. This does not consider the Welch Act, sir. This deals only with the reclassification act.

Mr. WOODRUM. The Welch Act dealt with the reclassification act, too. It provided certain increases for employees. Now, did your employees get the increases that the Welch Act provided?

Doctor WETMORE. Yes, sir; they did.

Mr. WOODRUM. This gives them an additional increase?

Doctor WETMORE. This gives them an increase in addition. The situation is this: The available appropriations are such that the greater part of the money involved is included on the salary rolls. We do not have sufficient surplus above the total demanded by the current salary rolls to give these promotions except through special provision. We are not able to take funds from those necessary for the current operations of the institution to make these step-ups.

The appropriation "Preservation of Collections for the National Museum" for the current year carries \$570,084. The salary roll under that appropriation totals \$549,549, leaving a surplus of only a little over \$20,000 that can be applied to the work of the organization. Under those circumstances it is not practicable to allocate from the funds available above the salary roll for these step-ups.

SALARIES OF GUARDS

Mr. WOODRUM. If this increase were granted, how much of that would go, for instance, to your guards who now get \$100 a month? Would they get a step up on that?

Doctor WETMORE. Some of them would.

Mr. WOODRUM. According to their efficiency ratings?

Doctor WETMORE. According to their efficiency ratings. The guard force is low paid; far lower than it should be, in my estimation. Those men enter at \$1,200. That is not a living wage. I have been promoting them perhaps at the expense of some of the grades a

little better paid, until I have them now near the average. The older men of the guard force are getting \$1,380.

Mr. WOODRUM. What is the average pay for guards in other departments of the Government? It is more than \$1,200, is it not?

Mr. JOHNSON of Washington. I think so; up to \$1,440 in some cases.

Doctor WETMORE. I am not certain on that point.

Our situation with respect to guards, I think, is somewhat different from that in the ordinary building. Our men are charged with the care of immensely valuable collections. We estimate that the collections in the National Museum now are worth \$120,000,000. If this committee were to give me \$400,000,000, I could not duplicate them, because they include so many unique specimens that are now no longer obtainable; in other words, things that are not available by purchase or obtainable in any other way. Our guards are concerned with the custody and the guarding of all these things. I have never felt that the salary of \$1,200 to \$1,380 was sufficient recompense for that service.

Mr. WOODRUM. Take, for instance, your stenographic service. Under your present schedule of salary rates, are they being paid about what stenographers in other governmental departments are being paid?

Doctor WETMORE. I do not think so, sir. The majority of them are below the average of their grade.

Mr. WOODRUM. Is not that true in nearly all of the governmental departments?

Doctor WETMORE. Yes.

Doctor ABBOT. If I may answer, Mr. Chairman, of 35 Government services in the District of Columbia, our average rate is third from the bottom; so you can see that the large proportion of employees being in these lower grades of which you have been speaking, the average salary paid must be below the average in the rest of the services in the Government.

Mr. WOODRUM. The reason I am asking these questions is not because I am out of sympathy with paying a reasonable wage to employees, because that has been my fight. But you can appreciate and my colleagues can appreciate, the question that is going to be raised when you undertake to make an increase of \$15,000 in the salaries of the employees of one department when it is not given to others.

Mr. ALLEN. Can you tell us the two that are lower in the scale?

Mr. DORSEY. One is the Public Buildings and Grounds, which employs a great number of laborers, and the other is, I think, one of the services that has to do with the national cemeteries, or something of that sort. Both of them are departments that employ a great deal of labor. That, I presume, brings them below us.

Mr. WOODRUM. When you speak of your average being lower than these other departments—taking a particular group, for instance; we will say your stenographic group—do you mean by that that they are thirty-third in the list below the average salary paid the same group in other governmental departments?

Mr. DORSEY. We send this table, Mr. Woodrum, to the Budget every year. We take the whole salaries from top to bottom—every department does—with the numbers and the pay and all, and they

are all averaged in one big average. That is the way it is arrived at—the comparison of the different groups—and this table of the Budget is simply the average of the total salaries of the Smithsonian Institution and each department of the Government.

Mr. WOODRUM. Will that sort of computation give you just such a statement? You would ordinarily infer from this statement that you are thirty-third on the list. It would convey to my mind that your employees, in their several capacities, are being paid below what similar employees in other departments are being paid.

Mr. DORSEY. I think that is true, sir.

Mr. WOODRUM. Do you think that statement reflects that?

Mr. DORSEY. I think so; yes, sir. That is due to the fact that our employees at the time the reclassification act went into effect were receiving such low salaries that they did not get as much benefit from the reclassification act as the employees of other departments who were then receiving higher rates of pay. That is the basic cause of this.

Mr. WASON. Do you happen to know what the average pay of the grade of stenographic work is in other departments?

Doctor WETMORE. Mr. Chairman, grade CAF-4 in our service includes 21 persons. The average salary paid is \$1,891.

Mr. WOODRUM. What is it in the Veterans' Bureau?

Doctor WETMORE. In the Veterans' Bureau that same salary average is \$1,950.

Mr. WASON. And are those stenographers?

Doctor WETMORE. Yes, sir.

Mr. WASON. And what are they in some other departments?

Mr. WOODRUM. They run along in the nineteen hundreds.

Mr. DORSEY. I think you will find, Mr. Chairman, if you go through it, that the average amount is below for almost all the grades.

Mr. WASON. I think it would be better for you to prepare your case under our instructions and make it comparable for the grade of stenographer and let us know what they do in the different departments.

Doctor ABBOT. We will be very happy to do that, Mr. Chairman.

Mr. WASON. I have no hesitancy in saying to you that I have understood for a number of years that the stenographers and some other employees in the institution are lower paid than in other activities of the Government here in Washington. But you men have not been quite able to demonstrate it, or have neglected to do it, so that we can render a verdict on it. Now, there is a way of reaching averages. It is easy enough for you to take your stenographers and your watchmen in certain grades and find comparable work in the other departments. Do you not think so, Mr. Luce and Mr. Moore?

Mr. LUCE. I think so, in the lower grades. Whether it can be done in the technical grades, I am not so certain.

Mr. WASON. Our committee, I know, will endeavor to be fair, but you will have to furnish us with the proof to defend your claims.

Doctor ABBOT. To illustrate, Mr. Chairman, two of our stenographers this morning were reading proof of an article which I venture to say would be entirely unintelligible to a majority of the persons in this room, and which was filled with technical expressions in different

languages. I think that there is no question that the character of service which is rendered throughout the organizations under the Smithsonian Institution is quite on a par and level with at least the average of the services in the District of Columbia. Notwithstanding that, the average payment for these services is thirty-third in the list.

Mr. LUCE. Mr. Chairman, I would say just one word bearing upon that particular point. It has been noticeable, I think, in the course of the struggles of the last 10 years to readapt salaries and wages to meet the new conditions brought by the drop in the purchasing power of money, that the most successful have been in organizations where the work has been most mechanical, while the services that you might call more cultural or intellectual have been the less successful, and that they have fallen far behind in the attempt at readjustment. Here is an institution that manifestly must have a more highly trained and better educated personnel than almost any other in Washington, and, if these figures do reflect the situation, instead of standing third from the bottom, they ought to stand third from the top; and even then most of those people down there would not be adequately paid.

Mr. WOODRUM. What was the reaction of the Bureau of the Budget to this proposition?

Doctor ABBOT. Mr. Chairman, the Bureau of the Budget has been very sympathetic to the Institution in recent years, and, as you see, the total appropriations for this year estimated by the bureau are, as I recall it, \$84,000 over last year, and last year they were considerably over the year before. I suppose that they feel, in the natural pursuit of economy, that it is not desirable to do too much at once, and so, although I think they were quite sympathetic to this idea of giving this one-step raise to those that were qualified, yet I believe that in keeping the Budget within limits they thought perhaps this was the place where they would be inclined to stop with us. I do not think it was any lack of sympathy with the proposition, but only an endeavor to keep the Budget within limits, as they are always trying to do.

Mr. WASON. Can you not make up a list of the different work, with the grades?

Doctor ABBOT. That can be done very readily, I should think, sir.

Mr. WASON. And then submit it to the subcommittee. We will not be through here for several days. A couple of you can come up here at any time, and if we are not tied up with somebody else, I know I am willing to have an informal, sympathetic conference—while we make no promises and forecast no conclusions—and see if we can find a valid reason for helping the situation that I know exists in your Institution.

