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Professor ROYCE, of Harvard University, U.S.A. (Gifford Lecturer in Aberdeen University), communicated a paper entitled, "The Recent University Movement in America."

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By Professor ROYCE, of Harvard University, U.S.A.

The kind invitation of the Philosophical Society has given me this opportunity to address you. Conversations with friends and colleagues during my brief stay here have suggested the topic of my address. An American teacher, engaged, even whilst he is here amongst you, in distinctly academic duties, can most easily speak to a company like this regarding the fortunes of his own profession at home. And I undertake the task solely in the spirit of one who wishes to take counsel with his brethren concerning very important interests which are common to us all. It is not my wish to give any mere catalogue of the external facts about the material side of our American University life. My interest, and yours, as I doubt not, is rather in the spirit and the meaning of our recent University movement in the United States. This spirit I want in a measure to portray, as far as my inadequate powers may permit.

The deeper problems of University life are, in all the more civilised countries, of necessity very largely the same. The University in any land ought to represent at once the best tradition of learning that its country has been able to win by virtue of the labours and sacrifices of the past, and also the most advanced and hopeful ideals of progress, both in knowledge and in spiritual power, that the best minds form when they now look forward into the future. The University is accordingly bound to represent equally both of these interests. Its task at any moment is always to harmonise what is permanently valuable about the ancient tradition with the new insight. No institutions should be more conservative, in a wise sense, than the Universities ought to be—conservative, I mean, of respect for the fathers, of the memory of former generations, and of the historical continuity of our common humanity. No institutions, on the other hand, ought, in another sense, to be more freely and

fearlessly progressive than Universities, since knowledge can recognise no barriers as absolutely impassable to the human spirit, and can regard no merely temporal tradition of our fallible human insight as the absolutely final statement of the truth. The University is, therefore, the natural home and training school both of reverence and of freedom, both of our historical memory and of our hopeful, reforming spirit, both of piety for the past and of a courageous pressing on towards the things that are before. The problem of the University in any land is always precisely the reconciliation of these two apparently opposed interests. You all know this problem in your own academic life. You daily have to recognise this task, both in the practical relations of your University to the material interests of the world about you, and in the interior relations of the various departments and ideals of study within your University itself. Well, what I want briefly to indicate is the form which just such problems have taken with us in America, and a few of the incidents of the undertakings by which we have tried to meet our problems.

It must be remembered that, in hastily preparing these observations, I do so quite apart from any access to documents and to other written or printed sources of information. I can say, therefore, only what any American College teacher might tell you as he looks over his memories of our recent University movement.

The earliest academic institution in America was Harvard College, out of which the Harvard University of to-day has grown. The first colony in New England was established at Plymouth in 1620. Sixteen years later, in 1636, by an Act of the General Court of the Colony of Massachusetts Bay, there was established at Newtone, since called Cambridge, in the immediate neighbourhood of Boston, a College, to which John Harvard, himself a graduate of Emmanuel College, Cambridge, gave a sum of money, so that the new College received his name. The purpose of the foundation is stated, in an early document of colonial annals, in quaint and beautiful language, which is now perpetuated in one of Harvard's favourite public inscriptions. The colonists had established their towns, and begun their life in the wilderness. They feared, so they in effect say, above all things the consequences of an uninstructed ministry. They founded the new College to ward off these dangers. The institution, by the terms of its early seal, was dedicated to Christ and the Church.

The interests of the ministry were prominently in mind in the foundation of our later Colleges of colonial date, such as Yale and Princeton. The rapid growth of the new Republic after the War of Independence led, however, not only to a proportionately rapid increase in the numbers of our academic institutions, but to an early diversification both of the ends that they undertook to accomplish and of the local traditions and interests that they represented. Our academic development, viewed in our nation as a whole, has, therefore, never followed the centralised type of the English University life. No one institution has ever attained the relative prominence in our own national world of learning that Oxford or Cambridge naturally possess. For a very long time our collegiate institutions were wholly provincial in their origin, and were largely so in their purposes and management. They were the outcome of local ambitions. If circumstances have later given to some of them a genuinely national significance and spirit, that result has been due to a process of evolution, and not to any legal enactment. Moreover, this process has been everywhere limited by the very wide extent of territory over which our culture has been forced to spread itself.

As you follow the older history of our academic life, what you find, then, as you look over the numerous States which our settlers gradually formed, is, first of all, a large and rapidly increasing aggregate of decidedly local institutions, called, according to the choice of their founders, either Colleges or Universities. All of these institutions conferred degrees. In particular, they conferred the degree of Bachelor of Arts upon those who had completed a four years' course of academic study. If you ask by what authority these various institutions were founded, and whence they received the right to confer degrees, the answer is that they belonged, on the whole, to three classes—classes which still exist amongst us. The larger number of these older Colleges or Universities were first founded in more or less close and express relation to the work and usually to the ministry of some religious denomination. Many of their graduates went on to the study of Divinity. A second, and in their evolution generally, a later class were the State Universities, founded directly by the Legislatures of the various States of which our Union is composed. These institutions were established under some form of State control. A third class of our academic institutions were the product of private benefactions. The foundation of any one of these would

be due to the gift or bequest of some individual. The first and third of these classes of Colleges, viz., the denominational Colleges and the foundations due to individual benefactors, were usually authorised to confer degrees by means of special charters conferred by the States wherein they grew up; or sometimes they were permitted to give degrees by the authority of a general State law passed to regulate the foundation of institutions of academic grade. Our central National Government was prevented, in part by the limitations imposed upon it by the Constitution, and still more by the general States Rights' tradition, and by its own established policy, from undertaking to found or to bring into any one centralised organisation these various types of Colleges. The sometimes over-hasty growth of academic ambitions was thus left without central control. Public opinion, as it developed in our various regions, and the academic conscience itself, as it grew more intelligent with the growth of the country, have, therefore, been the principal factors upon which we have had to depend for the improvement of our higher education, for the raising of its standard, and for the establishment of closer relations of co-operation amongst the various independent Colleges.

If one looks closer at the three types of institutions thus defined, the denominational Colleges, the State Universities, and the privately endowed independent institutions, one finds—especially the first and second type—occupying, in the end, decidedly contrasting places in our academic history. The first type—the denominational Colleges—as our country grew, multiplied for a while all the more rapidly for two notable reasons. Of these the first reason lay in the fortunes of our ecclesiastical development. America has been a region for the rapid differentiation of religious sects. This differentiation with us has been due to (1) the general thoughtfulness of the people, (2) to the absence of the visible monuments of historical tradition, and (3) to the relatively high average training of the purely popular intelligence. Independent and earnest thinking about religious matters has been with us, as with you here in Scotland, a very common and important factor in our social life. There has been with us, however, no such organisation of the national consciousness and traditions as could set any definable limits to the resulting differentiation of confessions. New sects, or divisions of older sects into various bodies—all of very considerable strength and standing—have, therefore, occurred with us much more frequently

than here. And where sectarian development was considerable and vigorous, a desire for representative collegiate institutions used to be, with us, an important symptom of the earnestness of the individual religious bodies. We owe a great deal to this disposition of the sects to give their serious convictions an embodiment in the form of collegiate institutions. For, on the other hand, the strongest of the denominational Colleges, once established, have very generally tended with us, just as in so many similar cases in the Old World, to outgrow the narrower ideals of their original founders. The Harvard of the Puritans was certainly a denominational College. But Harvard has proved in the end to be the very nursery of spiritual freedom in New England, and has now no sectarian affiliation. Yale and Princeton still remain in closer touch, the one with New England Congregationalism, the other with the Presbyterian body. Yet in both these institutions it is rather the spirit than the mere formula of their faith that you feel when you consider their modern influence. Both of these Universities are distinctly religious institutions. But neither of them is under any merely ecclesiastical domination as regards the freedom of academic teaching in matters of pure science and of progressive erudition. In much smaller and less significant instances, the same holds true, in a measure, of such Colleges as, first founded under a narrower denominational government, have survived and have become relatively strong. With us the rule holds, I think, that the sectarian College, if it prospers, tends, in the long run, to humanise the asperities with which the earlier history of its special sect may have been associated, rather than to lose sight of its academic ideals in its task of defending a single group of dogmas. So true is it that, even in the humbler instances, the spirit of the University tends, even through the keenest self-criticism, towards the higher harmony of life, rather than towards mere separations and hopeless or merely barren controversies. Seldom indeed have such institutions, so far as I know, applied religious tests to limit the conferring of the degree of Bachelor of Arts. Nevertheless, of course, the denominational College is, on the whole, more or less bound up with the internal life of its own religious body. And herein often lies the ground of a certain limitation of the range of its influence.

On the other hand, the State Universities have been of necessity non-sectarian institutions. For no State has with us any Established Church. These State Universities are most frequent and powerful in the newer States. Famous amongst the institutions of this type

is the University of Michigan, at Ann Arbor. Another instance is the University of California, founded in 1869. While the National Government is not the source of the authority of any of these State Universities, they have in general derived a portion of their resources from the sale of grants of public land which the National Government has given to the various States for the purpose of founding such academic institutions. The State Universities vary in their special constitution according to the laws and practices of the various Commonwealths which endow them. In general the control of such a State University is left to a Board of Regents, appointed or elected as special State officials. The University in such cases has its special charter, is endowed by the State, and is often subject to more or less legislative interference. In general such an University collects no fees from its students, but is supported wholly by its endowments and by public funds. The mutual jealousies of the various religious bodies present in each State set sharp limits to the introduction of any theological instruction into the curriculum of such a public institution. On the other hand, if the courses of a State University cannot include any distinctively religious or theological training, there is all the freer play for the development, in such places, of technical instruction. A State University accordingly has, as a general rule, an ordinary academic course, leading to the degree of Bachelor of Arts. In addition, it has courses in Engineering, in Science, in Agriculture, and professional schools such as train for Law and Medicine. The State University sometimes comes into conflict with the interests of the denominational Colleges, but in general, as a neutral means for the advancement of learning, and as a public foundation appealing to local patriotism, it receives the more or less cordial support of many, if not of all, the prominent religious bodies present in its neighbourhood. Its students are likely to be under less burdensome supervision than they would be in many of the more conservative denominational Colleges. And the local patriotism just mentioned is usually much concerned to give the State institution numerous facilities, and to raise by all feasible devices its rank and its reputation in the nation at large. The principal foe to progress in State Universities is the not infrequent presence of some interference with their destinies in the interest of partisan politics. How far such interference in any one case goes is something subject to wide variation with time and place. Some State Universities, after years of storm, might seem to have reached a quiet air. Others

are still in the thick of the political fight. Still others attract afresh, after intervals of peace, the attention of the partisan politicians. On the whole, however, this danger is a limited and, I think, a temporary one. Our Western public is jealous of the honour of its State Universities, and intends to tolerate only a limited partisan interference with their stability and with their patronage. And the older such institutions grow, the more do they tend towards academic freedom, and towards material stability. The American, rightly viewed, is after all very fond of the ideals, and is often even rather fantastic in his devotion to them. The vast material developments of our civilisation and the grossness of some aspects of the life of certain of our great cities, have combined to make some foreigners describe us as merely materialists and dollar-hunters. Our well-known boasts of the magnitude of our various enterprises have also often made us seem to foreigners lovers of mere material bigness. But, as a fact, to love to speak of large numbers and vast sizes is only a crude popular way of trying to express an interest in ideals. The Hindoo mystics used to be very fond of large numbers, and if you want to hear about really vast sizes and enormous distances, you must read Oriental philosophical accounts of divine and metaphysical things, rather than the stories of modern American boasters about their own land. Many of our representative American boasters are, in fact, merely imperfectly trained idealists, who simply have to use what speech is at their disposal to express their deep and sincere respect for the things, not of the material world, but of the spirit; and if you want to understand this deep and genuine idealism of the national spirit of our country, you must consider precisely such facts as the early and rapid growth of the State Universities in the newer portions of our country. You must follow the earnestness and foresight with which the strangers in a new land have again and again set about to establish these institutions. You must remember the high hopes with which they have been founded, the sacrifices by means of which they have often been supported, the proportionately large attendance of ambitious youth by which their early years have often been marked. You must observe the loyalty of their friends, the eagerness for improvement and for enlargement of resources of which their officers are so often inspired; and in the end you will see that these Universities have not been merely formal tasks, forced by tradition upon an unwilling people, but spontaneous efforts to transplant swiftly to a new soil the culture of the older world. The efforts

are often hasty; the mistakes are often many; and the mishaps of political life a free people have always with them. But for my part, when, as a loyal American, I look forward to my country's future, at just the present moment, it is not so much any gross materialism, nor yet is it the partisan politician, that I fear. It is an even too romantic and fantastic form of national idealism, whose unchastened love for very high things seems to me sometimes only too likely to lead us into ways where, perhaps, some day, if we become not wiser in time, the penalty of trespassing upon the sacred ground of more serious social problems may have to be paid.

But in our State Universities you have examples of the nobler side of this our genuine national idealism. And I am glad to have to lay stress upon this aspect of our life.

The institutions of our third class—the products of private beneficence—have, of course, in some cases been, or have become, only special instances of denominational Colleges. But some of them have been independent not only in foundation, but in administration. And such have played a genuine part in that reform of our academic life whose fortunes are to-night our principal concern.

In the older days, before our Civil War, the typical American College, whatever its origin, was primarily an institution where, as I said, the degree of Bachelor of Arts was given for a course of four years of study. This study was of the familiar classical type. The natural sciences were, in general, but little recognised. The method of instruction was usually rather by recitation than by lecture. The lecture had its place with us in those days, but was not the favourite form of teaching. There might be professional schools, in any instance, affiliated with the College. These prepared their students for Law, Medicine, or Divinity, or, perhaps, in other technical branches, and conferred degrees accordingly. The fuller development of many of the Western State Universities, with their more elaborate system of Technical Schools and Colleges, belongs to a later period. The strength of the best of the older Colleges lay in their individual teachers and presidents. Some of these won wide fame amongst us, and are still well remembered amongst the noblest of our national leaders of the older days. But even before the war, and decidedly more still since the war, two forces were long at work to introduce a higher spirit into our University life than any individual teachers, by themselves, could ever bring to pass. Of these the first was the influence of study abroad, and especially in Germany. It was long the

custom of some of our most ambitious and studious young men to find their way to a German University. At Göttingen, where the influence of our English-speaking brethren had preceded us, and where those whose speech was English most easily found their way, there is still an American student colony, whose records date back to the beginning of the century. There George Bancroft, afterwards historian and statesman, studied. In Germany, too, the poet Longfellow received an important portion of his literary training. In the middle of the century Göttingen was a favourite resort for the chemists who studied under Wöhler. Our astronomer Gould, our classical philologists Goodwin, Lane, and Gildersleeve, were typical instances of men trained in Germany. In later days Berlin and Leipzig became our favourite Universities. The spirit of the German University—its freedom, its erudition, its specialism, and its ideality—deeply influenced our scholars. From Germany our Transcendentalists, those typical romantic idealists of American thought in the ante-bellum years, won so much of their training and their inspiration as was not directly due to the influence of Coleridge and of Thomas Carlyle. From Germany our returning students brought back ideals of University life and of higher scholarly research, which in the end were extremely potent factors in academic reform.

The second influence was due to the development of the natural sciences. When Louis Agassiz, not far from the middle of the century, crossed the ocean, and took up his work as Professor at Harvard, he soon gathered about him a group of eager and ambitious young naturalists. But he did more than to train these young men. He aided to teach the public, both within the University and beyond it, that one of the most significant of the academic tasks is the enlargement of the boundaries of knowledge by research. The pupils of Agassiz were no longer candidates for the degree of Bachelor of Arts. They were aiming to become men of science, and were looking forward to lives of scientific research. The case of Agassiz was not alone. The coming of the new sciences was felt in many places and for many reasons. The value of these modern forms of study, not only in themselves, but as influences working towards general University reform, was not fully visible until long afterwards. Nor is it even yet any too well understood.

The consequences of this gradual raising of standards and ideals through foreign example, and the further consequences of the spirit of the natural sciences, could not work unhindered until after the

conclusion of our Civil War. The nation returned to peace in 1865, only to enter upon a period of very rapid expansion. The completion of the new and longer lines of Western railways, the great growth of the North-Western States and territories, the industrial developments throughout the country, furnished resources for new ideal enterprises. The academic ambitions began to prosper more than ever. The time was ripe for educational reforms. Within the larger Colleges and Universities the new spirit appeared in various ways. First there came tendencies towards a diversification of the traditional undergraduate curriculum, by the addition of optional or elective studies of various sorts. You know so well in your own experience the general nature of such tendencies that I need not dwell upon at least the earlier forms which they took with us. Then there came an increasing consciousness, in the older and larger institutions, that they ought to lead the way towards raising academic standards. Courses of study, whether new or old in type, must be (so men felt and said) severer and richer than of old. Degrees must be made harder to win. The preliminary or entrance requirements governing admission to the Colleges, must be increased. Where stronger institutions led the way towards such reforms, the smaller and younger Colleges were obliged either to follow as they could, or to become confessedly institutions of lower grade. For such changes were publicly discussed, and attracted a widespread interest amongst our better minds. Young people at a distance from the stronger and older institutions, such as Harvard or Yale, became ambitious to enjoy the prestige of a degree from institutions whose standards were now understood to be distinctly higher than those of their own local Colleges. In their turn, the more independent or prosperous of these local institutions, especially the State Universities, aimed to follow in the track of the leaders. A process began which has continued to the present time, and which has shown us how much more potent than formal legal enactments the influences of example, of ambition, and of rivalry may be in elevating academic standards. Our very freedom in founding and in administering collegiate institutions—a freedom which has often seemed dangerous, and which has also often actually burdened our newer communities with really very imperfect schools of higher learning—has also proved to be our safety. For if our poorer institutions have been on occasion weak indeed, their weakness has not had the sanction of ancient custom, nor yet of law. They have, therefore, often proved to be plastic institutions, apt to

undergo reforming changes. The reforming forces have been the example and teaching of the greater Colleges and Universities, the power of public opinion, and even the eagerness of local ambition itself.

Along with the general desire for the raising of standards went a strong interest in the sharper differentiation of the functions of the University proper from those of the typical old-fashioned American College. The terms "College" and "University" have consequently acquired with us in recent times shades of meaning which you may not always at once altogether appreciate. I can illustrate our usage best by the present application of our terms at Harvard. There we still apply the name Harvard College to a portion only of the institution now known as Harvard University. But the College with us means neither a building or group of buildings, nor any completely separable academic body having a Faculty or Senate, or even a system of courses that is wholly its own. By Harvard College we mean simply so much of our academic organisation as is concerned with the giving of the degree of Bachelor of Arts, and with the administration of the instruction which leads to that degree. A Committee of our general academic Faculty of Arts and Sciences, a Dean, and a few other officers are exclusively devoted to the care of Harvard College, taking the word in this its present sense. But the general Faculty of Arts and Sciences has charge of much other instruction besides that which leads to the Bachelor's degree; courses given to the students of Harvard College may also form part of the work of other parts of the University; and the students of Harvard College have no building or other visible portions of the University which are in any peculiar sense their own. They are simply the men studying for the Bachelor's degree. The term Harvard University, on the other hand, we use in two ways. We mean by the term, taken in an inclusive sense, the sum total of the various professional schools when taken together with the College. But, finally, by the University, taken in an exclusive sense, as opposed to the College, we often mean simply so much of our institution as has to do with degrees of a higher grade than the Bachelor's degree.

Elsewhere than at Harvard our American usage more or less varies. On the whole, however, we everywhere now regard as a College any institution, or any more or less separately organised portion of an institution that is devoted to giving either the degree of Bachelor of Arts or any degree, whatever its title, that is of the

rank of a first degree. By the term University we usually mean either a group of academic bodies organised together under one head, or else (and this latter usage is frequent in our literature) we mean an institution, or portion of an institution, devoted to giving degrees of higher professional grade, such as the degree of Doctor of Philosophy. Very seldom with us is the name College now associated with a special group of buildings within the larger whole of an University; and the type of organisation of the English University, with its various distinct Colleges, is nowhere exactly repeated amongst us.

During the period of reform of which I was just speaking an insistence that the function of an University went beyond the task of teaching undergraduates, and had rather to do with the instruction leading to higher degrees, and with the training for research work, and with adding to the sum total of scientific knowledge—all this insistence, I say, frequently appeared in our literature, and was a powerful motive for reform and improvement.

The conflict between the new sciences of nature and the older courses of study, led first, especially in Harvard, and then elsewhere, to a constantly increased use of what we name the elective system—the system which leaves the student more and more free to choose for himself what combination of studies he shall take, even when he is working for the Bachelor's degree. Of the earlier stages of this elective tendency I spoke a moment ago. Its later stages have gone farthest at Harvard, where at present, except for certain required work in English composition, and for some required study of modern languages, no effort is made to control freedom of election beyond what the necessary order of the instruction in any one subject must involve. A student might with us take the Bachelor's degree, after once he had passed his admission examinations, upon the basis of a series of courses, which would have to include the required English composition and elementary modern language work, but which might otherwise be composed exclusively, say, of chemistry, Sanskrit, and engineering—provided only that he could find the requisite number of courses, could avoid conflict of hours, and could arrange his courses in each subject in the order required by the nature of that subject. Such a student, in order to enter with us, would indeed have to pursue a preliminary course in the schools, such as in general our students do not finish until they are well over 18 years of age—our present average age of entrance is 18 years and 9 or 10 months. At entrance our student would present at least one ancient language.

If he did not present both Latin and Greek, he would have to furnish, as equivalent for the omitted ancient language, a decidedly advanced elective equivalent in science. His entrance examinations would be decidedly numerous and severe. His work with us for the degree, after entrance, would in general take four years, with about thirty weeks of actual instruction in each year, over and above the weeks devoted to examination. In these four years he would perform satisfactorily work that we describe as the equivalent of 18 full courses of study—a full course meaning with us three hours of lectures a week for the entire year, together with the required study in connection with these lectures. Laboratory courses in the sciences are estimated upon the basis of three hours of laboratory work as the equivalent of one hour of lecture, when taken together with the necessary study in a lecture course. The quantity and grade of work done is thus with us at present the basis upon which the Bachelor's degree is given; and, apart from the mentioned requirements in English composition and in the elementary study of modern languages, election is absolutely free, upon the basis now described.

I have anticipated the outcome at Harvard of the modern movement towards freedom of choice in undergraduate studies, because I wished to indicate at once the nature of the whole tendency. The growth of general interest in such breadth of range in the selection of studies was rapid in the years between 1870 and 1885. Few of our higher institutions have gone so far as Harvard in this respect. But all have tended in the same direction. And it is in this elective system that our representative Universities are seeking the solution of the complex modern problems involved in the conflict of studies. Our own doctrine at Harvard has long been that you cannot determine what combination of subjects a student needs unless you consider each individual case for itself. We offer as we can to advise individuals about their choices. But we have abandoned authoritative interference with free choice in this respect. Nor do we at Harvard, as you see, any longer attempt to limit freedom by arranging our courses in groups, and requiring a student to choose his group, and then to keep to the combinations provided within that group. The amount and grade of the work done for the degree, and not the grouping of the courses, must henceforth be our basis for the award of degrees. In other American Universities, to be sure, various forms of the group system, and various more limited types of the elective system, still survive. The tendency, however,

is towards freedom of choice. And the more advanced the requirements of modern life become, the more, I think, must the system of the free choice and the individual grouping of studies tend to triumph.

I have now spoken of some of the interests that became prominent during the period of reform. I must still sketch a few of its most notable instances. In 1876 a new University—the Johns Hopkins University at Baltimore—was opened. Johns Hopkins, a citizen of Baltimore, of Quaker ancestry, had left at his death a sum of about £1,400,000 to be divided equally between two affiliated institutions, one of them to be an University, the other a Hospital. The University was first founded. The Hospital, in close relation to the Medical School of the University, has since been completed, and brought into operation. The Johns Hopkins University was the first academic institution to announce that its principal purpose would be the training of advanced students, who already held the Bachelor's degree, or some equivalent degree, and their preparation for higher work in research and in teaching. Financial misfortunes, due in part to a single unhappy clause in the founder's will, have in later years diminished the power of the Johns Hopkins University to develop its original plans. But it is still known, both at home and abroad, as an institution for higher learning, for research, and for the training of academic teachers and original investigators.

The influence of the example of the Johns Hopkins University proved to be an important factor in the movement that has since rapidly followed. At Harvard, for reasons that I have already mentioned, the ideal of training advanced graduate students had been prominent since the days of Agassiz. But in the years since 1880 the new tendency to favour the studies of the higher or University grade rapidly progressed, and proved effective in reorganising the system of instruction in many important features. Since 1889 Harvard University has a well-organised graduate school, with a Dean of its own, with a Board or, in effect, a Committee of the General Faculty administering the affairs of this school, and with rather more than 300 students, all holders of degrees, working, in various departments of special research, for higher degrees—in particular for the degree of Doctor of Philosophy. The latter degree is given with us for what is officially defined as "long study and high attainments" in some special branch of science or learning. The powers and attainments of the candidate for this degree must be

proved both by record of work and by special examinations, as well as by the production of a thesis which contains an original contribution to knowledge in the region to which the candidate's studies are specially devoted. We confer the Ph.D. degree, as a fact, upon some 30 or 40 candidates each year. Classical philologists, historians, modern philologists, psychologists, chemists, and naturalists are at present prominent in numbers amongst the classes of scholars who earn the degree. But there are many other types of candidates. In order to organise the higher studies for the Doctor's degree, we have formed at Harvard fourteen different and relatively independent divisions of our Faculty of Arts and Sciences, each one of which has its own Committee on Higher Degrees, and each one of which directs the work of its own specialists, examines its candidates, and reports to the Faculty upon their attainments. These so-called divisions are themselves broad in scope. They cover such ranges as are indicated by the terms Ancient Languages, Modern Languages, Philosophy, Biology. For purposes of guiding the special work itself, each of these divisions has departments. The division of Ancient Languages, for instance, has separate departments for Semitic Languages, for the Indo-Iranian Languages, and for the Classical Languages. Each department has again its own Committee. A candidate for the degree of Ph.D. has his special work directed, in consequence, by a very few men, with whom, in laboratory or in the small advanced graduate courses, called with us seminaries, he is in close contact. His department Committee sees that his work is properly done. When he is ready to be examined for the degree, he comes before the larger Committee on Honours and Higher Degrees of his division. This Committee, even in the smallest of our fourteen divisions, must contain at least five members. The largest amongst our fourteen divisions contain as many as twenty or twenty-five members. The Committee of the division then report on the case to our large general Faculty of Arts and Sciences, and the degree is voted upon the recommendations thus made.

• A highly elaborate system, as you see, has thus with us developed as a necessary part of the organisation of the graduate studies. The reaction upon the organisation of the undergraduate studies themselves has been important and manifold. From the most elementary courses upwards we more or less distinctly feel that we are training men some of whom may go on to the Doctor's

degree, and become original workers in science under our own charge. Most of the instructors at Harvard have to do both with undergraduate work and with advanced graduate work. The consequence is that, as the Johns Hopkins University already proved, the entire spirit of the whole institution is raised when a distinct and conscious part of every instructor's work is the training of productive scholars as well as the more elementary teaching of youth. The undergraduates themselves are aided by the presence of this organised system of advanced work. Their laboratories are in consequence better equipped; their libraries are better supplied; their teachers are inspired by the resulting nature of the tasks; and the undergraduates themselves are more frequently encouraged to make in their own way a beginning in independent research so soon as they can.

This development of graduate study with us at Harvard has run parallel with movements in the same direction elsewhere. The years since 1880 have seen this, which we often call the distinctively University movement in our country, prominent not only at the Johns Hopkins, but also in the life both of the older Universities, such as Yale, and of the newer Universities, such as Cornell. The recently-founded University of Chicago, happily and repeatedly endowed already by private benefactors, has made at once its beginning upon the lines first laid down by the Johns Hopkins University, and by Yale and Harvard. At such new Universities as the one lately founded in California by Stanford, where conditions forbid indeed the immediate predominance of higher graduate work, an interest in research is still from the beginning encouraged. The same is already true of many even of the smaller local Universities.

But if you ask what our young graduate students, candidates for the degree of Doctor of Philosophy, are hoping, in a purely worldly sense, to accomplish for themselves by their higher studies, my answer is that with us the Ph.D. degree is already generally recognised as a pre-requisite to any appointment as a College teacher. Here, as you see, we reap the fruit of that large development of smaller Colleges in all parts of our country—a development whose relatively ungoverned freedom used to be regarded by our foreign critics as a reproach to our whole academic life. For reasons that I have already set forth, these smaller local Colleges, denominational or otherwise, are ambitious to follow the course of progress, and to maintain their local prestige. Accordingly they are eager to en-

large their resources for instruction; and the very freedom of their various foundations makes it the more possible that many of them should do so. The partisans of the very poorest amongst them delight to assure the young man who is about to leave home that, if he will but stay, he can get as good an education here in his own province as at Harvard or at Yale, or anywhere abroad. Now, such assurances, made to express the local pride of a far Western community, or of a small religious denomination, may seem mere vain boasts. But it is a sort of boasting that in the dealing of such institutions with our public proves both expensive and in its results salutary. For, in the long run, the local College needs its new laboratories, courses of instruction, and teachers, in order to make good its boasts. In such wise it is, for instance, to mention a case belonging to my own department, that a new branch of very profitable inquiry, Experimental Psychology, which is hardly twenty years old amongst us, has already spread from the larger Universities to the smaller Colleges, and has founded its laboratories in the most unexpected places.

Well, these smaller Colleges need new teachers. They draw these from the graduate students of the greater Universities; and in turn the graduate candidates for the doctorate at Harvard, Yale, Cornell, at Columbia University in New York City, or at the Johns Hopkins University, are preparing for the profession of teaching in some special department of research, just as the members of our Schools of Law and of Medicine in the various Universities are preparing for their own professions. In other words, with us the Ph.D. is the teacher's degree, as well as the degree of the scientific worker. Not all our Doctors of Philosophy, however, become teachers. The Government Scientific Bureaus, and the various similar organisations of the individual States, and in an increasing degree the various technical industries of our scientific age, offer opportunities for highly-equipped specialists to serve and to produce.

Meanwhile, of course, our undergraduate bodies remain, in general, by far the largest portions of our academic population. The movement since the later seventies has been characterised by a very large increase of their numbers throughout the country. At Harvard they have for some years numbered in the neighbourhood of 2,000. Our entire academic community exceeds 3,000. We have in the whole University, including the professional schools, nearly 400 teachers. Our large Faculty of Arts and Sciences, which has charge

of the undergraduates and of the candidates for the Doctorate of Philosophy, has in the neighbourhood of a hundred members.

But, as you see, our undergraduates are by far the most numerous of our charges. Except at the Johns Hopkins University, and at the Clark University for graduate students (at Worcester, Massachusetts), this predominance of the undergraduates is necessarily a feature at all of our Universities. The consequence has been that the later University movement has been throughout deeply interested in the problem of our relation to Secondary Education, and to the various types of preparatory schools with which we have to do. Into the resulting tendencies I have no time here to enter extensively. The subject forms a specialty by itself. Our American public is very deeply interested in popular education, and always has been. The new University movement has, however, meant a very notable transformation of secondary education. Its standards have been raised to meet the new academic conditions. The ranks of its teachers have been recruited from the Colleges by men trained in the new ways, and having the newer academic ideals before their eyes. The range of elective study has been broadened in the schools. Their mutual co-operation has been furthered by the mediating influence of the Universities. Admission to the University takes place, at Harvard, at Yale, and at several other of the strongest Universities, only by means of examinations determined wholly by the Universities themselves. In the Western States many of the State Universities, and of the other collegiate institutions, admit, as we say, upon certificate. That is, they accept students upon the result of the examinations conducted by certain authorised preparatory schools, which determine, under a general academic supervision, what ones amongst their own students are ready for the University. This certificate system finds no favour at Harvard. But it is often very effectively administered in the West, and it in such cases works well. In all regions, however, we are much interested in establishing close relations with our secondary schools, although we shall never have any general and centralised legal system, such as that of Germany, for determining the precise relations between secondary and academic education. Our dependence here, as elsewhere, is upon natural evolution, enlightened public sentiment, and the progress of science—taking the word science in its larger sense.

Throughout the country, as the standards have risen, the average

age of entrance to the University has risen also. At Harvard, as I before said, our average age at entrance is 18 years 10 months. One takes his Bachelor's degree when nearly 23. In order to reach the professional degree in Law, in Medicine, in Divinity, or in Philosophy, one must study at least three—in most cases four—years after the Bachelor's degree has been attained. Our best professional schools are now in a number of cases open only to holders of the Bachelor's degree, and are thus all alike graduate schools. Our young men of professional ambitions naturally complain at being only at the very threshold of their life-work at 27 years of age. But very many of our undergraduates do not aim at the professions, but at business careers, and it is gratifying to find how many of our successful merchants, financiers, or public men are, even in our reputedly so materialistic nation, graduates of Colleges. The newer academic movement tends to make this increasingly the case.

The growth of the undergraduate departments has meant, in our largest institutions, an increasing organisation of undergraduate life. The American undergraduate at Harvard has at present a decidedly complex social life. Into an account of this life I can hardly undertake, upon the present occasion, to enter. Suffice it to say that with us, as with you, the University is the training place not only of scholars, but of those who are to be men of the world and of action.

And herewith I must bring to a close these hastily-collected observations. They have been intended to give you a larger view of the meaning of our American world, and a fuller knowledge of its more hopeful tendencies.