

APR 24 1902

Massachusetts Institute of Technology,

Boston, Mass., April 12, 1902.

To

Daniel C. Gilman, LL. D.,

President, Carnegie Institution,

Washington, D.C.

Dear Sir:

In conformity with instructions laid down in your letter of March 25th I have spent nearly a week in Washington and have made a careful, though necessarily brief, investigation of the practicability of the plans proposed for the Washington Memorial Institution. During my stay I visited a number of the Departments of the United States Government and discussed the questions involved with many officers of the Government Service, e.g., the Secretary of Agriculture, the Assistant Secretary of State, the Director of the Geological Survey, the Commissioner of Labor, the Superintendent of the Coast and Geodetic Survey, the Commissioner of Fish and Fisheries, the Chief of the Weather Bureau, the President of the Civil Service Commission, the Chief of the Bureau of Standards, the Ethnologist in Charge of the Bureau of Ethnology, the Surgeon-General of the Army, the Supervising Surgeon-General of the Marine Hospital Service, and some of the subordinate officers in these and other Departments. I also called upon the Secretary of the Smithsonian Institution and the Assistant Secretary; upon the Director of the Census; the Librarian of Congress; and several other officers who unfortunately were absent from the city or could not be found. I have not undertaken to make an

*File under
Wash. Memorial*

APR 24 1902

Massachusetts Institute of Technology,

Boston, Mass., April 12, 1902.

Handwritten:
To Mr. Gilman
From Mr. Brewster

To

Daniel G. Gilman, M. D.,

President, Carnegie Institution,

Washington, D.C.

Dear Sir:

In conformity with instructions laid down in your letter of

March 25th I have spent nearly a week in Washington and have made

a careful, though necessarily brief, investigation of the presen-

tation of the plans proposed for the Washington Memorial Insti-

tution. During my stay I visited a number of the Departments of

the United States Government and discussed the questions involved

with many officers of the Government Service, e.g., the Secretary

of Agriculture, the Assistant Secretary of State, the Director of

the Geological Survey, the Commissioner of Labor, the Superin-

tendent of the Coast and Geodetic Survey, the Commissioner of

Fish and Fisheries, the Chief of the Weather Bureau, the Presi-

dent of the Civil Service Commission, the Chief of the Bureau of

Standards, the Technologist in Charge of the Bureau of Technology,

the Surgeon-General of the Army, the Supervising Surgeon-General

of the Marine Hospital Service, and some of the subordinate of-

ficers in these and other Departments. I also called upon the

Secretary of the Smithsonian Institution and the Assistant Secre-

tary; upon the Director of the Census; the Librarian of Congress

and several other officers who unfortunately were absent from the

city or could not be found. I have not undertaken to make an

exhaustive study of the whole situation, but rather by a general survey of all, and a detailed study of typical Departments to reach trustworthy conclusions.

The general trend of my inquiries was as follows:

(A) As to the nature and extent of the opportunities and facilities, present and prospective, in Washington for advanced workers and original investigators in or under the several Departments of the United States Government.

(B) As to the attitude likely to be taken by the principal officers in the several Departments toward investigators or advanced students desiring to work under their general supervision.

(C) As to the extent to which advanced students and investigators throughout the country would probably desire to avail themselves of the opportunities and facilities existing in Washington.

(D) As to the advisability of making better known the extent and nature of the opportunities and facilities existing in Washington, with a view to bringing together there a number of advanced students for special, and particularly, for original work.

(E.) And finally, as to the administrative and coordinating machinery required, in case it should be deemed wise to encourage advanced students and investigators to resort to Washington for work in the several Departments of the Government Service.

As a result of my inquiries, and after due considerations, I desire to make the following report:

extensive study of the whole situation, but rather by a general survey of all, and a detailed study of typical Departments to reach trustworthy conclusions.

The general trend of my inquiries was as follows:

(A) As to the nature and extent of the opportunities and facilities, present and prospective, in Washington for advanced workers and original investigators in or under the several Departments of the United States Government.

(B) As to the attitude likely to be taken by the principal officers in the several Departments toward investigators or advanced students desiring to work under their general supervision. As to the extent to which advanced students and investigators throughout the country would probably desire to avail themselves of the opportunities and facilities existing in Washington.

(C) As to the advisability of making better known the extent and nature of the opportunities and facilities existing in Washington, with a view to bringing together there a number of advanced students for special, and particularly, for original work. And finally, as to the administrative and coordinating machinery required, in case it should be deemed wise to encourage advanced students and investigators to resort to Washington for work in the several Departments of the Government Service.

As a result of my inquiries, and after due considerations,

I desire to make the following report:

(A) Undoubtedly, extensive and unique facilities already exist, and are likely in the future in still larger measure to exist, for advanced students and original investigators in many of the Departments in Washington. In particular, the raw materials of research, consisting of specimens, observations, data, statistics, records, reports, and the like, capable of being studied, classified, correlated, worked up and interpreted, are extraordinarily abundant and inviting. In the Agricultural Department, for example, there exists in the Bureau of Animal Industry material, unique in character and large in amount, relating to the diseases of animals caused by animal and vegetable parasites. In the Bureau of Plant Industry, living material is available for physiological and pathological experimentation, and preserved material for study and comparison, derived not only from the various sections of the United States, but also from other parts of the world furnishing plants of economic and industrial importance, such, for example, as fibre-producing materials, and the plants from which rubber, cinchona, starches, gums, resins, and the like are obtained. This Bureau is also doing a large amount of experimental work upon the growth and fermentation of tobacco; upon the diseases of the sugar beet; upon plant hybrids; and upon the economic improvement of races of plants such as corn and wheat. In the Bureau of Chemistry of the Agricultural Department researches are constantly going forward upon the composition and value of foods; upon the extent and character of food adulterations, both domestic and foreign; upon the composition of road-materials; the ripening of fruits; the chemistry

(A) Undoubtedly, extensive and unique facilities already exist, and are likely in the future in still larger measure to exist, for advanced students and original investigators in many of the Departments in Washington. In particular, the raw materials of research, consisting of specimens, observations, data, statistics, records, reports, and the like, capable of being studied, classified, correlated, worked up and interpreted, are extraordinarily abundant and inviting. In the Agricultural Department, for example, there exists in the Bureau of Animal Industry material, unique in character and large in amount, relating to the diseases of animals caused by animal and vegetable parasites. In the Bureau of Plant Industry, living material is available for physiological and pathological experimentation, and preserved material for study and comparison, derived not only from the various sections of the United States, but also from other parts of the world furnishing plants of economic and industrial importance, such, for example, as fibre-producing materials, and the plants from which rubber, opium, starches, gums, resins, and the like are obtained. This Bureau is also doing a large amount of experimental work upon the growth and fermentation of tobacco; upon the diseases of the sugar beet; upon plant hybrids; and upon the economic improvement of races of plants such as corn and wheat. In the Bureau of Chemistry of the Agricultural Department researches are constantly going forward upon the composition and value of foods; upon the extent and character of food adulterations, both domestic and foreign; upon the composition of food materials; the ripening of fruits; the chemistry

of forest products; upon the sugars and the sugar industries; and similar subjects of great scientific and economic importance.

Statements in greater detail might easily be made concerning the work of this and nearly every other Department of the Government Service, but it would be tedious to enumerate even a small fraction of the whole. I will only remark in passing that the opportunities which exist for novel and fruitful scientific work in the several divisions of the United States Geological Survey are probably unequalled anywhere in the United States. It should also be borne in mind that documents, data, observations, statistics, records, reports, and similar raw material ready for digestion, tabulation and interpretation await in equal measure the investigator in historical, statistical, meteorological, financial, economic, administrative, governmental, military, naval, hygienic, legal, anthropological, zoological, and other subjects.

I am profoundly impressed by the richness, variety, and importance of the materials already accumulated in Washington and awaiting classification, study, and interpretation; and if the visitor allows himself to look forward in imagination even for a few years it is easy to perceive that the accumulations will rapidly become vastly greater and vastly more important.

(B) I believe that the attitude of the principal officers of the several Departments, Bureaus, and Divisions, towards properly qualified persons desiring access to the materials under their care, or desiring to conduct investigations under their general supervision and direction, is likely, at least at the

of forest products; upon the sugar and the sugar industries; and similar subjects of great scientific and economic importance. Statements in greater detail might easily be made concern-

ing the work of this and nearly every other Department of the Government Service, but it would be tedious to enumerate even a small fraction of the whole. I will only remark in passing that the opportunities which exist for novel and fruitful scientific

work in the several divisions of the United States Geological Survey are probably unequalled anywhere in the United States. It should also be borne in mind that documents, data, observations, statistics, records, reports, and similar raw material ready for digestion, tabulation and interpretation await in equal measure

the investigator in historical, statistical, meteorological, financial, economic, administrative, governmental, military, naval, hygienic, legal, anthropological, zoological, and other subjects. I am profoundly impressed by the richness, variety, and im-

portance of the materials already accumulated in Washington and awaiting classification, study, and interpretation; and if the visitor allows himself to look forward in imagination even for a

few years it is easy to perceive that the accumulations will rapidly become vastly greater and vastly more important.

(B) I believe that the attitude of the principal officers of the several Departments, Bureaus, and Divisions, towards properly qualified persons desiring access to the materials under their care, or desiring to conduct investigations under their general supervision and direction, is likely, at least at the

outset, to be thoroughly friendly and hospitable; and if the workers, advanced students, etc., who might be certified to them by the Washington Memorial Institution should prove, when tested, to be of the right quality and capacity, i.e., well prepared, earnest, suggestive, and cooperative, there would be no doubt about the continued success of the experiment. But, if, on the other hand, the persons certified to them should prove incompetent, supercilious, meddlesome, or otherwise objectionable, the doors of the several Departments would speedily be shut, and reopened only with difficulty.

I have encountered in every direction a remarkable interest in, and approval of, the plans proposed for the Washington Memorial Institution, and on every hand a cheerful and almost unanimous promise of cordial and even enthusiastic cooperation. There is in my judgment absolutely no doubt that the officials of the Government Service would welcome, and cheerfully cooperate in, any well considered and well executed plan for making accessible to advanced or qualified students the opportunities existing in Washington.

(C) It is not easy to predict how far advanced students throughout the country would probably desire to avail themselves of the opportunities in Washington. It should not be forgotten that in the absence of a university organization such investigators as may come will necessarily be thrown largely upon their own resources, and what they take away from Washington will depend very largely upon what they bring into it. In a university there usually exists a well-defined and complex system or organization, of which advanced students upon arrival readily become a part.

outset, to be thoroughly friendly and hospitable; and if the work
ers, advanced students, etc., who might be certified to them by
the Washington Memorial Institution should prove, when tested,
to be of the right quality and capacity, i.e., well prepared,
earnest, suggestive, and cooperative, there would be no doubt
about the continued success of the experiment. But, if, on the
other hand, the persons certified to them should prove incompete-
tent, superficial, mediocre, or otherwise objectionable, the
doors of the several Departments would speedily be shut, and re-
opened only with difficulty.

I have encountered in every direction a remarkable interest
in, and approval of, the plans proposed for the Washington Memo-
rial Institution, and on every hand a cheerful and almost unani-
mous promise of cordial and even enthusiastic cooperation.
There is in my judgment absolutely no doubt that the officials
of the Government Service would welcome, and cheerfully cooperate
in, any well considered and well executed plan for making acces-
sible to advanced or qualified students the opportunities exist-
ing in Washington.

(C) It is not easy to predict how far advanced students
throughout the country would probably desire to avail themselves
of the opportunities in Washington. It should not be forgotten
that in the absence of a university organization such investiga-
tors as may come will necessarily be thrown largely upon their
own resources, and what they take away from Washington will depend
very largely upon what they bring into it. In a university there
usually exists a well-defined and complex system or organization,
of which advanced students upon arrival readily become a part.

Others are found following the same pursuits, or similar pursuits; laboratories and libraries exist primarily for their benefit, and, intentionally or unintentionally, constant though often invisible aid and support are given to the student or worker from the time he joins the university until he receives his degree. The university exists chiefly for his sake and, if rightly conducted, revolves as it were for and about him.

In Washington from the very nature of the case things would be totally different. The work of the several Departments does not exist even to the smallest extent for the sake of the student or investigator, but simply for the service of the Nation; and investigation, however extensive or essential, is strictly a means to, and never the end of, the work of a Government Department. Even if all the Departments at Washington could be gathered together in one building, or in a group of buildings, upon a "field" or "campus," or "yard," they would not in any right sense of the word constitute a university. They would not even closely resemble a school of applied science or an institute of technology, for the end and object of these is also the training of men; while the end and object of the Departments at Washington is public service.

It is, therefore, difficult to predict with certainty whether the advantages which unquestionably exist in Washington for those who are able to make use of them will, or will not, prove to be attractive to many investigators. I am nevertheless of the opinion that if these opportunities and privileges should be adequately made known there would prove to be, among the many

Others are found following the same parasite, or similar parasite; laboratories and libraries exist primarily for their benefit, and, intentionally or unintentionally, constant though often invisible aid and support are given to the student or worker from the time he joins the university until he receives his degree. The university exists chiefly for his sake and, at rightly conducted, reveals as it were for and about him.

In Washington from the very nature of the case things would be totally different. The work of the several Departments does not exist even to the smallest extent for the sake of the student or investigator, but simply for the service of the Nation; and investigation, however extensive or essential, is strictly a means to, and never the end of, the work of a Government Department. Even if all the Departments at Washington could be gathered together in one building, or in a group of buildings, upon a "field" or "campus," or "yard," they would not in any right sense of the word constitute a university. They would not even closely resemble a school of applied science or an institute of technology, for the end and object of these is also the training of men; while the end and object of the Departments at Washington is public service.

It is, therefore, difficult to predict with certainty whether the advantages which unquestionably exist in Washington for those who are able to make use of them will, or will not, prove to be attractive to many investigators. I am nevertheless of the opinion that if these opportunities and privileges should be adequately made known there would prove to be, among the many

millions of inhabitants of the United States, at least one or two hundred of advanced workers, who would hail with satisfaction an announcement that the unique collections and facilities existing in Washington were available to qualified persons for study and research, free of charge.

(D) As to the advisability of making more generally known the extent and nature of the facilities for research which Washington offers, with a view of bringing together in that city qualified students or investigators for special and original work, I am of the opinion that the experiment is well worth the making, provided it can be wisely conducted.

It would, in my judgment, be a result of comparatively small value, to bring workers to Washington and merely turn them loose in the several Departments, if each should follow by himself a strictly specialized course, rarely if ever coming into contact with others having similar high ambitions and similarly specialized pursuits. There is danger, educationally speaking, that unless some way is found to bring together, and, as it were, to broaden such men, they might complete their formal work and return to their homes without having reaped more than a small fraction of the advantages which ought normally to accrue from a residence in the National Capital. On the other hand, if some plan should be devised, as might easily be done, which should prevent possibilities so unfortunate, the richest results might be gained. It is difficult to conceive of a more splendid opportunity or method for carrying out the wish of George Washington that students should be brought together in a central establish-

millions of inhabitants of the United States, at least one or two hundred of advanced workers, who would hail with satisfaction an announcement that the unique collections and facilities existing in Washington were available to qualified persons for study and research, free of charge.

(D) As to the advisability of making more generally known the extent and nature of the facilities for research which Washington offers, with a view of bringing together in that city qualified students or investigators for special and original work, I am of the opinion that the experiment is well worth the making, provided it can be wisely conducted.

It would, in my judgment, be a result of comparatively small value, to bring workers to Washington and merely turn them loose in the several Departments, if each should follow by himself a strictly specialized course, rarely if ever coming into contact with others having similar high ambitions and similarly specialized pursuits. There is danger, educationally speaking, that unless some way is found to bring together, and, as it were, to broaden such men, they might complete their formal work and

return to their homes without having reaped more than a small fraction of the advantages which ought normally to accrue from a residence in the National Capital. On the other hand, if some plan should be devised, as might easily be done, which should prevent possibilities so unfortunate, the richest results might be gained. It is difficult to conceive of a more splendid opportunity or method for carrying out the wish of George Washington that students should be brought together in a central establish-

ment, "to do away with local attachments and state prejudices," than bringing mature but young men from various parts of the country and, as in a crucible, fusing local ideas and points of view into a solid and substantial national whole. In a university such a result is ordinarily obtained by university lectures, university dining-halls, clubs, reading-rooms, athletics and social gatherings. Something of this kind must be provided if those who come to Washington under the auspices of the Washington Memorial Institution are to derive the highest benefit from their stay.

As to the grade of students whose coming it might be desirable to encourage, I am of the opinion that for the reasons outlined above, this should be decidedly high or advanced. There is obviously no place in the present scheme for the student who requires close supervision or who desires formal instruction. Such a person would be far better off in a college or in a university. Moreover, the very richness of the feast makes it indigestible for any one not already well qualified to partake of it. I therefore believe that the work of the Departments, interesting and valuable as it is, is not adapted to persons below the grade of specialists, advanced workers, or investigators.

Those who come should be, in general, graduates of colleges or universities, or of mature age and fixed habits, and ready and eager for advanced work of a specialized type. The suggestion has been made that among those who would profit most by a stay in Washington would be the assistants and instructors in educational establishments, observatories, laboratories, experiment stations, fish-hatcheries, and the like, and even professors on leave of

ment, "to do away with local attachments and state prejudices," than bringing mature but young men from various parts of the country and, as in a crucible, fusing local ideas and points of view into a solid and substantial national whole. The university such a result is ordinarily obtained by university lectures, university dining-halls, clubs, reading-rooms, societies and social gatherings. Something of this kind must be provided if those who come to Washington under the auspices of the Washington Memorial Institution are to derive the highest benefit from their stay. As to the grade of students whose coming it might be desirable to encourage, I am of the opinion that for the reasons outlined above, this should be decidedly high or advanced. There is obviously no place in the present scheme for the student who requires close supervision or who desires formal instruction. Such a person would be far better off at a college or in a university. Moreover, the very richness of the feast makes it indigestible for any one not already well qualified to partake of it. I therefore believe that the work of the Department, interesting and valuable as it is, is not adapted to persons below the grade of specialists, advanced workers, or investigators. Those who come should be, in general, graduates of colleges or universities, or of mature age and fixed habits, and ready and eager for advanced work of a specialized type. The suggestion has been made that among those who would profit most by a stay in Washington would be the assistants and instructors in educational establishments, observatories, laboratories, experiment stations, fish-hatcheries, and the like, and even professors on leave of

absence. I am disposed to think that from many colleges, particularly from those smaller and more remote, from experiment stations, observatories and the like, a number of men might annually come, to whom the opportunities offered in Washington would be of inestimable service, and for whom a temporary residence in the National Capital under the right conditions for coming into contact with fellow workers; for attending meetings of scientific, historical, literary and statistical associations or academies; and for observing the conduct of the affairs of a great Nation; would be of service and lasting value. Upon this point experiment alone can enlighten us.

(E) As to the administrative machinery most to be desired in case an experiment of this sort is undertaken, there can be little question. Clearly, a large measure of energy, tact, wisdom and sagacity will be required of the experiment is to succeed. The several Departments of the Government will not long tolerate the presence of unqualified or troublesome workers upon their premises. These, therefore, must be selected and certified with discrimination, and their work must be followed and supervised with care, not indeed directly, by the Washington Memorial Institution or its officers, but indirectly by securing from the various Departments reports bearing upon the character, ability and originality, progress and industry, of the persons certified. The Washington Memorial Institution must reserve the privilege of striking from its rolls the name of any worker who is reported to be incompetent, meddlesome, or otherwise objectionable to any Department, and must always keep in close touch with the Department, with the investigator, and with the institution,--if any--from

absence, I am disposed to think that from many colleges, particularly from those smaller and more remote, from experiment stations, observatories and the like, a number of men might annually come, to whom the opportunities offered in Washington would be of inestimable service, and for whom a temporary residence in the National Capital under the right conditions for coming into contact with fellow workers; for attending meetings of scientific, historical, literary and statistical associations or academies; and for observing the conduct of the affairs of a great Nation; would be of service and lasting value. Upon this point experiment alone can enlighten us.

(E) As to the administrative machinery most to be desired in case an experiment of this sort is undertaken, there can be little question. Clearly, a large measure of energy, tact, wisdom and sagacity will be required of the experiment is to succeed. The several Departments of the Government will not long tolerate the presence of unqualified or troublesome workers upon their premises. These, therefore, must be selected and certified with discrimination, and their work must be followed and supervised with care, not indeed directly, by the Washington Memorial Institution or its officers, but indirectly by securing from the various Departments reports bearing upon the character, ability and originality, progress and industry, of the persons certified. The Washington Memorial Institution must reserve the privilege of striking from its rolls the name of any worker who is reported to be incompetent, meddlesome, or otherwise objectionable to any Department, and must always be up in close touch with the Department with the investigator, and with the institution,--if any--from

which he comes. The most intimate and friendly relations possible should also be inaugurated and maintained with the various educational and scientific establishments of the country, public and private, in the hope that these institutions, gaining confidence and experience, would come to use the Washington Memorial Institution as their trusted agent and adviser, and for the supervision of such advanced students as they might desire to send to Washington for work.

It should also be the duty of the Washington Memorial Institution to bring together as much as possible in scientific, literary, educational, and social gatherings the various workers under their care, to the end that a truly national spirit, and an enthusiasm for learning, might be cultivated, and that local differences and prejudices should be minimized or removed.

It has been suggested that a number of fellowships and scholarships would contribute greatly to the success of any undertaking of this kind. This is obviously true, provided they be awarded for ability and not for indigence. It has also been suggested that a central building, or headquarters, containing the offices of the Institution, with work-rooms for investigators, who might in some cases be allowed to remove materials from the Departments for more minute and prolonged study, and for work after four o'clock in the afternoon, would be useful if not indispensable; and I am inclined to agree with this opinion. The Private rooms for investigators in the Marine Biological Laboratory at Wood's Hole undoubtedly constitute its chief attraction and have contributed greatly to its success and usefulness.

which he comes. The most intimate and friendly relations possible should also be inaugurated and maintained with the various educational and scientific establishments of the country, public and private, in the hope that these institutions, gaining confidence and experience, would come to use the Washington Memorial Institution as their trusted agent and adviser, and for the supervision of such advanced students as they might desire to send to Washington for work.

It should also be the duty of the Washington Memorial Institution to bring together as much as possible in scientific, literary, educational, and social gatherings the various workers under their care, to the end that a truly national spirit, and an enthusiasm for learning, might be cultivated, and that local differences and prejudices should be minimized or removed.

It has been suggested that a number of fellowships and scholarships would contribute greatly to the success of any undertaking of this kind. This is obviously true, provided they be awarded for ability and not for indigence. It has also been suggested that a central building, or headquarters, containing the offices of the Institution, with work-rooms for investigators, who might in some cases be allowed to remove materials from the Department for more minute and prolonged study, and for work after four o'clock in the afternoon, would be useful if not indispensable; and I am inclined to agree with this opinion. The private rooms for investigators in the Marine Biological Laboratory at Wood's Hole undoubtedly constitute its chief attraction and have contributed greatly to its success and usefulness.

In brief, as a result of my personal inquiries, and after careful consideration, not only of the broader scope and significance but also of the detailed work proposed for the Washington Memorial Institution, I am convinced that the experiment is worthy, and likely to be successful, provided that liberal support can be found for the administrative machinery required, and provided that wise administrators can be found to initiate and conduct the experiment. At the end of a very few years it ought to be easy to determine with accuracy whether a demand exists, or can be created, for such an institution; whether it can be successfully conducted; and whether, as judged by its results, it is worthy of continued support.

Respectfully submitted,

(Signed) William T. Sedgwick.

In brief, as a result of my personal inquiries, and after careful consideration, not only of the broader scope and significance but also of the detailed work proposed for the Washington Memorial Institution, I am convinced that the experiment is worthy, and likely to be successful, provided that liberal support can be found for the administrative machinery required, and provided that wise administrators can be found to initiate and conduct the experiment. At the end of a very few years it ought to be easy to determine with accuracy whether a demand exists, or can be created, for such an institution; whether it can be successfully conducted; and whether, as judged by its results, it is worthy of continued support.

Respectfully submitted,
(Signed) William T. Sedgwick.