

**INDEPENDENT OFFICES
APPROPRIATION BILL FOR 1942**

HEARINGS

BEFORE THE

**SUBCOMMITTEE OF THE
COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES**

SEVENTY-SEVENTH CONGRESS

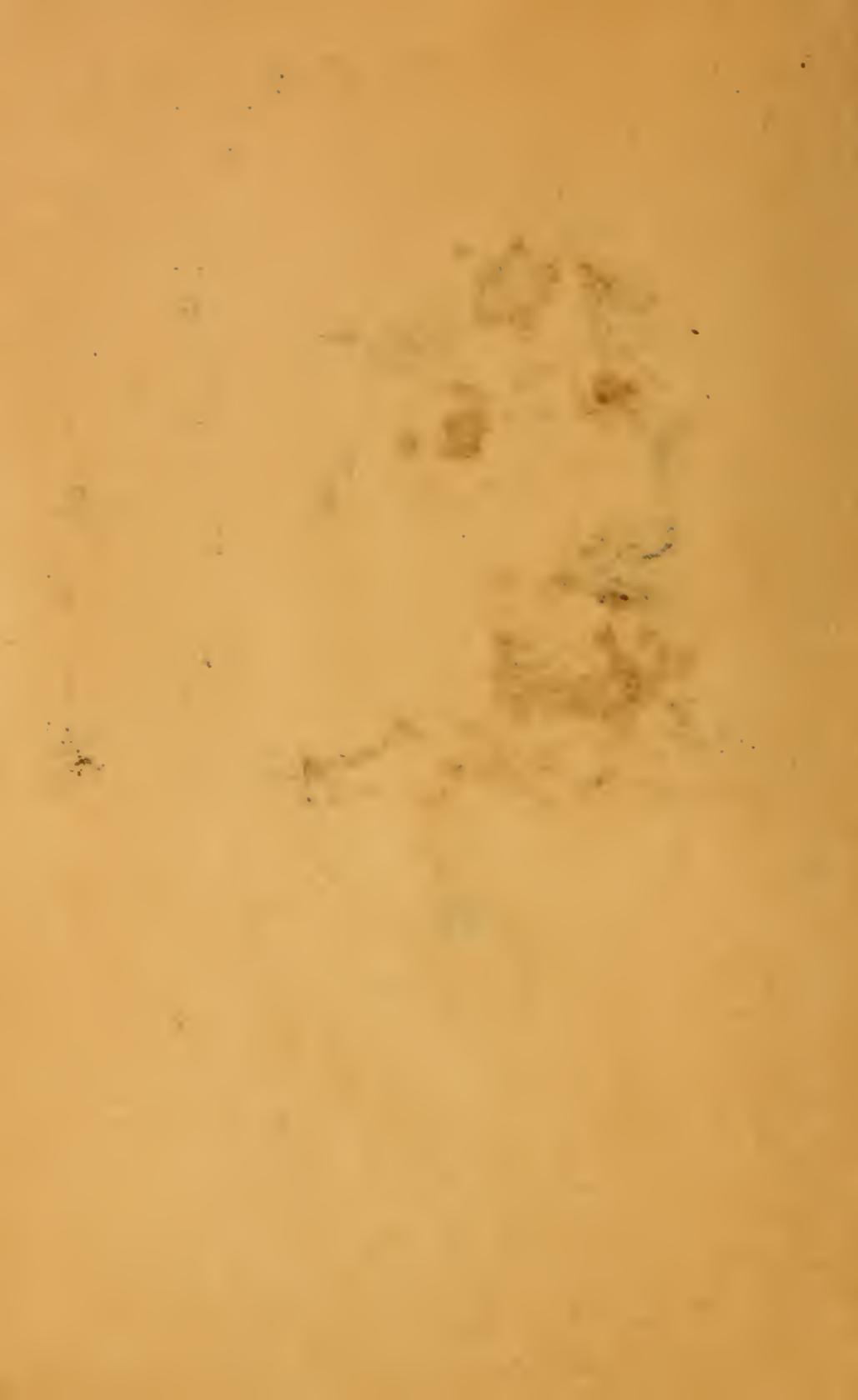
FIRST SESSION

ON THE

**INDEPENDENT OFFICES
APPROPRIATION BILL FOR 1942**

J. E. G.

FEB 24 1941



As wise as we tried to be in laying out the program, we find inevitably that we have to advance the priority of something that was not in the current program, although in our long-time program, but which we thought we could let go for another year. So that with that readjustment we have been, to use a slang phrase, just a jump ahead of the sheriff all the time. If you reduce this amount we would be just that much worse off next year. Our previous experience has shown that.

Mr. WIGGLESWORTH. Sixty percent of this is on existing projects and 40 percent on new, as I understand it.

Mr. NOLEN. That is right.

Mr. WOODRUM. Is there anything further, gentlemen?

Mr. NOLEN. I would like Mr. Duckett to be heard briefly.

Mr. WOODRUM. We shall be glad to hear you, Mr. Duckett.

Mr. DUCKETT. I have nothing especially to say, Mr. Chairman and gentlemen, except that we are very much interested in the park extension in Prince Georges County.

Mr. WOODRUM. You are with the Maryland commission?

Mr. DUCKETT. I am with the Maryland commission, yes; because of the tremendous influx of people there and the building of homes, we are trying to have a rather long-range plan with respect to the location of our roads and utilities and schools. All of those things depend, of course, one upon the other. We hope to get this park extended to a point beyond the immediate development so that we can plan on out from there. And we are very much afraid that if we delay it too long, we will have lost the opportunity to make the park system what it should really be.

Mr. WOODRUM. Thank you, gentlemen.

FRIDAY, DECEMBER 13, 1940.

SMITHSONIAN INSTITUTION

STATEMENTS OF DR. CHARLES G. ABBOT, SECRETARY; DR. ALEXANDER WETMORE, ASSISTANT SECRETARY, IN CHARGE OF NATIONAL MUSEUM; H. W. DORSEY, ADMINISTRATIVE ASSISTANT TO THE SECRETARY; J. E. GRAF, ASSOCIATE DIRECTOR, NATIONAL MUSEUM; M. W. STIRLING, CHIEF, BUREAU OF AMERICAN ETHNOLOGY; W. P. TRUE, CHIEF, EDITORIAL DIVISION, SMITHSONIAN INSTITUTION; DONALD D. SHEPARD SECRETARY-TREASURER AND GENERAL COUNSEL OF THE BOARD OF TRUSTEES (BUDGET OFFICER), NATIONAL GALLERY OF ART; GEORGE T. HECKERT, ASSISTANT TO THE ADMINISTRATOR, NATIONAL GALLERY OF ART, AND DR. L. J. RAGATZ, EDITOR, AMERICAN HISTORICAL ASSOCIATION

NATIONAL GALLERY OF ART

SALARIES AND EXPENSES

Mr. WOODRUM. Dr. Abbot, are you going to make us a little statement on the Smithsonian, to open the proceedings?

Dr. ABBOT. Mr. Chairman, we have now to estimate before us for the first complete year of the opening of the National Gallery of Art.

Those of us who have seen that building from the outside have admired it, those who have seen it from the inside have admired it more, and it is supposed it will be ready to exhibit the objects of art sometime about the middle of March. So there will be, under this appropriation, the estimates for the full year of the exhibition there.

Mr. Shepard, who has come up with the gentlemen from the National Gallery, has been suffering with sinus trouble a good deal and I wonder if you would care to hear that part of the hearing first, or afterward?

Mr. WOODRUM. Any way that will accommodate Mr. Shepard. That is the part for which you ask an increase of \$500,000 in the appropriation, is it?

Dr. ABBOT. There is an increase of about \$500,000, of which about \$260,000 is an increase in the National Gallery over last year, when it was not fully opened, as you know.

Mr. WOODRUM. We will take that up first, the language and estimate for which is as follows:

Salaries and expenses, National Gallery of Art: For the upkeep and operation of the National Gallery of Art, the protection and care of the works of art therein, and all administrative expenses incident thereto, as authorized by the Act of March 24, 1937 (50 Stat. 51), as amended by the public resolution of April 13, 1939 (Public Resolution Numbered 9, Seventy-sixth Congress), including personal services in the District of Columbia (except as otherwise provided in sec. 4 (c) of such Act) not to exceed \$365,220; traveling expenses, including not exceeding \$1,000 for expenses of attendance at meetings concerned with the work of the National Gallery of Art, when specifically authorized by the treasurer of the gallery; streetcar fares; supplies; equipment including labor-saving machines and devices and the rental, repair, and exchange thereof; periodicals and books of reference; purchase, repair, and cleaning of uniforms for guards and elevator operators; not to exceed \$8,000 for printing and binding; purchase or rental of devices and services for protecting buildings and contents thereof; and maintenance and repair of buildings, approaches, and grounds, \$533,300: *Provided*, That section 3709 of the Revised Statutes, the civil-service laws, or the Classification Act of 1923, as amended, shall not apply to the restoration and repair of works of art for the National Gallery of Art, the cost of which shall not exceed \$15,000.

JUSTIFICATION OF ESTIMATES FOR NATIONAL GALLERY OF ART

Salaries and expenses

Expended 1940.....	¹ \$158, 985
Appropriation 1941.....	² 300, 000
Estimate 1942.....	533, 300
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Increase for 1942.....	233, 300

¹ This was a preliminary appropriation to provide a small nuclear staff and for equipment.

² This appropriation was for the gradual completion of the staff leading up to the opening of the Gallery to the public, and operation of the Gallery on a part-year basis.

GENERAL STATEMENT

The National Gallery of Art is directed by a Board of Trustees composed of the Chief Justice of the United States (Chairman), the Secretary of State, the Secretary of the Treasury, the Secretary of the Smithsonian Institution, and five general trustees: Mr. David K. E. Bruce (president), Mr. F. Lamot Belin (vice president), Mr. Duncan Phillips, Mr. Joseph E. Widener, and Mr. Samuel H. Kress. Mr. Donald D. Shepard is the secretary, treasurer and general counsel.

Section 4 (a) of the act of March 24, 1937, as amended by the public resolution of April 13, 1939, provides that "The faith of the United States is pledged that, on completion of the National Gallery of Art by the donor in accordance with the terms of this act, and the acquisition from the donor of the collection of works of art, the United States will provide such funds as may be necessary for the upkeep of the National Gallery of Art and the administrative expenses and costs of operation thereof, including the protection and care of works of art acquired by the Board, so that the National Gallery of Art shall be at all times properly

maintained and the works of art contained therein shall be exhibited regularly to the general public free of charge. For these purposes, and to provide, prior to the completion of the National Gallery of Art, for the protection and care of the works of art in said Gallery and for administrative and operating expenses and equipment preparatory to the opening of the Gallery to the public, there are hereby authorized to be appropriated such sums as may be necessary."

In accordance with the bylaws of the Board of Trustees, the Budget estimates for the National Gallery of Art for the fiscal year 1942 were approved at a meeting of the Board held on June 21, 1940.

In submitting these estimates of public funds considered necessary for the upkeep of the National Gallery and the administrative expenses and costs of operation for the fiscal year 1942, two factors have been kept foremost in mind:

First, this is the first appropriation requested for a period during which the National Gallery will be in operation the entire fiscal year. The estimates therein for salaries and expenses are deemed adequate to enable the Trustees properly to maintain and operate the Gallery for the full year under consideration.

Second, because of the state of world affairs and the Nation's embarkation upon a broad program of national defense, all possible economy has been, and will be exercised by the trustees in the operation of the National Gallery consistent with their trust and contractual obligations. Accordingly, only items of first necessity have been incorporated in these estimates.

The uniformly high quality of the works of art in the National Gallery will cause it immediately to take its place as one of the leading galleries in the world. During the past 2 years exhaustive studies have been made of the organization and functioning of the principal galleries in the United States and of several national galleries in other countries, with a view to determining a proper and adequate standard of operation and maintenance, so that the National Gallery of our country would gain a favorable reputation in comparison with galleries of other nations, but a standard which at the same time would be as economical as possible.

In the preparation of previous estimates it was most difficult to determine the cost of operating the building, the construction of which was not then completed, and of the mechanical equipment installed therein, because changes and extensive additions were constantly being made, not only in the interior plan itself, but also to the mechanical equipment being furnished.

Since last December, it has been found necessary to complete about 10 or 11 gallery rooms to house a new collection, as well as 6 or 7 galleries to be used for loan exhibitions. Furthermore, since last December, the donors of the building decided to finish completely at this time a library and a lecture room which were in the original plans for the building but which it was thought might be left uncompleted until a later date. The air-conditioning installation in the building was increased, due to these additions, by approximately one-third. The amount of finished space thus added in the building was approximately 15 percent, or about 72,700 square feet. These additional finished areas and additional equipment require, of course, proper maintenance, the added cost for which has been incorporated in these estimates for the first time.

The appropriate advisers of both the Bureau of the Budget and the Civil Service Commission have been of great assistance in enabling the Gallery to determine what personnel will be required and what the operating expenses will now be. The Gallery also now has the benefit of finished studies which have been made by the architects, general contractors, and mechanical engineers who have constructed the building, as well as of its own chief engineer and building superintendent. It is therefore felt that the estimates this year are on a more definite basis than has heretofore been practicable.

The estimates for the engineering, mechanical, and custodial staffs have been increased by \$47,000, and, based upon a new estimate of the Potomac Electric Power Co., the annual cost of electric power and light will be \$21,000 greater than the estimates furnished last year. These increases are due to considerable extent to the additions to the space which is to be immediately occupied, and to full 24-hour operation of the complete mechanical equipment.

The Gallery's estimates for the fiscal year 1942 thus total \$533,300 which, if appropriated by Congress, will permit the trustees to operate and maintain the National Gallery at a standard which should, it is thought, meet the obligations to the public and the trust and contractual obligations to the donors of the building and of the collections which will be housed therein.

That this figure is a conservative estimate may be seen by a comparison with operating expenses, for the year 1937, of other important galleries, as follows: Metropolitan Museum, New York, \$1,535,393; British Museum, London, \$1,644,-

000; and the Museum of Fine Arts, Boston, \$582,295. It may be mentioned in this connection, that if any of these institutions were in air-conditioned buildings such as the National Gallery of Art, their operating expenses would be even higher.

In this connection, also, it should be taken into consideration that no expense has been spared in the construction of the building for the National Gallery, which has cost more than \$15,000,000, and that it will immediately contain collections of works of art estimated in value of \$80,000,000. To this, as has been announced in the press, will be added an important new collection.

The total floor area of the National Gallery is approximately 500,069 square feet, and the exhibition area about 238,000 square feet, as compared with 564,607 square feet and 340,232 square feet, respectively, of the Metropolitan Museum in New York, and with 344,448 square feet of exhibition space of the Louvre in Paris.

It is estimated that there will be at least 1,500,000 visitors to the Gallery annually—between 4,000 and 5,000 per day—as compared with 1,083,708 at the Metropolitan Museum in New York during 1937; 1,134,471 at the British Museum in London; 1,260,000 at the Versailles Museum in France; 653,633 at the National Gallery in London; 405,521 at the Museum of Fine Arts, Boston; and, at the present time, about 2,400,000 at the Smithsonian Institution in Washington.

The Gallery building has now been completed and was turned over to the Government on December 1, 1940, the works of art will be arranged in the building during the months of December, January, and February, and it is planned that the opening to the public will occur in March 1941.

EXPLANATION OF CHANGE IN THE APPROPRIATING LANGUAGE

“Salaries and Expenses, National Gallery of Art” (54 Stat. 137). The word “services,” included in the draft of the appropriating language for 1941, was apparently inadvertently omitted. It appeared in the appropriating language for 1940 (53 Stat. 984). This phraseology was intended definitely to authorize expenditures to cover such protective services as the American District Telegraph protective alarm and maintenance service. It may be that the present language without the word “services” does authorize such payment; but in the absence of a legal interpretation as to whether or not the present appropriating language for 1941 would cover such expenditures, it is recommended that the word “services” be inserted in the appropriating language for 1942.

01 Personal services:

1941 estimate.....	1 \$192, 000
1942 estimate.....	365, 220

1 For salaries on a part-year basis.

The total number of the staff (paid from Government funds) deemed necessary for the proper maintenance and operation of the National Gallery of Art on a full-year basis is estimated by the Board of Trustees to be 234. Of this number it should be noted that only 58 are for the office staff, the remainder—176—being for the maintenance, mechanical, custodial, and cleaning departments.

The trustees of the National Gallery have been conservative in their estimate of the necessary staff for the Gallery as may be seen from the fact that only 234 employees are requested, at an annual cost of \$365,220, as compared with 583 employees on the staff of the Metropolitan Museum in New York, at a cost in 1940 of \$1,284,346.27. In the only other comparable institution for which figures are available it is found that the number of employees in the British Museum in London is 573.

In other words, the National Gallery requests less than half the number of employees in other comparable museums and less than one-third of the amount spent for salaries by the Metropolitan Museum of New York.

Last year’s original estimates were made as carefully as comprehensive studies at that time would admit, but, nevertheless, the trustees were then dealing with an uncompleted project.

Now that the building has been completed and the opening of the Gallery is imminent, and from the further extensive research made during the past year, it has been found that more positions than were provided in the 1941 estimates are necessary. Thirty-one more employees are found to be necessary for the operating, mechanical, and custodial staff alone. To a considerable extent this is due to the increase in finished space in the building and the addition of further mechanical equipment, explained in the preceding general statement.

Concerning members of the clerical, mechanical, and custodial forces, it must be taken into consideration that the Gallery will be open to the public on Saturday afternoons, Sundays, and most holidays, so that adequate provision has to be made for relief services. This applies mainly to guards, engineers, and electricians, telephone operators, information clerks, nurses, messengers, and laborers.

In the hearings before the Appropriations Committee last year, the question was brought up as to whether the cost of the administration of endowment funds and the necessary administrative legal work of the gallery were to be considered as part of the administrative expenses and costs of operation of the gallery to be paid from public funds. On this point the committee suggested that the gallery obtain an opinion from the Comptroller General. In his decision, dated January 8, 1940, the Comptroller General advised the gallery that, "The appropriation in question is available for the employment of the subordinate officers referred to, such as an assistant treasurer, assistant secretary, and assistant general counsel, if such employees are deemed necessary for the purposes indicated * * *." This will make possible the setting up of the office of the secretary-treasurer and general counsel in such a manner that the trustees of the National Gallery of Art will be able to function and carry out their duties and responsibilities as regards the administration and operation of the gallery. The trustees feel that it is necessary and important that this office be established on a permanent basis as soon as possible, and the positions of assistant treasurer, assistant secretary-legal adviser, an accountant, and a clerk-stenographer are included in the present estimates.

02 Supplies and materials:

1941 estimate.....	1 \$21, 950
1942 estimate.....	34, 300

¹ For expenses on a part-year basis.

In this estimate for supplies and materials for full-year operation, the major item is for "mechanics', engineers', plumbers', and electricians' supplies" in the sum of \$17,345. The building is equipped with a large amount of the most modern and expensive machinery, which should be properly maintained. A large portion of the \$17,345 is for replacement of electric light bulbs and lenses, which, according to figures now available as to the number of bulbs and their average life, will require an annual expenditure of about \$9,000.

05 Communication service:

1941 estimate.....	1 \$2, 450
1942 estimate.....	3, 320

¹ For expenses on a part-year basis.

Of this estimate for communication service on a full-year basis, \$3,020 is for telephone service based upon a detailed survey by the Chesapeake & Potomac Telephone Co.

06 Travel expenses:

1941 estimate.....	1 \$1, 065
1942 estimate.....	1, 660

¹ For expenses on a part-year basis.

This amount, \$1,660, estimated for travel expenses will enable the Gallery to operate in this respect on a full-year basis, travel being required in connection with exhibits, loans to and from other museums, acquisitions, etc. Not to exceed \$1,000 of this sum is requested for attendance at meetings concerned with the work of the National Gallery, at which it is felt representatives of the Gallery should be present and in which they should take an important part.

07 Transportation of things:

1941 estimate.....	1 \$500
1942 estimate.....	500

¹ For expenses on a part-year basis.

This transportation covers the freight, express, or other shipment of works of art loaned for special exhibits, shipment of acquisitions to the National Gallery, and the shipment of such miscellaneous items as furnishings and equipment supplied on f. o. b. bids. Inasmuch as practically all of the furnishings and equipment will

be received before the end of the present fiscal year, it is felt that \$500, which was provided for part-year operation, will be sufficient for a full year of ordinary operation.

08 Printing and binding:

1941 estimate.....	1 \$7, 900
1942 estimate.....	8, 000

¹ For expenses on a part-year basis.

The principal item in printing and binding is a pamphlet containing a short directory of the National Gallery, floor plans, and a check-list of all works of art in the national collection. For the benefit of the public, these pamphlets will be distributed to those who make specific inquiry for them, so that wastage will be held to a minimum. The provision made in the 1941 estimate was sufficient to provide for the initial supply of these pamphlets, and therefore it is felt that the expenses for this item in 1942 on a full-year basis will not exceed \$8,000.

10 Furnishing of light and power:

1941 estimate.....	1 \$45, 580
1942 estimate.....	90, 000

¹ For expenses on a part-year basis.

The amount of electricity which will be required on a full-year basis is estimated to be 12,276,600 kilowatts which, at \$0.00737 per kilowatt, amounts to slightly more than \$90,000. This estimate of the amount and the cost of electric light and power has been supplied by the Potomac Electric Power Co., in their letter dated June 12, 1940, based upon the latest information available as to the probable load. A detailed survey of the Gallery's requirements was made by the engineers of that company.

12 Repairs and alterations:

1941 estimate.....	1 \$1, 500
1942 estimate.....	4, 000

¹ For expenses on a part-year basis.

The amount requested for repairs and alterations is to take care of such accidental damage to interior and exterior walls, floors, ceilings, skylights, and lay-lights as may occur during the first full year of operation, as well as such minor changes as may be required to house the new collection which has been acquired by the National Gallery. Certain expenditures of this kind will also occur in the arranging and rearranging of the collections of works of art in the Gallery's first year of operation.

13 Special and miscellaneous current expenses:

1941 estimate.....	1 \$17, 055
1942 estimate.....	20, 100

¹ For expenses on a part-year basis.

The principal item under special and miscellaneous current expenses is for the restoration of works of art and in this connection it should be noted that an exceedingly great responsibility rests upon the Board of Trustees for the proper care and preservation of irreplaceable works of art in the national collection, many of which were produced in the thirteenth and fourteenth centuries. This is a responsibility both to the Nation and also to the individual donors of the works of art. There are few specialists in the world competent to attempt any repair or restoration upon works of art of the character and value of those in the National collection, and the Board of Trustees feels that this item, which amounts to \$15,000, is of utmost importance.

The second major item under this heading, amounting to \$2,890, provides for maintenance service of the protective burglar and fire alarm systems throughout the building. The other items are for cleaning of uniforms, laundry of towels, and other miscellaneous services of this kind.

30 Equipment:

1941 estimate.....	1 \$10, 000
1942 estimate.....	6, 200

¹ For expenses on a part-year basis.

Practically all of the necessary equipment, including furniture and furnishings, has already been acquired from funds appropriated in 1940 and 1941, and the principal item under equipment is \$4,500 for furniture and furnishings principally in connection with subsequent housing of the new collection which has been acquired by the Gallery and for the completing of the library stacks in the Gallery library. Other minor items include floor stanchions and rope, miscellaneous hand tools, dies, taps, cutters, etc., polishing brushes and a disinfectant sprayer, plant tubs, garden tools, and snow shovels.

GENERAL STATEMENT ON NATIONAL GALLERY OF ART

Mr. McBRIDE. Mr. Chairman, Mr. Shepard, Secretary of the Board of Trustees, has asked me to report that the National Gallery building is now completed, and they would like to extend an invitation to the committee, the clerks thereof and to any members of their families, who would like to see the building. We moved into our offices in the new building last week, and some of the committee members might be interested in seeing it before the works of art are moved in and the Gallery is opened to the public.

In the statement which has been submitted, it is pointed out that since the hearings last year the donors have completed 10 or 11 extra Gallery rooms to accommodate a new collection the acquisition of which has been announced in the press, as well as 6 or 7 galleries to be used for loan exhibitions. Also, since last December, the donors of the building decided to finish completely, at this time, a library and lecture room. These additions made necessary another complete unit of the air-conditioning system, adding about one-third to the air-conditioning equipment. These additions are the main reason for the increase in the estimates, on an annual basis, above those submitted last year.

For instance, the finished space added to the building during the past year was approximately 15 percent, or about 72,700 square feet. I may say that the library and lecture room, or auditorium, were in the original plan, but it was not decided until within the past year that the donors would finish them now. In other words, we are getting a building that is complete in every respect, except for certain unfinished spaces that will be available for galleries in the future.

Mr. WOODRUM. Now, let us get in the record a brief statement about what the National Gallery of Art is. In just hastily looking at your statement here, I do not believe it is set out very clearly. It is established by act of Congress?

Dr. ABBOT. That will be contained in the general statement.

Mr. McBRIDE. That is in the first two paragraphs of the statement, Mr. Chairman.

COST OF NATIONAL GALLERY AND VALUE OF COLLECTIONS

Mr. WOODRUM. Tell us about the investment there, the donation that has been made, and what it amounts to.

Mr. McBRIDE. The building has cost more than \$15,000,000.

Mr. WOODRUM. It is donated entirely by Mr. Mellon; is that right?

Mr. McBRIDE. Yes, sir.

Mr. WOODRUM. By the foundation, or what was it?

Mr. McBRIDE. The trustees of the A. W. Mellon Educational and Charitable Trust have carried on the construction and completion of the building.

Dr. ABBOT. And the paintings were also given.

Mr. McBRIDE. Mr. Mellon also gave his important collection of works of art.

Mr. FITZPATRICK. Was that given permanently, or just loaned?

Mr. McBRIDE. Permanently; it was given in trust for the benefit of the people of the United States.

Mr. WOODRUM. And the cost to the Government is the administrative expenses?

Mr. McBRIDE. The cost to the Government is the administrative expenses, the cost of operation of the project, and protection of the works of art in the National Gallery.

Mr. WIGGLESWORTH. You have something like \$50,000,000 worth of paintings there, have you not?

Mr. McBRIDE. The two collections—the Mellon and Kress collections—which have already been received and which will be in the Gallery when it is opened to the public next March are estimated in value at about \$80,000,000, and now the gift of another important collection has been announced by the press.

Mr. WIGGLESWORTH. What collection is that?

Mr. McBRIDE. The Widener collection.

Mr. WIGGLESWORTH. What is its value?

Mr. McBRIDE. The press gives an estimate of around \$50,000,000.

Mr. WIGGLESWORTH. Fifty million for the Widener collection, in addition to the \$80,000,000 we now have?

Mr. McBRIDE. Yes, sir.

Dr. ABBOT. The collection that is available now includes not only Mr. Mellon's collection but also Mr. Kress' collection of Italian art, which was donated about a year and a half ago; but the gallery will open with all three of those great collections, will it not?

Mr. McBRIDE. Probably the Widener collection will not be there until some time after the opening.

Mr. FITZPATRICK. Is that a permanent gift?

Mr. McBRIDE. Yes, sir; I understand it is to be given in trust to the Nation. The Kress collection has already been given to the Nation, and these two, with the Mellon collection, are probably the three greatest collections in private hands in the World.

Mr. HOUSTON. Will you take anything that is not a permanent gift?

Mr. McBRIDE. Yes, sir; we would take loans of suitable works of art. I think that is the policy.

Mr. FITZPATRICK. What is the entire valuation of the three gifts?

Mr. McBRIDE. The entire valuation—it is difficult to place a monetary valuation on the important Widener collection, but the newspapers have talked about \$25,000,000 to \$50,000,000. That would make a total of \$130,000,000 as the estimated value of the works of art.

Dr. ABBOT. And in the building, about \$15,000,000?

Mr. McBRIDE. Somewhat more than \$15,000,000 in the building.

Dr. ABBOT. And an endowment fund?

Mr. McBRIDE. And an endowment fund from Mr. Mellon of \$5,000,000.

MAINTENANCE AND OPERATION OF BUILDING

Mr. FITZPATRICK. What will be the cost of the annual upkeep of that building?

Mr. McBRIDE. It will be about \$550,000; possibly a little less than \$550,000.

Mr. FITZPATRICK. Will that increase as the years go on, or will it be permanent at about that amount?

Mr. McBRIDE. It may increase slightly. Any new collection which may be offered to the Nation and accepted by the Board of Trustees, now that the building has been completed, would mean an annual expense of the additional guards, mechanical and cleaning force required to take care of it, and a slight increase for electric light, heat, supplies, and other administrative items. There might also be an initial expense in preparing gallery rooms to receive it.

Mr. WOODRUM. Now, tell us about your appropriation, Mr. McBride.

Mr. McBRIDE. The hearing on this estimate this year, Mr. Chairman, is unusually important, I think, for the National Gallery. It is the first appropriation which has been requested to carry on the administration and maintenance of the Gallery during a full fiscal year. And I may say, also, this is the first time that we feel our estimates have been on a fairly definite basis; that heretofore we have been dealing with a project which was not complete and which was being added to all the time.

The experts of the Bureau of the Budget and the Civil Service Commission have been of great assistance to the officers of the Gallery in determining just what the administration and maintenance would cost, and they have spent many hours, at the building going over the Gallery rooms, every piece of equipment, all of the fan rooms, and the air-conditioning machinery; they have gone into the guard situation very carefully to determine just how many guards we should have to protect the collections, the building and the grounds. So it is felt that the estimates this year are just about what the Gallery should have in order to be properly administered and maintained.

COMMUNICATION SERVICE

Mr. WOODRUM. What about the item of \$3,320 for communication service? What is that—for telephone and switchboard?

Mr. McBRIDE. Yes, sir. That is also the estimate of the telephone company.

Mr. WOODRUM. You would not have much telegraphic communication and long distance, and things of that sort, would you?

Mr. McBRIDE. For telegraph, we have only \$100; and long distance, \$240, for the year.

Mr. WOODRUM. You have estimated that?

Mr. McBRIDE. Yes, sir. That is how this figure of \$3,320 is made up. The telephone service amounts to \$2,280.

Mr. WOODRUM. That is the switchboard operation?

Mr. McBRIDE. Yes, sir.

Mr. WOODRUM. And rental to the telephone company?

Mr. McBRIDE. Yes, sir. And there is also an item for postage of \$200.

TRAVEL EXPENSES

Mr. WOODRUM. Now, what about your travel expenses; of what does that consist?

Mr. McBRIDE. It consists of \$1,595 for transportation, and \$65 for local transportation—streetcar fares. Travel will be required to some extent in connection with exhibits, loans and acquisitions which are offered to the Gallery, and it is also thought that, in case there are important meetings of museum officials in the United States, the Director or some other representative of the National Gallery should attend the meeting, and take a prominent part in it.

PRINTING AND BINDING

Mr. WOODRUM. What about your printing and binding, \$8,000; what will that be for?

Mr. McBRIDE. The main item there is a 16- or 24-page booklet, which would be a short directory more than anything else. Any person who comes into the Gallery and asks for it, would be given one of these booklets. It will contain floor plans of the Gallery, so that visitors can ascertain where the paintings are; it will have a check list of all of the works of art in the Gallery, indicating where they may be found, and certain rules about the hours of opening, Sunday opening, and so forth.

Mr. FITZPATRICK. That is to be given to them free, is it?

Mr. McBRIDE. Yes, sir.

Mr. FITZPATRICK. There is no charge planned to be made for visiting the Gallery?

Mr. McBRIDE. No, sir; there is no charge for visiting the Gallery.

Dr. ABBOT. I have had the pleasure of going through the Gallery twice, and I think such a booklet to direct the visitor where to go is very important, indeed; because there are scores of Gallery rooms, about which the public would want to know.

Mr. HOUSTON. Are all of these positions under civil service?

Mr. McBRIDE. Yes, sir.

SPECIAL AND MISCELLANEOUS CURRENT EXPENSES

Mr. WOODRUM. What about special and miscellaneous current expenses, \$20,100? What is that?

Mr. McBRIDE. The main item is for the repair and restoration of works of art. It is the same item we reported on last year.

Mr. WOODRUM. Will some of that be necessary right from the beginning?

Mr. McBRIDE. About \$15,000; yes, sir. That is the amount which is being used now.

Mr. WOODRUM. Is that on account of the damage done to them in putting them in, or what?

Mr. McBRIDE. No, sir. They require constant care. Sometimes the paint blisters and sometimes paintings on wood panels crack. Also from time to time paintings need to be cleaned and varnished. There are generally about a dozen or more of them which have to be in the hands of an expert restorer.

Dr. ABBOT. How many of them are there altogether?

Mr. McBRIDE. Paintings?

Dr. ABBOT. Yes.

Mr. McBRIDE. In the present collections there are 539 paintings and 51 pieces of sculpture.

Dr. ABBOT. So that this dozen or more to be operated on in a year is a very small percentage of the whole?

Mr. McBRIDE. Yes, sir.

Dr. ABBOT. But you have to keep on with still others in other years?

Mr. McBRIDE. Yes. There might even be more than that number in some years.

Mr. FITZPATRICK. Do they have to touch up the painting itself?

Mr. McBRIDE. No, sir; they try not to do that.

Mr. FITZPATRICK. You refer to the framework and the woodwork of it?

Mr. McBRIDE. No, sir; the work of art itself. If it is a painting on wood and the wood becomes badly eaten, or cracked, they even go so far as to scrape the wood off the back of the painting, and then mount the painting on canvas.

Mr. FITZPATRICK. But I mean the painting itself; do they touch that up?

Mr. McBRIDE. No, sir. They try to keep a painting in its original condition.

Mr. FITZPATRICK. They do not touch that?

Mr. McBRIDE. No, sir; except possibly under most unusual circumstances.

Mr. FITZPATRICK. Because it would lose its originality, if they did.

INCREASE IN MECHANICAL, ENGINEERING, ELECTRICAL, ETC. STAFF

Mr. WOODRUM. Is that about the story, Mr. McBride?

Mr. McBRIDE. Well, Mr. Chairman, the increase requested over last year in one item is not caused solely because the Gallery is now being placed on a full year's basis. We underestimated last year on the mechanical, engineering, electrical, and cleaning staffs. Thirty-one more employees in the operating, mechanical and custodial staffs have been found necessary. Part of that increase is due to the underestimate last year, and the rest of it is due to an increase in the finished space, and an increase of one-third in the air-conditioning equipment in the building.

Mr. HOUSTON. How many employees will you have down there altogether?

Mr. McBRIDE. We are requesting 234. Of the 234, only 58 are on the office staff; all of the rest of them—176—are for the mechanical staff, guards, and the cleaning force.

Mr. FITZPATRICK. How many guards?

Mr. McBRIDE. Seventy-nine.

Dr. ABBOT. How does that staff compare with the Metropolitan Gallery?

Mr. McBRIDE. It is about one-third.

Mr. WIGGLESWORTH. I notice that both your staff and total expenditure are apparently very much less than some of the other comparable galleries.

Mr. McBRIDE. Yes, sir. Exhaustive studies have been made and figures obtained from galleries in the United States and national galleries of several foreign countries concerning the staff required for administration and maintenance.

That the trustees of the National Gallery have been very conservative in their estimate of the necessary staff for the Gallery may be seen from the fact that only 234 employees are requested, at an annual cost of \$365,220, as compared with 583 employees on the staff of the Metropolitan Museum in New York, at a cost in 1940 of \$1,284,346.27. In the only other comparable institution for which figures are available it is found that the number of employees in the British Museum in London is 573.

In other words, the National Gallery requests less than half the number of employees in other comparable museums and less than one-third of the amount spent for salaries by the Metropolitan Museum of New York.

Mr. HOUSTON. It would average about one guard to every seven pictures, would it not?

Mr. McBRIDE. Not on duty at the same time.

Mr. HOUSTON. No; I understand; it is the average.

Mr. McBRIDE. It is a very conservative estimate because we are open Sundays, Saturday afternoons, and holidays.

Mr. DORSEY. And you have to have three shifts.

Mr. McBRIDE. Yes; and therefore adequate provision has to be made for relief services.

Dr. ABBOT. And you are open all the time?

Mr. McBRIDE. Yes; every day except Christmas and New Year's.

Mr. FITZPATRICK. What is the salary of the directors and personnel paid by the Metropolitan Museum, paid by the taxpayers?

Mr. McBRIDE. I do not have that figure.

Mr. FITZPATRICK. How do your salaries paid by the taxpayers compare with those paid by the taxpayers in other museums?

Mr. McBRIDE. The number paid by the taxpayers?

Mr. FITZPATRICK. And the amount.

Dr. ABBOT. You could find that out, I suppose?

Mr. McBRIDE. I could probably find that out. I do not know the source of their funds.

Mr. WOODRUM. You have to have guards on duty, even when the Gallery is closed?

Mr. McBRIDE. Yes, sir; patrolling the Gallery.

Dr. ABBOT. There is a value of \$130,000,000 for paintings in the interior of the buildings, some of them valued at \$1,000,000 apiece, and some more, and it is necessary, evidently, to have them watched at all hours of the day;

OTHER PERSONNEL REQUIRED

Mr. WIGGLESWORTH. You state in your justifications that a ruling by the Comptroller General has made it possible to set up the office of the Secretary-Treasurer and General Counsel?

Mr. McBRIDE. Yes, sir.

Mr. WIGGLESWORTH. Then you go on to say:

The positions of assistant treasurer, assistant secretary-legal adviser, an accountant and a clerk-stenographer are included in the present estimates?

Mr. McBRIDE. Yes, sir.

Mr. WIGGLESWORTH. Does that mean you contemplate having a treasurer?

Mr. McBRIDE. An assistant treasurer.

Mr. WIGGLESWORTH. And an assistant legal man?

Mr. McBRIDE. Yes, sir. Those are subordinate officers to do the administrative work in the offices of the Secretary and General Counsel, and of the treasurer.

Mr. WIGGLESWORTH. Are you going to have a treasurer and General Counsel in addition to those?

Mr. McBRIDE. Yes, sir, Mr. Shepard is the Secretary-Treasurer and General Counsel, acting for the trustees, and this subordinate personnel is to assist him in his administrative duties. That was a point on which the committee suggested we obtain a ruling from the Comptroller General last year and he gave his opinion that our interpretation was correct.

Mr. WOODRUM. If there are no further questions on the National Gallery, thank you, Mr. McBride. I think that covers the situation.

SMITHSONIAN INSTITUTION

GENERAL ADMINISTRATIVE EXPENSES

Mr. WOODRUM. Now, suppose we take up the items for the Smithsonian Institution. The first item is for general administrative expenses, \$500,550:

For expenses of the general administrative office; for the system of international exchanges between the United States and foreign countries; for continuing ethnological researches among the American Indians and the natives of Hawaii and the excavation and preservation of archeologic remains; for maintenance of the Astrophysical Observatory, including assistants, and making necessary observations in high altitudes; for cases, furniture, fixtures, and appliances required for the exhibition and safekeeping of collections; and for administration of the National Collection of Fine Arts; including personal services, purchase of books of reference and periodicals, traveling expenses, including not exceeding \$1,000 for expenses of attendance at meetings concerned with the work of the Institution when specifically authorized by the Secretary of the Smithsonian Institution; uniforms for guards, supplies and equipment, preparation of manuscripts, drawings, and illustrations, supplying of heating, lighting, electrical, telegraphic, and telephone service, repairs and alterations of buildings, shops, sheds, and approaches, and other necessary expenses, \$500,550.

JUSTIFICATION OF ESTIMATES

The justification may be inserted at this point:

GENERAL EXPENSES		
Expended, 1940	-----	\$348, 933
Appropriated, 1941	-----	386, 260
Nonrecurring items, 1941 ¹	-----	25, 810
Base for 1942	-----	360, 450
Estimate, 1942	-----	500, 550
Increase for 1942 (actual)	-----	140, 100
¹ See following:		
Sewer, Smithsonian Bldg.	-----	\$12, 500
Roof, Freer Gallery of Art	-----	13, 310
Total nonrecurring	-----	25, 810

The increase under this appropriation is allotted among the several projects as follows:

Project:	Increase, 1942
(1) "Salaries and expenses, Smithsonian Institution"-----	\$1, 620
(2) "International exchanges, Smithsonian Institution"-----	-----
(3) "American Ethnology, Smithsonian Institution"-----	8, 700
(4) "Astrophysical Observatory, Smithsonian, Institution"-----	26, 750
(5) "Maintenance and operation, Smithsonian Institution"-----	27, 950
(6) "National collection of fine arts, Smithsonian Institution"-----	75, 080

Total increase for appropriation "General expenses" ----- 140, 100

114,290

The work under this appropriation deals with the activities of several of the smaller bureaus administered by the Institution as well as the expenses of the central administrative office and those for the maintenance and operation of the group of five buildings. For convenience in considering these projects with their divergent types of work, the justifications have been arranged in order by projects rather than by objects of expenditure. Statements justifying the present activities of these projects, together with justifications of the increases requested follow in order.

APPROPRIATION "GENERAL EXPENSES"

(1) Project—"Salaries and expenses, Smithsonian Institution"

Expended, 1940-----	\$38, 117
Regular allotment, 1941-----	49, 190
Base for 1942-----	49, 190
Total estimate or allotment, 1942-----	50, 810
Increase for 1942-----	1, 610

Objective: The general administration, under the direction of the Secretary of the Smithsonian Institution of the six governmental branches under its charge: The International Exchanges, Bureau of American Ethnology, the Astrophysical Observatory, the United States National Museum, the National Collection of Fine Arts, and Maintenance and Operation of Buildings.

The problem.—To promote the work of these several branches; to insure their economical administration; and to coordinate their operations where practicable.

Financial requirements.—This appropriation provides for the salaries and necessary incidental expenses of the general administrative, or Secretary's office. The amount estimated is the same as that for the current year, except for a minor increase under personal services.

The increase in the estimate for 1942 is explained as follows:

(a) For one assistant office draftsman (CAF-3), \$1,620.—Objective: To provide for the preparation of maps and other illustrations for publications and for making miscellaneous drawings and charts required in the scientific work of the Institution and publishing the results of such investigations. The publications here referred to include descriptions of the researches of several actively investigating bureaus, the Astrophysical Observatory, and the Bureau of American Ethnology, as well as the administrative office of the parent Institution.

There is but one illustrator employed under this appropriation, a highly skilled and efficient man, whose full time is required in the preparation of high-grade work relating to illustrations. He is thus unable to prepare such routine figures as charts, graphs, and simple maps, and the publication of important manuscripts is often greatly delayed awaiting the preparation of such material. Work of this character could be done as well by a lower-salaried employee and the employment of this draftsman would relieve the time of the illustrator for the performance of more difficult types of work, which are now continually far in arrears.

(2) Project—"International Exchanges, Smithsonian Institution"

Expended, 1940-----	\$43, 027
Allotment, 1941-----	44, 880
Base for 1942-----	44, 880
Total estimate or allotment, 1942-----	44, 880
Increase for 1942-----	-----

ESTABLISHMENT AND DUTIES OF THE INTERNATIONAL EXCHANGES

In effecting the world-wide distribution of its publications, the Smithsonian Institution many years ago established foreign agencies. These facilities it placed at the disposal also of institutions and individuals of this country in the distribution of their publications abroad, and also foreign societies and individuals in distributing their publications in the United States. The Government also came to employ this channel extensively while it was yet principally supported by the Institution's private income.

(3) Project—"American Ethnology, Smithsonian Institution"

Expended, 1940-----	\$58, 170
Regular allotment, 1941-----	56, 287
Base for 1942-----	56, 287
Total estimate or allotment, 1942-----	64, 987
Increase for 1942-----	8, 700
<hr/>	
(a) 01 1 Photographer (CAF-4)-----	1, 800
(b) 02 Supplies and materials-----	900
(b) 05 Communication service-----	100
(b) 06 Travel expenses-----	1, 940
(b) 07 Transportation of things (service)-----	110
(b) 13 Special and miscellaneous current expenses-----	1, 800
(b, a) 30 Equipment-----	2, 050
<hr/>	
	8, 700

WORK DONE UNDER THIS ALLOTMENT

Nature of work.—The work of the Bureau of American Ethnology consists of research on the American Indian. Its great and widely varied values are briefly explained below under "Significance." This research involves two principal lines of approach—studies of living groups, in which facts and details are secured concerning their ethnology, linguistics, and physical anthropology, and studies of prehistoric groups primarily through archeological excavations with the object of reconstructing the movements and manner of life of pre-Columbian peoples. The manner of conducting these researches consists of basic field work supplemented by laboratory studies, documentary investigations, and preparation of the results for publication.

The increase in the estimate for 1942 is explained as follows:

(a) \$1,800 for a photographer, CAF-4.—Objective: To provide needed photographic service and preserve the records contained in the unique negative collection of the Bureau.

The Bureau lacks the services of a photographer to prepare illustrations used in quantity in its publications. Incidental assistance received from the museum photographic shop has helped in preparing illustrations, but service from this overworked shop is slow and uncertain, resulting in needless delays in publishing material of general interest and utility. There is also an urgent need to preserve priceless records. Its negatives include the most extensive collection in existence of pictures from the old Indian days. High-grade restoration is necessary in preserving the negatives made throughout the then unknown West, by old-time photographers, including Jackson, Powell, and Brady, if this important chapter in American history is to be preserved. The emulsion on many of these old irreplaceable plates will soon be deteriorated beyond restoration and rephotographing if further neglected.

Equipment included in a later item carries \$500 for the use of this position.

(b) An increase of \$9,400 is urgently required to conduct field work in ethnology and archeology including expenditures as follows: Supplies and materials, \$900; communication service, \$100; travel expenses, \$1,940; freight, \$110; special and miscellaneous current expenses, \$1,800; and equipment, \$1,550.—Objective: To furnish anthropological information that will further our knowledge of the ethnology, history, and prehistory of the American Indians.

In order to supply missing pages in the aboriginal history of this country it is important to undertake work with tribes on which our knowledge is incomplete.

In recent years most of the field work has been financed from the private income of the Institution, but funds from this source have diminished in recent years to such an extent that the work must be curtailed unless public support is forthcoming. The approval of this request would make it possible to carry on these needed investigations on a modest scale and slowly accumulate the information of the most importance in working out the story of the American Indians.

Items of the most immediate interest include:

(1) Archeological work at aboriginal sites in the Southwestern and South-eastern States, including the "Folsom man" site in Colorado. The semi-arid area comprising the States of New Mexico, Arizona, and Utah witnessed the development of the highest aboriginal culture within the bounds of the present United States. Almost as well advanced were the mound-building peoples of the lower Mississippi region and the Southeastern States. These two areas have long been leading objectives in the archeological work of the Bureau because of the fact that they offer a more complete picture of aboriginal life than do the remains in other sections of the country. It is particularly important that a chronological cultural sequence be developed for the southeastern area which will be comparable to that now almost completed for the southwest. Supplementing the work in the southwestern area it is hoped to continue studies on the oldest habitation site yet found in the New World, the Lindenmeier site in northern Colorado.

(2) Ethnological work on the Algonquian, Iroquoian, Athapascan, and Muskogean Tribes. These four great tribes, whose distribution almost covers the extent of the North American continent, are rapidly nearing the end of their aboriginal culture. Here and there small groups still exist from which it is still possible to obtain much information of value regarding the former culture, language and organization of these peoples. This work is urgent in nature because of the rapidly diminishing number of informants with a knowledge of the old life.

(3) A program of combined ethnological and archeological work in the north-western part of South America.

It has recently become evident that the source of the high civilizations of Central America and Mexico is very probably to be found somewhere in South America rather than in the valley of Mexico as was formerly supposed. The search for these origins comprises what is probably the present outstanding archeological problem for the New World. Archeological work in this area, for its proper understanding, should be combined with systematic ethnological researches as well. This work would be particularly timely at present because of the fact that the Bureau has undertaken the editing and production of the long-discussed handbook of South American Indians.

(4) *Project—"Astrophysical Observatory, Smithsonian Institution"*

Expended, 1940.....	\$41, 070
Allotment, 1941.....	31, 853
Base for 1942.....	31, 853
Total estimate or allotment, 1942.....	58, 603
Increase for 1942.....	26, 750

(a) Transfer of Division of Radiation and Organisms:

01 Personal services:	
1 senior scientist (P-5).....	\$4, 800
2 scientists (P-4).....	8, 000
1 assistant scientist (P-2).....	2, 800
1 junior scientist (P-1).....	2, 400
1 senior mechanic (Cu-7) 6 months.....	1, 100
02 Supplies and materials.....	750
07 Transportation of things (service).....	100
10 Furnishing electricity.....	400
12 Repairs and alterations.....	150
13 Special and miscellaneous current expenses.....	300
30 Equipment.....	4, 200
	25, 000

(b) 06 Travel expenses..... 1, 750

Total..... 26, 750

WORK UNDER THIS ALLOTMENT

Duties.—The Astrophysical Observatory under annual appropriations received from the Congress since 1892, carries on investigations to observe and evaluate the percentage variations of the sun's output of radiation, on which all life and weather depend. No other agency in the world does this.

Plan of work.—The work of the Observatory involves three field observing stations and the headquarters observatory, which is responsible for designing and making specialized instruments used in measurements, and reducing and publishing results from the field observatories.

The Observatory stations are located at Burro Mountain, N. Mex.; Table Mountain, Calif.; and Montezuma, Chile, at elevations of from 7,500 to 9,000 feet. These measurements must be conducted on high desert mountains where a maximum of calm, cloudless weather is found, and they should be widely scattered and in sufficient numbers to permit an unbroken series of measurement of the sun's radiation. The measurements of separate stations also increase the mean accuracy of the final results. The daily work at each field station requires about 2 hours of observing and from 4 to 10 hours additional for computation.

The appropriation of \$31,853, while inadequate, has been supplemented from private sources in order to maintain this unique and fundamental research unbroken. Continuation of its present Federal support is urgently needed as a contribution to this end.

The increase in the estimates for 1942 is explained as follows:

(a) \$25,000 for transferring to public support an established Smithsonian activity for the investigation of the effects of radiation on plant growth and animal organisms.—Objective: Since all life depends directly or indirectly on light, to carry out those investigations on living organisms (plants or animals) wherein radiation enters as an important factor. Such investigations include an analysis of plant growth as these processes depend on light (so-called photosynthesis), with special reference to the factors of intensity, wavelength, and duration of exposure.

Problems: The immediate problems concerned are twofold: First, to obtain quantitative data under rigidly controlled conditions of light, temperature, humidity, gaseous content, and the nutrient composition of the environment of the organisms studied, in order to determine the exact role played by each of these factors on plant growth in its various forms. Second, to reexamine and check experimentally the results reported by other investigators which bear on the work in hand and which were obtained under less quantitative and controlled experimental conditions.

Prior to the establishment of this laboratory by the Smithsonian Institution only fragmentary qualitative knowledge existed of the role of light in plant growth. For the most part observations had been made only on insignificant plants. The Institution has studied wheat extensively and other important food plants.

Significance: Green plants under the influence of light carry on a most important manufacturing process upon which all life depends. By this process carbon dioxide and water are united to form the simple sugars. These products are then elaborated into starch and other carbohydrates and into proteins, organic acids, and fats. Not only are these products the basis of the world's food supply, but in other forms they make up the coal beds and oil fields which are the fuel resources of mankind. Light plays an all-important role in the manufacture of these substances. Without light plants cannot increase in dry weight. A knowledge of the exact mechanism and conditions involved in this action of light on which all life depends will be of inestimable value as a basis for practical economic studies in agriculture and manufacturing pursuits in keeping with the needs of the country. While certain phases of this problem are being investigated in other institutions, there is no known duplication elsewhere of the work of this unit, either governmental or private.

Results accomplished: Thus far the activities of the Division have been focused largely on problems dealing directly or indirectly with photosynthesis. What color, what intensity of light is best? How does growth depend on the carbon dioxide concentration, on the period of illumination, and on other factors influencing plant growth? What are the stimulative and lethal actions of ultraviolet radiation? The research has been distinctly fundamental in nature. Exact measurements have taken the place of qualitative observations. Because of the unique methods and apparatus developed, the work has found very little duplication in other laboratories. These researches have been very rich in results and have attracted world-wide attention and much unsolicited praise from experts. Some of the equipment developed in this laboratory has found widespread application in other fields also. The counsel of its staff is being sought constantly on technical and research problems of radiation and the effects of radiation on living

organisms. Other Government branches have sought and received cooperation from this Smithsonian laboratory.

Necessity of public support: The Division of Radiation and Organisms was organized May 1, 1929, and its work carried on from private funds of the Smithsonian Institution. The private support for this work is now diminishing, as in all other endowed institutions, and these fundamental and original investigations must be curtailed or even abandoned if public support is withheld. This matter was discussed by the Regents of the Smithsonian Institution, among whom are the Chief Justice, the Vice President, and representatives of the Senate and House, and a resolution endorsing application for public support was unanimously adopted.

Since both types of research deal fundamentally with radiation, and use many similar types of instruments and methods, it is planned to combine this project with the Astrophysical Observatory where work dealing with technical measurements of radiation are also under way. The general equipment and requirements as to technical personnel of the two groups dovetail so well that the work will be forwarded efficiently and economically under this arrangement. Laboratories specially equipped for the work on plant growth and animal reactions are now established at the Smithsonian Institution. A well-trained staff of wide experience in this type of investigation has been working on these problems for several years at the Institution. It includes two physiologists, a physicist, a biochemist, and an engineer and technician. It is desired to transfer this staff, whose salaries now aggregate \$19,100 per annum, to the Astrophysical Observatory. The remainder of the requested appropriation of \$25,000 is required for supplies, including electric power, chemicals, special additions to technical equipment, and incidental expenses. The technical equipment used in the past would be made available for their use without a cost.

In view of the fundamental importance of such investigations to agriculture and industry, its public support is strongly urged.

The distribution of the funds under objects of expenditure includes the several items shown under the itemized list at the beginning of this project, and comprises both personal services and other expenditures.

(b) *Travel expenses, \$1,750.*—Objective: To transfer the two employees at the solar observing station on Mount Montezuma, Chile, to a station in the United States, and two employees from the United States to the Chile station.

To make daily observations of the sun requires the location of the stations at high elevations in cloudless regions. The Chile, South America, station is on a high mountain isolated in the nitrate desert. The character of the work is exacting, and the hardships under which the director and his assistant live on this mountain peak, where not so much as a blade of grass can live, and where every drop of water used has to be hauled in barrels up the mountain for miles, makes it necessary for the health of the employees to relieve them every few years. The present force will have completed their term in 1941. The increase of \$1,750 is requested to bring the present station director and his assistant back to this country and to send down their relief.

(5) *Project—"Maintenance and operation"*

Expended, 1940.....	\$145, 440
Regular allotment, 1941.....	161, 835
Deduct nonrecurring and other items not required in 1942 (\$12,500 for sewer, Smithsonian Building, to be completed fiscal year 1941).....	\$12, 400
Saving on electric current.....	2, 000
	14, 500
Base for 1942.....	146, 835
Total estimate or allotment, 1942.....	176, 785
Increase for 1942.....	29, 950
01 Personal services:	
(a) 1 clerk-stenographer (CAF-3).....	1, 620
(b) 1 cabinetmaker (Cu-7).....	1, 860
(c) 1 cabinetmaker's helper (Cu-4).....	1, 320
(d) 02 Supplies.....	6, 000
(e) 12 Repairs and alterations:	
(1) Plant gallery.....	11, 750
(2) Resurfacing service driveway, Natural His- tory Building.....	7, 400
	29, 950

WORK UNDER THIS ALLOTMENT

Activities conducted under the funds provided in this allotment from the appropriation "General expenses, Smithsonian Institution," include the carpenter and sheet-metal shops, paint shops, mechanics assigned to building repairs, the telephone exchange and engineer's office, including mechanics for the maintenance and repairs of the water and sewer systems, and of the installations for heating, lighting, and power. Activities also include the construction and repair of exhibition and storage cases for Museum specimens and a wide variety of drawers, trays, and other equipment needed in the classification and arrangement for ready reference of our huge and varied collections.

Other expenditures.—Aside from the salary of the mechanical staff, expenditures must be made for the purchase of electricity for light and power, for supplies of metal, glass, paint, and wood necessary in construction and repair, and the usual equipment necessary in the operations of the various mechanical shops. The funds are used also for the purchase of laboratory and office furniture and a great variety of glass, wood, metal and paper containers used in safeguarding specimens.

Needs of this work.—A very considerable portion of the funds under this allotment are required for fixed maintenance charges such as the purchase of electricity, and thus there is small leeway to meet unexpected break-downs and repairs or to provide for the growing expenses incident to constructing exhibition and storage cases and purchasing containers essential to the care of the increasing collections. Aside from this our principal buildings are from 30 to 94 years old, a fact which implies steadily increasing deterioration with consequent need for unexpected repairs and replacements and a growing demand for the supplies and equipment required for this work. Present expenditures are all essential so that there are no funds which might be transferred to cover costs of the following items for which additional funds are requested. The increase in the estimates for 1942 is explained as follows:

(a) \$1,620 for 1 clerk-stenographer for the engineer's office.—Objective: To relieve the engineer of much routine work and make him available for the varied engineering tasks required of him.

Since 1932 the engineer has been without a competent office helper. In this time the routine duties of the office, such as the keeping of time and records, making out materials lists, correspondence, and maintenance of accounts of material and labor on various jobs, has taken a considerable portion of his time which should have been available for technical engineering work. The Institution has lost much from this situation for the engineer alone on the mechanical staff possesses the engineering training and wide experience required to keep our equipment in efficient working condition. Since his work touches the systems for water and sewers, heating and lighting, as well as maintenance of elevators, the efficient performance of his duties affects all who work in our buildings as well as our numerous visitors. The addition of this position will also insure the presence of a person in the engineer's office when the engineer is absent on inspection and thus make possible the prompt coordination of the various separate tasks of the unit. This position is greatly needed but cannot be provided from current funds.

(b) \$1,860 for one cabinetmaker (Cu-7).—Objective: To increase the capacity of the carpenter shop for constructing exhibition and storage equipment for safeguarding specimens.

With the steady increase of our collections both in exhibits and in the study series, there is a proportionate requirement for added exhibition cases and storage equipment. The work as regards both of these activities is considerably in arrears, with the result that it is becoming more difficult to care for the specimens in our charge in a manner comparable to their value. We have found that it is important to make our storage cases in our own shops, since there all steps can be taken to avoid the shrinking of doors and cases, which cannot be tolerated as it exposes the specimens to insect attack or other deterioration. A continuing addition of cases is necessary if we are to meet our first duty—that of furnishing adequate protection to the collections in our care. Only in this way can we be certain that the materials now being added to the collection will be available for the study and use of succeeding generations. The additional cabinetmaker will furnish help needed in this connection.

(c) \$1,320 for one cabinetmaker's helper (Cu-4).—Objective: To furnish needed assistance to cabinetmakers in expanding the output of carpenter shop.

In order to expedite as much as possible the construction of sorely needed exhibition and storage cases, it is important that a helper be available to assist in the general work of the cabinet shop.

(d) *Supplies and materials, \$6,000.*—Objective: To provide the material needed for storage and exhibition cases.

Funds available under this subappropriation are inadequate for materials for the construction of exhibition and storage cases in the quantity needed. The reorganization of our collections which is constantly under way as new material is received, makes it necessary to spread and reclassify collections so that they will be available for study. This adds to the annual requirements for cases in a quantity now beyond our means to provide. The supplies are principally lumber-sheet metal, paint, and glass which are required in the building of exhibition and storage equipment.

(e) *Repairs and alterations*—

(1) \$11,750 for constructing a gallery for the Division of Plants.

Objective: To provide space for the cases of the growing plant collection.

The steadily continuing growth in the plant collections makes it imperative that more space be provided for their care. These collections are housed in the large hall on the third floor of the Smithsonian Building. In 1928 an overhead gallery was built over the west half of this hall to provide necessary expansion. It is now required to continue this gallery over the east half of the hall to care for the growing collection. At the present time all available space has been utilized for storage cases and the only possibility of obtaining needed case room is through the construction of this gallery, for which the cost is estimated by the Procurement Division as \$11,750. This is a nonrecurring expenditure.

(2) \$7,400 for resurfacing the service roadway around the Natural History Building of the National Museum.

Objective: To resurface the service driveway around the Natural History Building.

This concrete roadway has had 30 years' service. During this period it has been patched systematically and the section on the east has been replaced, but general deterioration resulting from heavy traffic and winter injury has reached a point where further patching is entirely inadequate. The only treatment now possible is making major repairs and resurfacing the entire roadway. This can be done at minimum cost now while there is still a relatively solid foundation.

The estimate of cost has been obtained from the Public Buildings Administration following a survey by their engineers. This is a nonrecurring expenditure.

(6) *Project—"National Collection of Fine Arts, Smithsonian Institution"*

Expended, 1940-----	\$33, 725
-----	42, 715
Allotment, 1941-----	42, 715
Deduct nonrecurring and other items not required in 1942 (\$13,310 for repairs to roof of Freer Gallery of Art, to be completed in fiscal year 1941)-----	13, 310
-----	29, 405
Base for 1942-----	29, 405
Estimate or allotment, 1942-----	104, 485
-----	75, 080
-----	75, 080
01 Personal services:	
(a) 1 junior clerk-typist (CAF-2)-----	1, 440
-----	1, 440
(b) Temperature and humidity control plant, Freer Gallery of Art:	
01 Cu-8 one principal mechanic (engineer) (half year) _	1, 000
02 Repairs and alterations-----	12, 000
13 Special and miscellaneous current expenses-----	10, 000
30 Equipment-----	50, 000
-----	73, 000
-----	73, 000
(c) 01 Extend char hours to 4 hours per day-----	640
-----	640
-----	75, 080

ESTABLISHMENT OF THE SMITHSONIAN ART COLLECTIONS

The act of August 10, 1846, establishing the Smithsonian Institution provided for a gallery of art among its activities, and made the Institution responsible for

"all objects of art and of curious research belonging to the Government." This collection was by court decision designated as the National Gallery of Art and was so known until the joint resolution of March 24, 1937, accepting the gift of the great Mellon collection, gave it the name "National Gallery of Art" and renamed the original art collection "The National Collection of Fine Arts." Through this agency the Institution is charged with the care, exhibition and maintenance of all objects classed as fine arts in the custody of the Institution exclusive of those which meet the specifications of the present National Gallery of Art, and are housed in a special building provided therefor.

The National Collection of Fine Arts is at present located in borrowed space assigned to it in the Natural History Building of the United States National Museum.

Objective and plan of work.—The stimulation of the public interest in and knowledge of art by the exhibition and care, as far as space permits, of the paintings, statuary, and other objects contained in this collection; by the holding of special temporary exhibitions of the work of different artists or art organizations; by the publication of catalogs containing information on the collection and by furnishing information on art topics by correspondence.

The increase in the estimates for 1942 is explained as follows:

(a) *One junior clerk-typist (CAF-2), \$1,440.*—Objective: To prepare and maintain a full catalog record of the National Collection of Fine Arts, exclusive of the Freer collections, such catalog to contain complete definite information regarding each object.

The present records of accessions go back as far as 1840 and in many cases are incomplete. Full data regarding them are not only important but necessary as the collections embrace gifts, deposits for indefinite periods and temporary loans, and this information and the conditions under which these gifts or deposits are made are frequently omitted in the older records, and can only be ascertained by research requiring considerable time, and frequently causing embarrassment.

(b) *Temperature and humidity control plant for Freer Gallery of Art, \$73,000.*—Objective: To prevent injury to rare and irreplaceable paintings and other art objects by expansion and contraction due to constant changes in temperature and humidity.

Problem: The art collection, valued at many millions of dollars, with a special building to house it, was presented to the Nation by Charles L. Freer with the stipulation that the Government should provide for its safe and proper maintenance. A large part of this collection is composed of ancient Chinese and Japanese paintings on paper and other fragile material, and those of eminent contemporary American artists which are suffering much injury by the expansion and contraction due to the constant changes in Washington's temperature and humidity.

Financial requirements: To prevent this injury it is planned to install a temperature and humidity control plant. Adequate flues for this purpose were constructed when the building was erected to provide for the washing of the air entering it. For this reason a temperature and humidity control plant can be installed at a cost of many thousand dollars less than if flues therefor had also now to be built in. Alternating-current motors are now being installed in this building, which makes the estimate about \$10,000 less for the cost of the plant than if they had to be provided. Of the amount estimated (\$73,000) approximately \$70,000 would be nonrecurring, but the necessary personnel and current to run the plant would have to be provided when it is put in operation next year.

(c) *Extension of char hours from 3 to 4 hours per day, \$640.*—Objective: To keep the exhibition halls of the National Museum and Galleries clean.

Provision has been made in the current year to extend the char hours to 4 per day on 2 days each week. This has improved conditions but is not adequate to keep the halls clean at all times, which would require the full 4 hours each day, for which funds are not available. The increasing number of visitors not only brings more dirt into the halls, but also soils the exhibition cases, making necessary constant cleaning and polishing of the glass cases, so that the visitors may not have to view the specimens through an unsightly accumulation of dust and fingerprints.

Tell us about this item, Doctor.

Dr. ABBOT. That includes a number of the activities which were lumped together, at the suggestion of the Bureau of the Budget, some years ago, and includes the personnel of the general administrative office, the Astrophysical Observatory, the Bureau of American Eth-

nology, International Exchange Service, maintenance and operation of the United States National Museum and the National Collection of Fine Arts.

NEED FOR INCREASE FOR ASTROPHYSICAL OBSERVATORY

(See p. 227)

In this appropriation, we have asked one considerable increase for the Astrophysical Observatory. That deals with what is called the Division of Radiation and Organisms. It was established by the Smithsonian Institution from its private funds about 10 years ago.

You are aware, of course, Mr. Chairman, that all life on the earth, all coal, wood, and everything which contains carbon, derives that carbon from the air. Although the air has only three-one hundredths of 1 percent of carbonic acid gas in it, yet all of the coal, wood, vegetation, the carbon in our own bodies, everything which contains carbon, has derived that, directly or indirectly, from absorption of carbon-dioxide by the green leaves of plants under the influence of light.

For 25 years, I had hoped to make a study of that matter, actually to find out which kinds of light, which intensities of light, the distribution of the time in which that light falls, and other features, would promote that reaction under which carbon dioxide is absorbed under the influence of light by the green leaves.

In about 1930, we were able to devote some of the private means of the Institution to that purpose, and the Research Corporation of New York helped us in establishing and maintaining this division, which has done a great deal of valuable work. It has made many publications and, for the first time, we are putting out real quantitative knowledge in this field of science. So much appreciated has been this work, that we have had letters, unsolicited entirely, from hundreds of people all over this country and the world, who are interested in those subjects, praising the work. And many of the methods which we have employed and apparatus which we have used being novel, they have copied those methods and apparatus to some extent, and have always been very appreciative of the character of the work and of its importance. I feel that it is really a very, very useful branch of our investigation, and it is one which has been highly appreciated by the Department of Agriculture. We have had several occasions on which we have had cooperative investigations, in which we took part and they took part, and they have been very cordial to this work.

Now, the private funds under which we have continued it for 10 years are diminishing, drying up.

Mr. WOODRUM. Have not we been appropriating some money for that, Doctor?

Dr. ABBOT. Not at all. As I say, the private funds are diminishing; so, more than a year ago, I brought this matter to the attention of the Board of Regents of the Smithsonian Institution and a resolution was passed unanimously recommending that attempts should be made to get this new Bureau under public support, since it relates to the most fundamental of all chemical reactions—that on which all life depends.

This year we brought it up and the matter was investigated very thoroughly by the Bureau of the Budget, a great many questions

were asked; I got a recommendation from the head of the Bureau of Plant Industry, of the Department of Agriculture and, in the end, they became convinced that it was a matter which was of importance and of public interest. And like other bureaus—the National Museum itself, the National Zoological Park, the Astrophysical Observatory, and some others—which were started by the Institution out of its private funds and became of public importance, and have been appropriated for by Congress for a good many years, it was thought this deserved similar treatment.

Now, we make studies of radiations in the Astrophysical Observatory, and as this is a subject which involves radiation primarily, it seemed a suitable thing to attach this Bureau to the Astrophysical Observatory.

The estimate which covers this new enterprise is an increase of \$25,000 in the appropriation for the Astrophysical Observatory. You are aware, of course, Mr. Chairman, that a good deal of the cost of the Astrophysical Observatory is carried by the private funds. For many years, largely through the generosity of Mr. Roebbling, we have been able to devote something like \$20,000 to the support of the Astrophysical Observatory, in addition to the approximately \$30,000 which the Congress has provided.

So that the increase of \$25,000 for this new enterprise will not really cover anything like the entire cost of the Astrophysical Observatory, with this new enterprise added. We expect still to carry something like \$20,000 of its cost from funds which we are able to collect for the purpose of studying the radiation of the sun, and the effects of its variation on the weather, which I have explained to you in former years. That is the principal item of increase in this branch of the estimate of which we are now speaking. Later on I should like to speak to the matter of the publications of the Institution. I think, however, that comes in a separate section. There is a large item of increase there.

ADDITIONAL DRAFTSMAN FOR ILLUSTRATIONS OF PUBLICATIONS

Mr. WOODRUM. What is that increase in salaries and expenses?

Mr. DORSEY. That is \$1,620 for one additional draftsman to take up the routine work of illustrations for publications. We have one man there now, a very highly skilled illustrator, and he is so crowded with work that frequently, in order to get diagrams and maps and things of that sort ready for publication, which can be done by a minor man, the P-5 men draw their own diagrams. And it is very necessary to have this man in order to keep the publications going and not delay their publication.

Dr. ABBOT. I frequently draw diagrams myself, because of the lack of this man.

Mr. DORSEY. Yes.

Mr. FITZPATRICK. There is a total increase in that item of \$140,000.

Dr. ABBOT. Part of that is conditioning of the air for the Freer Gallery of Art. The Freer Gallery, as you know, purchases from the income of the private funds which were left by Mr. Freer a large number of additions amounting to more than \$100,000 each year, to the precious works of art representing the paintings and illustrations of China, Japan, Persia, and India. These are works of the great

masters of those countries, and they are so highly valued that it is not unusual to expend, for a single object, as much as ten or twenty, and sometimes even as much as forty or fifty thousand dollars.

INCREASE UNDER NATIONAL COLLECTION OF FINE ARTS

Mr. WOODRUM. How much of the increase that we have under that item, Doctor, is for the National Collection of Fine Arts? You are increasing that by \$75,080. How much was it before?

Mr. DORSEY. \$42,715.

Mr. WOODRUM. It was \$42,715, and you are increasing that by \$75,080?

Mr. DORSEY. Yes, sir.

MAINTENANCE AND OPERATION

Mr. WOODRUM. What is this "Maintenance and operation" \$27,950?"

Dr. WETMORE. The part of this appropriation allotted to maintenance and operation covers the physical care and upkeep of our buildings. The new items here are as follows: First, an additional clerk-stenographer, grade CAF-3, for service in the office of the engineer. Since 1932, the engineer has had no office assistance. He has been under the necessity of keeping his own time books, writing his own orders, and doing routine work of that nature.

Mr. WIGGLESWORTH. Should that amount be \$29,950, or \$27,950? It appears differently on pages 1 and 24, if I am not mistaken.

Mr. GRAF. Actually, we have \$29,950 of new activities, but the difference between the \$27,950 and the \$29,950 is a saving of \$2,000 on electric current. In other words, they are giving us \$29,950 of new activities, but only \$27,950 of new money, because of the saving of \$2,000 on our present appropriation.

Dr. WETMORE. This clerk, as I say, is essential in the operation of the engineer's office.

We wish to add, also, a cabinetmaker, grade CU-7, to carry on the necessary work in the cabinet shops, and a cabinetmaker's helper in grade CU-4, at \$1,620.

Mr. WOODRUM. How many do you have now?

Dr. WETMORE. We have three cabinetmakers and one mill hand at the present time. These men are occupied in making and repairing storage and exhibition furniture for the National Museum for our ever-increasing collections so as to keep in proper shape these valuable materials. We find it the better procedure to have this type of work done in our own shops, rather than to attempt to have it performed by outside contract, because we are able in that way to determine the condition of material that goes into the cases. It is quite important that the lumber be well seasoned, otherwise as it dries, cracks appear and allow the entry of dust, insects, and sometimes light, all of which are highly destructive. Also, the storage cabinets are made in unit sizes, so that the containers that go into them are interchangeable from one cabinet to the others. With an outside contractor, it is very difficult to get these things milled down to an exact dimension so that this interchange is practicable. By doing the work in our own shops, we can keep samples there and set up jigs that enable an absolute determination of size.

ADDITIONAL SUPPLIES

In connection with this, there is an increase also of \$6,000 for additional supplies.

Mr. WOODRUM. How much did you have under that item, before the increase?

Dr. WETMORE. We expended last year \$18,668. We estimate, for the current year, \$19,375. The estimate for 1942 is \$25,375—an increase of \$6,000.

This covers the purchase of lumber, paints, sheet metal for covering storage cabinets, glass for the fronts of exhibition cases, mechanics' and electricians' supplies, and items of that character. The additional material is definitely needed for the care, preservation, and maintenance of our collections.

REPAIRS AND ALTERATIONS

There are two principal items under "Repairs and alterations" that require consideration. We have submitted an estimate of \$11,750 for the enlargement of a gallery to house the collection of plants. The plant collection of the National Museum now includes more than 1,750,000 specimens. These are housed in suitable cabinets to preserve them, in a large hall on the third floor of the Smithsonian Building.

In 1928 the conditions in this hall became badly crowded, and we secured an appropriation to build an overhead gallery, over about one-half of this area, for which there was abundant space, as the room is very high. Now we have come to a point where we are under the necessity of extending this gallery across the entire room, the remaining distance being about 65 feet. The estimate given is based on figures we have secured from the Procurement Division. At the present time we have no more space for additional cabinets for these plant collections. We are getting annually valuable materials that are important to the national collections, and we need more adequate space for them.

The other new item under "Repairs and alterations" is for \$7,400 to repair and surface the service driveway leading around the National History Building. The driveway in question encircles three sides of the building, and there is also an entrance approach on the north. The building was finished for occupancy in 1911 and the driveway has been in use ever since.

About 1928 we replaced certain sections on the east side, but now additional work is necessary over the entire section of roadway. We contemplate under this item the removal of broken cement where necessary, repairs to the curbsings, and the raising of manhole covers, drains, and similar installations for about an inch, and then to cover the whole with an inch of bituminous surfacing. That will put the drive in good condition again and, we believe, maintain it for a considerable number of years. Unless we do this we will be under the necessity, in a very short time, of replacing the entire cement work, at a considerably greater expense.

ETHNOLOGY AND ARCHEOLOGY OF AMERICAN INDIANS

Mr. WOODRUM. You also have an item for ethnology and archeology of American Indians, for which the estimate for 1942 is \$64,987.

Mr. STIRLING. Yes, sir.

Mr. WOODRUM. How much did you have for this item for the current year?

Mr. STIRLING. Our regular allotment for 1941 was \$56,287, and the amount of the increase requested is \$8,700. That is divided into two principal items. One is the item of \$1,800 for the salary of a CAF-4 photographer, \$6,400 for field researches in archeology and ethnology.

I have a general statement in the justifications more or less outlining the objectives of the Bureau and the work we are doing and hope to do, and have tried, in so doing, to bring out a little more clearly than may have been done in the past some of the more practical aspects of the work that we do in our researches.

I think that the cultural aspects of the work, contributions to history—particularly the pre-Columbian history of America—is of great interest to everyone, and I think a great many people fail to realize many of the practical items that have come out of it. On the scientific side the subject matter of anthropology has a very wide scope, and in our work with aboriginal tribes we encounter almost limitless aspects of those things that have to do with the welfare of man.

I have mentioned in my statement of justifications some of the things that have been revealed to the benefit of modern culture as the result of these ethnological studies. The wide use of aboriginal medicinal remedies offers a good illustration in one field. A few remedies which have been known for a long time, such as quinine and cocaine, were utilized by early explorers. Everyone knows of these.

In recent researches ethnologists have put more serious study into hundreds of other remedies that the Indians have used in various parts of the country, and are gradually discovering that a great many of these are of very real, practical value.

One interesting bit of research, now almost completed, has to do with what appears to be a specific for paralysis that has been found in the application of curare, a drug the Indians used primarily for poisoning their arrows in the tropical jungles of South America. The Indians also used it in the form of a medicine, but like some of our powerful drugs, such as sulfanilamide, it can be very harmful if improperly used, and its poisonous effects indicate that it can have very powerful uses as a drug, when properly and intelligently applied.

This particular drug is probably the best thing that has been discovered for the treatment of paralysis, and it has been used successfully in many cases.

I mention it as one example of the practical discoveries brought out purely through ethnological research.

Mr. STIRLING. The same situation is true with regard to food plants. Every one knows that the American Indians developed maize, beans, squash, potatoes, sweetpotatoes, and many other staples now in common use.

Dr. ABBOT. And probably rice.

Mr. STIRLING. Not rice. The ordinary rice we use is an Asiatic plant. Wild rice, however, was extensively used by the tribes in the Great Lakes region and was one of the staple foods of this region.

Recently, as the result of the findings of ethnologists, some ethnologically interested members of the Department of Agriculture have been studying more carefully the plants used by the Indians,

and find that there is a huge number of food plants that we have never attempted to utilize.

In other words, there has been a lack of use made of many possible food sources, because like sheep we are inclined to hang on to the few things we have, without bothering to try anything new.

There are many places where Indians have subsisted very comfortably on native foods, where a white man would starve to death.

A good example is found in the desert region of southern Arizona, in the Gila and Salt River Valleys, where the Indians make use of some 75 different species of desert plants, which, by proper treatment, can be converted into food. Yet in that same region there were caravans in the early days in which the white men starved to death with ample food all about them, simply because of ignorance, whereas, if they had possessed in their wagons such a report as that on the use of desert plants by the Cahuilla Indians, by Barrows they could have lived very comfortably. Not realizing that cactus, yucca, and other available plants could be prepared for food, they starved.

The stalks of the Maguey plant, when properly prepared and cooked, make a food which is quite palatable and nourishing.

There are a great many plants which could be used in a commercial way, greatly increasing our natural sources of food supplies. A few men such as Cook and Swingle have been actively interested in this field for the Department of Agriculture.

Mr. WOODRUM. You have furnished us with a very good statement on the general work of the Bureau.

Mr. STIRLING. I have tried, in the justifications, to summarize our activities. It is not necessary to amplify this further. That general statement has been written in an attempt to emphasize the practical end of the work.

INCREASES FOR FIELD WORK

With regard to the increase asked for for field work, our results depend on filed researches, which are really the lifeblood of our organization. We have been struggling along without funds in that respect for the past 8 years, but have managed in one way or another to accomplish work in dribbles, and have been able to get by, as a result of deaths and retirements among members of the staff, together with private funds from the Institution that Dr. Abbot has generously handed to us from time to time. We would like very much to get back on our own and be able to adequately carry on our researches.

The other item of \$1,800 for the photographer bears on a point that has bothered us for quite some time. One of our principal bottlenecks in the matter of the preparation of material for publication has been in connection with the photographic situation.

There are two laboratory men who do all of the photographic work for the entire Smithsonian Institution. That is considerably more than they can handle, and I believe the photographic work of the Bureau of Ethnology is the heaviest of any single unit of the institution, and to handle our work alone would keep one man busy.

In addition to that, we have a much more urgent item, the salvage or restoration of our invaluable negative collection. This is by far the finest collection in existence of photographs dealing with the American Indian. We have the plates made by the Wheeler, Hayden, and Powell surveys in the West. Many of these are not only ethno-

logical in nature, but they are historical pictures of great value. A great many were made with the old wet-plate process. A lot of the negatives are beginning to deteriorate, and under present crowded conditions it is impossible to work with them.

If we get a new man, my plan is that as a part of his regular routine work he could systematically go through these, making new prints from the deteriorated negatives and then after restoring the prints, making new negatives from them.

If this is not done it will not be very long before many of these irreplaceable records will be damaged beyond the possibility of restoration, and it is something that ought to be done before it is too late.

That, I think, is also covered in my prepared statement, so it is not necessary to amplify it further.

PRESERVATION OF COLLECTIONS

Mr. WOODRUM. We have also the following item for preservation of collections:

Preservation of collections: For continuing preservation, exhibition, and increase of collections from the surveying and exploring expeditions of the Government, and from other sources, including personal services, traveling expenses, including not exceeding \$1,500 for expenses of attendance at meetings concerned with the work of the National Museum when specifically authorized by the Secretary of the Smithsonian Institution, purchasing and supplying, repairing and cleaning of uniforms for guards and elevator conductors, postage stamps, and foreign postal cards, and all other necessary expenses and not exceeding \$5,500 for preparation of manuscripts, drawings, and illustrations for publications, and not exceeding \$4,000 for purchase of books, pamphlets, and periodicals, \$656,230.

JUSTIFICATION OF ESTIMATES

Dr. WETMORE. Mr. Chairman, I offer the following justification for that item:

Justification of estimates

Expended, 1940.....	\$625, 146
Appropriated, 1941.....	627, 470
Transferred to Post Office Department, general fund (United States official mail and messenger service) (under provision of Reorganization Plan IV, sec. 5).....	750
Base for 1942.....	626, 720
Estimate, 1942.....	658, 230
Increase for 1942.....	31, 510
<hr/>	
01 Personal services:	
(a) 2 assistant curators (P-3).....	6, 400
(b) 1 scientific aide (SP-5).....	1, 800
(c) 1 junior scientific aide (SP-3).....	1, 440
(d) 3 clerk-stenographers (CAF-3).....	4, 860
(e) 1 lieutenant of watch (CU-5).....	1, 500
(f) Additional for guard service.....	900
(g) 1 messenger for Library (CU-3).....	1, 200
(h) 1 classified laborer (CU-2).....	1, 080
(i) Extend char hours from 3 to 4.....	5, 330
02 (j) Supplies and materials.....	4, 000
30 (k) Equipment.....	3, 000
Total.....	31, 510

NEEDS OF THE MUSEUM

While changes in the exhibition collections are going forward constantly they are minor at any one time. The study collections, however, are a living and growing entity and must be treated as such. The addition of specimens, which is of daily occurrence, acts to increase the work load on a staff already inadequate to fulfill its responsibilities as promptly as is justified by their importance. Since our major accretions come to us by gift and are important to the work imposed on the Museum by law, we cannot control or limit our work load. With such expenses as cleaning supplies, uniforms for guards, alcohol and other chemicals for preserving specimens as fixed charges, the funds available for ordinary miscellaneous expenses are entirely insufficient even when these are supplemented as is always necessary by savings from the salary roll. The use of such savings from salaries results in denying promotions to many of our personnel and in preventing the appointment of needed temporary assistants. There are no funds available for providing the additional items requested herewith, which are urgently required to meet our minimum needs as to—

- (1) Safe preservation of specimens and records.
- (2) Imprisonment in the effectiveness of the guard force.
- (3) Better cleaning of buildings and exhibition cases.

The increase in the estimate for 1942 is explained as follows:

01 Personal services:

- (a) \$6,400 for two assistant curators (grade P-3 at \$3,200 each).

Objective.—To provide adequate technical personnel to assist the curators in giving proper care to specimens in (1) the Division of Fishes and (2) the Division of Engineering, and to provide understudies in training for the curatorial positions indicated.

These additional curatorial services are urgently required in the Division of Fishes and in the Division of Engineering.

(1) The work of caring for the large and economically important fish collection of the Museum, which includes about 1,000,000 specimens, falls on a staff too small to give it adequate attention. The present personnel in this unit consisting of a curator, one aid, one clerk, and one laborer, is occupied almost entirely with current work to the detriment of proper curating and classification of the collections. As fishing is an industry of major commercial importance and also a recreation for thousands of persons, it follows that our scientific collections in this group are highly valuable and that many questions requiring the attention of trained personnel arise in connection with them. The Museum has now only one professional worker to care for the diverse work of the Division of Fishes. In his temporary absence for any cause the work of the unit is seriously impeded. As our appropriation is now 95 percent allotted to personal services, it is impossible to assign funds to this Division where \$3,200 is needed for the establishment of a new position of assistant curator (grade P-3).

(2) The Division of Engineering administers extensive collections pertaining to the record of man's material progress. They are widely recognized for their authenticity and constitute an important auxiliary to national education and culture. The professional staff caring for these collections consists of a curator and one assistant curator, the latter devoting his entire time exclusively to aeronautics, because of the magnitude and rapid developments of this industry. The curator alone cannot properly administer and develop the many remaining diverse collections ranging from land transportation to timekeeping and from coal mining to radio. Nor can he meet the increasing public demands for professional assistance. The collections, furthermore, noticeably lag behind industrial and engineering developments as to scope as well as behind modern museum practices as to exhibition. Funds for this position are not available in existing appropriations, for which \$3,200 additional is needed.

- (b) \$1,800 for one scientific aide in the Division of Ethnology (grade SP-5).

Objective.—To furnish the semitechnical assistance required to insure the ethnological specimens against insect depredations, and to assist in the care and arrangement of these collections.

The Division of Ethnology has under its charge articles and products of many kinds illustrating the cultural development of the existing races of man as found throughout the world. It is charged with preserving one of the very large (more than 180,000 specimens) and important collections in the Museum and has been understaffed for several years. The specimens require unusual care for their preservation. Metal and wood objects are relatively safe, but those made of straw, wool, or leather, which constitute a large portion of the collection, are subject to insect attack and thus require regular inspection and insecticide treatment. This cannot be done as often as required by the present staff if our normal responsibilities are to be met. The work of the aide requested would be concerned in part with such preservation measures and in part with assisting in the arrangement of the collections incident to their constant growth, and the preparation of records so necessary to the use of the specimens in technical studies.

(c) \$1,440 for a junior scientific aid in the Division of Plants (grade SP-3).

Objective.—To furnish pest protection to the collection of plants and relieve the technical staff of routine handling of specimens incident to their identification.

The work of the Division of Plants is considerably in arrears as regards subprofessional help. With its large collection now approaching 2,000,000 specimens and its rapid and steady growth, an additional subprofessional position is needed if the collection is to be given proper protection from insect pests and kept in good arrangement to permit rapid comparison of specimens in connection with the heavy load of identification work. This collection is one of great scientific value since it plays an important part in all economic botanical work. With the present force, too great a portion of the time of the technical staff is required in withdrawing specimens from the collections for study and replacing them, but this work is of a semitechnical character and cannot be entrusted to laborers. Since this collection is built up to a large extent through donations resulting from our identifications, it is important to the continued growth to place classification on a somewhat higher level as regards promptness of identification. The aid in question would, through relieving the technical staff of much of the routine work, make available more of their time for this important work, a considerable portion of which is of direct aid to economic investigations.

(d) \$4,860 for three clerk-stenographers (grade CAF-3 at \$1,620 each).

Objective.—To provide sorely needed assistance in maintaining records and preparing correspondence in (1) the office of personnel, (2) the Division of Crafts and Industries, and (3) the Division of Paleontology.

The personnel unit of the National Museum is greatly in need of additional help. Large and constantly increasing requirements as to reports and allied work are required by the central Federal agencies. An additional clerk-stenographer to be responsible for the stenographic work of the unit and the retirement records is most urgently needed. The present staff of two persons cannot carry on this work with its constantly increasing volume and variety in a reasonably prompt manner. The addition of this position will greatly expedite the personnel work and obviate the delays in filling vacancies which now work to the detriment of the watch and labor forces as well as the understaffed bureaus in every branch of the Smithsonian. The present shortage of help is felt especially in connection with the large quantity of forms, questionnaires, and other personnel statements which must be prepared within set times, and that necessarily take precedence over the regular personnel work which is more directly important to the work of the Institution. Since specific knowledge of the varied personnel practices is required in this position, temporary assistance is of little value.

Several of the major divisions of the Museum are now without any clerical or stenographic help. Members of the technical or subprofessional staff who have higher duties are now obliged to make necessary records of the large and varied collections, including cataloging and typing. In addition to greatly delaying necessary clerical routine the arrangement works to the detriment of adequate professional care of the collections. It is impossible to meet this situation by transferring clerks within the organization, for those we now have are kept fully occupied on the work of the divisions where they are assigned. The units most urgently in need of such stenographic and clerical help are the Division of Paleontology and the Division of Crafts and Industries, both of which are without clerical assistants.

(e) \$1,500 for 1 lieutenant of watch.

Objective.—To insure supervision by officers of the 2 night guard watches at all times.

The greatest need of the guard force is an additional lieutenant to serve as relief on the second and third watches. Owing to the necessity of granting compensatory leave for overtime service to the three lieutenants now on the force and for annual and unavoidable sick leave, it is impossible to keep an officer on continuous duty through the second and third watches in the scattered buildings in the Smithsonian group. In many cases these watches have been under supervision by officers only half of the time. This is a most dangerous practice and could become disastrous in an emergency.

(f) \$900 for additional guard service.

Objective.—To provide uniformed guards for Sunday service and eliminate the part time, partly trained "civilian" guard service now used.

At the present time the Sunday work of guards, which is overtime service, is met in part by hiring "Sunday guards" under the item which is carried in the budget as the service of 1.5 guards at \$1,000, or a total of \$1,500 for the year. This service, while necessary under present conditions, has never been satisfactory, and there is always doubt as to the conduct of such employees in an emergency due to their lack of experience. With the present watch force it is now apparent that this Sunday group could be abolished if two full-time guards were available, for this would make possible a redistribution of work in such a way that a sufficient number of fully trained men would be available for Sunday service. At the present time \$1,500 per annum is allotted to the Sunday work, which with the \$900 additional requested herewith would make it possible to appoint two full-time guards and terminate the present Sunday guard service. The arrangement suggested would place all of the guard work on a more efficient basis. Funds for making this change are not available in our present appropriations.

(g) \$1,200 for an additional messenger for the Library.

Objective.—Through additional messenger service to provide prompt delivery of reference books to the branch libraries and scientific workers.

The Museum's library is one of the most important scientific libraries to be found in the Nation. It covers the broad fields of natural science and engineering and to a lesser extent history and art. In its custody there are the reference works used as basic material for the research work of the Museum. In its effort to increase the availability of its texts it has established branch reference collections. The utility of such collections is based on their completeness and their availability. A major consideration in this connection is an adequate messenger service. There is now available only one messenger, CU-2, who is unable to cope with the work as to quantity, or to perform the higher-grade work which is often required. There is consequently an increasing accumulation of unfinished or incompletely done work which the professional members of the staff have often to leave their own duties to reduce and correct. The services of an additional higher-grade messenger (CU-3) would greatly reduce the work in arrears and save the time of higher-paid personnel. The duties of this position would include: (1) Special messenger service; (2) locating books and periodicals on the shelves and reshelving them after use; (3) carrying books and periodicals to sectional libraries and bringing from them material needed for temporary use elsewhere and (4) opening and stamping incoming books, pamphlets, documents, and periodicals.

(h) \$1,080 for one additional laborer for the cleaning force.

Objective.—In the interest of Museum visitors to make a needed improvement in the cleanliness of glass cases.

The growing attendance of visitors together with increase in number of glass exhibition cases in the public halls has tremendously increased the work required to keep the exhibition halls in a fairly presentable condition. With the present force it is no longer possible to wipe the outside of the glass cases as often as necessary and the interval between washing the interior of the cases has increased unduly. This condition results in a most untidy condition of the cases most of the time. The situation causes an uninviting appearance and interferes with

inspection of the contents of the cases. Even if moderate pride in the condition of the Museum were lacking, the addition of these extra positions would be amply justified in the interest of the public which visits these halls.

(i) \$5,330 for extending the daily service of charwomen.

Objective.—To maintain public halls and offices in a reasonably satisfactory state of cleanliness.

In the appropriation act for 1941 request was made for extending the daily service of charwomen from 3 to 4 hours a day. This request was met in part by the appropriation of \$2,500, which enabled us to place the charwomen on 4-hour duty 2 days each week, leaving them on 3-hour service during the remaining time. While this is of great aid, especially in connection with Monday cleaning, it is still not possible to maintain the exhibition halls on an acceptable standard of cleanliness. The amount received for 1941 served to replace the loss of time incurred through the granting of leave to the char force, but it still does not care for the added work which has been thrown on this force by the addition of cases in the exhibition halls and by the greatly increased attendance. It is still felt that the request made last year is moderate, and in the interest not only of maintaining our halls in an attractive condition for our visitors, but in the preservation of the stone floors, request is made for an additional sum of \$5,330 which would place all of our charwomen on a 4-hour basis and would increase the time of service of the forewomen from 4 to 5 hours daily, a step necessary to obtain the maximum effort from the char force.

02 (j) Supplies and materials, \$4,000:

This increase is urgently required for additional supplies and materials.

Objective.—To provide supplies urgently needed to insure the preservation of specimens from deterioration.

As practically all of the Museum appropriation "Preservation of collections" is allotted to salaries, and the portion remaining is largely reserved for fixed charges, it is never possible to find funds for all of the materials required for expediting research on the collections and for permitting their treatment in such a manner as to allow the most effective and useful work on them. The situation is most serious as regards miscellaneous laboratory supplies and chemicals, especially those required in preserving specimens. The amount requested herewith would be used largely for scientific supplies for which present funds are inadequate.

30 (k) Equipment, \$3,000:

This increase is urgently required for additional laboratory equipment.

Objective.—To furnish equipment needed to obtain the most effective results from the efforts of the technical staff in their scientific work.

Additional funds are urgently required for the purchase of scientific equipment of various kinds, as well as for books needed in the increasing scientific activities of the Museum. While the Museum depends largely on gifts and exchanges for the building of its library, it is not possible to obtain important individual books and periodicals in this way, and the small sum at present allotted for such purchase makes it impossible to procure the necessary standard reference material for the use of the professional staff. These reference works are required constantly and cannot be drawn from other libraries. Of the sum requested, \$1,000 would be allotted for the purchase of library stock and \$2,000 would be utilized for the purchase of needed scientific equipment of which there has always been a serious shortage. We are especially in need of such items as compound and dissecting microscopes, drills, lathes, and other power-driven laboratory equipment for cleaning and preparing the specimens for study and preservation.

Mr. WOODRUM. You are asking for 10 new positions, with an increase of \$31,510.

SAMPLES OF INTERESTING ITEMS IN COLLECTION

Dr. WETMORE. Mr. Chairman, the National Museum has had a successful year in the year just past. The number of visitors who have come to our halls has been 2,512,000. We have added 212,000 specimens to our collections. The catalog entries now total more than 17,000,000.

Our new ascessions come through gift, through expeditions that are financed principally by the Smithsonian Institution, and, to a very limited extent, by purchase. To indicate the type of materials that come to us, I have brought with me a few specimens that may be of some interest to you.

We have heard and read a good deal in the papers lately about the new naval and air bases in Latin America. Here is a clay figurine that comes from British Guiana not far from the site of one of the bases soon to be established.

Among our minerals—

Mr. WOODRUM. What is that?

Dr. WETMORE. It is supposed to represent an armadillo, a curious animal the size of an opossum with a hard shell over the body. It was made by an Indian tribe near the border between British and Dutch Guiana.

Mr. WOODRUM. What is it made of?

Dr. WETMORE. It is pottery, made of clay.

Mr. WOODRUM. Does it represent something to the people down there?

Dr. WETMORE. It has some significance, but just what I do not know. It is a standard type of the figurines that they make and have around. I presume it is an expression of art on their part.

Here are some very interesting things among recently received minerals [indicating]. Here is a specimen of ruby silver, known as proustite from one of the famous mines in Chile.

Mr. FITZPATRICK. Is there any value attached to it?

Dr. WETMORE. It runs about 65 percent of silver, one of the richest silver ores we know, and comes from one of the old bonanza mines of the country.

During this past year one of our curators, Dr. Foshag, traveling in Mexico, collected a number of crystals of apatite, the mineral shown here [indicating]. These crystals are of attractive and pleasing appearance, and can be cut into small semiprecious gemstones that make attractive decorations.

Mr. FITZPATRICK. Is that found on the surface?

Dr. WETMORE. These come from mines down in the earth. These particular specimens come from Durango. They are very handsome.

Strategic minerals are very much in the public eye at present, and among them tin has been of frequent reference. Here is one of the finest specimens of oxide of tin or cassiterite we have ever seen. This particular sample comes from Brazil. It is quite heavy, and a very beautiful thing.

Mr. FITZPATRICK. What percentage of tin would be in that?

Dr. WETMORE. That runs about 78 percent of metallic tin.

Here is a very unusual crystal form of aquamarine, also from Brazil. That is the only one of the minerals that occasionally comes in this tapering form. Such specimens are rare.

Dr. ABBOT. Did we not get an enormous crystal from Brazil a few years ago?

Dr. WETMORE. We have one huge topaz of gem quality that weighs 153 pounds.

Here is something of a different type [indicating], a decoration from the headdress of an Indian maharaja. It was used on the front of the turban to hold the cloth in place, and also to support an aigret plume, indicative of his rank. The stones are emeralds.

This being Friday the 13th, it may seem desirable to display the pipe of peace. I have here a peace pipe of catlinité with a wooden stem which belonged to the famous Indian Sitting Bull, being one that Lieutenant McAndrews secured from Sitting Bull in December 1890. It has been recently presented to us. It is a very good specimen, not only for its manufacture, but also for its associations.

Mr. FITZPATRICK. What is that made of, clay?

Dr. WETMORE. That is pipestone or catlinité. Historically, it is a very valuable specimen.

Mr. STIRLING. That is a very interesting thing, in view of the fact that there are enough reputed Sitting Bull relics including pipes to fill this room. But there are only a very few documented specimens.

Mr. FITZPATRICK. Have you any idea of the number of specimens that supposedly came over in the Mayflower? I understand there are about 2,000,000 of those.

Dr. WETMORE. I might mention and show you a few things that have come from expeditions. In October and November of this year I was myself in Costa Rica, making collections of birds in the northwestern part of the country, in the Province of Guanacaste. That is a very fascinating country, one that has not been too well developed yet.

I was searching for birds, and I have a few samples here to show you of the types found there.

Here is a long-tailed jay, which is closely related to our blue jay, a very handsome, decorative species.

This is a crested flycatcher, known as a royal flycatcher.

Here is a specimen of manakin, a bird called the toledo, with long plumes in the tail; and this is a tiny kingfisher, that has all the habits of our ordinary kingfisher, though only half as large as a sparrow. And here are a few humming birds.

What I have brought is only a mere handful of what might have been shown to you here this morning, but it serves to illustrate the type of work with which we have to do in our great National Museum.

Mr. WOODRUM. It is all very interesting, just as your statements are always interesting.

NEED FOR ADDITIONAL PERSONNEL

Dr. WETMORE. We are asking here for a certain increase in this appropriation for the preservation of collections.

The first item is for two assistant curators, grade P-3, at \$3,200 each. These services are needed in two of the important divisions of the National Museum. The first is the Division of Fishes, where there is a large and valuable collection, and where at the present time we have only one scientific man, the curator. An assistant curator is necessary to carry on the work there, and also in order to have a trained man available when the curator is away on leave, on an expedition, or absent for any other reason.

Furthermore, it is important in all these scientific divisions to have two men, one of whom may be an understudy so he can take up the work if the curator for any reason should leave us. That is highly important.

The other additional position in this category is intended for the division of engineering. In that division we cover all the phases of engineering, preserving so far as possible the historical specimens that

illustrate the steps in the development of different engineering interests.

We have now a curator and an assistant in that division, but the time of the assistant is taken up entirely in work in connection with aeronautics, a matter which is of vast importance. We think it is very important to have additional help in the large and varied field dealing with engineering.

Mr. WIGGLESWORTH. How does aeronautical work come under the Smithsonian?

Dr. WETMORE. We have considerable collections that illustrate the development of aviation, consisting of historic airplanes, and types of engines, propellers, and other interesting things of that type, that concern the growth of this important means of transportation. These collections are shown in the Arts and Industries Building, in part, and in part in a long shedlike structure back of the Smithsonian, constructed originally in 1917, at the time of the last war, as a sort of laboratory for the National Advisory Committee on Aeronautics. Our collections in this field is one of the most important that exists at the present time. The man in charge knows the history of aviation very well and has built up a highly valuable series that cannot be duplicated.

Mr. FITZPATRICK. What is the total amount of increase in all departments coming under the jurisdiction of the Smithsonian Institution?

Mr. WIGGLESWORTH. It is \$406,100, is it not?

Dr. WETMORE. That is right.

NEED FOR RETAINING ART GALLERY WITHIN SMITHSONIAN INSTITUTION

Mr. HOUSTON. Is there any thought of moving your Smithsonian Institution Art Gallery into the Mellon Gallery?

Dr. ABBOT. No. They would not accept all of our paintings. It is very similar to galleries in European countries where there are two galleries, one for old masters and the other for more modern paintings.

The National Collection of Fine Arts includes a good many types that are not provided for in the National Gallery, types for which they have no provision.

It has been said that Mr. Mellon was very keen to have nothing in the National Gallery but masterpieces of the very highest quality. However, there are a great many pictures that are not regarded as masterpieces, which are quite interesting to the public.

If you were to go down to the Corcoran Gallery, and were of my frame of mind, you would be delighted to see Mr. Brooks' Pastoral Visit, a beautiful picture, but not of the type which should go in the National Gallery. We have in the National Collections of Fine Arts a good many like that which are very interesting to the public but are not regarded as masterpieces.

Mr. WOODRUM. Dr. Wetmore, you have given us in your estimates a very complete and informing statement about each of these items, and unless there is something special you want to say about them, I do not see any need of going into all of them.

ADDITIONAL EQUIPMENT FOR LABORATORIES

Dr. WETMORE. We have made a very careful investigation of the needs for each of these small additions. They are small things, but they are essential to us. If I may, I would like to say a brief word about the item for equipment. We are asking for \$3,000 for additional equipment for our laboratories.

Of this, \$1,000 is to be allotted to an increase for the purchase of books, which is a highly important thing to us. At the present time we have a limitation in the act of \$3,000 for expenditure for books, but that is not sufficient to keep the reference works in our library abreast of the needs of our scientific staff. We get a good many books by exchange, but there are certain ones that we have to purchase, and the amount of \$3,000 is not sufficient. Therefore, out of the \$3,000 for equipment, \$1,000 would be for books and the other \$2,000 would be for scientific apparatus needed in our laboratories. This addition requires a change in the wording of the act, raising the limitation for the purchase of books, pamphlets, and periodicals from \$3,000 to \$4,000.

PRINTING AND BINDING

Mr. WOODRUM. The next item is for printing and binding, as follows:

Printing and binding: For all printing and binding for the Smithsonian Institution, including all of its bureaus, offices, institutions, and services located in Washington, District of Columbia, and elsewhere, except the National Gallery of Art, \$100,000, of which not to exceed \$12,000 shall be available for printing the report of the American Historical Association.

JUSTIFICATION OF ESTIMATES

Dr. ABBOT. Mr. Chairman, I desire to submit the following justification for printing and binding:

JUSTIFICATION OF ESTIMATES

Expended 1940.....	\$72, 000
Appropriated 1941.....	73, 000
Total estimate or appropriation 1942.....	100, 000
Increase for 1942.....	27, 000

WORK UNDER THIS APPROPRIATION

Nature of work.—Funds made available by this appropriation cover the general printing and binding for the Smithsonian Institution and the American Historical Association, being divided as follows:

Smithsonian Institution.....	\$65, 000
American Historical Association.....	8, 000

Total appropriated, 1941..... 73, 000

That portion available to the Smithsonian Institution provides for printing the annual report of the Board of Regents (required by law) and necessary printing for the United States National Museum, Bureau of American Ethnology, National Collection of Fine Arts, the National Zoological Park, and the Astrophysical Observatory. Items printed include annual reports; bulletins, comprising works of a monographic nature and scientific studies of museum specimens; proceedings, which are original papers setting forth newly acquired facts in biology, anthropology, and geology; labels; and blank forms. Beyond this, provision is made for binding books and periodicals in the various branches of the Smithsonian library, which together constitute one of the largest repositories of scientific literature in the country.

The publications of the American Historical Association consist of the proceedings of the Association, documentary material, and a report upon the condition of historical studies in America. The last-named takes the form of an annual bibliography of books and articles on United States and Canadian history.

Significance and value.—The work performed under this appropriation is the principal outlet for the "diffusion of knowledge," one of the prime functions of the Institution as defined in James Smithson's original foundation. The printed publications are sent to libraries and educational institutions throughout the world, where they are utilized as important sources of information and working tools by biologists, anthropologists, geologists, engineers, and historians, many of whom are engaged in practical problems of direct interest to agriculture, industry, and applied science. The publications are important in spreading widely the basic scientific data found in the national collections and in recording the results of the Institution's scientific investigations, explorations, and field work.

The Smithsonian's publications are perhaps unique among Government documents from the standpoint of permanency. This is attested by the fact that some of the Institution's series have been continuously issued now for as long as 65 years, while the Smithsonian annual reports, containing selected articles setting forth the yearly advance in science, have been issued for over 90 years. Requests are received daily for copies of the older and out-of-print bulletins and reports.

The largest part of the printing funds are allotted to the National Museum and the Bureau of American Ethnology. The researches conducted by these agencies are concerned essentially with the discovery and preservation of data bearing on man's history in North America, on his natural environment, and on his arts and industries together with scientific studies of the vast array of species of animals and plants that now or in the past have inhabited the world. The function of their publications therefore is primarily scientific—they place on record for students of present and future generations new discoveries in these fields of science and correlate these with what has been found before.

NEEDS OF THE WORK

Scientific facts are of value only when they are available to those who would utilize them in extending the frontiers of human knowledge. Such facts hidden in unpublished manuscripts lose their potential usefulness. It is thus important to make available the discoveries of the scientists of the Institution and of the others who study the materials in its vast collections. Under the present appropriation this is possible only in part, and the accumulation of unpublished manuscripts grows steadily. Undue delay in publication brings a direct loss to the world of science, for it means that scientists must either pursue their studies with insufficient information or they must duplicate in part investigations already completed but unavailable for their use. It means also a serious stifling of scientific research, loss of incentive on the part of the investigators doing their prescribed work, and in many cases loss of priority in discoveries for which the United States Government should receive credit.

The increase in the estimates for 1942 is explained as follows:

(a) Smithsonian Institution.....	\$23, 000
(b) American Historical Association.....	4, 000
Total increase, 1942.....	27, 000

(a) Of the increase of \$27,000 requested herewith, \$23,000 is urgently needed to enable the Institution to bring its publication program nearer in pace with the original scientific researches of its staff. It would bring the printing and binding fund almost to the sum available in 1932 and would make possible a slow reduction of the accumulated unpublished manuscripts, although hindered by conditions explained in the two next paragraphs.

Recent increases approximating 20 percent in the Public Printer's scale of prices for work of the character of the Institution's publications, as well as curtailment of appropriations in recent years, have made it increasingly difficult to publish promptly these valuable scientific manuscripts, with the result that there is on hand a considerable accumulation of material.

In the field of binding, the situation is equally serious. The Public Printer's scale of prices for binding has been increased in recent years from an average of \$3.40 to nearly \$6 a volume. This has resulted in a large arrearage in binding for the Smithsonian Library, with consequent danger of loss and damage to the thousands of unbound books and scientific periodicals, some of them irreplaceable, that are used as working tools of the scientific staff and consulted

frequently by outside investigators. It has been found by long experience that if the library is to be maintained in a truly economical way, and deterioration prevented, binding and rebinding must be done promptly when needed.

(b) Of the increase recommended, the remainder (\$4,000) is included for the American Historical Association and is required to enable the association to publish important historical documents that would otherwise remain inaccessible to the public.

Mr. WOODRUM. Will you tell us about that, Doctor?

ADEQUACY OF PRINTING AND BINDING APPROPRIATIONS AND ESTIMATES

Dr. ABBOT. In the matter of printing and binding I would like to say a few words, Mr. Chairman. You know that during all my connection with the Smithsonian Institution we have always prided ourselves for making a dollar go further than anybody else. A former chairman of the Committee on Appropriations, I think Mr. Wood, even said practically that same thing on the floor of the House. We are very proud of this reputation.

But when the cuts began to come in 1932, and again in 1933, it was very serious for us, because in the first place a 10 percent flat cut was made in 1932, and then in 1933 a 25 percent additional cut was made, and the only way in which we could continue to function was to cut off the printing appropriation entirely. We made no publications whatever for some time.

Then gradually, as you know, the printing appropriation has been increased little by little, until last year I think it went up to about \$65,000. But that was \$35,000 less than we used to get in 1932, and during the interim the costs of printing and binding have increased so we are not able to do anything like the amount of printing which we used to be able to do.

Now, when the members of the staff exert themselves to make a study of some important subject connected with the collections, we have no money with which to print that, and it is very demoralizing to morale.

So we made a special feature of this matter before the Bureau of the Budget this year, and I should perhaps say the Bureau of the Budget spent much more time over the Smithsonian Institution estimate this year than ever before in my recollection. We had almost two full days of hearings. They went fully into all our affairs, and as a result the Bureau of the Budget has made an estimate of \$100,000, which is the same amount we used to have in 1932.

But it will not go as far as the same amount went in 1932 by a good deal because of the great increase in the costs of printing and binding. But still it will be a very great encouragement to our staff if we could be able to print the things which have been lying back for years, and those which are coming on, to give them some encouragement in connection with their valuable work on the collections and on the other interests of the Institution, and that we shall be able to print that for the benefit of the public.

Mr. True, the editor, is here, and he can answer any questions in connection with this matter.

Mr. WOODRUM. What are the things you will be able to print this year, on account of the proposed increase, which you'd not print previously?

Mr. TRUE. Through the reduction of our funds and the increase in the cost of printing we have accumulated \$85,000 worth of manuscripts

over 7 years, and many of those, unfortunately, are the larger monographic papers, which are the most expensive and at the same time the most valuable, and which we have not yet been able to take up. Some of them have been held as long as 7 years.

Mr. WOODRUM. So you will use this increase, if you get it, to catch up as much as you can?

Mr. TRUE. Yes; we will use it to catch up as much as we can, and if we are able to have this amount for several years we will be up to date on our printing, and can keep it up to date year by year.

INVESTIGATION OF RADIATION ON PLANT GROWTH AND ANIMAL ORGANISMS

Mr. WIGGLESWORTH. Dr. Abbot, I was not here during the discussion of the item of \$25,000 for the proposed transfer to public support of the Division of Radiation and Organisms for the investigation of the effects of radiation on plant growth and animal organisms. Can you give us for the record a statement as to the size of private contributions which have been received in each of the past few years for that purpose?

Dr. ABBOT. In establishing that Division it was done under private funds about the year 1930. We received for 2 or 3 years about \$22,000, from the Research Corporation of New York. They had to diminish their appropriation very soon after that to \$12,000, and then to \$7,500. The appropriation was insufficient to continue that work, so I was obliged to take from the private funds of the Institution an amount necessary to make it come up to about the figure which I am asking that it may be transferred to the Government now, about \$25,000.

In recent years the income from investments, as you know, has been much reduced, and we have found it very difficult to maintain its operation, which is very highly appreciated by experts and by the Department of Agriculture. Without Government support it will be necessary to very materially curtail the work, or possibly to abandon it, which, I think, would be a great misfortune to the public. We are dealing in a very fundamental way with that branch of science which relates to the fixation of carbon, or carbon dioxide, from which coal, wood, fruits, vegetables, and even carbon of the human organism itself depends. By getting this fundamental knowledge it will be the source from which investigations of the Department of Agriculture and other branches all over the world will get a great deal of value in future years.

It has always been so. When Faraday, about 1830, began to investigate electromagnetism, it was merely from curiosity, of interest to scientific men, but, as you know, at the present time all electrical power and all radio transmission, all telegraphy and telephony, depend upon the development of that work. So, whenever you get fundamental information such as we are endeavoring to obtain here, and have been very successful in obtaining in this division, you are getting something which will have future value. That is the reason we are asking to have it supported.

Mr. WIGGLESWORTH. If you put in \$18,000 this year, for instance, from private funds, why cannot that be done in the next fiscal year?

Dr. ABBOT. We shall try to keep it up as much as we can, but I have made up my mind that we shall have to give it up to a large

extent. It is not possible for us to carry it on with the other demands which we have upon us.

Mr. DORSEY. Our income too has been depleted. We are not getting, from our investments, anything like the amount that we did get, and that is a source from which some of this support comes.

AMERICAN HISTORICAL ASSOCIATION

Dr. ABBOT. Mr. Chairman, there is one other item that ought to be brought up, and that is with reference to the American Historical Association. They get a part of our printing appropriation. That is to say, you make a lump sum appropriation of, say, \$100,000. Then we would have to give over to the American Historical Association a part of it. Professor Ragatz is here, and I should like him to say a word in regard to the work of the American Historical Association.

Mr. WOODRUM. We shall be glad to hear Dr. Ragatz.

STATEMENT OF DR. L. J. RAGATZ, EDITOR OF THE AMERICAN HISTORICAL ASSOCIATION

Dr. RAGATZ. The American Historical Association normally publishes three volumes a year. Volume 1 is given over to the proceedings of the organization. Volume 2 is given over to a bibliography of writings on American history in all languages in all countries of the world. Then a third volume is normally given over to the publication of papers of historical value; diaries, documents, and so forth.

For instance, we published the papers of Calhoun a few years ago. We published the diary of Edward Bates, Lincoln's attorney general, priceless source material on conditions here at the time of the Civil War; also the letters and instructions to British Ambassadors in Washington from 1783 to 1815 are in hand.

Generally speaking, this material in volume 3 is source material, material of the utmost importance to students of American history, the publication of which is welcomed by men throughout the profession, resulting in an expanded knowledge in the field as nothing else does.

A few years ago the appropriation for which the Smithsonian Institution printing budget looks to was being cut and the American Historical Association's share was cut from \$12,000 to \$8,000. That \$8,000 has made possible the publication of only the proceedings volume, which ordinarily takes \$1,500, and volume 2 (the Writings on American History, the annual bibliography), which takes approximately \$5,500. The balance is absorbed in meeting additional charges and so forth. The result is that we have not been able to bring out a volume 3 since publishing the annual report for 1936. At present we have available four very important masses of material which ought to be published in such third volume.

For instance we have been offered the Journal of Lt. Henry Wadsworth, of the American Navy, covering America's participation in the Barbary Wars. That is one of the outstanding pieces of unpublished source material on that important episode in our national history. Similarly, we have been offered a collection of edited documents on prize cases down in the West Indies, particularly in Jamaica. That involves our relations with Great Britain at various times when

we have been at war with her rather than on cordial terms, or allies, as we have been more recently.

Then, similarly, we have been offered the papers of William Portland Miles, of South Carolina and Louisiana. These are very important for the study of the secession movement and the organization of the Confederacy and the course of the Civil War.

And lastly, a very little known subject, the Confederate judiciary, is now being studied by quite a few students of constitutional law. We have been offered important papers on the Confederate judiciary which could be published if we got an increase in grant which would make a third volume possible.

Any of these materials could be published starting with a new appropriation and they could be published in turn, if still available, should the appropriation be continued.

Not only that, because we have not had a volume 3 since the annual report for 1936, we have had to say, "No," to a good many authors and editors who have proposed certain collections of papers and material which they would like to have published.

Mr. FITZPATRICK. Can they obtain that material at other libraries?

Dr. RAGATZ. No; this is unprinted documentary material. It is entirely written material and some of it is in private hands; some of it is in public hands. The material I mentioned has been gotten together by various students of history in the hope of publication.

Publication of this material is not practical, commercially. No commercial publisher like say the Macmillan Co. or the Houghton Mifflin Co. can ever publish these things. They would lose money on every volume.

Mr. HOUSTON. Do you have to pay for this material?

Dr. RAGATZ. No; generally speaking, the author or the editor carries on the work at his own expense or under some grant from some foundation.

Mr. FITZPATRICK. Do you get original letters and correspondence, original communications?

Dr. RAGATZ. Yes; for instance, a professor in history will uncover a collection of hitherto unknown papers, shall we say in southern Illinois or central Pennsylvania, during the course of his researches. He makes copies of that correspondence.

Mr. FITZPATRICK. That is what I am trying to bring out. Do you get the originals?

Dr. RAGATZ. Oh, no, we are not interested in the papers themselves as such, it is the contents which concern us. We do not need physical possession of the originals.

Mr. FITZPATRICK. You get the copies?

Dr. RAGATZ. Yes; we get copies for publication.

Mr. FITZPATRICK. If you never saw the originals, how can you tell whether you are getting true copies of the original or not?

Dr. RAGATZ. No person who is in the profession of history would be so slovenly in his workmanship as to prepare untrue copies. In the first place, transcripts used to be made, simply copies by copyists, by hand. It is customary always to check and double-check where transcripts are made. More recently photostating has been resorted to and we have on occasion used the actual photostats as printer's copy. There is certainly no historian in the profession who would be so slovenly in his craftsmanship as not to provide absolutely true copies.

Mr. FITZPATRICK. There is a great deal of criticism at the present time about certain historical facts that have been published as being not true.

Dr. RAGATZ. Yes, that is true; so-called historical material is very commonly produced by journalists and other untrained people. The American Historical Association would not, of course, under any circumstances, publish any material by anyone who was not a recognized leader in his field and who did not follow the highest standards of the profession.

Mr. GRAF. Sometimes they find new source material, do they not?

Dr. RAGATZ. Yes.

Mr. FITZPATRICK. Do you charge anything for these booklets or volumes, or whatever you call them?

Dr. RAGATZ. No; the annual report in which this material appears, 1, 2, and 3 volumes, is distributed as follows: 2,500 copies go to the Smithsonian Institution for distribution to libraries throughout the world; 2,000 copies go to members of the American Historical Association. Then the rest are made available for distribution as public documents, to Senators and Congressmen, save that a small number are always placed on sale with the Superintendent of Documents in the Government Printing Office.

Mr. FITZPATRICK. That is what I was inquiring about, if there were any placed on sale.

Dr. RAGATZ. Yes.

Mr. FITZPATRICK. What happens to the money that is received? Does that go into the Treasury or to your organization?

Dr. RAGATZ. Our organization gets no money. We simply share in the Smithsonian printing credit. Money received from volumes sold goes to the Superintendent of Documents. He orders approximately a 10 years' supply. He attempts to stock these titles for that length of time. Sometimes they sell out a little bit before, sometimes they have them on hand a little longer. Generally speaking, if an individual who is not a member of the Association and who cannot get a copy through a Senator or a Congressman wishes to purchase a copy, he may do so at low cost, between 75 cents and \$1.50, usually, from the Superintendent of Documents.

Mr. HOUSTON. These are bound volumes?

Dr. RAGATZ. Whenever the appropriation is sufficient.

Mr. WOODRUM. In this particular appropriation that you have, you get \$8,000 plus an additional \$4,000.

Dr. RAGATZ. We are requesting an additional \$4,000 to make possible the distribution of a third volume. The third volume would include one of these projects which I have mentioned, without doubt. We always like to have a third volume so that we may publish such a collection of material year after year.

Mr. DORSEY. That \$12,000 is a portion of our appropriation, and if our appropriation is reduced, that would be reduced accordingly.

Mr. WOODRUM. Proportionately?

Mr. DORSEY. Proportionately, yes.

Mr. WOODRUM. Thank you, gentlemen.

