

THE UNIVERSITY OF
NORTH CAROLINA

THE GRADUATE
SCHOOL



Report of the Dean

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CHAPEL HILL, N. C.



Graduate School

REPORT OF THE DEAN

To the President of the University:

I submit herewith my report for the current academic year.

The registration in the Graduate School to date is 163. Fourteen states are represented in this registration, thus indicating the growing influence of the work that we are doing. The students hold first degrees from thirty-three colleges. A considerable number already have received the Master's degree, here or elsewhere. It is matter for encouragement that sixty-eight students have had at least one year of graduate training prior to the present year. The presence of so many second and third year students is an influence that is making itself felt. Such a proportion of students committed to an extended course of advanced work is deeply significant. To this should be added the fact that of the first-year men many have already signified their intention of continuing their studies beyond this year.

To secure a student body made up in large part of men and women who look upon graduate training in the same way as preparation for law or medicine, and who are therefore willing to remain here several years, is necessary to growth and power. This means finding superior students and holding them. They may be held only if they find here men competent to direct their studies, are given certain necessary material advantages, such as laboratory and library facilities of the first rank, together with proper living conditions, and are above all inspired by a vision of what scholarship means and of its opportunities for service.

In all three of these requirements definite progress has been made during the past year. Several departments have added to their staffs professors widely known for research in important branches of learning. We are at present in a position to offer work leading to the doctorate in a considerable number of fields. The library has been greatly strengthened by reason of the increased appropriations, and is in the way of becoming the research library that we need. Several laboratories, notably those of pharmacology, psychology, and the engineering sciences, have been notably improved. If we can maintain this rate of progress in the development of the graduate faculty, the library, and the laboratories, we shall soon be able to take a commanding position among research institutions.

As to the third of the essentials, the vision of the meaning of scholarship, and of its opportunities for service, evidences of vigor and growth are not lacking. The second annual bulletin of Research in Progress, covering the year ending July first, contains sixty-six pages. In it are abstracts of monographs contributed by members of the faculty to learned journals, abstracts of problems in process of investigation, and abstracts of dissertations presented by candidates for higher degrees. Ninety-three names appear in connection with these various problems, and there are seventy-four abstracts varying from a few lines to two pages in length. By this means a man is able to get a clear view of the wide range of research activities at the University, to find out what men in various departments are doing and to add to his bibliography notes on work being done in fields in which he is interested. The inclusion of abstracts of theses is of value to students, who know that their work is not to be buried in some pigeon hole, but is to appear, in brief form, in a bulletin sent to all parts of the United States. This publicity is a useful thing, also, as a stimulus to thorough work. If a thesis is poorly done, the abstract will show its faults. We may expect improvement in the Master's theses as a result.

Several other universities publish titles of monographs and dissertations. If the plan of printing abstracts of such work could be extended, the gain to research would be immense. By such means men in every part of the country would be able to gain a view of the work being done in their special fields to an extent not now possible.

In addition to the Research Bulletin, the three learned publications of the University afford opportunity for making known the results of work done here. *Studies in Philology* is now on a subscription basis, and its list of subscribers is constantly increasing. Evidences of the appreciation of leading scholars in this country and abroad are abundant, and some of the greatest names in America in the field of language and literature appear in the table of contents of the volume completed in October. The *Journal of the Elisha Mitchell Society* gives evidence of the high value of the work in science being done here. The *Sprunt Monographs*, limited to state history, are a valuable adjunct to the work of the Historical Commission. While it is not wise to extend unduly our list of publications, there is great need that we should establish at an early date a quarterly journal of research in the economic and social sciences. Such a journal would instantly find an audience not only among scholars but among business men and progressive citizens generally, and it would contribute in many practical ways to the life and

prosperity of the State. I suggest that steps looking to the establishment of such a journal be taken in the near future, and that provision for its financial support be made in the next budget. Such a journal could count upon a paid subscription list from the start, and would soon become nearly or quite self-supporting.

The Research Fund

The establishment, through the far-sightedness of the President and Trustees, of the thousand dollar fund for the encouragement of research, marks an epoch. This fund, which became available for the year beginning last September, is handled by the Administrative Board in its capacity of a research committee. The Board decided that for the first year preference should be given to a number of projects involving small sums rather than to more extensive investigations. Applications for sums ranging from ten to a hundred dollars have been approved. By the terms of the grant, supplemented by rules adopted by the Board and published in the last issue of the Research Bulletin, money is not appropriated for library and laboratory equipment that should be acquired through departmental budgets, or for employment of assistants. Other expenses involved in an investigation in which a member of the faculty is engaged may be met by appropriation from the fund. A formal report of the progress of the investigation is expected in June of each year, and abstracts will be published in the next Research Bulletin. Grants already made cover such expenditures as the purchase of material for scientific projects; payment for a search to be made in certain European libraries; a payment towards the cost of the plates used to illustrate a monograph; the establishment of a temporary experiment station for field investigation in biology; provision for an investigation in sewage disposal, and the like. The recognition of the principle that it is a proper function of the University to encourage the research of members of the staff through allowances for necessary expense is far more important, in its effect upon the faculty, than the money actually received. Research becomes a legitimate and honored part of a man's service to the University, not something to be done at odd times and often at severe financial sacrifice. Furthermore, the establishment of this fund opens the way for further additions through grants from outside sources. We have had a number of such grants in the past, and during the present year a member of the faculty has been given \$500 by the American Academy of Arts and Sciences for a scientific investigation in which that organization is interested. Closely analogous, also, is the increasing cooperation between members of the University and various state

agencies. The Department of Civil Engineering has recently undertaken certain researches in behalf of the State Highway Commission, a graduate fellowship being made available for the work. It is expected that such cooperation between University research agencies and various state commissions will increase during the coming years.

The Teaching Fellowships

We have at present twenty-two teaching fellowships, each paying \$500. Next year two additional fellowships become available. It is felt that we should not go beyond this number of appointments in which a certain amount of teaching is expected of incumbents.

Of the twenty-two men appointed this year, twelve received their first degrees at this University; of the other men, five come from other North Carolina colleges, two from Georgia, and one each from Missouri, Wisconsin, and Kentucky. The fellowships this year are assigned to the departments of Botany, Chemistry, Economics, Education, Engineering, English, Geology, History, Mathematics, Psychology, and Sociology.

It is very necessary that our fund for fellowships and scholarships be materially increased. For one thing, there are no fellowships available for women. There are relatively few women in the Graduate School, but they do work of excellent quality, and we expect their number to increase. Financial aid for able women students is as necessary, and as repaying, as for men. Again, we have no appointments for which no return in service is expected. While much is to be said in behalf of the teaching fellowships from the standpoint of their value as means of securing some experience in college teaching under capable supervision, the fact remains that holders of these appointments find their time for study materially cut down. A series of fellowships with stipends of from \$300 to \$500 should be established, the awards being limited, as a rule, to students who have done at least one year's work with us and are proceeding to the doctorate. The entire time of these students should be devoted to advanced study. In some cases, holders of such appointments might be assigned special research in behalf of some industry, or for a state commission. Funds for such fellowships may well come from some source outside the regular income of the University. Persons desirous of establishing a worthy memorial to an alumnus or a friend or a member of their family might bear in mind the opportunity to found one or more memorial fellowships or scholarships. There is no nobler form of memorial than one which will enable some gifted student to go on with research. Results of the highest value to humanity might

well follow upon such a foundation, blessing the generations yet to come and insuring an immortality of service. We need also loan funds available for graduate students. A considerable number of our students are here at great financial sacrifice. They have completed what the world is apt to call their education. The pressure to engage at once in gainful occupation is often almost overwhelming. Yet in many cases a term of one to three years in advanced study would mean to an ambitious youth the difference between an occupation and a career. For all these purposes—aid to women graduates, fellowships and scholarships for second and third year men of exceptional promise, and loan funds—we need considerable sums of money, and we need these sums now, not ten or twenty years hence.

The Graduate Club

The hopes I expressed a year ago for the newly organized Graduate Club have been abundantly justified by its record. Last year seven meetings were held, all largely attended by students and faculty. The general subject of the meetings was the scope and method of research in widely separated fields. The purpose was to break down some of the isolation in which professors and advanced students in a limited field find themselves, and to discover, if possible, some principles of research applicable to all departments. To this end, the informal talks presented, as a rule, some problem in which the speaker was at that time personally interested, not from the standpoint of a piece of completed research but as an investigation actually in progress and developed, so far as possible, in the presence of the group. Abstracts of these meetings will be found in the Research Bulletin, but no abstract can do justice to the method that was employed. Students were thus made to feel that research is a living thing, not a matter of printed pages or the accumulation of facts at second hand. And this series of meetings in which students and teachers in various fields met on common ground contributed more than any other possible agency to the realization of the Graduate School as a professional school analogous to the schools of law and medicine. During the present year the meetings are in charge of the committees described below, the general theme being the discussion of certain problems connected with advanced study in which both teachers and students are concerned.

The Five Committees

As a further means of realizing the meaning of our Graduate School the Administrative Board is this year enjoying the benefit of the cooperation and advice of a considerable number of members of the

School, both teachers and students. Five committees, appointed by the Board under the authorization of the Graduate Club, are at work upon some of the immediate problems of the School. These committees are relatively large, averaging twelve men each, two or three of whom are graduate students of more than one year's standing. Each committee is divided into smaller groups for purposes of economy and division of work. Meetings of the Graduate Club during the year are to be conducted by these committees, the plan being to present, at each meeting, a preliminary report on two or three matters in the field covered by the committee, with opportunity for general discussion. In this way each problem is brought to the attention not merely of the committee but of the entire School. It is felt that the development of the Graduate School is a matter of co-operation rather than administration.

Committee A, of which Professor J. M. Bell is chairman, is studying research methods in undergraduate classes. Elementary research, or such student work as is calculated to develop initiative and some sense of research technique, is one aspect of the work. It is concerned also with the important problem of the proper guidance to be given to students who display high gifts. In this respect its work touches that of the college. It is a matter of common observation that the mediocre student is apt to get a larger share of a teacher's time than the brilliant man who seems quite capable of going on by himself. The temptation to direct instruction towards the average or the poor student brings down the pace of the class, with the result that the able student does not have enough to do. Hence the temptation to loaf, or to find more work through registering for too many courses. The brilliant student may thus become either an idler or a smatterer. To find the brilliant student as early in his undergraduate course as possible; to make full use of his ability to do superior work, and, where occasion offers, to encourage him to take a different view of a course from the conventional idea that it is a milestone to be passed and forgotten, are matters in which both Graduate School and the college find common interest. From another point of view, it is certain that much time may be saved by a student who looks forward to graduate work if he can learn something of the method of research in the field of his undergraduate major, and is given a broader idea of this field and of the problems than the average student, dependent on course credits alone, usually secures.

Committee B, of which Professor George Howe is chairman, is at work upon some proposed modifications of the Master of Arts degree. It is becoming increasingly difficult for a man to complete our requirements for this degree in one year, unless he has had unusually good

undergraduate training. At present the thesis is insisted upon as a piece of elementary research and as a means for developing research technique. There is also a fairly rigid set of comprehensive examinations, one written and one oral, in addition to the requirement of nine courses completed with honor grades. Committee B has under consideration not only our present type of degree but certain proposals looking to greater flexibility in the requirements to meet the needs of various students. The relations between the Master's degree and the doctorate; the possibility of recognizing creative work, such as the writing of a drama, as a substitute for the thesis; the providing of a special type of degree for those who are preparing for secondary and elementary college teaching, are examples of the problems that the committee has in hand.

Committee C, of which Professor J. F. Royster is chairman, is studying the relation between research and teaching. The question has a practical bearing upon some problems that have arisen in our faculty, and affects also such proposals as one for the establishment of research divisions in certain fields. From a somewhat different angle, definitions of research and teaching are needed, and an inquiry as to whether there is any necessary hostility between the two forms of activity. In many cases, especially among young scholars, research is regarded primarily as a means for winning promotion, or as something quite apart from teaching. Older men, established in position, are sometimes apt to speak of teaching as one thing, their "own work" as another. Or, they let research go, preferring to be merely teachers. Or, they are hostile to it, even letting this hostility be seen in the class room, to the discouragement of young men who might win distinction in some field of investigation. The research man, too, is apt to alienate sympathy by a sort of academic pharisaism. The reconciliation between research and teaching, therefore, becomes analogous to the famous political problem of the reconciliation of government and liberty.

Committee D is making a survey of special research fields in which this University may hope to do outstanding work. Professor R. D. W. Connor is the chairman. There are certain forms of investigation proper to this University as a state institution, and also certain fields that belong to our situation, involving research that can be done better here than at Harvard or Columbia. The committee will survey such work so far as it has already been accomplished or may be in progress, and it will point out unoccupied fields that we ought to cover, with practical suggestions as to ways and means. The relation of research to the prosperity and growth of the state will come under its province.

The fifth committee, of which Professor Daggett is chairman, is devoted to Graduate School extension. This is not limited to publicity, but includes a study of the advantages and disadvantages due to our location, the publications necessary to the extension of our work, the province and feasibility of a University Press, and a division of educational relations. "Extension" means not merely extension of our own influence; whatever can be done, throughout the South, to stimulate advanced work, is part of our field of service.

Realizing the Graduate School

It will be seen, from what I have said concerning the work of the Graduate Club last year and from the outline of the program of the five committees, that we are giving our first attention to an attempt to *realize* our Graduate School. We are trying to see it clearly, its place in the structure of the University, its relation to the advancement of learning, and its relation to the life of the state. We approach this task not from any feeling that the past history of research at the University gives cause for regret, and least of all from any feeling that reforms are necessary. It is rather with a sense of responsibility for carrying on work already under way, with only such changes as befit the greater University that is in building. The new elements, I think, are the increased sense of the need for greater cooperation among all the provinces of learning, a need taught us by the war, and an increased sense of the relation between research and American life, also born of the war. The research fund, for aid to investigation carried on by members of the faculty; the increased library and laboratory appropriations, for the benefit of both faculty and students; and the twenty-four fellowships for the benefit of young men of promise, are other steps in the same direction, that of self-realization of the Graduate School. We have paid no particular attention to registration or to attempts to increase the number of students. That increase will come when we are ready, spiritually and physically. We need, for example, a graduate dormitory. A dormitory could be filled with graduate students now, if we had it. The need will become more acute with every passing year. Besides the sheer necessity of providing living accommodations, we have to take into account the fact that a graduate dormitory, as a center of the life of men who are carrying on advanced work, would help more than any other material agency to win this sense of personality as of a professional school. At present, the graduate students are lost in the mass of students in a dozen schools. Yet they should be a vital campus influence. They are men of high ideals and gifts. They have dedicated themselves, as to a divine

calling. Some of them are teaching elementary students. All of them are interested, or are capable of being interested, in the undergraduate colleges and schools in a way that no one on the campus, outside the faculty, is interested. They are also students, with a more mature view. They are, or should be, the connecting link between undergraduates and the faculty. Expense, trouble, time, anything that can help them to realize their possibilities of service, will be returned a hundred fold to the University.

The Invisible College

The early form of the Royal Society, the group formed in 1645, was called "the invisible college." This was forty years after the publication of Bacon's survey, in which he pointed out the deficiencies in the universities of his own time, chiefly because of their neglect of the "proficiency and advancement of learning." In 1669, nearly a century after Sir Humphrey Gilbert had drawn up his plan for "Queen Elizabeth's Achademy," an institution to be devoted to research and to preparation for the service of the state, the Royal Society was attacked as "an underminer of the Universities." Thus the new spirit of scientific investigation in the seventeenth century, like the classical humanism of the fifteenth century, had to establish itself outside the university and in the face of every form of opposition that could be brought to bear by the recognized possessors of the academic tradition. The "invisible college," without buildings or endowments, securing disciples outside the regular channels, embodying nevertheless the spirit that was destined to mould a new era in human thought in the seventeenth century as in the fifteenth, has become a symbol full of meaning.

It is a symbol especially applicable to the Graduate School. The invisible college values material equipment, but does not depend upon buildings, funds, or crowds of students. Its professors do not measure their work in terms of hearing recitations, setting examination papers, marking percentages. Its students do not measure progress by the accumulation of little credit units and diplomas. It knows neither ranks nor conditions; all its members, teachers and students alike, meet in the common search for truth. It knows no authority, save the authority of truth. It operates not through barter and exchange, in which information is dispensed and received, but through the quest for the Grail.

There is nothing new in these statements. The trouble with them, as with so much of our thinking about education, is that we are in danger of assuming that nothing more than agreement is necessary. They are not translated into action. But the invisible college, in

the fifteenth century and in the seventeenth was an active and propagating force. In the earlier period the classics were at length given recognition in the university course. Theology was succeeded in part at least by humanism, and as a result of the influence of the Royal Society science was at length, after many years, admitted to the hierarchy. These are examples of the way in which the college curriculum has grown up, always by addition of new branches. The process has been extended to include dairy husbandry and shorthand alongside of Sanskrit and relativity. The curriculum, despite our efforts to keep it in bounds through group systems and majors, resembles what the student called the chief religion of China—confusionism. Sooner or later this process of developing a university through the addition of new courses must give way to a new synthesis.

To such a synthesis the Graduate School should make the chief contribution. The invisible college is no longer the little group without the pale, but the society of scholars whose training in research and belief in the supreme value of research to the state fit them to do what their predecessors in distant centuries did, to revise the relationship between the work of the college and the life of a changing world. We are coming to see that the years 1914-18 marked the end of an epoch. For the new age, once more, a new synthesis is necessary.

This synthesis, like its predecessors, will be the product of research men. Research in the literature, ethics, and tradition of the classics brought to the fifteenth and sixteenth centuries the philosophy of life needed at that time, and out of that philosophy grew the Renaissance. Research into the phenomena of nature, advocated eloquently by Bacon, practiced by scientists from Copernicus to Darwin and Huxley and their followers, added a principle equally fruitful. The results of this renaissance have been a progress in science of enormous proportions, a progress that is still lively, proceeding now at a speed incredible to those who have traced its beginnings. Meantime human institutions, the theory and practice of the state, have not kept pace. The classical tradition has lost its old efficacy. The modern state, born in the Renaissance and developed with the growth of democracy, is now subjected to strains unthought of a few years ago. More than one scientist of standing has of late sounded the warning that the mastery of nature by man may prove the instrument of destruction that will end civilization. The facts that of our hundred million population less than one third are above the average intellectual age of thirteen years and that less than five per cent are of superior intelligence, show

the importance not merely of raising the general level but the even greater importance of being careful how we train this small, superior group. It is from this group that the creative element vital to human progress is to come. To this group our research men belong, and their problem is to bring about, through research, a proper adjustment to a new age.

The research man, therefore, has a dual function. It is his duty to add to the sum of knowledge in all fields affecting human life. It is also his duty to contribute to a new survey of learning in its relation to life. The Graduate School is not a vocational school. It does not discharge its duty if it merely sends out, year after year, men trained to be chemists or engineers on the one hand, and economists, teachers, and social workers on the other. Even research itself is not necessarily of immediate practical importance. Professor Soddy has recently pointed out, in a very stimulating book called *Science and Life*, that the grander the discovery the more trivial and utterly useless it often appears at first sight. He holds that the scientist "sets forth into an unknown land not to discover anything definite, anything of use to anyone, but to discover what there is in the unknown to be discovered." One of the greatest American business organizations, which maintains a splendid scientific laboratory and a staff of research men, has recently stressed the fact that commercial research depends less on the immediately practical than on investigation into some principle, apparently trivial, which may be potent to achievements now unguessed.

The Three Researches

The Graduate School, therefore, looks upon research in a three-fold aspect. There is the patient investigation of the phenomena of life and nature. This ends in the creation of new knowledge. The student who enters upon it seeks the mastery of a single subject, in order that he may push out beyond the confines of knowledge in that subject and sail uncharted seas. Such work brings new meaning to the world. Of such a man Professor Soddy remarks, "His education begins where that of a man who has achieved breadth without depth ends. He is curious. His relative ignorance of other subjects than his own and their freshness to his mind, make him so, whereas the other is satiated with imperfectly appreciated subjects which he thinks he knows, and he becomes dull."

The second type of research is that which is immediately applicable to life. The professor in a State University, more than a professor in a private institution, has a responsibility to the state. To gather and interpret the facts about the social and economic life of the state;

to study the traditions and the personality of the state; to cooperate with the various state agencies and commissions as a consulting expert—these are illustrations of investigation of immediate practical importance. The professor in a state institution is not a trainer of immature minds in a body of received opinion; he is an expert in a field necessary to the material and spiritual welfare of the state.

The third type of research has a certain philosophical element. It is not enough for us to have pioneers in uncharted realms of learning and consulting experts on the multitudes of practical problems with which the state is concerned. Synthesis, generalization, is also needed. The Royal Society, following Francis Bacon, distrusted generalization. Their three aims were to get rid of the incubus of authority of received opinion in order to test all things anew; to devote themselves to minute and long continued observation; and to avoid generalization. Such aims were needful in the infancy of science. They are not sufficient now. In every department of knowledge, the accumulations in the last half century have been tremendous. This accumulation is proceeding at a higher speed now than ever before. But the continued accumulation of materials, continual building on such various foundations as the arts and sciences now represent, means a new chaos, a new war of the elements, unless we pause now and then to see what it is all about. The necessity is the greater because of what has happened since 1914. The leaders must be the research men themselves. Science alone cannot bring it about, nor a return to the classics, nor an elaborate vocational training. Art and literature, science, a more thorough interpretation of history and politics, an ethic to correspond with that of Aristotle, but adapted to the new age—these all contribute according to their vision.

Such a conception of research has an immediate bearing upon the Graduate School, and should transform it. Perhaps we shall have not a one year course leading to a Master's degree and a three year course leading to the doctorate, but an entirely different idea of the place of graduate study. The Graduate School now trains specialists in intensive fields. The man who is going to give himself to investigation or to teaching registers for graduate work as mechanically as the man who intends to be a lawyer or a doctor goes to the appropriate specialized school. What we are in need of is provision for the man who is going to be a specialist in the service of the state, in the broad sense in which that ideal dominated Renaissance humanism. This is the new humanism, not a return to the classics, or a rival to science. It includes the classics if they have anything to

say to the twentieth century. It includes also science, philosophy, art. The general subject, to use the title of a stimulating book recently published, is human engineering. Part of the work will be to get a definition of engineering applicable to the purposes. It means, in the end, not a graduate school, but a graduate college.

Such a college will train specialists, but it will add breadth of vision to the intensity of penetration. It will deal with superior men, so that the state may have the fullest human capacities at its disposal. It will make its own course of study, on new lines, not by mere accumulation of subjects. This course of study is to be worked out through the co-operation of the best minds, alive to the crisis of humanity, alive to the facts that the years 1914-1918 marked the end of the era that has dominated human history since the Renaissance and that the new cycle will bring destruction or a new level of civilization as the only alternatives.

This is not the place for setting down any details of the organization and curriculum of such a Graduate College. There will be in it, perhaps, four schools: the school of political science; the school of business administration; the school of literature and fine art; and the school of pure and applied science. All these schools will deal with the philosophy and practice of education as the matter of the highest moment to humanity. Finally, in it, faculty and students will be one body. For the most important students in the Graduate School are the members of the teaching staff.

Respectfully submitted,

EDWIN GREENLAW, Dean.

