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Central Atlantic Ocean-
ographic Station

ISELIN & RIGGS

25 BROAD STREET, NEW YORK

JOHN H. ISELIN
LAWRASON RIGGS, JR.

CABLE ADDRESS "ISRIG NEW YORK"
TELEPHONE HANOVER 4925

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January 30, 1930.

Dr. Max Mason,
Rockefeller Foundation,
61 Broadway,
New York City.

Dear Dr. Mason:

Re: Woods Hole Oceanographic Institution

I herewith transmit the formal request of the Woods Hole Oceanographic Institution for support. We estimate that a certain amount, not over \$25,000., for expenses of organization and cost of secretarial services, etc. during the period while building plans are being developed and investigations regarding equipment and personnel completed, will now be needed, and that during the ensuing year, that is, during the period of construction, a further sum of not more than \$50,000. will be needed to cover expenses other than those of construction. If the Rockefeller Foundation acts favorably upon the application, the Institution intends to proceed vigorously with the program.

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Sincerely yours,
Lawrason Riggs, Jr.

Room 1643, 25 Broad Street,
New York, January 30, 1930.

To the
Rockefeller Foundation,
61 Broadway,
New York City.

Gentlemen:

Referring to the recent action of the National Academy of Sciences in adopting the report of its Committee on Oceanography, we beg to report that the WOODS HOLE OCEANOGRAPHIC INSTITUTION has been incorporated under the General Laws of the State of Massachusetts, Chapter 180 as amended, for the following purposes:

"To prosecute the study of oceanography in all its branches; to maintain a laboratory or laboratories, together with boats and equipment and a school for instruction in oceanography and allied subjects; to accept and hold money and property of any kind whatsoever, and wherever situated, and whether received through bequest, devise, gift or otherwise; and to apply from time to time and at any time to the purposes of the corporation, or to any of them, all or any part of the income and/or principal of any funds and/or property held by the corporation".

The Charter of the corporation is dated the 6th day of January 1930. The Trustees of the corporation at present are the following:

Thomas Barbour,
Henry B. Bigelow,
William Bowie,
Newcomb Carlton,
E. G. Conklin,
Benjamin M. Duggar,
Frank R. Lillie,
John C. Merriam,
Seward D. Prosser,
Lawrason Riggs, Jr.,
Elihu Root, Jr.,
Harlow Shapley,
T. Wayland Vaughan.

and the members of the corporation are the same persons.

On or before the date of the annual meeting to be held next summer, it is intended that the number of Trustees shall be raised to twenty-four in order to secure as wide as possible a representation of those interested in oceanography.

The present officers of the corporation are:

President,	Frank R. Lillie,
Director,	Henry B. Bigelow,
Treasurer,	Lawrason Riggs, Jr.,
Clerk,	Henry B. Bigelow.

At a meeting of the Trustees held in New York on the 15th day of January, 1930, the Treasurer and/or Director were authorized to make application to the Rockefeller Foundation on behalf of the Woods Hole Oceanographic Institution for funds to carry out the project. Accordingly, the Trustees of the Woods Hole Oceanographic Institution now make application to the Rockefeller Foundation for financial support for the project outlined in the report of the Committee on Oceanography of the National Academy of Sciences and in the memorandum attached to a letter to Dr. Max Mason from Dr. Frank R. Lillie dated October

Rockefeller Foundation, No. 3

14, 1929, of which a copy is appended. The financial needs of the program are:

1. The sum of One million Dollars (\$1,000,000) for building and other construction, boats, equipment, and endowment of upkeep of the building.
2. An endowment of Two million Dollars (\$2,000,000) for the general support of the project.

Support of this project in the amount stated above will insure a complete working unit.

We request the support of the Rockefeller Foundation for this project.

Respectfully submitted,

WOODS HOLE OCEANOGRAPHIC INSTITUTION,

By Henry B. Bigelow
Director

Lawson Higgs Jr.
Treasurer.



Chicago, Illinois,
October 14, 1929.

Dr. Max Mason,
Rockefeller Foundation,
61 Broadway,
New York, N.Y.

My dear Dr. Mason:

At our conference on October 13th you asked for a statement concerning the location and organization of the proposed central Atlantic Oceanographic Station. There was not time to give a satisfactory answer to the question during our conference. I have, however, a statement prepared for the meeting of the Committee on Oceanography held on October 12th, and considered there, which I am enclosing with this letter for your information, with only such editing as is needed for the present purpose. I may say that each item of this necessarily brief statement has received careful and detailed consideration. You will find some of the discussion that led to conclusions concerning location and external and internal organization in the concluding chapters of Bigelow's report, which you have not yet seen, but which we expect to place in your hands with the completed report by November first. The estimates on size of the main building are based on preliminary architects' plans, which incorporate the foreseen needs; and costs are based on their estimates for construction at Woods Hole, with which they have had much experience. We have collected data at home and from abroad concerning cost of vessels and expense of their operation. Other estimates of operating expense of the Institution are based on experiences at Woods Hole and elsewhere.

The sums estimated for the physical and the operating organization would establish an institution that could function successfully for an indefinite period without need for additional support. Its operation should attract interest, and in time more support, from institutions and individuals, which it would be difficult to secure while the plan is still in the project stage.

Dr. Max Mason, No. 2

I telegraphed Bigelow on the thirteenth to deliver to you twenty copies of the entire report, and of the recommendations of the Committee to the National Academy by November first, and confirmed this by letter on the same day.

May I add that incorporation has been purposely delayed, so that when it is done it may meet the wishes and advice of all interests concerned.

I hope that you may be able to give me a little time when you come to Chicago for ~~final~~ considerations, and also for one or two matters of detail that might be quite important.

Thanking you for all the patient consideration that you have given to this affair, I am,

Yours sincerely,

(Sgd) Frank R. Lillie.

FRL:M

MEMORANDUM TO DR. MAX MASON CONCERNING -

Location, External and Internal Organization and costs
of the proposed Atlantic Oceanographic Station.

* * * * *

1. Location and Physical Equipment.

It is believed that the location of the Central Atlantic Oceanographic Station should be at Woods Hole, Massachusetts, on account of geographical advantages and the scientific good will and cooperation that would be assured by its location there. Of the two ~~stations~~ referred to in the proposed report to the Academy, the oceanic (subtropical) station should be located in Bermuda on account of its ready access to oceanic depths and its subtropical marine conditions, as well as its accessibility and other advantages. The Atlantic coast presents the peculiar advantage, unmatched in any other part of the world, of the existence of subarctic conditions so far south as to be readily accessible. While the exact location of a seasonal subarctic station need not be determined for some time, the region of the straits of Belle Isle and the East Coast of Newfoundland should be examined in cooperation with the Biological Board of Canada.

The central station would require a building of about 525,000 cubic feet, wharves, a vessel of about 120 feet in length and other smaller boats, residences and equipment. If located at Woods Hole, a very modest library would suffice, and other savings could be effected. The Marine Biological Laboratory would furnish a suitable site under proper conditions, so that not much additional land would be needed. The cost of all real estate, buildings, sea-going and other equipment would approximate \$800,000.00. The cost of operation is estimated at about \$100,000.00 a year, which would require an endowment of \$2,000,000. Preliminary plans for a suitable building will be presented at the meeting of the Committee, together with outline of a proposed budget.

II. External or Governing Organization.

Various types of governing organization have been considered as related in the main body of the report. We believe that independent incorporation of the Central Atlantic Station is necessary, and it is suggested that the Committee on Oceanography of the National Academy of Sciences might become original incorporators, with additional members, including at least one business and legal adviser, to be selected later. It is also suggested that endowment funds might be held for the benefit of the Corporation by an approved Trust Company, subject possibly to a decennial review by the National Academy of

Sciences, or some specially constituted committee.

III. Internal or Operating Organization of the Central Station.

The work of the station would fall naturally into two major divisions of geophysics and biology, and the organization of the staff should be primarily adapted to cover both fields.

The functions of the station would be (1) to conduct specific research projects, and (2) to furnish directive stimulation to oceanographic research by cooperation in the following ways:

- (a) by furnishing research facilities to competent investigators,
- (b) by supplementing university and other instrumentalities for training in oceanography,
- (c) by cooperating in various ways with other oceanographic investigations.

These functions can be effectively realized only under a director of scientific ability with enthusiasm for the project, who is willing to devote his life to the work.

The determination of the extent of both the stated functions involves definite policies which might be chiefly considered under the above headings.

1. Research projects.

It is considered unwise to commit the resources of the institution to comprehensive departmental organization and programs in advance, for this would at once stereotype the activities of the institution and restrict freedom of development. A more flexible program might be based on research projects to be determined by those in charge of the two major divisions of geophysics and biology, subject to the approval of the Director. It would not be advisable to attempt to outline specific projects in advance of appointments of the Director and heads of the two major divisions of the work.

If the work of the station were to be organized by projects rather than by departments, it would probably be wise not to make more than two principal staff appointments at first, representing in the best possible way the two major divisions of the work, one of these appointees to serve also as Director. These men should then determine in consultation with the incorporators what other appointments to make, and whether these should be permanent, or for the duration of research projects, in the latter case presumably to be held by men released from their university or other permanent appointments for stated periods.

2. Cooperative Relationships.

However important the provision for carrying on specific research projects may be, the cooperative relations of the proposed station or stations are, of at least equal importance; for, though the specific research program of the station may result in discoveries even of fundamental importance to oceanography, they can never include more than a small fraction of the problems pressing for solution. In order that these problems may be developed in a manner commensurate with their scientific and economic importance, there is needed in America a center of influence that will be an encouragement to all concerned with the problems of the ocean. This theme is illustrated repeatedly in the main body of the report. How can the proposed station promote this purpose concretely?

a. Furnishing Research Facilities to Competent Investigators.

Models for this activity of the station are furnished by the Marine Biological Laboratory at Woods Hole, by the Station of the Carnegie Institution at Tortugas, by the Bureau of Fisheries Laboratory at Woods Hole, by the Canadian Atlantic Biological Station at St. Andrews; on the Pacific Coast by the Scripps Institution of Oceanography and the Hopkins Marine Station; abroad by the Zoological Station at Naples, by the Plymouth (England) Marine Biological Station, by stations in France and others that might be mentioned. This is now a recognized activity of practically all marine stations, which has been in operation for over half a century in one or two cases. Therefore no argument is necessary for including it as a main feature of the organization of the proposed new station. It is important, however, to consider both the extent of the provisions desirable to be made in this case, and also special forms that it might take.

For certain kinds of oceanographic work the number of visiting investigators at work must be limited by the accommodations of the boats and the regular program of work on which they are engaged. Certainly only a very few can be accommodated at any one time for work on the high seas. There is, however, an immense amount of work, physical, chemical and biological for which personal use of the sea-going equipment is not required. Ample provision should be made for investigators undertaking work of this kind. There will also be a certain number of investigators able to command the use of private or government owned vessels for whom provision should be made in the station, as a headquarters for working up results, and for meeting other investigators.

The provision for all such visiting investigators must include private work rooms with physical, chemical and biological laboratory equipment and library. Suitable plans for arrangements of these kinds can be readily prepared, taking advantage of the experience of the various institutions that furnish similar facilities. The quantitative amount and distribution of the different kinds of facilities requires special consideration. It would certainly be unwise to start on too small a scale.

Visiting investigators at the proposed station should be of two classes: (1) Those carrying out their investigations without specific reference to the research program of the institution; and (2) those directly participating in this program. Those of the first class should be encouraged to contribute through their institutions to the expenses of their undertakings. Those of the second class may receive temporary stipends of varying amounts for longer or shorter periods depending on circumstances.

b. Supplementing University and other
Instrumentalities for Training in Oceanography.

As Doctor Bigelow has pointed out in his report, the educational aspect of Oceanography is under serious handicaps at the present time. This section of his report contains very cogent reasons why the proposed organization should make a special effort to improve these conditions. Any considerable improvement will involve much time, but definite beginnings should be included in the plan for the proposed station.

At the present time oceanography as a university discipline is handicapped very seriously by lack of suitable laboratory and research facilities. A considerable part of this handicap could be overcome in a certain number of institutions by facilities available in common to all of them. The proposed central institute could not propose to give a comprehensive training in oceanography, for which study of physics, chemistry, biology, geology and geophysics is indispensable, but it could organize one or more special courses in the technique of oceanographic study, that would supplement the basic and the systematic training of the universities. At a later stage in the training of the oceanographer the institute could also furnish facilities for the research required for the Ph. D. or Sc. D. degrees in oceanography. Thus provision could readily be made for two stages in oceanographic education, leaving to the universities all the rest.

c. Cooperating in other Oceanographic Investigations.

Cooperation is not something that can be created to order. It grows out of mutual interests and mutual confidence. It would, therefore, be a mistake to attempt to outline systematically the range, or to estimate the fruitfulness, of cooperative undertakings. We are not starting at the beginning of oceanographic investigation in America, but are on the contrary, proposing to add a new organization to the group of existing agencies already concerned in various phases of oceanography. Some of these are long established and hence possess much experience and long established traditions. In the section of his report dealing with the status of oceanography in America, Dr. Bigelow has given an account of these agencies. He has pointed out that all of them are handicapped for comprehensive treatment of oceanography by limitations of a constitutional or institutional sort. The opportunity of the proposed new Institute in this connection is to include all these interests, and utilize them in a comprehensive conception. This requires a disinterested, sympathetic policy. The fact that so many, perhaps all the more important of the existing agencies, welcome the prospect of a centralizing organization is a good omen for success in the undertaking, but there will always be the danger of attempting too much, and of embarking on fruitless enterprises. The Director will have need of much wisdom in guiding the policies to be pursued.

