

Harvard University  
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DIVISION OF FORESTRY

CAMBRIDGE, MASS.

June 17, 1909

Dear Mr. Adams:

I submit to you herewith the report of the Division of Forestry for the academic year 1908-09.

GENERAL SUMMARY.

On October 1st last the Division began its occupation of the Harvard Forest, and the new two years' course, based on the use of the forest as laboratory and object lesson, went into effect. The essential feature of the scheme was to organize and operate a model forest from which a yield as nearly continuous as possible can be cut, and to arrange the technical instruction so that through all its stages the student will get training and experience from a forest actually under management. The change from the former scheme in force at Cambridge involved some crowding and confusion in individual courses, and some consequent hardship upon the present second year class. Nevertheless, the Division is convinced that the present plan of instruction, although still in need of improvement in detail, is, in essentials, thoroughly effective. The students made far more progress than ever before in the same time, and their general grasp of forestry as a business was notably quickened.

The forest operations of the year, in connection with which instruction was given, comprised the cutting and marketing of about 215 thousand feet of lumber and 250 cords of firewood. These operations netted \$1890.40 stumpage. Nearly half of this cut consisted of diseased

or overmature timber, and the whole amount represents less than the total annual growth of the whole tract, and less than 1/50 of the present total merchantable stand. Only three and three-quarters acres were cut clean, and about twenty-three were culled or thinned. In every case the method of cutting was calculated either to further reproduction or to improve growth in an existing stand.

Summing up the year's work, it can be said that the financial results fulfilled expectations, that, in spite of drawbacks incidental to transfer from the old system, resident instruction at Petersham, if adequately developed, is likely to offer one of the most attractive opportunities for the study of forestry in this country.

#### DETAILED REPORT.

Financial Statement. In organizing the work of the Forest School, the finances were classified under three separate accounts, (1) "Operations," which includes all receipts and expenditures connected with the forest and the land; (2) "House," including running expenses and repairs as well as receipts from the dormitory building; and (3) "Laboratory," which covers the instruments and materials necessary for instruction and the charges needed to maintain them. Below is given the detailed statement classified according to these accounts of all receipts and expenditures up to June 1, 1909. It is to be noted that this statement covers a period of fourteen months, or two months more than would ordinarily be included. Hereafter the accounts will run from June 1 to June 1. The surplus noted under the head of "Operations" is not the true net return from the logging, but rather the cash balance after all expenses, more than half of which are not properly chargeable to logging, have been deducted.

ACCOUNTS OF THE HARVARD FOREST

April 1, 1905 to June 1, 1909.

OPERATIONS

RECEIPTS

Miscellaneous, \$ 43.71  
Wood and Timber, 2881.35  
\$2925.06

EXPENDITURES

Woods Operations, \$735.45  
Roads, 7.50  
Nursery Stock, 62.00  
General Expenses, 441.68  
Superintendent, 560.00  
Insurance, 29.34  
\$1835.97

Surplus, \$1089.09

HOUSE

Rents and tele-  
phone calls, 194.72

General Expenses,  
light, heat, ser-  
vice & telephone, 190.72

Surplus, 4.00

LABORATORY

Fees, 65.00

Instruments, re-  
pairs, & draught-  
ing materials, 47.45

Surplus, 17.55

Total, \$3184.78

Total Surplus, \$1110.64

Total, \$2074.14

Living Arrangements. Under the plan adopted for feeding and housing students, each man paid a rent of \$5 a month for his room, and board for both students and instructors was furnished by the Superintendent at \$4.50 a week. As regards the lodging, this proved to be a pleasant and satisfactory arrangement. The food, however, did not turn out to be satisfactory. The reason for this was lack of competence and experience on the part of the Superintendent. It seems very doubtful whether it is wise to combine the functions of caterer and woods foreman in one person or family. The present incumbent certainly is not equal to both duties. He has been an extremely useful and very industrious man, and his supervision of the woods operations was fairly creditable. Yet, all things considered, it would seem to be wisest to make another arrangement for next year. Just what this arrangement should be, the Division is not now prepared to state. Probably the best scheme would be to lodge the woods foreman and his family permanently in a separate house, so that while students are in residence at Petersham the wing of the dormitory building can be occupied exclusively by whoever does the catering. If this plan is carried out, it would be necessary to put the small cottage known as the Russell House into habitable shape, and unless the foreman were to move back into the main building upon the departure of students it would be necessary to have some one else to live there during the winter. In any case, the repair of the Russell House is a necessary improvement, for there are not now sufficient accommodations for the different employees who are needed on the place. Probably the best solution of the food question would be to hire a man cook and helper for the periods of residence at Petersham.

The condition of the main building is not yet what it should be. There was not sufficient money left over from Mr. Ames' gift for repairs and equipment to cover certain matters of finish. The inside walls of all the rooms need papering or painting. The outside of the house is being painted now. When it has been painted outside, and finished inside, the building will be in very good condition for its purpose.

Equipment for Instruction. The equipment necessary for the work at Petersham consists of a complete set of instruments used in field work, and of a good working library. In this particular the Division is still very inadequately supplied. It has instruments sufficient for ordinary and necessary field work, but there are a number of instruments for special purposes, and of foreign make, which would be extremely valuable to have. The library facilities have been extremely poor not only in Petersham but at Cambridge as well. A great deal of the printed matter useful for instruction in forestry is contained in local or occasional publications, such as State and Government bulletins, periodicals, and the working plan reports of organized forests in other parts of the world. To get an adequate amount of this material together does not require a large amount of money, but it does require a considerable amount of time and thought on the part of some one familiar with forestry and its history. Up to now, it has been impossible to make more than a beginning of supplying this need, but for the course of instruction as now organized a larger and better reference library is urgently needed.

Logging Equipment. The School already has a tolerably complete outfit of logging tools and the equipment necessary for woods work. It will be necessary, however, both to further the protection of the woods, and for the best results in woods operations, to have one or more portable shacks which can be used both for the storage of tools and for housing men when cutting is going on. As the general business connected with the forest grows, the need of equipment will also grow, but for the present, except for lack of these portable camps, the logging part of the enterprise is adequately supplied.

*R. J. Fisher*

# HARVARD UNIVERSITY

## SCHOOL OF FORESTRY

*Cambridge, Massachusetts*

### THE NEW SCHEME OF INSTRUCTION.

Sept 1913

With the present academic year<sup>1</sup> the School of Forestry put into effect two important changes, first the transfer of its winter quarters and of all instruction hitherto given at Cambridge to the Bussey Institute at Jamaica Plain; and second, the re-arrangement of the curriculum so as to devote the second year of the course exclusively to special training for research in one of four fields, namely, the operation of forest lands, entomology, wood technology and dendrology. Under this scheme graduates of under graduate forest schools can enter on a par with second year students in the Harvard School and secure the degree of M. F. after one year of specialization. 2

The removal to Jamaica Plain gives the school very greatly improved quarters and resourse both for instruction and investigation. In addition to adauate accomodations in the Bussey Building it enjoys the co-operation of one of the strongest departments of entomology in the country. With its library and insect collection and with the proximity of the Arnold Arboretum it has for the first time the ready use of unexcelled material for the study of trees and the literature of trees. This transfer and consequent alliance of equipment hitherto practically unrelated and of instructors whose work is in many important ways interdependent, makes a very strong foundation, probably as strong as could be found in the country, for the working out of the new plan.

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The rearrangement of the curriculum went into effect with the opening of the summer term last July, having been announced in print late in the spring. It was undertaken after very careful consideration of the tendencies of forestry and various education in the country and of the function of the forest school in view of its resources and relation to the growth of other scientific instruction in the University. The need and justification for the kind of advanced specialized training which the school has in view were emphatical, not only by professional conditions throughout the country but by the direct assurance of most of the graduates of the school, all of whom were informed of the change in prospect by the approval of the heads of a number of various schools ( one of which is already making the same sort of change ), and by the strong opinions of representative lumbermen throughout the country.

The general factors which went to form these conclusions have been growing clearer for several years. The opportunities for which practically all previous forest education has been shaped consisted mainly of government and state service, both public and semi-public work. These openings which began with extraordinarily rapid expansion ten years ago have now shrunk to the point of very small growth, too small to take care of more than a limited proportion of the men who have been influenced by the popularity of forestry to go into the profession. At the same time the general interest in conservation as a matter of public policy has brought about the starting of a large number of forest schools, most of

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them elementary and based on the same general lines. The consequence has been a comparative overproduction of foresters whose training has fitted them chiefly for a kind of work which has already passed its period of greatest growth and which could never be a field of greatest professional development. It has been plain from the outside that forestry as a live profession, ultimately must rest on a real demand for expert supervision by the privately owned forestry resources of the country. This is a field which includes more than four times the acreage and twenty times the volume of business of government and states combined. That forestry has made relatively small progress on the private lands of the country is due in part to the unsuitableness of the usual foresters training, in part to the fact that timber owners not knowing what the limitations were have put inexperienced foresters in responsible positions that they had not the knowledge or experience to fill, and even more to the fact that the financial conditions of the lumber business have not until very lately begun to justify the application of the economies of forestry to the conduct of logging operations. The greater part of the big lumber lands of the country have been acquired cheap, so cheap that the natural rise in the price of lumber has been sufficient to bring great returns even when the business of logging and manufacturing has been conducted with the greatest lack of economy, both present and future. Even under these conditions it has been clearly shown that foresters with the right experience or with training in a particular line who have

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been willing to begin in a small position and learn the particular lumber business that they were to have a part in, have found their services well paid for. The timber owners of the country are yearly coming to a more and more favorable situation for the employment of forest experts, but as almost all of the most progressive themselves say, they have very seldom been able to get the kind of men they want from among the graduates of forest schools. It was natural that the first organization of forest education should have been directed to the public service which at the outset formed so large a part and so attractive a part of the opportunity. That this kind of training will not do for the future growth of the profession is absolutely certain and at present every indication points to a growing demand for men who can apply scientific principle to the forest industry, to the sound and accurate valuation of timber, to the improvement of efficiency in logging and to thorough economy in the utilization of wood. So far as its limited resources would permit the Harvard School has steadily tried to anticipate this development, but not until the present time has it felt that both the time and opportunity to put the idea into practice had come.

The registration in the school for the present year has been about what these general conditions and the difficulties incident to adopting the new place rendered likely. Four new students registered, all from colleges other than Harvard, one from the forest school at Cornell for a year of special work in serviculture, one from Biltmore for a course in surveying and

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two for the regular course from Tufts and Bowdoin respectively. The total registration for the year 1913-14 is nine. Three other men who had signified their intention of entering were unable to come because the date of beginning was changed from the end of September to the first of July and they were obliged to use the summer for earning money. The change of plan was unavoidably announced late in the year and further inadequately advertised. Considering the fact that forest work was very dull last year on account of general business conditions and that other graduate schools of forestry fell off in numbers very noticeably, the response to the new plan does not seem unpromising, especially since the school has not yet been able to announce the opportunity for specialized work in the most promising field of all, that is lumbering. Furthermore, even thus early in the year there are four or five students who are expecting to enter next season, several of them as graduates of other schools.

Original  
on 5 carbons

February 6, 1914.

President A. Lawrence Lowell,  
Harvard University,  
Cambridge, Mass.

Dear President Lowell:

The following is a memorandum of the proposals discussed by the staff of the School of Forestry with you and Mr. Bacon yesterday.

With the present academic year the School of Forestry put into effect two important changes, first, the transfer of its winter quarters and of all instruction hitherto given at Cambridge, to the Bussey Institute at Jamaica Plain; and second, the rearrangement of the curriculum so as to devote the second year of the course exclusively to special training or research in one of four fields, namely, the operation of forest lands, entomology, wood technology and dendrology.

14 [ After a year's further study of the situation both here in the University and in the country at large, the staff of the school is unanimous in believing that the time has come to ] take another and final step, and to [ organize squarely and exclusively, as an institution for research and the training of advanced specialists. Their reasons for this belief are, first, that on the old basis we were competing in a field in which too many other schools offered nominally equivalent training; second, that while the market for men of general training is shrinking,

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the market for men of special training, particularly in problems relating to the lumber business, is growing; third, that a general course precludes research and special training by the same corps of instructors; fourth, that with the resources now for the first time available, through alliance with the Bussey Institution and its staff, through proximity to the Arnold Arboretum, and through the possibility of cooperation with other scientists in the University, the school has an equipment for certain lines of <sup>research and</sup> specialization that is unrivalled in this country. The School of Forestry therefore proposes to give up entirely its general course, to devote itself strongly to the research which the elementary teaching has hitherto precluded, and to offer to qualified men, opportunity for advanced training in the following fields: (1) the management and silvicultural treatment of forests, for which work the Harvard Forest is the chief laboratory; (2) the control of insect pests, for which Professors Wheeler and Bruce will furnish the means; (3) dendrology, through Professor Jack and the Arboretum; (4) wood technology and researches in wood utilization, through Professor Bailey and his laboratory; and (5) the scientific study of lumbering and logging and the economies in those processes which only technical investigation can bring about. For the first four of these specialties, the school is already strongly equipped. For the last, the lumbering, it is practically unprovided. At the present moment, it is this

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special work in lumbering that will be most in demand, because so many of the problems of timberland management must be solved from that approach. Furthermore, it is this work that the school has all along foreseen the importance of, and which it is known to have been aiming toward. If we proceed now upon the new basis, working only in the specialties already provided for, we shall be moving in the right direction but we shall have failed to enter the field where specialization is most needed. If, on the other hand, we can add the lumbering to our other subjects, we shall not only be first in the field, but we shall point our whole scheme with the study most vitally related to the whole industry for which forestry is working.

To secure this addition to the school in adequate form will cost an increase of \$4000. to our budget. It will mean getting Mr. Austin Cary, formerly professor here and during the last three years at work on lumbering problems for the government, to give us at least four months of his year, as lecturer and organizer of the field work. His services will cost perhaps \$1500. To work under him, there will have to be two assistants, one on full and the other partial time. Their combined cost would amount to \$2500. The sum of \$1000. appropriated last year for engineering work could be diverted from our budget to cover necessary field and other expenses. We already have in view the men for assistants, men whose training we have been watching for several years. As for Mr. Cary, his experience since leaving Harvard has made him the

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leading, practically the only, man in his field, and has gained the confidence of the lumber interests to a high degree. Both in his case and that of the assistants, a division of time between the University and the Forest Service, or other employers, would be desirable and apparently feasible. With these additions to our staff, we should have the strongest institution for advanced training and research in the United States.

Very respectfully,

(R.T. Fisher)

Chairman.

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