

36TH CONGRESS, }
2d Session. }

SENATE.

{ MIS. Doc.
No. 21.

ANNUAL REPORT

OF THE

BOARD OF REGENTS

OF THE

SMITHSONIAN INSTITUTION,

SHOWING THE

OPERATIONS, EXPENDITURES, AND CONDITION OF THE
INSTITUTION FOR THE YEAR 1860.

WASHINGTON:
GEORGE W. BOWMAN, PRINTER.
1861.

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IN THE SENATE OF THE UNITED STATES,

February 26, 1861.

Resolved, That five thousand additional copies of the Report of the Board of Regents of the Smithsonian Institution for the year ending the 30th June, 1860, be printed; two thousand for the use of the Smithsonian Institution, and three thousand for the use of the Senate: *Provided*, That the aggregate number of pages contained in said report shall not exceed four hundred and fifty pages, without wood cuts or plates, except those furnished by the Institution.

ASBURY DICKINS, *Secretary*.

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L E T T E R
OF THE
SECRETARY OF THE SMITHSONIAN INSTITUTION,
COMMUNICATING

*The Annual Report of the operations, expenditures, and condition of
the Institution for the year 1860.*

FEBRUARY 26, 1861.—Read, and ordered to be printed.

SMITHSONIAN INSTITUTION,
Washington, February 25, 1861.

SIR: In behalf of the Board of Regents, I have the honor to submit to the Senate of the United States the Annual Report of the operations, expenditures, and condition of the Smithsonian Institution for the year 1860.

I have the honor to be, very respectfully, your obedient servant,
JOSEPH HENRY,
Secretary Smithsonian Institution.

Hon. JOHN C. BRECKINRIDGE,
President of the Senate.

ANNUAL REPORT OF THE BOARD OF REGENTS
OF THE
SMITHSONIAN INSTITUTION,
SHOWING

THE OPERATIONS, EXPENDITURES, AND CONDITION OF THE INSTITUTION UP TO JANUARY 1, 1861, AND THE PROCEEDINGS OF THE BOARD UP TO FEBRUARY 22, 1861.

To the Senate and House of Representatives:

In obedience to the act of Congress of August 10, 1846, establishing the Smithsonian Institution, the undersigned, in behalf of the Regents, submit to Congress, as a report of the operations, expenditures, and condition of the Institution, the following documents:

1. The Annual Report of the Secretary, giving an account of the operations of the Institution during the year 1860.
2. Report of the Executive Committee, giving a general statement of the proceeds and disposition of the Smithsonian fund, and also an account of the expenditures for the year 1860.
3. Proceedings of the Board of Regents up to February 22, 1861.
4. Appendix.

Respectfully submitted.

R. B. TANEY, *Chancellor.*
JOSEPH HENRY, *Secretary.*

OFFICERS OF THE SMITHSONIAN INSTITUTION.

JAMES BUCHANAN, *Ex officio* Presiding Officer of the Institution.
ROGER B. TANEY, Chancellor of the Institution.

JOSEPH HENRY, Secretary of the Institution.
SPENCER F. BAIRD; Assistant Secretary.
W. W. SEATON, Treasurer.
WILLIAM J. RHEES, Chief Clerk.

JAMES A. PEARCE,
ALEXANDER D. BACHE, } Executive Committee.
JOSEPH G. TOTTEN, }

REGENTS OF THE INSTITUTION.

JOHN C. BRECKINRIDGE, Vice President of the United States.
ROGER B. TANEY, Chief Justice of the United States.
JAMES G. BERRET, Mayor of the City of Washington.
JAMES A. PEARCE, member of the Senate of the United States.
JAMES M. MASON, member of the Senate of the United States.
STEPHEN A. DOUGLAS, member of the Senate of the United States.
WILLIAM H. ENGLISH, member of the House of Representatives.
L. J. GARTRELL, member of the House of Representatives.
BENJAMIN STANTON, member of the House of Representatives.
GIDEON HAWLEY, citizen of New York.

* _____
GEORGE E. BADGER, citizen of North Carolina.
CORNELIUS C. FELTON, citizen of Massachusetts.
ALEXANDER D. BACHE, citizen of Washington.
JOSEPH G. TOTTEN, citizen of Washington.

* Vacancy caused by the death of Hon. Richard Rush.

MEMBERS EX OFFICIO OF THE INSTITUTION.

JAMES BUCHANAN, President of the United States.
JOHN C. BRECKINRIDGE, Vice President of the United States.
LEWIS CASS, Secretary of State.
HOWELL COBB, Secretary of the Treasury.
JOHN B. FLOYD, Secretary of War.
ISAAC TOUCEY, Secretary of the Navy.
JOSEPH HOLT, Postmaster General.
J. S. BLACK, Attorney General.
ROGER B. TANEY, Chief Justice of the United States.
P. F. THOMAS, Commissioner of Patents.
JAMES G. BERRET, Mayor of the City of Washington.

HONORARY MEMBERS.

BENJAMIN SILLIMAN, of Connecticut.
A. B. LONGSTREET, of Mississippi.
JACOB THOMPSON, Secretary of the Interior, (ex officio.)

PROGRAMME OF ORGANIZATION

OF THE

SMITHSONIAN INSTITUTION.

[PRESENTED IN THE FIRST ANNUAL REPORT OF THE SECRETARY, AND
ADOPTED BY THE BOARD OF REGENTS, DECEMBER 13, 1847.]

INTRODUCTION.

General considerations which should serve as a guide in adopting a Plan of Organization.

1. **WILL OF SMITHSON.** The property is bequeathed to the United States of America, "to found at Washington, under the name of the SMITHSONIAN INSTITUTION, an establishment for the increase and diffusion of knowledge among men."

2. The bequest is for the benefit of mankind. The government of the United States is merely a trustee to carry out the design of the testator.

3. The Institution is not a national establishment, as is frequently supposed, but the establishment of an individual, and is to bear and perpetuate his name.

4. The objects of the Institution are, 1st, to increase, and 2d, to diffuse knowledge among men.

5. These two objects should not be confounded with one another. The first is to enlarge the existing stock of knowledge by the addition of new truths; and the second, to disseminate knowledge, thus increased, among men.

6. The will makes no restriction in favor of any particular kind of knowledge; hence all branches are entitled to a share of attention.

7. Knowledge can be increased by different methods of facilitating and promoting the discovery of new truths; and can be most extensively diffused among men by means of the press.

8. To effect the greatest amount of good, the organization should be such as to enable the Institution to produce results, in the way of increasing and diffusing knowledge, which cannot be produced either at all or so efficiently by the existing institutions in our country.

9. The organization should also be such as can be adopted provisionally, can be easily reduced to practice, receive modifications, or be abandoned, in whole or in part, without a sacrifice of the funds.

10. In order to compensate, in some measure, for the loss of time occasioned by the delay of eight years in establishing the Institution,

a considerable portion of the interest which has accrued should be added to the principal.

11. In proportion to the wide field of knowledge to be cultivated, the funds are small. Economy should therefore be consulted in the construction of the building; and not only the first cost of the edifice should be considered, but also the continual expense of keeping it in repair, and of the support of the establishment necessarily connected with it. There should also be but few individuals permanently supported by the Institution.

12. The plan and dimensions of the building should be determined by the plan of organization, and not the converse.

13. It should be recollected that mankind in general are to be benefited by the bequest, and that, therefore, all unnecessary expenditure on local objects would be a perversion of the trust.

14. Besides the foregoing considerations deduced immediately from the will of Smithson, regard must be had to certain requirements of the act of Congress establishing the Institution. These are, a library, a museum, and a gallery of art, with a building on a liberal scale to contain them.

SECTION I.

Plan of Organization of the Institution in accordance with the foregoing deductions from the will of Smithson.

TO INCREASE KNOWLEDGE. It is proposed—

1. To stimulate men of talent to make original researches, by offering facilities for the preparation of memoirs containing new truths; and
2. To appropriate annually a portion of the income for particular researches, under the direction of suitable persons.

TO DIFFUSE KNOWLEDGE. It is proposed—

1. To publish a series of periodical reports on the progress of the different branches of knowledge; and
2. To publish occasionally separate treatises on subjects of general interest.

DETAILS OF THE PLAN TO INCREASE KNOWLEDGE.

I.—*By stimulating researches.*

1. Facilities afforded for the production of original memoirs on all branches of knowledge.
2. The memoirs thus obtained to be published in a series of volumes, in a quarto form, and entitled Smithsonian Contributions to Knowledge.
3. No memoir on subjects of physical science to be accepted for publication which does not furnish a positive addition to human knowledge, resting on original research; and all unverified speculations to be rejected.
4. Each memoir presented to the Institution to be submitted for examination to a commission of persons of reputation for learning in

the branch to which the memoir pertains; and to be accepted for publication only in case the report of this commission is favorable.

5. The commission to be chosen by the officers of the Institution, and the name of the author, as far as practicable, concealed, unless a favorable decision be made.

6. The volumes of the memoirs to be exchanged for the transactions of literary and scientific societies, and copies to be given to all the colleges and principal libraries in this country. One part of the remaining copies may be offered for sale; and the other carefully preserved, to form complete sets of the work, to supply the demand from new institutions.

7. An abstract, or popular account, of the contents of these memoirs to be given to the public through the annual report of the Regents to Congress.

II.—*By appropriating a part of the income, annually, to special objects of research, under the direction of suitable persons.*

1. The objects, and the amount appropriated, to be recommended by counsellors of the Institution.

2. Appropriations in different years to different objects, so that, in course of time, each branch of knowledge may receive a share.

3. The results obtained from these appropriations to be published with the memoirs before mentioned, in the volumes of the Smithsonian Contributions to Knowledge.

4. Examples of objects for which appropriations may be made:

(1.) System of extended meteorological observations for solving the problem of American storms.

(2.) Explorations in descriptive natural history, and geological, magnetical, and topographical surveys, to collect materials for the formation of a Physical Atlas of the United States.

(3.) Solution of experimental problems, such as a new determination of the weight of the earth, of the velocity of electricity, and of light; chemical analyses of soils and plants; collection and publication of scientific facts accumulated in the offices of the government.

(4.) Institution of statistical inquiries with reference to physical, moral, and political subjects.

(5.) Historical researches and accurate surveys of places celebrated in American history.

(6.) Ethnological researches, particularly with reference to the different races of men in North America; also, explorations and accurate surveys of the mounds and other remains of the ancient people of our country.

DETAILS OF THE PLAN FOR DIFFUSING KNOWLEDGE.

I.—*By the publication of a series of reports, giving an account of the new discoveries in science, and of the changes made from year to year in all branches of knowledge not strictly professional.*

1. These reports will diffuse a kind of knowledge generally interesting, but which, at present, is inaccessible to the public. Some of the

reports may be published annually, others at longer intervals, as the income of the Institution or the changes in the branches of knowledge may indicate.

2. The reports are to be prepared by collaborators eminent in the different branches of knowledge.

3. Each collaborator to be furnished with the journals and publications, domestic and foreign, necessary to the compilation of his report; to be paid a certain sum for his labors, and to be named on the title-page of the report.

4. The reports to be published in separate parts, so that persons interested in a particular branch can procure the parts relating to it without purchasing the whole.

5. These reports may be presented to Congress for partial distribution, the remaining copies to be given to literary and scientific institutions, and sold to individuals for a moderate price.

The following are some of the subjects which may be embraced in the reports:

I. PHYSICAL CLASS.

1. Physics, including astronomy, natural philosophy, chemistry, and meteorology.
2. Natural history, including botany, zoölogy, geology, &c.
3. Agriculture.
4. Application of science to arts.

II. MORAL AND POLITICAL CLASS.

5. Ethnology, including particular history, comparative philology, antiquities, &c.
6. Statistics and political economy.
7. Mental and moral philosophy.
8. A survey of the political events of the world, penal reform, &c.

III. LITERATURE AND THE FINE ARTS.

9. Modern literature.
10. The fine arts, and their application to the useful arts.
11. Bibliography.
12. Obituary notices of distinguished individuals.

II. *By the publication of separate treatises on subjects of general interest.*

1. These treatises may occasionally consist of valuable memoirs translated from foreign languages, or of articles prepared under the direction of the Institution, or procured by offering premiums for the best exposition of a given subject.

2. The treatises should, in all cases, be submitted to a commission of competent judges previous to their publication.

3. As examples of these treatises, expositions may be obtained of the present state of the several branches of knowledge mentioned in the table of reports.

SECTION II.

Plan of organization, in accordance with the terms of the resolutions of the Board of Regents providing for the two modes of increasing and diffusing knowledge.

1. The act of Congress establishing the Institution contemplated the formation of a library and a museum; and the Board of Regents, including these objects in the plan of organization, resolved to divide the income* into two equal parts.

2. One part to be appropriated to increase and diffuse knowledge by means of publications and researches, agreeably to the scheme before given. The other part to be appropriated to the formation of a library and a collection of objects of nature and of art.

3. These two plans are not incompatible one with another.

4. To carry out the plan before described, a library will be required, consisting, 1st, of a complete collection of the transactions and proceedings of all the learned societies in the world; 2d, of the more important current periodical publications, and other works necessary in preparing the periodical reports.

5. The Institution should make special collections, particularly of objects to illustrate and verify its own publications.

6. Also, a collection of instruments of research in all branches of experimental science.

7. With reference to the collection of books, other than those mentioned above, catalogues of all the different libraries in the United States should be procured, in order that the valuable books first purchased may be such as are not to be found in the United States.

8. Also, catalogues of memoirs, and of books and other materials, should be collected for rendering the Institution a centre of bibliographical knowledge, whence the student may be directed to any work which he may require.

9. It is believed that the collections in natural history will increase by donation as rapidly as the income of the Institution can make provision for their reception, and, therefore, it will seldom be necessary to purchase articles of this kind.

10. Attempts should be made to procure for the gallery of art casts of the most celebrated articles of ancient and modern sculpture.

11. The arts may be encouraged by providing a room, free of expense, for the exhibition of the objects of the Art-Union and other similar societies.

*The amount of the Smithsonian bequest received into the Treasury of the United States is.....\$515,169 00
Interest on the same to July 1, 1846, (devoted to the erection of the building).. 242,129 00
Annual income from the bequest..... 30,910 17

12. A small appropriation should annually be made for models of antiquities, such as those of the remains of ancient temples, &c.

13. For the present, or until the building is fully completed, besides the Secretary, no permanent assistant will be required, except one, to act as librarian.

14. The Secretary, by the law of Congress, is alone responsible to the Regents. He shall take charge of the building and property, keep a record of proceedings, discharge the duties of librarian and keeper of the museum, and may, with the consent of the Regents, employ assistants.

15. The Secretary and his assistants, during the session of Congress, will be required to illustrate new discoveries in science, and to exhibit new objects of art; distinguished individuals should also be invited to give lectures on subjects of general interest.

This programme, which was at first adopted provisionally, has become the settled policy of the Institution. The only material change is that expressed by the following resolutions adopted January 15, 1855, viz:

Resolved, That the 7th resolution, passed by the Board of Regents on the 26th of January, 1847, requiring an equal division of the income between the active operations and the museum and library, when the buildings are completed, be and it is hereby repealed.

Resolved, That hereafter the annual appropriations shall be apportioned specifically among the different objects and operations of the Institution in such manner as may, in the judgment of the Regents, be necessary and proper for each, according to its intrinsic importance, and a compliance in good faith with the law.

JOURNAL OF PROCEEDINGS
OF THE
BOARD OF REGENTS
OF
THE SMITHSONIAN INSTITUTION.

WASHINGTON, *January 16, 1861.*

In accordance with a resolution of the Board of Regents of the Smithsonian Institution, fixing the time of the beginning of their annual session on the third Wednesday of January of each year, the Board met this day in the Regents' room.

No quorum being present, the Board adjourned to meet at the call of the Secretary.

FEBRUARY 16, 1861.

The Board of Regents met this day, at ten o'clock, a. m., in the Regents' room.

Present: Hon. James A. Pearce, Hon. James M. Mason, Hon. S. A. Douglas, Hon. W. H. English, Hon. Benj. Stanton, Gen. Jos. G. Totten, Prof. A. D. Bache, and the Secretary.

Mr. Mason was called to the chair.

The Secretary stated that there are at present three vacancies in the Board of Regents, among the class of citizens at large, namely: the vacancy occasioned by the expiration of the term of service of Hon. Gideon Hawley, of Albany, who declines a reelection on account of inability to attend; that occasioned by the death of Hon. Richard Rush; and that by the expiration of the term of Dr. C. C. Felton, of Harvard University; that a resolution was some time since presented to the Senate of the United States to fill these vacancies, which had not yet been acted upon.

Mr. Pearce presented the report of the Executive Committee, with the estimates for the year 1861; which was read and adopted.

A communication addressed to the Secretary, relative to the Wynn estate, was read.

The Secretary stated that since the death of Hon. Richard Rush, no communication had been received in regard to the remainder of the Smithsonian bequest left in England, as the principal of an annuity to the mother of the nephew of Smithson; whereupon, on motion of Mr. Bache, it was

Resolved, That the Secretary be requested to communicate with Messrs. Clark, Fynmore & Fladgate, attorneys in London, informing them of the death of Hon. Mr. Rush, and making inquiry as to the present condition of this annuity.

On motion of Mr. English, it was

Resolved, That the Secretary be directed to adjust the accounts of the Regents for traveling and other expenses, at each annual or special meeting, according to the provisions of the act of organization.

A letter was read relative to the debt of the State of Arkansas, desiring the Regents to unite with other parties in endeavoring to recover it.

The Secretary stated that he had replied, giving as his individual opinion that the Regents are in no way interested in this matter; the United States having assumed the debt originally due from the State of Arkansas to the Smithsonian fund.

On motion, it was

Resolved, That the Board concur in this opinion.

A communication addressed to the Board, from H. A. Gaston, of Napa City, California, requesting aid in introducing a new steam engine, was read.

The Secretary stated that this communication was one of a large class usually addressed to himself in his official capacity; that he had answered these communications by stating that it did not form a part of the policy of the Institution to give an opinion as to the merits of any invention, or to render assistance to any enterprise which, though it might be of importance to the public, was undertaken for the immediate benefit of an individual; that the government of the United States had enacted laws granting an exclusive monopoly to inventors as a reward for their ingenuity, and that they must apply to the Patent Office for the means of securing a remuneration for their labors. That if, however, in any case, an individual has made an invention for which he does not intend to take out a patent, then the Institution would accept, on the usual conditions, an account of such invention, and would make it known, through the Smithsonian publications, to the civilized world, thus securing to the inventor the *reputation* which might justly be his due.

The following memorial was presented from distinguished citizens of Philadelphia, accompanied by a letter from Mr. Lowe :

To PROF. JOSEPH HENRY,

Secretary of the Smithsonian Institution, Washington, D. C.

The undersigned, citizens of Philadelphia, have taken a deep interest in the attempt of Mr. T. S. C. Lowe to cross the Atlantic by aeronautic machinery, and have confidence that his extensive preparations to effect that object will add greatly to scientific knowledge. Mr. Lowe has individually spent much time and money in the enterprise, and, in addition, the citizens of Philadelphia have contributed several thousand dollars to further his efforts in demonstrating the feasibility of trans-Atlantic air navigation. With reliance upon Mr. Lowe and his plans, we cheerfully recommend him to the favorable consideration of the Smithsonian Institution, and trust such aid and advice will be furnished him by that distinguished body as may assist in the success of the attempt, in which we take a deep interest.

JNO. C. CRESSON.

WILLIAM HAMILTON.

W. H. HARRISON.

HENRY SEYBERT.

J. CHESTON MORRIS, M. D.

ISAAC LEA.

FAIRMAN ROGERS.

JAMES C. FISHER, M. D.

THOS. STEWARDSON, M. D.

J. B. LIPPINCOTT.

GEO. W. CHILDS.

JOHN GRIGG.

S. S. HALDEMAN.

JOHN F. FRAZER.

GEORGE HARDING.

M. McMICHAEL.

PHILADELPHIA, *December*, 1860.

On motion of Mr. Mason, it was

Resolved, That the Secretary be requested to give Mr. Lowe any advice which he may deem fit, as to his experiments ; and to reply to the memorialists stating the reasons why the Regents do not consider themselves at liberty to make any appropriation from the Smithsonian fund for the purpose mentioned in the communication.

Several communications received by the Secretary from David P. Holton, were read and referred to the Executive Committee.

The following letters also were presented by the Secretary :

[Translation.]

BERLIN, *November 24*, 1860.

SIR: I have received the last invoice of publications, which through your kindness has been presented to me by your great and liberal