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A MEMORANDUM

on the

H A R V A R D F O R E S T

ITS PRESENT STATUS AND A PROPOSED PLAN OF WORK THEREUNDER

Prepared for

THE COMMITTEE APPOINTED BY THE BOARD OF OVERSEERS
OF HARVARD UNIVERSITY TO VISIT THE HARVARD FOREST

April 1940

THE HARVARD FOREST
ITS PRESENT STATUS AND A PROPOSED PLAN OF WORK THEREUNDER

For purposes of instruction and the granting of degrees, the Harvard Forest is a unit in the Department of Biology of the Graduate School of Arts and Sciences. For purposes of administration it is also part of a botanical group which includes the Arnold Arboretum, the Bussey Institution, the Gray Herbarium, Atkins Institution of the Arnold Arboretum, Botanical Museum, Farlow Herbarium and Library, and the Maria Moors Cabot Foundation for Botanical Research, under the direction of the Administrator of Botanical Collections of Harvard University.

Since instruction in forestry was first offered at Harvard in 1903 the work has taken several different forms. Over these thirty-six years continuous readjustments have been made to accommodate the program to the rapid development of forestry education and the ever increasing activities of public forestry agencies.

In the early years of forestry in this country the Harvard Forest was able to do effective pioneering in a number of fields, and the results of research by staff and students contributed to the understanding of many problems which were receiving little or no attention elsewhere. These contributions were the result of insight and imagination, and a flexible research program which permitted following promising leads and required facilities which were relatively crude. But with the enormous increase in the body of knowledge pertaining to forestry which has taken place within the past fifteen years, research is becoming increasingly refined and specialized. It is no longer possible for the small group of workers at Petersham effectively to undertake as diversified a program of research as was once the case.

The time again has come to readjust the work plan of the Forest with a view toward fixing more definitely upon those activities in which the greatest contributions can be made. The decision to concentrate in silviculture and a certain few of the underlying sciences arises only in part from a traditional interest and special fitness in those branches of the field of forestry. It arises also and gains strength from the conviction that there is a need in the forestry profession for more effective training in biology. Throughout the vast network of forestry activities in this country there are marked weaknesses attributable to inadequate groundings in biology. There evidently is only partial recognition of the fact that, although forestry may need more able administrators and is impeded by economic factors, yet there can be no sound forestry practice without the biological base. It is this element in the structure which the Forest staff aims to provide in the training of students coming to Petersham.

The Harvard Forest can assist in the development of forest administrators and specialists in land use planning through

continued participation in the agricultural economics and land use work of the Graduate School of Public Administration. It can provide students who contemplate a career in such fields with a better understanding of the laws of biology as they relate to forests and thus help develop within our public forestry agencies a more realistic comprehension of the nature of the living material with which they are dealing. Those with a forestry training background can in turn acquaint themselves with the economic relationships conditioning practical forest operations, either private or public.

Specific recommendations for a plan of work are presented below under the three original objectives of the Forest:

(1) a field laboratory for the instruction of students in forestry and allied fields;

(2) an experiment station for research in silviculture and related subjects;

(3) a model forest to demonstrate the practice of forestry.

INSTRUCTION

Since 1915, instruction in forestry at Harvard leading to the Master in Forestry degree has been confined to students who possess a bachelor's degree in forestry. Ordinarily students complete the requirements for the master's degree in one academic year. By giving up the two-year graduate course offered prior to 1915, intended for men having no previous forestry training and requiring the teaching of elementary forestry subjects, the Forest staff was free to concentrate its efforts on advanced work and specialization. Under the guidance of a staff member, students undertook research projects in a great variety of subjects, including silviculture, forest management, utilization and marketing, forest entomology, forest pathology, forest economics, soil science, tree physiology, forest genetics, and, for a time, wildlife management. The research project method of instruction is still being followed.

For a number of years past, however, it has become increasingly clear that, with a small staff and limited funds, adequate instruction could not be given in all of the professional forestry subjects. Those subjects in which the staff believes specialization should now be offered at Petersham are silviculture and certain of the underlying sciences, namely, soil science, tree physiology, and forest genetics. In cooperation with other members of the Department of Biology at Cambridge or of other units in the University, advanced work also should be offered (by special arrangement) in such subjects as forest entomology, forest pathology, forest ecology, and forest economics. Specialization in any of these subjects,

as well as in silviculture, is considered acceptable for candidates for the Master in Forestry degree, provided part of the year is spent in general forestry instruction at Petersham.

For such candidates adequate grounding in the professional forestry subjects should continue to be assured by limiting acceptance to those who possess a bachelor's degree from a forestry school of recognized standing. With such a background, a student may be given sufficient instruction in two months' time at Petersham in the history, culture, protection, use, and economic importance of the local forests to serve as orientation for specialized study occupying the remainder of the academic year. At the same time this period of instruction should be used to test in a general way and to round out the candidate's knowledge of those subjects considered most essential to successful professional practice, namely, silviculture, management, utilization, protection, and economics.

Forestry is suffering from an oversupply of poorly trained field foresters - men who have an inadequate training in biology, who lack the necessary "biological feel", who are unable to analyze the extremely complex forest conditions of today, and who, therefore, are unable to determine the proper silvicultural treatments to be applied. The actual contact with the living forest and with the methods in silviculture developed over a period of thirty years is an outstanding advantage offered at Petersham.

For students specializing in silviculture, as contrasted with such subjects as forest entomology, forest pathology, etc., and who are planning a career in practice, the research project method of instruction, in which the student necessarily spends most of his time working in a small sector of a limited field, should be replaced by one in which the student is required to study intensively and prepare a written report on a selected area of the Forest. This should contain such a representation of conditions as will afford an insight into local land use history and forest succession, the influence of these and other factors on the present character of the stands, and the kind of silvicultural treatments applicable. With the close guidance of a staff member, such a method should greatly improve the student's ability to analyze and interpret the various factors bearing on existing stand conditions, diagnose present silvicultural needs, and prescribe suitable treatments. The instructor will find opportunity to bring in the importance and influence of local wood utilization and markets, of economic considerations in general, of destructive insects and diseases, and of numerous other factors which must be taken into account in making forest plans. In this way it is believed the student can best obtain within a short period of time an understanding of the complex interrelations of biologic and economic factors involved in the application of forestry. This is essentially the plan of instruction followed by the late Professor Fisher when working in the field with his students.

The selection of research problems for M.F. degree candidates other than those specializing in silviculture also should be influenced by the professional character of the degree, holders of which are expected to become competent practitioners of forestry. This should hold regardless of whether the student intends later to become a candidate for the doctorate, unquestionably a desirable aim in the case of those planning a career in research or teaching.

For the degree of Doctor of Philosophy, the research problem, for students working at Petersham, will ordinarily be in tree physiology, soil science or forest genetics. Opportunity is provided for participation in the continuing research projects in forest soils and related work on tree nutrition and growth, and in projects in forest genetics carried on with the support of the Cabot Foundation for Botanical Research. It is desirable that this work in certain of the fundamental sciences be maintained at such a high level as to attract research men from experiment stations and elsewhere on leave of absence for the purpose of learning advanced techniques in research in these fields.

There is a generally recognized need at present for men trained in forest economics to deal with the problems arising out of the depletion of our forest resources and the difficulties involved in passing from a long period of forest exploitation to one of conservative use. Continued collaboration between the Forest and the Department of Economics in the instruction of candidates for the M.F. degree is very desirable. The courses in agricultural economics now being offered by Professor John D. Black and the seminar conducted by him in Agricultural, Forestry and Land Use Policy under the School of Public Administration are attracting forestry students throughout the country.

Instruction and facilities for research at the Forest should continue to be made available to candidates for the degree of Master of Arts or Doctor of Philosophy who undertake studies in such subjects as botany, zoology, physiology, or economics which bear on forest culture or utilization.

RESEARCH

When the Harvard Forest was first established in 1907, it was the only institution in the region which could in any way be considered a forest experiment station, and this condition lasted until 1923, when the regional forest experiment stations under the U. S. Forest Service were established. The federal work in New England was first located at Massachusetts State College and later moved to New Haven, where the Northeastern Forest Experiment Station has since developed a comprehensive program of work entrusted to a technical staff of some twenty-five persons. It has two experimental tracts in the White

Mountains, one at Alfred, Maine, one at Williamstown, Massachusetts, and others in New York State. On these experimental forests, research in silviculture has been conducted along approximately the same lines as at Petersham. There is, however, little duplication of effort, for the reason that the experimental forests operated by the Station are situated in other parts of the region, where conditions are quite unlike those at Petersham. Here we are fortunate in being located in the "transition zone", marked by the overlapping of the northern forest and the central hardwood forest, and where land use history falls into sharply defined stages of unusual significance. The Harvard Forest, because of its location, its unequaled length of time under intensive treatment, and its unbroken series of records, can continue to make valuable contributions in research. Nor, as has already been demonstrated, is the application of the findings of research at Petersham limited to the central New England region. Methods in silviculture developed at the Forest have been found useful in many parts of the country.

In the underlying fields of soil science, tree physiology, and forest genetics, work being done at the Forest under the Cabot Foundation, and elsewhere in the University in related fields, such as botany, ecology, physiology, etc., affords the basic support to research in silviculture which does not exist in the case of any other experimental forest. In the biological phases of forestry, the Harvard Forest should excel. On the other hand, the federal forest experiment stations will conduct research in other fields of forestry, such as mensuration (forest measurements), wood utilization, marketing of forest products, wildlife management, flood and erosion control, etc., which will receive only minor or incidental attention at Petersham.

Research in the methodology of silviculture should stand out strongly at Petersham. For this a small forest is equally as useful as a large one. The prime requisites are care and thoroughness in the planning, executing, and recording of experimental treatments, plus continuity of treatment over a period of time sufficiently long to give conclusive results. Most fortunately, nearly all of the young stands established since the Forest was first put under management suffered no more than slight damage from the hurricane, and the original plans can be carried along without drastic changes.

Research in silviculture should be broadly oriented from the standpoint of economic wood production, from the considerations of profitable enterprise associated with private ownership. The silvicultural methods and techniques approved and recommended by the Forest as a result of research always have been required to meet the test of soundness and worth from a business standpoint. Research in silviculture so oriented best fits the needs of instruction of candidates for the professional degree (M.F.) and contributes towards the most effective collaboration with workers in forest economics at Cambridge.

In general, research of the descriptive and empirical type should be carried on in connection with the training of candidates for the M.F. degree; while research of the more exact and fundamental type, in such fields as soil science, tree physiology, etc. should be the province of candidates for the Ph.D. degree.

Research in silviculture, as well as in the fundamental sciences, must necessarily be largely of the continuing type and conducted by staff members who can follow through year after year in making observations and records. Students will participate in such research and collaborate with staff members in the preparation of either progress or final reports. And certain research projects may lend themselves to completion in a single academic year; but, by and large, silviculture is the one field of forestry most dependent upon long-term research, which in turn requires long-continued ownership and operation of an experimental forest. For successful endeavor under such requirements, a privately endowed institution has many advantages over one supported by annual appropriations from the public treasury. Among other things, there is much greater flexibility and promptness of action in initiating new projects and following promising leads. The Forest has amply demonstrated this fact in several cases, where its leadership served to encourage other research agencies to continue along the lines developed here. This greater freedom of thought and action, which results in promising studies being taken up and carried forward by larger agencies, should be protected and encouraged.

There should be continued cooperation with public forest research agencies working in the region. Excellent results have come from the collaboration of members of the Harvard Forest staff with members of the Northeastern Forest Experiment Station, the Division of Forest Insects of the U. S. Bureau of Entomology and Plant Quarantine and of the Division of Forest Pathology of the Bureau of Plant Industry. Several experiments are now being conducted in the Forest, in both entomology and pathology. Such joint undertakings with scientists in fields closely related to forestry are of great value to both Forest staff members and students.

DEMONSTRATION

As a result of the hurricane, which destroyed no less than two-thirds of the merchantable timber on the Forest, and of greatly reduced income from the sale of forest products for a number of years to come, it is realized that some important changes in the management of the Forest as a demonstration area are in order. However, there should be no departure from the fundamental purpose and objective of a demonstration forest as laid down by the late Director Fisher at the start. A forest such as was visualized by him, for the use of students, professional foresters, woodland owners, and the general public, is of even greater usefulness today than in 1908. The great

demonstrational value of the Harvard Forest was given recognition by him in the following words: "But although the Forest has provided a field for countless exercises by students and the material for many bulletins and papers, it is not these but the forest itself which has translated the developing technique of management into realizable and convincing terms. It speaks the only language which can be understood both by the wise and the simple--visible results."

Slow progress in the application of forestry to private holdings in America is due in part to so few demonstrations of silvicultural methods and techniques which have stood the test of time and are ready for adoption. The Harvard Forest is one of the few places where time has permitted such tests. In continuity of intensive silviculture its history is longer than that of any other forest in America. For 31 years it has annually carried on a wide variety of silvicultural treatments and maintained a record system in the form of detailed maps of every part of the Forest, photographs tracing stand history, descriptions of all silvicultural operations, statements of time and costs for each individual operation and accounts of all products harvested.

The Forest is visited by from three to four hundred persons annually, many of them students from other schools, professional foresters, scientists working in fields allied to forestry, and others interested in forestry, conservation, or outdoor life. To many visiting professional foresters a trip through the Forest has strengthened their faith in the value of their work. W.B. Greeley, formerly Chief Forester of the U. S. Forest Service, said, "The two days at Petersham...stand out as red letter events for many reasons, among them that I felt closer on that occasion to native American silviculture than at any other time in my life."

Only under conditions of stable ownership, dependable support, and continuity of silvicultural policy is such a contribution possible. One might think that such conditions existed in the case of many state, town, and municipal forests in the region; but this is not true. Silvicultural work done in such forests is almost invariably involved with unemployment relief. Expenditures per acre for forest improvement treatments have been so great, the amount of work done so excessive, and the supervision so inadequate, that these public forests in many cases are not only of little value as demonstrations for the guidance of private woodland owners, but are harmful in that they give rise to the mistaken notion that forestry is very costly and out of reach of the average woodland owner. It is of the utmost importance that demonstration forests whose work is oriented from the standpoint of private enterprise be encouraged.

Bearing on this same point, silvicultural methods thus far applied on both public and private forests have generally proved to be too expensive in the light of present or expectable economic conditions. For the most part, the practices recommended in the early years of forestry had their genesis in the methods of

growing agricultural crops. The layman still thinks of forestry in terms of setting out uniformly spaced rows of trees on cleared land, much the same as planting a crop of corn or setting out an apple orchard. These artificial stands have already proved the wisdom of those few early American foresters, like the late Professor Fisher, who foresaw costly maintenance, unsatisfactory outcome and an eventual swing towards the natural associations of trees. Not only has their unbalanced condition subjected such plantations to destructive attacks by insects and diseases, but the initial costs of establishment plus protection have been too high to give promise of any profit. More and more it is becoming recognized that the philosophy of working in close harmony with nature, as exemplified by the silvicultural methods developed at Petersham by Professor Fisher, is eminently sound and practicable from the standpoint of economic timber production.

Up till the time of the hurricane, the Forest afforded an unusual demonstration of sustained yield management, having such a distribution of ages of timber, from young to old, as to make possible sizable annual cuts year after year without depleting the capital growing stock. Such an organization of production also was a great financial aid to the Forest in that substantial annual incomes from the sale of forest products were realized. However, it was not the demonstration of sustained yield management, as such, which attracted visitors, but rather the demonstration of the application of the art of silviculture to local conditions in such a way as to leave a conviction in the visitor's mind that here native American silviculture was taking root. Nor was the demonstration of logging and lumbering methods of particular interest to most visitors, for the reason that they were essentially the same as those practised by lumbermen generally in the region and might be seen in use elsewhere. Similarly, very little in the way of new methods in wood utilization or in the processing of wood products was demonstrated, since in this case also the Forest found it a practical necessity to conform with local practices and to provide the sort of lumber demanded by local industries. With a sufficiently large staff of technicians, experimentation might have been undertaken in the past in these lines of work with fruitful results. But, for the future, the development of improved methods in wood utilization and processing, logging and lumbering and the like should be left largely to those agencies which are best equipped to carry it on efficiently, such as the Forest Products Laboratory at Madison, Wisconsin, and the regional forest experiment stations.

While there is no need or desire to abandon the policy of sustained yield management, existing circumstances necessitate putting less emphasis on this aspect of the Forest as a demonstration area for the next few decades. The one outstanding demonstration which promises a continuing growth in value and interest is that of the methodology of silviculture. Even under existing financial circumstances it is feasible to develop and demonstrate improved methods and techniques in this field. For this purpose small areas will suffice. There is no need for extending a given treatment over a large tract in order to supply convincing evidence. There should be a concentration of effort on a

comparatively few stands having conditions of particular interest and significance from the standpoint of silvicultural treatment. Moreover, there should be strong emphasis on the natural methods of regeneration and in general on those methods of stand establishment and improvement most in accord with natural tendencies. A larger share of such cultural work might well be done by students under the guidance of a staff member, rather than becoming largely routine operations carried out by a paid crew.

Since 69 per cent of the young stands remaining after the hurricane (not more than moderately damaged and not more than 30 years of age) are of planted conifers, there should be a complete cessation of coniferous planting other than on a strictly experimental basis. Much more experimentation in the planting of hardwoods is desirable. A much smaller forest nursery will suffice for future needs.

The whole scale of forest operations must necessarily be brought into conformity with the present limitations in funds and technical staff. Certain portions of the Forest destroyed by the hurricane and of comparatively little interest at the present time must be left untouched for the time being. It may well be that nature's own methods of forest restoration on such areas will be of greater value from a research standpoint than though money were available to apply cultural methods to every acre of the Forest. One weakness in past procedure under a policy of sustained yield which aimed towards regularizing the production of the Forest at constantly increasing levels was that too much emphasis was placed on growing timber, as such, with necessarily some loss in the development of new or improved methods through outright experimentation. Under a considerably reduced program of forest operations greater care should be possible in planning, executing and recording the various treatments than in the past.

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Albert C. Cline
ca. 1940

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The time again has come to readjust the work plan of the Forest with a view toward fixing more definitely upon those activities in which the greatest contributions can be made. The decision to concentrate in silviculture and a certain few of the underlying sciences arises only in part from a traditional interest and special fitness in those branches of the field of forestry. It arises also and gains strength from the conviction that there is a need in the forestry profession for more effective training in biology. Throughout the vast and intricate network of forestry activities in this country there are marked weaknesses attributable to inadequate groundings in biology. There evidently is only partial recognition of the fact that, although forestry may need more able administrators and is impeded by economic factors, yet there can be no sound forestry practice without the biological base. It is this element in the structure which the Forest staff aims to provide in the training of students coming to Petersham

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themselves with the economic relationships conditioning practical forest operations, either private or public.

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Instruction

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For a number of years past, however, it has become increasingly clear that, with a small staff and limited funds, adequate instruction could not be given in all of the professional forestry subjects. Those subjects in which the staff believes specialization should now be offered at Petersham are silviculture and certain of the underlying sciences, namely, soil science, tree physiology, and forest genetics. In cooperation with other members of the Department of Biology at Cambridge or of other units in the University, advanced work also should be offered (by special arrangement) in such subjects as forest entomology, forest pathology, forest ecology, and forest economics. Specialization in any of these subjects, as well as in silviculture, is considered acceptable for candidates for the Master in Forestry degree, provided part of the year is spent in general forestry instruction at Petersham.

For such candidates adequate grounding in the professional forestry subjects should continue to be assured by limiting acceptance to those who possess a bachelor's degree from a forestry school of recognized standing. With such a background, a student may be given sufficient instruction in two months' time at Petersham in the history, culture, protection, use, and economic importance of the local forests adequately to serve as orientation for specialized study occupying the remainder of the academic year. At the same time this period of instruction should be used to test in a general way and to round out the candidate's knowledge of those subjects considered most essential to successful professional practice, namely, silviculture, management, utilization, protection, and economics.

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For students specializing in silviculture, as contrasted with such subjects as forest entomology, forest pathology, etc., and who are planning a career in practice, the research project method of instruction, in which the student necessarily spends most of his time working in a small sector of a limited field, should be replaced by one in which the student is required to study intensively and prepare a written report on a selected area of the Forest. This should contain such a representation of conditions as will afford an insight into local land use history and forest succession, the influence of these and other factors on the present character of the stands, and the kind of silvicultural treatments applicable. With the close guidance of a staff member, such a method should greatly improve the student's ability to analyze and interpret the various factors bearing on existing stand conditions, diagnose present silvicultural needs, and prescribe suitable treatments. The instructor will find opportunity to bring in the importance and influence of local wood utilization and markets, of economic considerations in general, of destructive insects and diseases, and of numerous other factors which must be taken into account in making forest plans. In this way it is believed the student can best obtain within a short period of time an understanding of the complex interrelations of biologic and economic factors involved in the application of forestry. This is essentially the plan of instruction in silviculture followed by the late Professor Fisher when working in the field with his students.

The selection of research problems for M.F. degree candidates other than those specializing in silviculture also should be influenced by the professional character of the degree, holders of which are expected to be competent practitioners of forestry. In general, the thesis problem should be broad rather than narrow, emphasizing the interrelations of the various subjects which come into play in the solution of the problem. This should hold regardless of whether the student intends later to become a candidate for the doctorate, unquestionably a desirable aim in the case of those planning a career in research or teaching.

For the degree of Doctor of Philosophy, the research problem, for students working at Petersham, will ordinarily be in tree physiology, soil science or forest genetics. Opportunity is provided for participation in the continuing research projects in forest soils and related work on tree nutrition and growth, and in projects in forest genetics carried on with the support of the Cabot Foundation for Botanical Research. It is desirable that this work in certain of the fundamental sciences be maintained at such a high level as to attract research men from the federal forest experiment stations and elsewhere on leave of absence for the purpose of learning the most advanced techniques in research in these fields.

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Research

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There should be continued cooperation with public forest research agencies working in the region. Excellent results have come from the collaboration of members of the Harvard Forest staff with members of the Division of Forest Insects of the U. S. Bureau of Entomology and Plant Quarantine and of the Division of Forest Pathology of the Bureau of Plant Industry. Several experiments are now being conducted in the Forest, in both entomology and pathology. Such joint undertakings with scientists in fields closely related to forestry are of great value to both Forest staff members and students.

Demonstration

As a result of the hurricane, which destroyed no less than two-thirds of the merchantable timber on the Forest, and of greatly reduced income from the sale of forest products for a number of years to come, it is realized that some important changes in the management of the Forest as a demonstration area are in order. However, there should be no departure from the fundamental purpose and objective of a demonstration forest as laid down by the late Director Fisher at the start. A forest such as was visualized by him, for the use of students, professional foresters, woodland owners, and the general public, is of even greater usefulness today than in 1908. The great demonstrational value of the Harvard Forest was given recognition by him in the following words: "But although the Forest has provided a field for countless exercises by students and the material for many bulletins and papers, it is not these but the forest itself which has translated the developing technique of management into realizable and convincing terms. It speaks the only language which can be understood both by the wise and the simple— visible results."

Slow progress in the application of forestry to private holdings in America is due in part to so few demonstrations of silvicultural methods and techniques which have stood the test of time and are ready for adoption. The Harvard Forest is one of the few places where time has permitted such tests. In continuity of intensive silviculture its history is longer than that of any other forest in America. For 31 years it has annually carried on a wide variety of silvicultural treatments and maintained a record system in the form of detailed maps of every part of the Forest, photographs tracing stand history, descriptions of all silvicultural operations, statements of time and costs for each individual operation and accounts of all products harvested.

The Forest is visited by from three to four hundred persons annually, many of them students from other schools, professional foresters, scientists working in fields allied to forestry, and others interested in forestry, conservation, or outdoor life. To many visiting professional foresters a trip through the Forest has strengthened their faith in the value of their work. W.B. Greeley, formerly Chief Forester of the U. S. Forest Service, said, "The two days at Petersham...stand out as red letter events for many reasons, among them that I felt closer on that occasion to native American silviculture than at any other time in my life."

Only under conditions of stable ownership, dependable support, and continuity of silvicultural policy is such a contribution possible. One might think that such conditions existed in the case of many state, town, and municipal forests in the region; but this is not true. Silvicultural work done in such forests is almost invariably involved with unemployment relief. Expenditures per acre for forest improvement treatments have been so great, the amount of work done so excessive, and the supervision so faulty, that these public forests in many cases are not only of little value as demonstrations for the guidance of private woodland owners, but are harmful in that they give rise to the mistaken notion that forestry is very costly and out of reach of the average woodland owner. It is of the utmost importance that demonstration forests whose work is oriented from the standpoint of private enterprise be encouraged.

Bearing on this same point, silvicultural methods thus far applied on both public and private forests have generally proved to be too expensive in the light of present or expectable economic conditions. For the most part, the practices recommended in the early years of forestry had their genesis in the methods of growing agricultural crops. The layman still thinks of forestry in terms of setting out uniformly spaced rows of trees on cleared land, much the same as planting a crop of corn or setting out an apple orchard. These artificial stands have already proved the wisdom of those few early American foresters, like the late Professor Fisher, who foresaw costly maintenance, unsatisfactory outcome and an eventual swing towards the natural associations of trees. Not only has their unbalanced condition subjected such plantations to destructive attacks by insects and diseases, but the initial costs of establishment plus protection have been too high to give promise of any profit. More and more it is becoming recognized that the philosophy of working in close harmony with nature, as exemplified by the silvicultural methods developed at Petersham by Professor Fisher, is eminently sound and practicable from the standpoint of economic timber production.

Up till the time of the hurricane, the Forest afforded an unusual demonstration of sustained yield management, having such a distribution of ages of timber, from young to old, as to make possible sizable annual cuts year after year without depleting the capital growing stock. Such an organization of production also was a great financial aid to the Forest in that substantial annual

incomes from the sale of forest products were realized. However, it was not the demonstration of sustained yield management, as such, which attracted visitors, but rather the demonstration of the application of the art of silviculture to local conditions in such an evidently practical way as to leave a conviction in the visitor's mind that here native American silviculture was taking root. Nor was the demonstration of logging and lumbering methods of particular interest to most visitors, for the reason that they were essentially the same as those practised [sic] by lumbermen generally in the region and might be seen in use elsewhere. Similarly, very little in the way of new methods in wood utilization or in the processing of wood products was demonstrated, since in this case also the Forest found it a practical necessity to conform with local practices and to provide the sort of lumber demanded by local industries. With a sufficiently large staff of technicians, experimentation might have been undertaken in the past in these lines of work with fruitful results. But, for the future, the development of improved methods in wood utilization and processing, logging and lumbering and the like should be left largely to those agencies which are best equipped to carry it on efficiently, such as the Forest Products Laboratory at Madison, Wisconsin, and the regional forest experiment stations.

While there is no need or desire to abandon the policy of sustained yield management, existing circumstances necessitate cutting less emphasis on this aspect of the Forest as a demonstration area for the next few decades. The one outstanding demonstration which promises a continuing growth in value and interest is that of the methodology of silviculture. Even under existing financial circumstances it is feasible to develop and demonstrate improved methods and techniques in this field. For this purpose small areas will suffice. There is no need for extending a given treatment over a large tract in order to supply convincing evidence. With the limited funds now available, there should be a concentration of effort on a comparatively few stands having conditions of particular interest and significance from the standpoint of silvicultural treatment. Moreover, there should be strong emphasis on the natural methods of regeneration and in general on those methods of stand establishment and improvement most in accord with natural tendencies. A larger share of such cultural work might well be done by students under the guidance of a. staff member, rather than becoming largely routine operations carried out by a paid crew.

Since 69 per cent of the young stands remaining after the hurricane (not more than moderately damaged and not more than 30 years of age) are of planted conifers, there should be a complete cessation of coniferous planting other than on a strictly experimental basis. Much more experimentation in the planting of hardwoods is desirable. A much smaller forest nursery will suffice for future needs.

The whole scale of forest operations must necessarily be brought into conformity with the present limitations in funds and technical staff. Certain portions of the Forest destroyed by the hurricane and of comparatively little interest at the present time must be left untouched for the time being. It may well be that nature's own methods of forest restoration on such areas will be of greater value from a research stand-point than though money were available to apply cultural methods to every acre of the Forest. One weakness in past procedure under a policy of sustained yield which aimed towards regularizing the production of the Forest at constantly increasing levels was that too much emphasis was placed on growing timber, as such, with necessarily some loss in the development of new or improved methods through outright experimentation. Under a considerably reduced program of forest operations greater care should be possible in planning, executing and recording the various treatments than in the past.

THE FINANCIAL SITUATION

The Forest was acquired in 1907 through the generosity of John S. Ames, '01, as a field laboratory for students in forestry, who then were spending a good share of the year at Cambridge. With the passage of time, the work became more and more centered at Petersham until, in 1922-23, students specializing in professional forestry subjects spent the entire academic year in residence at the Forest. Aiding with its development as an outlying unit of the University, the Forest became increasingly dependent for funds upon the annual sale of timber and such gifts for current use as the director was able to obtain. Prior to 1923 the only sizable endowment was the Mrs. William H. Bliss bequest of $50,000, the income from one-half of which was used for scholarships and from the other half for salaries.

For the period leading up to the World War and, to a lesser extent, for the ensuing period of inflation which culminated in the business depression of 1929, the net profit from the sale of timber was a substantial part of the Forest's income. An anonymous endowment of $100,000 in 1923 for forest production research, and a further endowment of $200,000 raised through the efforts of the late Professor Fisher in 1929-30 produced income which was needed to maintain the work of the Forest on an efficient basis and permit a modest degree of expansion.

But, in more recent years, with the continued decline in profit from logging operations, due to a combination of lower prices for lumber and higher prices for labor, and a shrinkage in the interest rate on endowments, the Forest has been unable to support itself. During the past ten year's deficits have been incurred in all but three years, despite the efforts of the director to offset losses through gifts for current use. Only the continued generosity of friends of the Forest during these years prevented still larger deficits.

*

The situation at present has been rendered more acute by the recent hurricane, which necessitated the liquidation of the equivalent of at least fifteen years' annual cuts of timber (nearly 5 million board feet), with little or no profit, and which leaves the Forest without any appreciable income from this source for many years to come.

The following statements of estimated income and expenditures disclose the present financial situation:

Income*

In the way of dependable revenue, the Forest receives the annual income from the following endowments:

Mrs. William H. Bliss (1917), salary portion, $25,000	$1,200.00
Harvard Endowment (1917), $1,500	60.00
Forest Production Research (1923), $100,000	4,100.00
Harvard Forest (1930), $200,000	8,200.00

Through the generosity of a friend of the Forest, the following sum has been made available for a number of years past for the support of a secretary	1,500.00
Other generous friends, most of them summer residents in Petersham, have helped for many years by making annual gifts to the Director for current use. As an average, the total of such gifts has amounted to approximately	1,500.00
Because of the heavy loss in merchantable timber caused by the hurricane, the only income for the sale of forest products for several years to come will be from fuelwood. The average income from this source for the next few years is estimated to be	600.00
Other Income (room rent, miscellaneous sales, etc.)	500.00

Total Annual Income, $17,660.00

*Not including the Nathan Matthews Plantation (1929), the Pisgah Forest Reservation (1929), and the G. Frederick Schwarz (1928) endowments totaling approximately $20,000, the Incomes from which are used for the most part in paying taxes, traveling expenses, and hiring outside labor on these outlying properties.

Expenditures

(See itemized account)

The following expenditures are considered an absolute minimum under the present program of the Forest:

Staff Salaries*	$9,600.00	
Forest crew wages	5,750.00	
Transportation and travel	825.00	
Building maintenance, including cooking and Janitor service	1,450.00	
Office expense	450.00	
Equipment and supplies for research	400.00	
Library	250.00	
Forest operations, equipment and supplies	850.00	
Miscellaneous expense	1,400.00	$20,975.

From the above comparison it will be seen that an additional annual income of around $3,000 is needed In order to balance the budget and avoid further deficits.

*Not including the salaries of one Assistant Professor and two laboratory technicians supported by the Cabot Foundation for Botanical Research.

Itemized Statement of Expenditures

Staff Salaries (Including pension contributions)		
Director	4,725.	
Business Secretary	2,016.	
Asst. to Director	1,872.	
Stenographer (oart time)	500.	
Tech.Assistant (")	500.	$9,613.
Forest Crew Wages (including pension contributions)		
Superintendent	2,052.	
Three men	3,676.	5,728.
Transportation and Travel (Staff)		
Gasoline	75.	
Mileage (5 people)	550.	
Travel (out of town)	100.	
Student car	100.	825.
Building Maintenance		
Harvard House		
Cook	544.	
Janitor	150.	
Maintenance	100.	
Supplies (inc. coal)	100.	
Heat (inc. kerosene)	35.	
Light	150.	
Equipment	20.	
Miscellaneous	11.	1,110.
Forest Cottage	100.	
Superintendent's House	100.	
Benson House	100.	
Garage	25.	1,435.
Office Expense		
Equipment	35.	
Supplies	100.	
Telephone	120.	
Postage	150.	
Express & freight	25.	
Miscellaneous	10.	440.
Equipment and Supplies		
Lab. Equipment	50.	
Gen. Equipment	25.	
Lab. Supplies	250.	
Gen. Supplies	75.	400.
Library		250.

Forest Operations

Gasoline	135.	
Truck	150.	
Tractor	100.	
Fire truck	75.	
Supt.'s transportation	150.	
Road Maintenance	50.	
Provision for Injuries	75.	
Equipment	25.	
Supplies	50.	
Sundries	25.	835.

Miscellaneous Expense

Cooking supplies, inc. gas	75.	
Gift to Petersham	600.	
Reserve for Depre.	300.	
Insurance (fire)	275.	
Entertainment	50.	
Rain gauge	25.	
Society membership	30.	
Sundries	25.	1,380

To be read before Pres. Gilman — note by Pres. Conant

← A.C. Cline ca. 1940

THE HARVARD FOREST
ITS PRESENT STATUS AND A PROPOSED PLAN OF WORK THEREUNDER

For purposes of instruction and the granting of degrees, the Harvard Forest is a unit in the Department of Biology of the Graduate School of Arts and Sciences. For purposes of administration it is also part of a botanical group which includes the Arnold Arboretum, the Bussey Institution, the Gray Herbarium, Atkins Institution of the Arnold Arboretum, Botanical Museum, Farlow Herbarium and Library, and the Maria Moors Cabot Foundation for Botanical Research, under the direction of the Administrator of Botanical Collections of Harvard University.

Since instruction in forestry was first offered at Harvard in 1903 the work has taken several different forms. Over these thirty-six years continuous readjustments have been made to accommodate the program to the rapid development of forestry education and the ever increasing activities of public forestry agencies.

In the early years of forestry in this country the Harvard Forest was able to do effective pioneering in a number of fields, and the results of research by staff and students contributed to the understanding of many problems which were receiving little or no attention elsewhere. These contributions were the result of insight and imagination, and a flexible research program which permitted following promising leads and required facilities which were relatively crude. But with the enormous increase in the body of knowledge pertaining to forestry which has taken place within the past fifteen years, research is becoming increasingly refined and specialized. It is no longer possible for the small group of workers at Petersham effectively to undertake as diversified a program of research as was once the case.

The time again has come to readjust the work plan of the Forest with a view toward fixing more definitely upon those activities in which the greatest contributions can be made. The decision to concentrate in silviculture and a certain few of the underlying sciences arises only in part from a traditional interest and special fitness in those branches of the field of forestry. It arises also and gains strength from the conviction that there is a <u>need in the forestry profession for more effective training in biology</u>. Throughout the vast and intricate network of forestry activities in this country there are marked weaknesses attributable to inadequate groundings in biology. There evidently is only partial recognition of the fact that, although forestry may need more able administrators and is impeded by economic factors, yet <u>there can be no sound forestry practice without the biological base</u>. It is this element in the structure which the Forest staff aims to provide in the training of students coming to Petersham.

The Harvard Forest can assist in the development of forest

administrators and specialists in land use planning through continued participation in the agricultural economics and land use work of the Graduate School of Public Administration. It can provide students who contemplate a career in such fields with a better understanding of the laws of biology as they relate to forests and thus help develop within our public forestry agencies a more realistic comprehension of the nature of the living material with which they are dealing. Those with a forestry training background can in turn acquaint themselves with the economic relationships conditioning practical forest operations, either private or public.

Specific recommendations for a plan of work are presented below under the three original objectives of the Forest:
(1) a field laboratory for the instruction of students in forestry and allied fields;
(2) an experiment station for research in silviculture and related subjects.
(3) a model forest to demonstrate the practice of forestry.

Instruction

Since 1915, instruction in forestry at Harvard leading to the Master in Forestry degree has been confined to students who possess a bachelor's degree in forestry. Ordinarily students complete the requirements for the master's degree in one academic year. By giving up the two-year graduate course offered prior to 1915, intended for men having no previous forestry training and requiring the teaching of elementary forestry subjects, the Forest staff was free to concentrate its efforts on advanced work and specialization. Under the guidance of a staff member, students undertook research projects in a great variety of subjects, including silviculture, forest management, utilization and marketing, forest entomology, forest pathology, forest economics, soil science, tree physiology, forest genetics, and, for a time, wildlife management. The research project method of instruction is still being followed.

For a number of years past, however, it has become increasingly clear that, with a small staff and limited funds, adequate instruction could not be given in all of the professional forestry subjects. Those subjects in which the staff believes specialization should now be offered at Petersham are silviculture and certain of the underlying sciences, namely, soil science, tree physiology, and forest genetics. In cooperation with other members of the Department of Biology at Cambridge or of other units in the University, advanced work also should be offered (by special arrangement) in such subjects as forest entomology, forest pathology, forest ecology, and forest economics. Specialization in any of these subjects, as well as in silviculture, is considered acceptable for candidates for the Master in Forestry degree, provided part of the year is spent in general forestry instruction at Petersham.

For such candidates adequate grounding in the professional forestry subjects should continue to be assured by limiting ac-

ceptance to those who possess a bachelor's degree from a forestry school of recognized standing. With such a background, a student may be given sufficient instruction in two months' time at Petersham in the history, culture, protection, use, and economic importance of the local forests adequately to serve as orientation for specialized study occupying the remainder of the academic year. At the same time this period of instruction should be used to test in a general way and to round out the candidate's knowledge of those subjects considered most essential to successful professional practice, namely, silviculture, management, utilization, protection, and economics.

Forestry is suffering from an oversupply of poorly trained field foresters - men who have an inadequate training in biology who lack the necessary "biological feel", who are unable to analyze the extremely complex forest conditions of today, and who, therefore, are unable to determine the proper silvicultural treatments to be applied. The actual contact with the living forest and with the methods in silviculture developed over a period of thirty years is an outstanding advantage offered at Petersham.

For students specializing in silviculture, as contrasted with such subjects as forest entomology, forest pathology, etc., and who are planning a career in practice, the research project method of instruction, in which the student necessarily spends most of his time working in a small sector of a limited field, should be replaced by one in which the student is required to study intensively and prepare a written report on a selected area of the Forest. This should contain such a representation of conditions as will afford an insight into local land use history and forest succession, the influence of these and other factors on the present character of the stands, and the kind of silvicultural treatments applicable. With the close guidance of a staff member, such a method should greatly improve the student ability to analyze and interpret the various factors bearing on existing stand conditions, diagnose present silvicultural needs, and prescribe suitable treatments. The instructor will find opportunity to bring in the importance and influence of local wood utilization and markets, of economic considerations in general, of destructive insects and diseases, and of numerous other facto which must be taken into account in making forest plans. In thi way it is believed the student can best obtain within a short period of time an understanding of the complex interrelations of biologic and economic factors involved in the application of forestry. This is essentially the plan of instruction in silvicult followed by the late Professor Fisher when working in the field with his students.

The selection of research problems for M.F. degree candidates other than those specializing in silviculture also shoul be influenced by the professional character of the degree, holde of which are expected to be competent practitioners of forestry.

In general, the thesis problem should be broad rather than narro emphasizing the interrelations of the various subjects which come into play in the solution of the problem. This should hold regardless of whether the student intends later to become a candidate for the doctorate, unquestionably a desirable aim in the case of those planning a career in research or teaching.

For the degree of Doctor of Philosophy, the research problem, for students working at Petersham, will ordinarily be in tree physiology, soil science or forest genetics. Opportunity is provided for participation in the continuing research projects in forest soils and related work on tree nutrition and growth, and in projects in forest genetics carried on with the support of the Cabot Foundation for Botanical Research. It is desirable that this work in certain of the fundamental sciences be maintained at such a high level as to attract research men from the federal forest experiment stations and elsewhere on leave of absence for the purpose of learning the most advanced techniques in research in these fields.

There is a generally recognized need at present for men trained in forest economics to deal with the problems arising out of the depletion of our forest resources and the difficulties involved in passing from a long period of forest exploitation to one of conservative use. Continued collaboration between the Forest and the Department of Economics in the instruction of candidates for the M.F. degree is very desirable. The courses in agricultural economics now being offered by Professor John D. Black and the seminar conducted by him in Agricultural, Forestry and Land Use Policy under the School of Public Administration are attracting forestry students throughout the country.

Instruction and facilities forresearch at the Forest should continue to be made available to candidates for the degree of Master of Arts or Doctor of Philosophy who undertake studies in such subjects as botany, zoology, physiology, or economics which bear on forest culture or utilization.

Research

When the Harvard Forest was first established in 1907, it was the only institution in the region which could in any way be considered a forest experiment station, and this condition lasted until 1923, when the regional forest experiment stations under the U. S. Forest Service were established. The federal work in New England was first located at Massachusetts State College and later moved to New Haven, where the Northeastern Forest Experiment Station has since developed a comprehensive program of work entrusted to a technical staff of some 25 persons. It has two experimental tracts in the White Mountains, one at Alfred, Maine, one at Williamstown, Massachusetts, and others in New York State. On these experimental forests, research in silviculture has been conducted along approximately

the same lines as at Petersham. There is, however, little duplication of effort, for the reason that the experimental forests operated by the Station are situated in other parts of the region, where conditions are quite unlike those at Petersham. Here we are fortunate in being located in the "transition zone", marked by the overlapping of the northern forest and the central hardwood forest, and where land use history falls into sharply defined stages of unusual significance. The Harvard Forest, because of its location, its unequaled length of time under intensive treatment, and its unbroken series of records, can continue to make valuable contributions in research. Nor, as has already been demonstrated, is the application of the findings of research at Petersham limited to the central New England region. Methods in silviculture developed at the Forest have been found useful in many parts of the country.

In the underlying fields of soil science, tree physiology, and forest genetics, work being done at the Forest under the Cabot Foundation, and elsewhere in the University in related fields, such as botany, ecology, physiology, etc., affords the basic support to research in silviculture which does not exist in the case of any other experimental forest. In the biological phases of forestry, the Harvard Forest should excel. On the other hand, the federal forest experiment stations will conduct research in other fields of forestry, such as mensuration (forest measurements), wood utilization, forest protection, marketing of forest products, wildlife management, flood and erosion control, etc., which will receive only minor or incidental attention at Petersham.

Research in the methodology of silviculture should stand out strongly at Petersham. For this a small forest is equally as useful as a large one. The prime requisites are care and thoroughness in the planning, executing, and recording of experimental treatments, plus continuity of treatment over a period of time sufficiently long to give conclusive results. Most fortunately, nearly all of the young stands established since the Forest was first put under management suffered no more than slight damage from the hurricane, and the original plans can be carried along without drastic changes.

Research in silviculture should be broadly oriented from the standpoint of economic wood production, from the considerations of profitable enterprise associated with private ownership. The silvicultural methods and techniques approved and recommended by the Forest as a result of research always have been required to meet the test of soundness and worth from a business standpoint. Research in silviculture so oriented best fits the needs of instruction of candidates for the professional degree (M.F.) and contributes towards the most effective collaboration with workers in forest economics at Cambridge.

In general, research of the descriptive and empirical type

should be carried on in connection with the training of candidates for the M.F. degree; while research of the more exact and fundamental type, in such fields as soil science, tree physiology, etc. should be the province of candidates for the Ph.D. degree.

Research in silviculture, as well as in the fundamental sciences, must necessarily be largely of the continuing type and conducted by staff members who can follow through year after year in making observations and records. Students will participate in such research and collaborate with staff members in the preparation of either progress or final reports. And certain research projects may lend themselves to completion in a single academic year; but, by and large, silviculture is the one field of forestry most dependent upon long-term research, which in turn requires long-continued ownership and operation of an experimental forest. For successful endeavor under such requirements, a privately endowed institution has many advantages over one supported by annual appropriations from the public treasury. Among other things, there is much greater flexibility and promptness of action in initiating new projects and following promising leads. The Forest has amply demonstrated this fact in several cases, where its leadership served to encourage other research agencies to continue along the lines developed here. This greater freedom of thought and action, which results in promising studies being taken up and carried forward by larger agencies, should be protected and encouraged.

There should be continued cooperation with public forest research agencies working in the region. Excellent results have come from the collaboration of members of the Harvard Forest staff with members of the Division of Forest Insects of the U. S. Bureau of Entomology and Plant Quarantine and of the Division of Forest Pathology of the Bureau of Plant Industry. Several experiments are now being conducted in the Forest, in both entomology and pathology. Such joint undertakings with scientists in fields closely related to forestry are of great value to both Forest staff members and students.

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While there is no need or desire to abandon the policy of sustained yield management, existing circumstances necessitate putting less emphasis on this aspect of the Forest as a demonstration area for the next few decades. The one outstanding demonstration which promises a continuing growth in value and interest is that of the methodology of silviculture. Even under existing financial circumstances it is feasible to develop and

demonstrate improved methods and techniques in this field. For this purpose small areas will suffice. There is no need for extending a given treatment over a large tract in order to supply convincing evidence. With the limited funds now available, there should be a concentration of effort on a comparatively few stands having conditions of particular interest and significance from the standpoint of silvicultural treatment. Moreover, there should be strong emphasis on the natural methods of regeneration and in general on those methods of stand establishment and improvement most in accord with natural tendencies. A larger share of such cultural work might well be done by students under the guidance of a staff member, rather than becoming largely routine operations carried out by a paid crew.

Since 69 per cent of the young stands remaining after the hurricane (not more than moderately damaged and not more than 30 years of age) are of planted conifers, there should be a complete cessation of coniferous planting other than on a strictly experimental basis. Much more experimentation in the planting of hardwoods is desirable. A much smaller forest nursery will suffice for future needs.

The whole scale of forest operations must necessarily be brought into conformity with the present limitations in funds and technical staff. Certain portions of the Forest destroyed by the hurricane and of comparatively little interest at the present time must be left untouched for the time being. It may well be that nature's own methods of forest restoration on such areas will be of greater value from a research standpoint than though money were available to apply cultural methods to every acre of the Forest. One weakness in past procedure under a policy of sustained yield which aimed towards regularizing the production of the Forest at constantly increasing levels was that too much emphasis was placed on growing timber, as such, with necessarily some loss in the development of new or improved methods through outright experimentation. Under a considerably reduced program of forest operations greater care should be possible in planning, executing and recording the various treatments than in the past.

THE FINANCIAL SITUATION

The Forest was acquired in 1907 through the generosity of John S. Ames, '01, as a field laboratory for students in forestry, who then were spending a good share of the year at Cambridge. With the passage of time, the work became more and more centered at Petersham until, in 1922-23, students specializing in professional forestry subjects spent the entire academic year in residence at the Forest. Along with its development as an outlying unit of the University, the Forest became increasingly dependent for funds upon the annual sale of timber and such gifts for current use as the director was able to obtain. Prior to 1923 the only sizable endowment was the Mrs. William H. Bliss bequest of $50,000, the income from one-half of which was used for scholarships and from the other half for salaries.

For the period leading up to the World War and, to a lesser extent, for the ensuing period of inflation which culminated in the business depression of 1929, the net profit from the sale of timber was a substantial part of the Forest's income. An anonymous endowment of $100,000 in 1923 for forest production research, and a further endowment of $200,000 raised through the efforts of the late Professor Fisher in 1929-30 produced income which was needed to maintain the work of the Forest on an efficient basis and permit a modest degree of expansion.

But, in more recent years, with the continued decline in profit from logging operations, due to a combination of lower prices for lumber and higher prices for labor, and a shrinkage in the interest rate on endowments, the Forest has been unable to support itself. During the past ten years deficits have been incurred in all but three years, despite the efforts of the director to offset losses through gifts for current use. Only the continued generosity of friends of the Forest during these years prevented still larger deficits.

The situation at present has been rendered more acute by the recent hurricane, which necessitated the liquidation of the equivalent of at least fifteen years' annual cuts of timber (nearly 6 million board feet), with little or no profit, and which leaves the Forest without any appreciable income from this source for many years to come.

The following statements of estimated income and expenditur disclose the present financial situation:

Income*

In the way of dependable revenue, the Forest receives the annual income from the following endowments:

Mrs. William H. Bliss (1917), salary portion, $25,000	$1,200.
Harvard Endowment (1917), $1,500	60.
Forest Production Research (1923), $100,000	4,100.
Harvard Forest (1930), $200,000	8,200.
Through the generosity of a friend of the Forest, the following sum has been made available for a number of years past for the support of a secretary	1,500.
Other generous friends, most of them summer residents in Petersham, have helped for many years by making annual gifts to the Director for current use. As an average, the total of such gifts has amounted to approximately	1,500.
Because of the heavy loss in merchantable timber caused by the hurricane, the only income for the sale of forest products for several years to come will be from fuelwood. The average income from this source for the next few years is estimated to be	600.
Other Income (room rent, miscellaneous sales, etc.)	500.
Total Annual Income,	$17,660.

* Not including the Nathan Matthews Plantation (1929), the Pisgah Forest Reservation (1929), and the G. Frederick Schwarz (1928) endowments totaling approximately $20,000, the incomes from which are used for the most part in paying taxes, traveling expenses, and hiring outside labor on these outlying properties.

Expenditures

(See itemized account)

The following expenditures are considered an absolute minimum under the present program of the Forest:

Staff Salaries*	$9,600.00	
Forest crew wages	5,750.00	
Transportation and travel	825.00	
Building maintenance, including cooking and janitor service	1,450.00	
Office expense	450.00	
Equipment and supplies for research	400.00	
Library	250.00	
Forest operations, equipment and supplies	850.00	
Miscellaneous expense	1,400.00	$20,97

From the above comparison it will be seen that an additional annual income of around $3,000 is needed in order to balance the budget and avoid further deficits.

* Not including the salaries of one Assistant Professor and two laboratory technicians supported by the Cabot Foundation for Botanical Research.

Itemized Statement of Expenditures

Staff Salaries (including pension contributions)			
Director	4,725.		
Business Secretary	2,016.		
Asst. to Director	1,872.		
Stenographer (part time)	500.		
Tech. Assistant (")	500.		$9,613.
Forest Crew Wages (including pension contributions)			
Superintendent	2,052.		
Three men	3,676.		5,728.
Transportation and Travel (Staff)			
Gasoline	75.		
Mileage (5 people)	550.		
Travel (out of town)	100.		
Student car	100.		825.
Building Maintenance			
Harvard House			
Cook	544.		
Janitor	150.		
Maintenance	100.		
Supplies (inc. coal)	100.		
Heat (inc. kerosene)	35.		
Light	150.		
Equipment	20.		
Miscellaneous	11.	1,110.	
Forest Cottage		100.	
Superintendent's House		100.	
Benson House		100.	
Garage		25.	1,435.
Office Expense			
Equipment	35.		
Supplies	100.		
Telephone	120.		
Postage	150.		
Express & freight	25.		
Miscellaneous	10.		440.

Equipment and Supplies		
Lab. Equipment	50.	
Gen. Equipment	25.	
Lab. Supplies	250.	
Gen. Supplies	75.	400.
Library		250.
Forest Operations		
Gasoline	135.	
Truck	150.	
Tractor	100.	
Fire truck	75.	
Supt.'s transportation	150.	
Road Maintenance	50.	
Provision for Injuries	75.	
Equipment	25.	
Supplies	50.	
Sundries	25.	835.
Miscellaneous Expense		
Cooking supplies, inc. gas	75.	
Gift to Petersham	600.	
Reserve for Depre.	300.	
Insurance (fire)	275.	
Entertainment	50.	
Rain gauge	25.	
Society membership	30.	
Sundries	25.	1,380.

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THE HARVARD FOREST

FINANCIAL SITUATION

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The following statements of estimated income and expenditures disclose the present financial situation:

Operating Income*

In the way of dependable revenue, the Forest receives the annual income from the following endowments:

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Harvard Endowment (1917), $1,500	60.00
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Other generous friends, most of them summer residents in Petersham, have helped for many years by making annual gifts to the Director for current use. As an average, the total of such gifts has amounted to approximately	1,500.00
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Other Income (room rent, miscellaneous sales, etc.)	500.00
Total Annual Income,	$17,660.00

* Not including the Nathan Matthews Plantation (1929), the Pisgah Forest Reservation (1929), and the G. Frederick Schwarz (1928) endowments totaling approximately $20,000, the incomes from which are used on these outlying properties; or income from the scholarship portion of the Mrs. William H. Bliss Fund, about $1100. annually. (Other scholarship funds annually available are four University Scholarships of $150. each, and the John W. Blodgett, Jr. Scholarship of $500.)

Expenditures

The following expenditures are considered an absolute minimum under the present program of the Forest:

Staff Salaries*	$9,600.00	
Forest crew wages	5,750.00	
Transportation and travel	825.00	
Building maintenance, including cooking and janitor service	1,450.00	
Office expense	450.00	
Equipment and supplies for research	400.00	
Library	250.00	
Forest operations, equipment and supplies	850.00	
Miscellaneous expense	1,400.00	$20,975.00

* Not including the salaries of one Assistant Professor and two laboratory technicians supported by the Cabot Foundation for Botanical Research.

From the above comparison it will be seen that an additional annual income of around $3,000. is needed in order to balance the budget under the present program of the Forest.

DEDICATION OF SHALER HALL AND THE FISHER MUSEUM, HARVARD FOREST, PETERSHAM

May 13, 1941

President Conant

Ladies and Gentlemen:

We are met here to dedicate the Fisher Museum and Shaler Hall, two new additions to the Harvard Forest made possible by the generosity of a great friend of Harvard, who, unfortunately, has asked to remain anonymous. I wish this friend could be here today so that the Governing Boards might express their appreciation to him and say with what assurance and confidence they accept this new addition to the Forest . In having these exercises we have accomplished a number of purposes. The Governing Boards and the Committee to Visit the Harvard Forest ~~salute~~ recognize once again the accomplishments of this branch of the University. We pay tribute to the memory of the first Director, Dr. Richard Thornton Fisher, and ~~salute the memory~~ of Dean Nathaniel Southgate Shaler, a distinguished figure in Harvard history, who was active in the first foundation of scientific work along these lines, the establishment of Forestry. The subject of Forestry at Harvard has a long history. The actual Forest is more than thirty years old, as a department of the University. The first record of our interest, ~~to the Administration at least,~~ in Forestry ~~at Harvard~~ goes back to a report of President Eliot in 1871-72, when he wrote as follows:

> The cultivation and preservation of forests will become, in no long time, a matter of national concern. The natural forests of the country are rapidly disappearing, and wood will, at no distant day, be a scarce and dear commodity, as it has long been in many countries of Europe.

The day is perhaps here, as he foresaw. It was, however, some thirty or forty years before this anticipation of the entry of Harvard into the field of Forestry was realized. In 1907 the new department was enabled by the generous gift of Mr. John S. Ames, of the Class of 1901, to acquire a tract of 1788 acres of wood-land in Petersham, owned by the late James W. Brooks. The land was offered to the University at a price substantially below its commercial value

and was augmented at the same time by the gift of adjacent holdings by seven owners, of whom Mr. Brooks was one. During the more than thirty years of its existence as a department of the University, the Harvard Forest has gone through several phases in relation to the organization of instruction and research.

I have had my attention called to the prophecy of these developments by President Eliot, ~~speaking forty years~~ when he came to Petersham to dedicate a new high school on May 22, 1908:

> ~~When I first became a teacher at Harvard University, the old method of the University was a training through the memory, through book learning, and also through a training in mental discrimination. I believe that to be an exact description how changed today! Now, in addition to this training of the memory and this training , a whole new process has developed.~~ This method of training has become universal in all walks of education. A recent exemplification of which you may now observe is a new profession of Forestry. ~~This very year, far-seeing benevolent men, filled with public spirit and enthusiasm for the profession for the future, gave the University a large tract of land. We have there an essential means of training of young foresters. They are going to live in Petersham for four months of the year, doing all the things a forester needs to know how to do, etc., etc.~~

The course of the Harvard Forest followed for a time President Eliot's prophecy, and then the emphasis was ~~displaced by a further emphasis on~~ transferred to certain aspects of research.

It would be out of place for me, when we have two people here who are so much more familiar with the work of the Forest, To speak at any length on that subject, ~~so~~ I shall not try to do so. All who know Dean Shaler and Professor Fisher The one as a distinguished teacher of science, and the other as the one resource in forestry builder of ~~the future~~, will realize how appropriate it is that we pay tribute to them in the names of these buildings and by our presence at this opening day.

We were fortunate in procuring Professor Merrill's services two years ago as Administrator of Botanical Collections. Dr. Merrill, as you know, was in New York, when we persuaded him to take charge of the botanical collections and the museums. He has been a tower of strength to the Administration ~~and~~

(Here follows Professor Merrill's remarks)

(President Conant)

These buildings have been designed and constructed under the supervision of the Architect, Mr. H. W. Andrews, ~~and~~ We congratulate him on his labors and look forward now to his formal report on his work.

(Mr. Andrews)

I have completed the buildings and ~~I herewith~~ now hand you the keys.

(President Conant)

In accepting these keys to the buildings, I wish to thank you, on behalf of the President and Fellows, and to congratulate you ~~again~~ on the successful completion of your work.

As Director of the Harvard Forest, we have the good fortune to have an able pupil of the master designer of this enterprise, Professor R. T. Fisher, and a worthy successor. It is now my privilege to hand to you, Mr. Cline, as Director of the Harvard Forest, the master keys to the buildings and commit this enterprise to your care.

(Mr. Cline)

President Conant, in receiving these keys from your hands, I am mindful of the increased responsibility that has devolved upon me, etc. (Copy remarks)

(President Conant)

I have only to conclude these ceremonies by expressing once again the University's deep gratitude for the generosity of the anonymous donor, and to declare that these buildings are formally dedicated to the uses to which they have been designed.

When I first became a teacher in Harvard University the whole method of the University was a training through the memory, through book-learning absorbed and held by the memory, and also through a training in mental discrimination among facts held in the memory or in printed records. I believe that to be an exact description of the whole process of systematic education sixty years ago. How changed today from bottom to top! Now, in addition to this training of the memory and this training in mental discrimination among recorded or remembered facts, a whole new process has developed. That process is, first, a training of the senses, then a training in recording observations made by our senses, and, finally, a training in the exercise of good judgment on the facts reported by the senses, - reported by the senses, I say, not found in books, not simply held in the memory from reading books or hearing lectures, but reported by the senses. This method of training has become universal in all walks of education. A recent exemplification of it you may now observe here in Petersham. There is a new profession of forestry, - how does the University train men for it? In books, to be sure, by reading, but in laboratories more, in work with the fingers and the eyes on chemistry, physics, geology, and geography. But we do not stop there. Now-a-days in almost all professional training there is a large amount of what we call "field work." Thus, we have hired a mine this summer, that our students of mining and metallurgy may go into that mine, and themselves do there all the kinds of work needed to get out its ore. Again, this very year, far-seeing, benevolent men, filled with public spirit and enthusiasm for the new professions of the future, gave the University a large tract of beautiful woodland in the town of Petersham. We have there an essential means of training our young foresters. They are going to live here in Petersham four months of the year; they are going to work eight hours a day in those woods, doing all the things that a forester or a lumberman needs to know how to do. It is field work, not book work; it is work with the senses, the muscles, the nerves, with the whole being. Is it physical? Yes. Is it mental? Yes. It is all kinds of training put together, developing simultaneously the whole man. So with all our professional training; we rely on doing things, more than on reading about other men's doings, on doing one's self, doing with one's own eyes and hands, doing with the whole body as well as with the whole thinking force. That, I say, is the great new process brought into education in my day, within my own observation, and the easy recall of my memory.

By the way, I think you will observe that the young men who come here for this training in forestry will not be completely occupied with their labors. (Laughter.) Although they begin with a lecture at 7 o'clock, and work in the woods eight hours thereafter, and sometimes have an hour's walk to get home, I think you may depend upon it that they will not be exhausted at 6 o'clock in the evening (laughter), but will be ready to play on musical instruments, or act a play, or dance, after their day's work. I think you will find them a cheerful addition to the population of Petersham (applause), and that they will add year after year - and more and more as the years go by, and there are more of them - to the enjoyments of life in this town. Moreover, these Petersham woods will be preserved in all their beauty through long generations as means of professional instruction in a subject vital to New England's welfare.

Dr. Merrill:

Dr. Merrill

It is most gratifying that we now witness the consummation of a project that has intrigued an anonymous friend of the Harvard Forest for at least fifteen years; that is, the completion of the Harvard Forest models, work on which was actually commenced in 1930, and their installation in a properly designed building, the dedication of the Fisher Museum planned for these models, and the dedication of Shaler Hall, the administration building, completing the unit at Petersham. The contrast betveen these new buildings and the inadequate quarters in the old headquarters building, and the constant fire risk involved in that antique structure, is very great.

Harvard University is unique in controlling nine separately endowed units in the general field of botany, these for the most part research rather than teaching organizations. Beginning in 1805 with the establishment of the Botanical Garden in Cambridge, these units were organized from time to time largely through the special interests of a very remarkable series of men, each interested in his own particular field. They are, in order of establishment, the Botanical Garden, the Gray Herbarium, the Bussey Institution, the Arnold Arboretum, the Botanical Museum, the Harvard Forest, the Farlow Reference Library and Herbarium, the Atkins Institution of the Arnold Arboretum, and the Maria Moors Cabot Foundation for Botanical Research, the latter having been established in 1937. The institution with which we are concerned today owes its origin to the original interest of Dean Nathaniel S. Shaler, for whom Shaler Hall is named, and its development to the work of Professor Richard Thornton Fisher

from 1903 to 1934, for whom the Fisher Museum is named.

These several separately endowed units which I have, on occasion referred to as the botanical orphans adopted by Harvard University, but which are better designated by President Conant's descriptive phrase "pillars of strength to the Division of Biology" are now all affiliated with the University through its Division of Biology, and various staff members, including some whose salaries are derived wholly from independent unit funds, take an active part in the direction of graduate students, and some offer courses that are open to undergraduates. For many years these several units operated independently of each other, and there is some evidence that on occasion some administrative officials felt that they were more or less independent of the University. In the few years that I have occupied the position of Administrator of Botanical Collections, I have consistently followed the policy of coördination and coöperation, developing further the idea that all of the quasi-independent botanical units are integral parts of the University, and that all form a part of the Division of Biology, in consummation of the ideal of biological unity through harmony of interest and coöperation. In pursuance of this policy, I have taken the attitude that no matter from which unit an individual's salary may come, he is free to do his work in that place where his work can best be done, whether at the Arnold Arboretum, the Gray Herbarium, the Biological Laboratory, the Harvard Forest, or elsewhere. I have further established the policy that inter-institutional loans, or on occasion, even deposits of reference material and of publications should freely be made. Thus in reference to the Harvard Forest, when Shaler Hall was finished I transferred from

the Arnold Arboretum library, on deposit, its remarkably complete files of forestry periodicals, approximately 1800 volumes, thus giving the Harvard Forest one of the most complete and valuable sets of forestry periodical literature in existence.

The Harvard Forest is a unique institution. While never large in student enrollment as compared with many professional schools of forestry, its work is now confined entirely to the research field and the advanced training of selected graduate students. Its influence on the profession of forestry has been deep, and this has undoubtedly been due, in part, to the fact that the staff and registered students are in residence at Petersham and thus in direct contact with the problems under investigation throughout the year. In contrast to our forestry work most schools of forestry and forestry experiment stations are located in urban centers, so that actual contact with strictly forest problems is, in many cases, confined to limited periods when the staff and classes visit the forest for observation and practical work.

The affiliations of the Harvard Forest are in part with the Division of Economics in reference to problems of general economics, forestry economics, and land utilization, but its closest affiliations are with the Division of Biology. Much work has been done through the coöperation of staff members of the Arnold Arboretum, and a vital part of the operations under the auspices of the Maria Moors Cabot Foundation for Botanical Research are definitely centered at the Harvard Forest, financed by funds from the Foundation. With the completion of the new buildings at Petersham, we now have, for all practical purposes, an inland biological station, for the present forestry program at the Harvard Forest is largely a biological one, and from the

very nature of the situation must continue to be so. It is hoped that those members of the Division of Biology will, like representatives of federal units and other institutions, take full advantage of the equipment and facilities at the Harvard Forest in the furtherance of their investigations, in so far as problems of inland biology are concerned. It is our desire, now that adequate facilities are available at Petersham, that the space and equipment be used to the greatest possible extent for the furtherance of biological and forestry investigations. To this end all Harvard staff members whose research fields impinge on that of the forest are invited to take advantage of the opportunities afforded.

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DEDICATION OF SHALER HALL AND THE FISHER MUSEUM
HARVARD FOREST, PETERSHAM

May 13, 1941

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We were fortunate in procuring Professor Merrill's services two years ago as Administrator of Botanical Collections. Dr. Merrill, as you know, was in New York, when we persuaded him to take charge of the botanical interests of the University. He has been a tower of strength to the Administration.

(Here follows Professor Merrill's remarks)

> It is most gratifying that we now witness the consummation of a project that has intrigued an anonymous friend of the Harvard Forest for at least fifteen years; that is, the completion of the Harvard Forest models, work on which was actually commenced 1930, and their installation in a properly designed building, the dedication of the Fisher Museum planned for these models, and the dedication of Shaler Hall, the administration building, completing the unit at Petersham. The contrast between these net buildings and the inadequate quarters in the old headquarters building, and the constant fire risk involved in that antique structure, is very great.
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They are, in order of establishment, the Botanical Garden, the Gray Herbarium, the Bussey Institution, the Arnold Arboretum, the Botanical Museum, the Harvard Forest, the Farlow Reference Library and Herbarium, the Atkins Institution of the Arnold Arboretum, and the Maria Moors Cabot Foundation for Botanical Research,, the latter having been established In 1937. The institution with which we are concerned today owes its origin to the original interest of Dean Nathaniel S. Shaler, for whom Shaler Hall is named, and its development to the work of Professor Richard Thornton Fisher from 1903 to 1934, for whom the Fisher Museum is named.

These several separately endowed units which I have, on occasion referred to as the botanical orphans adopted by Harvard University, but which are better designated by President Conant's descriptive phrase "pillars of strength to the Division of Biology" are now all affiliated with the University through its Division of Biology, and various staff members, including, some whose salaries are derived wholly from independent unit funds, take an active part in the direction of graduate students, and some offer courses that are open to undergraduates. For many years those several units operated independently of each other, and there is some evidence that on occasion some administrative officials felt that they were more or less independent of the University. In the few years that I have occupied the position of Administrator of Botanical Collections, I have consistently followed the policy of coordination and cooperation, developing further the idea that all of the quasi-independent botanical units are integral parts of the University, and that all forts a part of the Division of Biology, in consummation of the ideal of biological unity through harmony of interest and cooperation. In pursuance of this policy, I have taken the attitude that no matter from which unit an individual's salary may come, he is free to do his work in that place where his work can best be done, whether at the Arnold Arboretum, the Gray Herbarium, the Biological Laboratory, the Harvard Forest, or elsewhere. I have further established the policy that inter-institutional loans, or on occasion, even deposits of reference material and of publications should freely be made. Thus in reference to the Harvard Forest, when Shaler Hall was finished I transferred from the Arnold Arboretum library, on deposit, its remarkably complete files of forestry periodicals, approximately 1800 volumes, thus giving the Harvard Forest one of the most complete and valuable sets of forestry periodical literature in existence.

The Harvard Forest is a unique institution. While never large in student enrollment as compared with many professional schools of .forestry, its work is now confined entirely to the research field and the advanced training of selected graduate students. Its influence on the profession of forestry has been deep, and this has undoubtedly been due, in part, to the fact that the staff and registered students are in residence at Petersham and thus in direct contact with the problems under investigation throughout the year. In contrast to our forestry work most schools of forestry and forestry experiment stations are located in urban centers, so that actual contact with strictly forest problems is, in many cases, confined to limited periods when the staff and classes visit the forest for observation and practical work.

The affiliations of the Harvard Forest are in part with the Division of Economics in reference to problems of general economics, forestry economics, and land utilization, but its closest affiliations are with the Division of Biology. Much work has been done through the cooperation of staff members of the Arnold Arboretum, and a vital part of the operations under the auspices of the Maria Moors Cabot foundation for Botanical Research are definitely centered at the Harvard Forest, financed by funds from the Foundation. With the completion of the new buildings at Petersham, we now have, for

all practical purposes, an inland biological station, for the present forestry program at the Harvard Forest in largely a biological one, and from the very nature of the situation must continue to be so. It is hoped that those members of the Division of Biology will, like representatives of federal units and other institutions, take full advantage of the equipment and facilities at the Harvard forest in the furtherance of their investigations, in so far as problems of inland biology are concerned. It is our desire, now that adequate facilities are available at Petersham, that the space and equipment be used to the greatest possible extent for the furtherance of biological and forestry investigations. To this end all Harvard staff members whose research fields impinge on that of the forest are invited to take advantage of the opportunities afforded.

(President Conant)

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(Mr. Andrews)

I have completed the buildings and now hand you the keys.

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(Mr. Cline)

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(Professor Merrill's remarks)

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work with the senses, the muscles, the nerves, with the whole being. Is it physical? Yes. Is it mental? Yes. It is all kinds of training put together, developing simultaneously the whole man. So with all our professional training; we rely on doing things, more than on reading about other men's doings, on doing one's self, doing with one's own eyes and hands, doing with the whole body as well as with the whole thinking force. That, I say, is the great new process brought into education in my day, within my own observation, and the easy recall of my memory.

By the way, I think you will observe that the young men who come here for this training in forestry will not be completely occupied with their labors. (Laughter) Although they begin with a lecture at 7 o'clock, and work in the woods eight hours thereafter, and sometimes have an hour's walk to get home, I think you may depend upon it that they will not be exhausted at 6 o'clock in the evening (laughter), but will be ready to play on musical instruments, or act a play, or dance, after their day's work. I think you will find them a cheerful addition to the population of Petersham (applause) and that they will add year after year - and more and more as the years go by, and there are more of them - to the enjoyments of life in this town. Moreover, these Petersham woods will be preserved in all their beauty through long generations as means of professional instruction in a subject vital to New England's welfare.

The course of the Harvard Forest followed for a time President Eliot's prophecy, and then the emphasis was transferred to certain aspects of research.

It would be out of place for me, when we have two people here who are so much more familiar with the working of the Forest, to speak at length on the subject; I shall not try to do so. All who knew Dean Shaler and Professor Fisher, the one as a distinguished teacher of science and the other as the builder of our resources in forestry, will realize how appropriate it is that we pay tribute to them in the names of these buildings and by our presence at this opening day.

We were fortunate in procuring Professor Merrill's services two years ago as Administrator of Botanical Collections. Dr. Merrill, as you know, was in New York, when we persuaded him to take charge of the botanical interests of the University. He has been a tower of strength to the Administration

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Press Release
1941
5-13-41

Shaler Hall and Fisher Museum *

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Automobiles furnished by the local members of the Governing Boards, most of them starting from the Yard in the early morning, brought the whole party to the Forest after a two-hour drive, and the dedicatory ceremony was opened by President Conant at noon.

President Conant traced briefly the history of the University's interest in forestry beginning with the following extract from President Eliot's Annual Report for the year 1871-72:

> The cultivation and preservation of forests will become, in no long time, a matter of national concern. The natural forests of the country are rapidly disappearing, and wood will, at no distant day, be a scarce and dear commodity, as it has long been in many countries of Europe.

President Conant went on to speak of the generous gift of Mr. John S. Ames of the Class of 1901 which enabled the University to acquire a tract of 1788 acres of wood-land in Petersham owned by the late James W. Brooks. The land had been offered to the University at a price substantially below its commercial value and had been augmented at the same time by the gift of adjacent holdings by seven owners of whom Mr. Brooks was one. President Conant sketched ~~After sketching~~ the history of teaching and research in forestry at Harvard, beginning with the first appointment of Richard Thornton Fisher, of the Class of 1898, as Instructor in Forestry in 1903, upon the recommendation of Dean Shaler, and utilizing first the resources of the

Arnold Arboretum, until the acquisition of the Harvard Forest provided facilities for field instruction and research. Under Fisher's subsequent administration as Assistant Professor and Director, the early emphasis on the professional training of foresters had given place to research in silviculture, in which departure the Forest soon won recognition as a leading center for the advancement of knowledge in ~~that field as regards~~ forest management and its ~~underlying~~ biological aspects.

Again President Conant quoted an address given by President Eliot at the Petersham High School in 1908, in which he remarked on the significance of the laboratory method of professional instruction as illustrated by the facilities of the Harvard Forest, in contrast to the older reliance on books and theoretical instruction.

After referring briefly to the remarkable personality and services of Dean Shaler and Professor Fisher, President Conant introduced Professor Elmer Drew Merrill, Administrator of the Botanical Collections of the University, who spoke on "The Harvard Forest and the University."

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At the conclusion of Professor Merrill's address, the architect, Mr. Harry W. Andrews, S.B. 1905, reported that the buildings had been completed, and handed their keys to the President, who accepted them with thanks and congratulated Mr. Andrews on the successful completion of his work.

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Mr. Cline in accepting, as Director, the responsibility for the care and use of the new buildings said that the Harvard Forest was assuredly entering upon a new ~~era~~ era which would be marked by increased awareness of its work on the part of members

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Referring to the destructive hurricane of September 21, 1938, which broke down nearly three-quarters of the Forest's merchantable timber, he stated that in a little more than one year over five million board feet of lumber had been salvaged. This was the equivalent of nearly fifteen years' annual cuts. Fortunately this timber was for the most part growing in wild second-growth stands, which were of less value for purposes of instruction and research than the young managed stands established and reared under Harvard management. The great bulk of these young stands had escaped serious loss and in some respects were of even greater usefulness than before, in that they provided a fund of knowledge in the methodology of stand establishment and early treatment which would be of inestimable value in rehabilitating the area affected by the hurricane. Furthermore, the management would be more free to engage in outright experimentation, unhampered by the former necessity of routine operations involved in the sustained production and the annual cutting of timber. Two new research projects of major importance were being started in the Forest this

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After the dedicatory ceremony a buffet luncheon was served and an opportunity was afforded those present to inspect the Fisher Museum, and the laboratories, offices and living quarters in Shaler Hall.

On Wednesday, March 14, the Museum was formally opened to the public. Invitations had been sent to a large number of persons, including Government

officials and others especially interested in sylviculture and biological research. The ~~occasion~~ opening was attended by more than four hundred.

Shaler Hall and Fisher Museum

Press Release - May 13, 1941

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Harvard Forest

January 18, 1940

Dear Sir:

At the last meeting of the Corporation the Treasurer reported the receipt of securities valued at $31,889.63 from an anonymous donor (Dr E.G.Stillman) for construction at the Harvard Forest.

Very truly yours,

JEROME D. GREENE

Secretary

Mr Albert C. Cline
Harvard Forest
Petersham, Massachusetts

*

Harvard Forest

January 20, 1940

Dear Mrs. Fisher,

Our good friend Ernest Stillman is anxious to verify a statement, apparently attributed to Richard, that the establishment of the Harvard Forest originated in the mind of Dean Shaler, and that the invitation to Richard to come here as Instructor in Forestry was sent by President Eliot on Dean Shaler's initiative. I am having the Archives searched to see whether there is any record of correspondence on this subject in 1903, for it was on June 1 of that year that Richard's first appointment as Instructor in Forestry was made, to take effect September 1, 1903.

Does your memory substantiate the facts as stated? If you remember any reference to this point on Richard's part, it would be most helpful.

I am delighted to learn that there is so early a prospect of realizing the plans for the buildings at Petersham, including the Fisher Museum, though nothing can be announced for some time to come.

Sincerely yours,

JEROME D. GREENE

Mrs. Richard T. Fisher
Love Lane
Weston, Massachusetts

Harvard Forest

HARVARD · COLLEGE · LIBRARY

CAMBRIDGE · MASSACHUSETTS

January 23, 1940

Mr. Jerome D. Greene
25 Massachusetts Hall
Harvard University

Dear Mr. Greene:

The correspondence of Dean Shaler and President Eliot bears out your supposition that it was the former who suggested to the latter the employment of Professor Fisher. The original recommendation by the dean should be of considerable interest to anyone tracing the history of the teaching of forestry.

I shall keep this material available in room T until I learn whether or not your friend would care to come and utilize it; or it may, of course, be sent to your office if that would be more convenient.

Very truly yours,

Clifford K. Shipton

Custodian,
Harvard University Archives

CKS:C

1940?

LOVE LANE
WESTON
MASSACHUSETTS

Jan 25.

Dear Mr. Preece.

I wish I could help you in tracing the idea I associate with the Harvard Forest to its source. But I never had heard of the Forest until I met Dick in 1912, and never really assimilated the history & its origin. I wonder

if Henry James might not help you? He and Dick were very close friends from college on, and I am sure he would not have forgotten if D. K. had ever spoken of Dean Sluter in connection with Mr Frost.

Sincerely yours.

Eugenia P. Fisher

January 27, 1940

Dear Mrs. Fisher,

Thank you very much for your reply to my inquiry about the genesis of the Harvard Forest. You will be interested to know that since hearing from you I have received a letter from the person in charge of the College Archives saying that upon consulting the Eliot-Shaler correspondence he has confirmed our supposition that it was Dean Shaler who suggested to President Eliot that Dick's services should be secured.

Sincerely yours,

JEROME D. GREENE

Mrs. Richard T. Fisher
Love Lane
Weston, Massachusetts

*

Copy.

Arnold Arboretum, Harvard University.

Jamaica Plain, Mass., June 15, 1903.

Dear Sir:-

I enclose an outline of the instruction which I would propose to give in the first half year of the course in Forestry which you have asked me to undertake. If it is not satisfactory I shall be very glad of suggestions for modification.

As I am asked to give the opening course to the students, and they are not supposed to have had previous instruction in that direction, I think I should give a brief account of the anatomy and physiology of trees, although this would come under other botanical courses. One or two lectures would cover this part of the course.

I think the chief aim should be to train the powers of observation and discrimination, besides giving the students a general idea of American tree life as related to forestry.

In this instruction special attention would be given to the available characters by which trees and shrubs of the forest may be known at all seasons. By such means a fair degree of familiarity with the dendrology of the eastern states should be acquired and be taken as a sufficient groundwork for the further studies and advancement of the student.

Yours very truly,

(Signed) J. G. Jack.

President Eliot,
Cambridge, Mass.

entered previously

*

COPY

HARVARD UNIVERSITY

N. S. Shaler, Dean.
J. L. Love, Secretary.

Lawrence Scientific School,

Cambridge, Mass.,

March 28, 1903.

Course in Forestry - cost not to exceed $1200
(handwriting of J.D.C.)

Gentlemen:

On the part of the Administrative Board, as well as on my own part, I beg you to take steps to establish a programme in Forestry in this School. This matter has been under consideration for more than five years. The requests for instruction and a degree in that subject have been more numerous and more insistent than those made concerning others of our recently instituted programmes. I am inclined to believe that we should quickly have thirty or forty persons taking the work.

In order that I might see the situation more clearly, I have taken a nominal position in the Department of Forestry of the Bureau of Agriculture; and I have thereby gained a clear insight into the opportunities of employment. It is now evident that we can for a number of years to come find places for well-trained men in forestry in the government work, and there are many demands for men to take charge of corporation and private estates. Mr. Gifford Pinchot, who is in charge of the government forestry work, strongly advises the establishment of the proposed programme.

We are singularly well provided with all the teaching necessary to make a better course of Forestry than any other in this country or, perhaps, abroad, except for the instruction in the technical art of the forester. On conference with Mr. Pinchot, it appears desirable to take two of his young men--one, a graduate of this University--each for half a year,--relieving these men in their relations to the Bureau. I have seen the men, and they are excellent

fellows and they would welcome such work. I therefore ask you to warrant an expenditure not exceeding $2000 for salaries of these men. The amount of their pay has not yet been considered. I think it likely that the money required will not exceed $1700. I cannot foresee any other cost connected with the establishment of the programme.

It is perhaps worth while to note that the institution of this programme would make available for instruction the Arnold Arboretum, the largest unused part of the University plant except the Observatory. I may say, further, that Mr. Pinchot will be very glad to have the arrangement made with the men who would teach with us.

I am particularly anxious to establish a programme in Forestry, for the reason that I foresee a risk of a reduction in the number of students in the Lawrence Scientific School next year. This reduction would be due to the fact that we have greatly increased the requirements for admission and have for years been endeavoring to diminish the number of special students, as well as those who are enrolled in the programme of General Science—it being the belief of the Administrative Board that all the men in the last-named programme should be in the College. From pride, as well as from considerations of policy, I am very desirous of closing the term of years in which the advance in the entrance requirements of the School has been made without loss of numbers. I believe the best, if in fact the only, way to accomplish this is by instituting this programme.

Yours very truly,

(Signed) N. S. Shaler

Dean of Lawrence Scientific School.

To the President and Fellows of Harvard College.

Harvard Forest

January 29, 1940

Dear Ernest,

The Eliot-Shaler correspondence in the College Archives has revealed the enclosed letter from Dean Shaler which goes far to support the theory that the initiative in starting instruction in Forestry at Harvard was taken by Shaler. It is certain, however, that there had been talk or correspondence on the subject during the preceding months for there is a letter from Dick Fisher dated in Munich almost on the very day that the Corporation finally took action in June, 1903, about ten weeks after the date of Dean Shaler's letter.

I do not exclude the possibility that President Eliot's interest in silviculture in relation to landscape architecture, through his son Charles Eliot's distinguished services in the latter field, might have been the moving consideration. Neither do I exclude the possibility that Fisher may have suggested the idea to President Eliot who then may have passed it along to the administrative board of the Scientific School as the appropriate source of official recommendation. Nevertheless, the internal evidence of Shaler's letter supports the view that his "nominal position in the Department of Forestry of the Bureau of Agriculture" was what gave birth to the idea.

I am afraid that this is as far as we can go in this bit of antiquarian research. Mrs. Fisher writes that she has no

knowledge on the subject whatever as she did not meet Dick until 1912.

Sincerely yours,

JEROME D. GREENE

P.S. I also enclose as of possible interest a letter written by J. G. Jack with a synopsis of his course in Forestry.

Dr. Ernest G. Stillman
45 East 75th Street
New York, N. Y.

*

Stillman

*

February 2, 1940

Dr. E. G. Stillman
45 East 75th Street
New York, N. Y.

Dear Dr. Stillman:

As requested by you I am writing this letter to confirm our conversation of this morning, covering various subjects.

First of all, I wish to acknowledge receipt of the following securities:

150	sh.	American Telephone & Telegraph Co.
120	"	American Tobacco Co. "B"
35	"	Atchison, Topeka & Santa Fe Ry.
225	"	Consolidated Edison Co. of New York
966	"	Delaware, Lackawanna & Western RR Co.
60	"	Lackawanna RR of New Jersey
143	"	U. S. Steel Corporation Common
124	"	Union Pacific RR Co. Preferred
250	"	Frank B. Shattuck Co.
206	"	New York Central RR Co.
50	"	Norfolk & Western RR Co. Common
1387	"	Pullman, Inc.

The proceeds of the above, together with the proceeds of 307 shares of Central Hanover Bank stock already received by us, are to be used, together with the $20,000 which you recently gave to the Harvard Forest, for the construction of Shaler Hall and the Fisher Museum at Petersham. After said construction, if there is any balance from the above funds, such balance is to be added to the Black Rock Forest Trust Fund.

I wish to call to your attention that in the list of securities submitted in your letter of the 14th of December, 1939, you included 3275 shares of National City Bank stock, which was not delivered by you today. Likewise, the list referred to above calls for 50 shares of Lackawanna Railroad of New Jersey and 60 shares were delivered today. In addition, you delivered 1387 shares of Pullman, Inc., which was not included in your list of December 14, 1939. I am calling these differences to your attention so that you may have them for your records.

The above securities, including the 307 shares of Central Hanover Bank stock, have an approximate market value of $145,000. As you may remember, I gave you a figure of some $210,000. - said figure being based on the market value of the list of securities submitted in your letter, in which was included 3275 shares of National City Bank stock.

It is our intention to sell in the market all of the above securities with the exception of the American Tobacco Co. "B", which we are taking into our General Investments Account. It is further my understanding from our conversation that this procedure meets with your approval. When the sales are completed I will write you the prices so that you will have them for your records.

This will also acknowledge your letter of January 26th, in which you state that you have asked the New York Trust Company to forward to us 13,666 shares of the stock of the Compagnie Industrielle Maritime, representing a gift to be carried in a special account under the heading of the Black Rock Forest Trust Fund,and that you wish us to establish as best as we can the value of these shares as of the date of receipt and notify you of said value for your records. The income from the above shares, together with any other additions that may be made from time to time to this trust to be accumulated until your death.

All of the above gifts are to be reported as "anonymous".

It is further my understanding that you have left in your will to Harvard University a tract of land of some 3,000 acres, adjacent to West Point, now owned by you and known as the Black Rock Forest, said tract of land being now operated as a scientific forest, and that after your death the income from the Black Rock Forest Trust mentioned above will be in the first instance used to defray the expense of operating the Black Rock Forest and such surplus as may remain from the income to be applied to the Harvard Forest. I further understand that it is your wish that a reasonable income reserve be accumulated on the above Trust Fund to avoid if possible any violent fluctuations in monies available to cover expense of the operation of the forest.

It is further my understanding that your will leaves to Harvard University such stock as you may own at the time of your death of the Cornwall Press and that there are no restrictions placed upon this stock preventing Harvard from disposing of this enterprise if it seems wise to do so. The Cornwall Press stock or the proceeds derived from its sale shall be added to the Black Rock Forest Trust Fund carried upon our books, the purposes of which are outlined above.

It is further my understanding that you wish the proceeds of your life insurance policy now in force to be likewise added to the Black Rock Forest Trust Fund, said disposition being a change from the understanding now in force.

I know that you will appreciate that the recitation covering our conversation is purely my own understanding of your wishes as, naturally, I cannot bind the Corporation to accept your bequest of the Black Rock Forest under your will without their approval. It seems to me the wisest procedure would be for me to present the above memorandum of our understanding to the Corporation for their consideration, as the approval by the Corporation of the acceptance of your bequest of the Black Rock Forest is vital to the carrying out of your plans.

Would you please let me know if the above sets forth correctly your wishes.

May I conclude by saying that I enjoyed your visit and I hope in the not too distant future that we will have another opportunity to get together and continue the many subjects about which we talked, including 28-inch pickerel, beavers and bears.

Sincerely yours,

WHCJr/J

Treasurer

February 6, 1940

Dr. E. G. Stillman
45 East 75th Street
New York, New York

Dear Dr. Stillman:

The Treasurer of the University has told me of your most generous intentions and has showed me a copy of his letter to you of February 2. You have already done so much for Harvard University and Harvard is already so indebted to you that it is hard for me to find words to express adequately my thoughts about this last proposal of yours. But I do want you to know that both personally and officially I am delighted that you have once again approached the University with a very generous offer.

There are many details to be worked out about the relation between the Black Rock Forest and the Harvard Forest. As you know, I am somewhat worried about the latter. I am wondering if you are to be in Cambridge sometime this month so that we could sit down and have a talk for an hour or so. The Corporation, of course, will have to make the final settlement of details, but I think if you and I could explore the matter frankly together first, we could get ahead more rapidly with drawing up the necessary papers.

With all good wishes,

Sincerely yours,

JAMES B. CONANT

COPY.

February 7, 1940.

Dr. Elmer D. Merrill,
940 Centre Street,
Jamaica Plain, Mass.

My dear Dr. Merrill:-

When it was realized that our virgin forests would not last much longer, thoughts of foresters turned from the problems of how to place lumber on the market most cheaply to that of growing trees so that future generations might have some to cut. This led to the popular cry of "re-forestation" - the expensive method of planting seed in nurseries, transplanting seedlings at least once, and then planting in the field. As a rule the little trees so set out were left to themselves. Because of competition with weed trees, dense turf, etc. only about 20% of these trees lived - an expensive method of re-establishing our forests. A few years later, due to the efforts of the chemists and metalurgists, the use of wood was greatly restricted. Cardboard boxes and paper matches on the one hand, and metal furniture and all metal automobile bodies on the other drastically curtailed the consumption of white pine and of hardwoods, respectively. All these factors have conspired to change radically the aim of forestry. As trees grow so slowly, we must expect a rotation of between 100 and 125 years between crops. What kind of wood will be in demand 100 years hence is problematical. Whether artificially compressed wood or veneers will have completely dominated the market is purely a conjecture. In this connection, we may learn a little from Europe where forestry has been practiced for 600 years. But climate, soil and tree species, as well as the economical factors, differ so radically from ours that no absolute analogy may be drawn.

The same difference occurs in various parts of the United States. The Harvard Forest, situated as it is in a natural white pine, spruce and northern hardwood country, offers one set of problems. The Black Rock Forest, located on the rocky slopes of the Highlands of the Hudson, represents a typical example of the extensive sprout hardwood region. The Aitckison foundation in Cuba supplies the tropical forest. Neither of these tracts duplicate each other.

In the United States, where estates may not be entailed, private ownership of experimental forests is out of the question. In relation to The Black Rock Forest, I feel the future value of this demonstration forest will be much greater if owned by a large universit than if operating under its own board of trustees. In the first place,

the money which I have already contributed directly or provided for by will - at present market value roughly One Million - will be better invested, but the scientific and educational value would be much greater.

You know what extensive use has already been made of The Black Rock Forest by graduate students and the staff members of the Arnold Arboretum. But as I feel that the best interests of The Black Rock Forest will be served by an even closer alliance to the Harvard Forest, the income from The Black Rock Forest endowment may be used to defray work at Petersham as well as at Black Rock. I hope in the future to add to the present endowment.

What should be the aim of The Black Rock Forest in the whole field of Forestry? Forestry practice varies so greatly, due to type of trees, climate and soil, that I believe an intensive study of how to most rapidly grow the most valuable local species of trees on the soil available would accumulate the most information. Although we have not yet the complete answer, it is surprising how much has been learned during the past thirteen years that the Forest has been under intensive management.

In closing, may I quote from the introduction to our Bulletins written by the late Prof. R. T. Fisher, and the introduction to the 10th Bulletin by Dean C. F. Korstian, of the Duke Forest School:

> "The Black Rock Forest, from which this bulletin is the first publication, is probably the first institution of its kind to be established in the United States - a private property organized as a forest laboratory for research in problems of forest management and for the demonstration of successful methods in practice. In carrying out this purpose, for which a great deal of the preliminary work is already done, the Forest has every prospect of rendering a valuable public service. The tract is of ample size, and by reason of its location and good protective organization it is relatively safe from fire. Adequate financing and expert supervision assure it of efficient management. Moreover, the Black Rock Forest represents a region where the problem of the future use of land is of peculiar economic and social importance, and where but little systematic work has been done to solve it.
>
> In the hills of northern New Jersey and the Highlands of the Hudson, almost at the back doors of the greatest center of population in the country, there is in the aggregate a very large area of rough, wooded land, much of it still practically a wilderness. For generations it has been repeatedly cut over for wood and many times ravaged by fire. As a result many of the better species of trees have become scarce, inferior kinds have increased growth and reproductive capacity is enfeebled, and the soil is impoverished. For most of this type of land - rocky, steep, and thin-soiled - the only foreseeable use is

for recreation or forest products. For either purpose economy requires that the forest should be rejuvenated in growth and value and the soil restored as far as possible to its maximum fertility. To this end it is necessary that the right methods be worked out to eliminate the worthless and to increase the growth and reproduction of the better species, to restore the fertility of the soil, and in time to define the types of vegetation that will make the best use of these rough and stony sites.

It is the program of the Black Rock Forest to supply this needed knowledge, not only by publishing periodically the results of experimental work, but by displaying to visitors the various areas or plots in the woods where different kinds of treatment have been applied and how they have succeeded. Looking to the future relation between the metropolitan area and its nearest available region of wild land, this will be a service of the greatest value.

R. T. Fisher,
Director of the Harvard Forest"

"More and more are foresters becoming thoroughly convinced as to the outstanding utility of well-located and well-developed demonstration and research forests and that their usefulness will increase many fold with each decade of successful operation. Also it is generally agreed that too few demonstration and research forests are available in the United States. All the more interest, therefore, centers in such of these forests as have been in existence for some time.

The Black Rock Forest, of which this bulletin is the first decennial progress report, is rapidly taking its place as a seasoned demonstration and experimental forest. This Forest, because of its proximity to both the metropolitan areas of New Jersey and lower New York State and to the wooded, rough, hilly land of northern New Jersey and the Highlands of the Hudson, should contribute substantially to the solution of important economic and social problems involving land use peculiar to the region. Because of the representative nature of the Black Rock Forest, and because of its size, location, and the valuable records which are being accumulated it is serving well as a research and demonstration forest. A research program has been in progress long enough to bear fruit in the form of bulletins and papers. A variety of silvicultural treatments are under experimental trial, numerous forestry practices are being demonstrated, and much attention has been devoted to research in the problems of timber growing. These objectives are essentially the same as those of demonstration and research forests in other parts of the country.

Now that the value of many of the demonstration and experimental forests of New England has been greatly impaired by the hurricane of September 21, 1938, and since considerable time will be required for their rehabilitation, all the more reliance must be placed on similar forests in adjacent regions in seeking answers to the problems of forestry. These forests must and will be used to point the way to technically correct and economically sound forestry practices."

Sincerely yours,

(Signed) E. G. Stillman

* - Make sure note at bottom is included

E. G. STILLMAN, M. D.
45 EAST 75TH STREET
NEW YORK
N. Y.

February 8, 1940.

Dr. James B. Conant, President,
Harvard University,
Cambridge, Mass.

My dear President Conant:-

In answer to your letter of February 6th, would say that unfortunately I am leaving today for Haiti for a flying trip. I will make a point of getting in touch with you early in March to discuss the Harvard Forest and Petersham situation. In the meanwhile, I enclose a copy of a letter which I just wrote Dr. Merrill and which is largely self-explanatory. As he will probably be back before I am, I hope you will have an opportunity to talk this matter all over with him.

The last time I saw you I told you that you should stop worrying about the situation in Petersham and leave the fretting to Dr. Merrill and myself. I am afraid you haven't taken my advice. As one of the great weaknesses of the situation was the question of finances, I have tried to rectify this.

Sincerely yours,

E. G. Stillman

P.S.
As it so much easier for a busy person like yourself to have written memoranda to be read at your convenience, I am going to jot down such a thesis on this forestry problem. Once you have had time to read it, I will appear in person for the oral dissertation.

Ess

February 12, 1940

Dr. L. C. Stillman
48 East 75th Street
New York, New York

Dear Dr. Stillman:

I am writing you this note in hopes it may catch you before you leave for Haiti. I shall read with interest your letter to Dr. Merrill which, I take it, is the memorandum on the forest to which you refer. If you wish to write any further summary of your views, I should, of course, be glad to have such a document.

My own plans call for my leaving Cambridge on March 5 for California. Unfortunately I am to be away a month. We should, therefore, have to have our talk either the first week in March, or put it off until the first week in April. Whichever suits your convenience would be highly satisfactory for me. Perhaps you will let me know when you return from Haiti.

With all good wishes,

Sincerely yours,

JAMES B. CONAN

Harvard Forest

February 26, 1940

Dear Sir:

At the last meeting of the Corporation the Treasurer reported the receipt of securities valued at $121,547.05 from an anonymous donor (Dr E. G. Stillman) as an additional gift toward the construction of Shaler Hall and the Fisher Museum at the Harvard Forest.

Very truly yours,

JEROME D. GREENE
Secretary

Mr Albert C. Cline
The Harvard Forest
Petersham, Massachusetts

E. G. STILLMAN, M. D.
45 EAST 75TH STREET
NEW YORK
N. Y.

MAR 7 1940

March 5, 1940.

Dr. James B. Conant, President,
Harvard University,
Cambridge, Mass.

My dear President Conant:-

I am sorry that I did not return from Haiti until last Saturday, March 2nd. I had to go to the hospital and work Saturday and Sunday to catch up. Had planned the work so carefully that my laboratory boy had just enough to do while I was away.

I will arrange to see you when you return to Cambridge after the first of April.

Yours sincerely,

E. G. Stillman

Stillman

JWL + GHC have read

E. G. STILLMAN, M. D.
45 EAST 75TH STREET
NEW YORK
N. Y.

APR 2 1940

April 2, 1940.

Dr. James B. Conant, President,
Harvard University,
Cambridge, Mass.

My dear President Conant:-

I feel you and the corporation are due an apology for the apparent discourteous manner I have acted in regards to Petersham. My only excuse is that when the plans for these buildings were first drawn some fifteen years ago, the administration then in power seemed to care nothing about the orphan institutions and did not want to be bothered by any reference to them. So, as long as the late Professor Fisher approved of the plans, and also of the idea of Black Rock Forest becoming a part of the forestry plant of the University, naturally I erroneously assumed that all necessary arrangements had been made. If I had not expected Black Rock Forest ultimately to belong to the University, I would never have spent the thought or money on this piece of research.

I enclose the memorandum about the Harvard Forest I wrote you about some time ago. I sent a copy of this to Dr. Merrill for his comments. In his characteristic way, he made no remarks, but turned it over to Al Cline and Ranp of the Arboretum staff for their reaction. As I disagreed with them in some of my thoughts, they naturally took exception to my ideas. Their comments are appended in the form of notes.

I am awaiting your convenience to discuss the Harvard Forest. Although I can come up to Cambridge any time after April 15th, I would prefer to have the appointment on a Friday or Saturday, as it is easier for my work at the Hospital to be away over a weekend.

Yours sincerely,

E G Stillman

April 11, 1940

Dr. E. G. Stillman
45 East 75th Street
New York, New York

My dear Dr. Stillman:

I am quite certain of one thing, and that is that you owe no apology whatsoever to me or to the Corporation. Don't have this on your mind for a moment. We owe you all sorts of votes of indebtedness because of your generosity to Harvard in general, and your interest in the Harvard Forest in particular. However, I will not trespass on your time by elaborating on that fact.

I have read with great interest your memorandum and the comments attached. I am sure that everything will work out splendidly for both the Black Rock Forest and the Harvard Forest if you and I can sit down and talk things over. I hate to have you make a special trip to Cambridge for this purpose, although I should like to have you here so that Mr. Claflin and some other members of the Corporation might meet with you for a general talk after you and I had finished business. I am to be in New York for a meeting on Saturday, April 20 and could arrange to stay over for the afternoon and talk Harvard Forest if that would be agreeable to you; on the other hand, if you have the time to come to Cambridge, I suggest that you plan to be here on Saturday, April 27, and spend the night at my house. We could talk in the afternoon, and I would plan to have some members of the Corporation in for a very informal dinner.

Whichever plan suits you best suits me best. Would you let me know whether you would rather have me call on you in New York on Saturday, the 20th, in the afternoon, or whether you would feel like coming up for a pow-wow in Cambridge on Saturday, the 27th?

With all good wishes,

Sincerely yours,

E. G. STILLMAN, M. D.
45 EAST 75TH STREET
NEW YORK
N. Y.

April 13, 1940.

APR 15 1940

Dr. James B. Conant, President,
Harvard University,
Cambridge, Mass.

My dear President Conant:-

As my medical research takes me to the Harvard Medical School at least once a month, I can easily be at your house on Saturday, April 27th, at any hour you say.

Thank you for asking me to spend the night, but I must say no. My son likes to come in from Noble's to spend the night with me.

As regards dinner, if you believe it necessary for me to be "drawn and quartered" even informally by some members of the corporation, I will have to submit. The question of dinner I leave in your hands.

I will bring the tentative plans for the Petersham buildings with me.

Yours sincerely,

E. G. Stillman

April 16, 1940

Dr. E. G. Stillman
45 East 75 Street
New York, New York

Dear Dr. Stillman:

I am delighted that you will be in Cambridge on the 27th. Won't you come to my house around three thirty? This will give us a chance for a long talk before dinner. I am going to ask just a few members of the Corporation, the Treasurer, Dr. Lee and Charlie Coolidge, to come and dine very informally (we won't dress). You and I will have completed all our business talk and the conversation with the Corporation, I assure you, will not come under the head of anyone being "drawn and quartered."

I had the pleasure of meeting your son at a club dinner last night and told him that you were coming up to be at my house for a bit, at least, on Saturday, April 27. He is a most attractive young man. I wish I had an opportunity of seeing more of him. Perhaps now that we have met again, he will feel like coming to the house some Sunday afternoon for tea and join in the free-for-all discussion which we try to start here on international and other controversial issues.

With all good wishes,

Sincerely yours,

JAMES B. CONANT

Harvard Forest

HARVARD UNIVERSITY
HARVARD FOREST
PETERSHAM, MASSACHUSETTS

May 1, 1940.

Dear Mr. Greene:

I am very glad to acknowledge your letter of April 27 informing me of the receipt of a fund of $46,276.49 in securities from an anonymous donor to establish the "Black Rock Forest Trust Fund."

Very truly yours,

Director

Mr. Jerome D. Greene

Forests

HARVARD UNIVERSITY

OFFICE OF ADMINISTRATOR OF
BOTANICAL COLLECTIONS OF HARVARD UNIVERSITY
ARNOLD ARBORETUM, JAMAICA PLAIN, MASS., U.S.A.

Arnold Arboretum, *Jamaica Plain, Mass.*
Atkins Institution of the Arnold Arboretum,
Soledad, Cienfuegos, Cuba
Botanical Garden, *Cambridge, Mass.*
Botanical Museum, *Cambridge, Mass.*
Bussey Institution, *Jamaica Plain, Mass.*

Farlow Herbarium and Library, *Cambridge, Mass.*
Gray Herbarium, *Cambridge, Mass.*
Harvard Forest, *Petersham, Mass.*
The Maria Moors Cabot Foundation for
Botanical Research

May 10, 1940

MAY 11 1940

President James B. Conant
Harvard University
Cambridge, Massachusetts

Dear President Conant:

I had a brief note from Dr. Stillman this morning, who seems to be somewhat disturbed because he has heard nothing about the approval of his project of constructing the new buildings at Petersham. I judge that he is rather anxious to submit the data to contractors for bids. I telephoned Mr. Greene, but he was ill; his secretary thought that the matter was not discussed at the last meeting of the Corporation. Whereupon I telephoned Mr. Claflin who confirmed this, and suggested that I get in touch with you. Miss Bonn, however, said that you were just on the point of leaving for the day.

I wrote to Dr. Stillman that the very fact that the Corporation had accepted the Black Rock Trust indicated to me that his whole program at Petersham met with the general approval of that body. I think that under the circumstances it would be a nice thing if you would write a reassuring note to Dr. Stillman at 45 East 75th Street, New York, indicating, if you consider this to be desirable, that the matter will be placed on the docket for the next meeting of the Corporation.

Very truly yours

E. D. Merrill
Administrator

EDM:CG

Stillman

Charge to the account of President's Office, Harvard University $

CLASS OF SERVICE DESIRED			
DOMESTIC		CABLE	
TELEGRAM		ORDINARY	
DAY LETTER		URGENT RATE	
SERIAL	X	DEFERRED	
NIGHT LETTER		NIGHT LETTER	
SPECIAL SERVICE		SHIP RADIOGRAM	

Patrons should check class of service desired, otherwise the message will be transmitted as a telegram or ordinary cablegram

WESTERN UNION

1206-B

CHECK
ACCOUNTING INFORMATION
TIME FILED

R. B. WHITE, PRESIDENT
NEWCOMB CARLTON, CHAIRMAN OF THE BOARD
J. C. WILLEVER, FIRST VICE-PRESIDENT

Send the following message, subject to the terms on back hereof, which are hereby agreed to

May 14, 1940

Dr. E. G. Stillman
45 East 75th Street
New York, New York

Regret delay in notifying you about approval of plan for buildings at Petersham. Absence of certain members of Corporation from last Mondays meeting made action inadvisable. Corporation approved plan last evening. You have my official approval to go ahead.

James B. Conant

OFFICE OF THE ADMINISTRATOR OF
BOTANICAL COLLECTIONS OF HARVARD UNIVERSITY

December 3, 1940

Mr. William H. Claflin, Jr.
Treasurer, Harvard University
24 Milk Street
Boston, Massachusetts

Dear Mr. Claflin:

I transmit herewith a deed to a small parcel of land in Cornwall containing approximately 7000 square feet, to the President and Fellows of Harvard University. This is the land near the Cornwall Press owned by Dr. Stillman on which stands a cement building which is the present laboratory of the Black Rock Forest, and as I see the picture, all of the buildings that will be needed in connection with possible future operations there.

Dr. Stillman handed this deed to me a few days ago, and asked me to transmit it to you for file, with the statement that it should not be registered. I think you will know what to do with it.

Very truly yours,

E. D. Merrill
Administrator

EDM:CG
Enclosure

MASSACHUSETTS HORTICULTURAL SOCIETY

HORTICULTURAL HALL, 300 MASSACHUSETTS AVENUE

BOSTON, MASSACHUSETTS

December 18, 1940

Dr. E. G. Stillman
45 East 75th St.
New York City

Dear Dr. Stillman:

We take great pleasure in sending you, under separate cover, the gold medal that was awarded to the Harvard Forest for the dioramas exhibited at our recent Autumn Flower Show.

We also want to take this opportunity to thank you for allowing us to exhibit these marvelous dioramas. Dr. Merrill has no doubt told you that they aided greatly in making our Fall Exhibition an outstanding success.

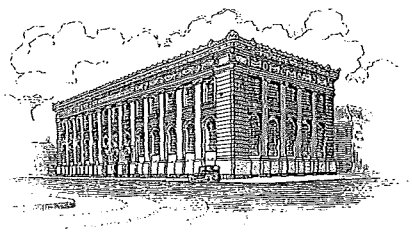
Thank you again for your cooperation in this matter.

Very sincerely yours,

Arthur H. Merrill

Exhibition Manager

AHN:N



Harvard Forest

HARVARD UNIVERSITY

HARVARD FOREST

PETERSHAM, MASSACHUSETTS

March 18, 1941.

Mr. John W. Lowes,
Financial Vice-president,
Massachusetts Hall,
Cambridge, Mass.

Dear Mr. Lowes:

I am enclosing our financial statement for the period ending February 28, 1941. { see statement file

The favorable balance shown is due chiefly to our having been able to sell a large quantity of gravel for use in the construction of the new state highway, rather than to any economies which were not anticipated at the time of preparing our last budget. On the other hand, our cash income from the sale of cordwood would have been much larger, had it not been for the greatly increased amount needed for our own use in heating the new buildings. I hope very much that we shall still be on the profit side at the end of the present fiscal year.

During your absence, I have talked with Mr. Gillis about the numerous difficulties in budgeting and accounting arising from carrying inventories of forest products in our books. I am enclosing a copy of the letter which I wrote Mr. Gillis on this subject on November 23rd last. I am quite sure that Mr. Gillis feels as I do about dispensing with inventories, and I should like very much to have an opportunity to discuss the question with you at any time which meets your convenience.

Very sincerely yours,

A. W. Reed

Director

1941 ✓

✓

Forbes

Mr and Mrs Conants.

Shall I decline? Mr Conant goes to Petersham with the Board of Overseers at noon, May 13th

THE ADMINISTRATOR OF BOTANICAL COLLECTIONS

IN HARVARD UNIVERSITY

THE DIRECTOR AND THE STAFF OF THE

HARVARD FOREST

REQUEST THE PLEASURE OF YOUR COMPANY

AT THE OPENING OF

SHALER HALL AND THE FISHER MUSEUM

AT THE HARVARD FOREST, PETERSHAM

ON WEDNESDAY, MAY 14, 1941

AT TWELVE O'CLOCK, NOON

Please decline

Declined 5/6/41

Luncheon will be served in Shaler Hall at one o'clock. The favor of a reply is requested, addressed to Mr. A. C. Cline, Director of the Harvard Forest, Petersham, Massachusetts.

Harvard Forest

HARVARD UNIVERSITY

HARVARD FOREST

PETERSHAM, MASSACHUSETTS

May 19, 1941.

President James B. Conant,
Massachusetts Hall,
Cambridge, Mass.

My dear Mr. Conant:

I wish to recommend the appointment of Mr. Stephen H. Spurr as Instructor in Forestry for the academic year 1941-42. This has the full endorsement of Dr. E. D. Merrill, Administrator of the Botanical Collections.

Mr. Spurr has served as a technical assistant during the present year in a highly satisfactory manner. He is exceptionally well suited to our need for additional instructors in the work undertaken by candidates for the Master in Forestry degree. A record of his education and experience is attached.

Very sincerely yours,

Director

STEPHEN H. SPURR

Personal Data:

Born in Washington, D.C., February 14, 1918.
Age: 23 years.
Height: 6 feet.
Weight: 180 lbs.
Religion: Unitarian
Residence: Alstead, N.H.

Education:

Public and private schools of New Rochelle, N.Y. and Alstead, N.H.

Phillips Exeter Academy, Exeter, N.H. and New Rochelle (N.Y.) High School.

University of Florida, B.S. with high honors, 1938.

Majored in botany with minors in geology and chemistry. 113 hours A, 24 hours B, none lower. Graduated first in senior class. Member Delta Chi, Phi Beta Kappa, debate team (3 yrs.), school newspaper, varsity swimming, tennis and rifle teams.

Yale School of Forestry, M.F. cum laude, 1940.

Graduated first in class. 93 2/3 hours, with emphasis on silviculture and management. Member Sigma Xi.

Experience

Vacation Positions:

Camp counselor, South Pond Cabins, Fitzwilliam, N.H.
Crew foreman, hurricane clean-up, Yale Natural Preserve, New Haven, Conn.
Fire guard, Willamette National Forest, Oregon.
Strawboss, timber stand improvement, Green Mountain National Forest, Vermont (brief).

Other:

Assistant instructor, University of Florida, Teaching required sophomore course, "Man and the Biological World", 1937-38.

Technical assistant, Harvard Forest, July 1940 to date. Present work: silvical research, including statistical analysis.

Publications:

"The Influence of Two Juniperus Species on Soil Reaction", Soil Science, Oct. 1940, pp. 289-294

"The Pine That Isn't a Pine", American Forests, March 1941.

"Notes on the Distribution and Habits of Ferns of Northern Peninsular Florida", Proc. Fla. Acad. Sci., 1941.

"Factors Determining the Distribution of Florida Ferns", accepted for publication by Amer. Fern Jour. 1941.

"The Straightening of Weeviled White Pine Stems", in preparation.

with R. B. Friend: "Compression Wood in Weeviled Northern White Pine", accepted for publication by Journal of Forestry, 1941.

with A. C. Cline: "Ecology, the Key to Profitable Forestry", paper presented before Ecological Society of America, Philadelphia, 1940.

Societies:

Florida Academy of Science.

Society of American Foresters, Junior Member.

UNIVERSITY OF FLORIDA

1934-1938

Course		Credits	Grade
Biology			
Bly 225-226	Natural history of the Gainesville region with particular reference to arthropods	8	A
Botany			
Bty 101-102	General botany	8	A-B
Bty 311	Plant physiology	4	A
Bty 432	Plant anatomy	4	A
Bty 502	Problems in taxonomy	4	A
Bty 500	Seminar in ecology	2	A
Bty 505	Problems in plant histology	4	A
Bty 501	Problems in taxonomy	4	A
Chemistry			
Cy 101-102	General chemistry	10	A
Cy 201	Analytical chemistry	4	A
Cy 262	Organic chemistry	5	B
Economics			
Es C1-D	Economic foundations of modern life.	5	A
Bs381E	Economic geography of North America.	3	A
English			
Eh 101-102	Rhetoric and composition	6	A
French			
Fh 207-208	Survey of French Literature	6	A
Geology			
Gy 204	Physiography of North America	4	A
Gy 202	Historical geology	4	A
Gy 201	Readings in physical geology	4	A
German			
Gn 21-22	Elementary German	6	B-B
Physical education			
Pl 101-102	Gymnastics	2	A-C

Course		Credits	Grade
Latin			
Ln 41	Cicero	3	B
Mathematics			
Ms 85	Plane trigonometry	3	A
Ms 101	College algebra	3	A
Ms 102	Plane analytic geometry	3	A
Military science			
My 101-102	Infantry	4	A
Philosophy			
Cpp 54	Introduction to philosophy	3	A
Physics			
Ps 101-102	Elementary physics theory	6	A
Political science			
Pol 101-102	American government and politics	6	A
Speech			
Sch 201	Public speaking	3	B
Sch 303-304	Argumentation and debating	6	A-B
		137	

Scholastic average
2.83

YALE SCHOOL OF FORESTRY

1938-1940

Course	Credits	Grade
Forest mensuration 150s	4	A
Forest surveying 142s	1	A
Surveying 140s	4	A
Forest mensuration 151a	2	A-
Field dendrology 111a	1 1/3	A-
General dendrology 112a	2	A
Wood anatomy 160a	1	A-
Silviculture 122a	4 2/3	A
Soils 120a	3	A
Wood preservation 162a	2	A
Surveying 141a	3	A
Forest economics 180a and 180b	4	A
Wood utilization 169b	2	A
Seasoning of wood 164b	2	A
Soils 121b	1	A
Tree seed 129b	1	B
Research methods 126b	3	A
Forest protection 130b	2	B
Forest policy 181a	2	A
Treatment of woodlands 124b	8 2/3	B
Statistical methods	3	B
Forest pathology (Bot. 110)	3	B +
Forest management 153	2 2/3	A
Thesis - Plant influence on soil reaction	4	A
Forest finance	2 2/3	A
Lumbering 170	2 2/3	A
Lumbering 171b	4	A
Forest entomology - special problem	7	A
Forest management	10	A
Statistical methods	1	A

Total credits (semester hours) 93 2/3

Required credits 85

Scholastic average (A - 3;B - 2) 2.81

COLLEGE ACTIVITIES AND HONORS

University of Florida 1934-1938

Scholastic
Phi Eta Sigma, freshman honorary
Phi Kappa Phi, senior honorary
Phi Beta Kappa
Graduated first in senior class.

Athletic
Freshman swimming
Varsity swimming
Varsity tennis
Varsity rifle

Non-athletic extracurricular
Florida players, honorary dramatic
Debate team, 3 years, 13 intercollegiate debates
Alligator (school newspaper) staff, news, proof editor
Second prize, junior oratorical contest
Vice-president, astronomy club
University chess champion
Director of chess, Student Union
Alumni homecoming committee

Social fraternity
Delta Chi, secretary, alumni secretary, tutorial advisor, intramural manager, pledge master.

Honors
Chosen most outstanding freshman, 1934-35
Chosen as one of outstanding Delta Chis, 1936-37, 1937-38
Chosen to represent University in Rhodes Scholarship competition, 1937

Yale School of Forestry

Received degree of Master of Forestry cum laude
Awarded Charles Lathrop Pack prize for popular article on forestry.
Member of Yale Badminton team, two years
Secretary, forestry club.
Associate, Sigma Xi

HARVARD UNIVERSITY

HARVARD FOREST

PETERSHAM, MASSACHUSETTS

June 20, 1941.

Mr. Gordon P. Gillis,
Lehman Hall,
Cambridge, Mass.

Dear Mr. Gillis:

Since we submitted the salary sheet of the Harvard Forest, the Corporation has appointed Mr. Stephen H. Spurr as Instructor in Forestry. Although Mr. Spurr's appointment is of September 1, his salary increase is to become effective July 1. He is to receive $1,600 for the coming year, $900 to be paid from the Anonymous Gift of the Harvard Forest and $700 from the funds of the Cabot Foundation allotted to Dr. Gast. Provision was made in the budget for this appointment.

This letter is being sent to Dr. Merrill for his written approval.

Very truly yours,

Director

Approved:

P. R. Gast

Approved:

Administrator of Botanical Collections

Stillman

June 26, 1941

Dr. Ernest G. Stillman
45 East 75th Street
New York, N. Y.

Dear Dr. Stillman,

The time that has elapsed since the dedication of Shaler Hall and the Fisher Museum at Petersham on May 13 has been more than usually occupied or I should have written to you before to add my personal acknowledgments to the other expressions of appreciation you have received for your generous addition to the resources and facilities of the Harvard Forest. I was glad to learn that although you thought it best to absent yourself from the dedicatory ceremony, you did attend the Open House on the following day, and you must have been gratified by the numbers and quality of the people interested in forestry and the biological sciences who attended in such large numbers. There could not have been a more significant tribute to the generous but anonymous donor.

With kindest regards, I remain

Sincerely yours,

JAMES R. CONANT

Harvard Forest

HARVARD UNIVERSITY

HARVARD FOREST

PETERSHAM, MASSACHUSETTS

July 31, 1941

Dean George H. Chase
2 Massachusetts Hall
Cambridge, Mass.

Dear Dean Chase:

I recently took up with Dr. Merrill my proposal that we start our academic year here at Petersham in mid-August. Dr. Merrill approves of this change but suggested that I consult you also.

The reason for such a proposal is to lengthen the season during which field work can be carried on most advantageously. Oftentimes, these New England winters set in so early that the students are unable to collect sufficient data in the field to permit undertaking, other than in an incomplete way, the indoor task of analyzing and interpreting the data. Instead, they must wait until spring to complete the field work. In many cases the result is that the student fails to complete his thesis by Commencement and does not receive his degree until some later time.

In order to take fuller advantage of the forest itself and all that it has to offer as a place to study living trees and associated organisms, we must regulate our field activities more in accordance with the New England climate.

I hope very much that you will approve of our starting the academic year about a month earlier than heretofore, this year on August 18th.

Very sincerely yours,

Director

August 4, 1941

Dear Mr. Cline,

Your letter of July 31 to Dean Chase has come to me in his absence. I should think that the Corporation would be sure to adopt your recommendation and that of Professor Merrill with regard to starting the academic year at the Forest in mid-August and that you would be safe in inaugurating the plan, subject to confirmation by the Corporation at their meeting of August 19.

Technically speaking, under the latest revision of the Statute of the University relating to the academic year, sessions which do not coincide with the regular academic year are authorized by the President and Fellows on the recommendation of a Faculty. As the work at the Forest is in connection with the fulfillment of requirements for degrees in the Faculty of Arts and Sciences, I suppose the Faculty should make the necessary recommendation. This of course will not be possible until the opening of the next academic year, but I suggest that if you wish the plan to take effect this month you should write a letter to Dean Ferguson saying that you expect to receive informal authorization in time to put the plan in effect at once, but that you would like to bring the matter before the Faculty of Arts and Sciences at their first meeting so that the recommendation of the Faculty may be duly made and placed on file with the Corporation in conformity with the Statute.

Sincerely yours,

JEROME D. GREENE

Mr. A. C. Cline
Harvard Forest
Petersham, Massachusetts