The Graduate School in American Democracy

By

ISAIAH BOWMAN

President, The Johns Hopkins University

BULLETIN 1939, No. 10

UNITED STATES DEPARTMENT OF THE INTERIOR . . . *Harold L. Ickes*, Secretary
OFFICE OF EDUCATION . . . . . *J. W. Studebaker*, Commissioner

UNITED STATES GOVERNMENT PRINTING OFFICE . . . . . WASHINGTON : 1939

For sale by the Superintendent of Documents, Washington, D. C. . . . . Price 15 cents

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Foreword

AS NEVER before, human welfare today depends upon the results of research, and upon the steady stream of scholars needed for the increasingly arduous demands of intellectual leadership. That unit of our educational system most directly responsible for stimulating research and for developing scholarly leadership is the graduate school.

How to maintain high-grade graduate instruction and research is now one of the most pressing of all the problems connected with our national economy and culture. It has become increasingly acute in recent years because of the extraordinary demands made upon graduate schools in preparing college professors and research workers in the rapidly multiplying departments of science and art and in supplementing the work of the colleges in educating the vast number of teachers and administrators for our growing system of public and private schools. At the same time, nearly all types of professional schools, including teachers colleges, within and without the universities, have been engaged to full capacity in trying to meet the demands for advanced professional education. The staffing of these professional schools has been a task of the graduate school. The raising by State departments of education of standards of certification of high-school teachers and the increasing of requirements for licensure in many professions have been important contributing factors in this situation.

In order to help overcome difficulties arising from this expansion of graduate and research activities, a number of associations of institutions of higher education and of professional schools, during recent years, have made studies and surveys of many phases of education on the graduate level. And inasmuch as the brunt of graduate study and research in all fields finally falls on the graduate school of arts and sciences it was naturally felt that a special study of this unit was highly desirable. The need for such a survey was admirably pointed out by R. G. D. Richardson, dean of the Graduate School of Brown University, in an address given at the meeting of the Association of American Universities held at Cornell University, November 7, 1935.

The matter of a possible study of graduate education and research and also other matters relating to graduate school standards have been brought frequently to the attention of staff members of the Office of Education by leading educational authorities and graduate school officials. At the same time the Office has received a growing volume

of inquiries from institutions and agencies within the country concerning problems of graduate education, particularly the many independent and overlapping studies which seem to be in prospect. In addition, inquiries have come from ministries of education and universities in foreign lands manifesting concern regarding the standards of some of our graduate instruction.

In view of these conditions it seemed desirable to raise the question of a study of the whole field of graduate work and research on a Nation-wide basis. After consulting with many leaders, I appointed an advisory committee of 15 representatives of graduate schools and national research associations which met on March 29, 1937, to confer on this matter. It was the view of this committee that the idea of such a study was worthy of serious consideration, and it was recommended that a subcommittee be named to canvass further the possibilities of the project. The advisory committee also contributed a list of important items that well might be considered in connection with such an investigation.

In harmony with the recommendations of the conference, I called a meeting of a subcommittee of 10 to continue the study. This meeting was held in the Office of Education, May 21, 1937. The subcommittee gave special attention to the following topic which was among the items listed by the earlier conference: "The development of a clear statement of the functions of the graduate school with reference to its relation to the Nation's resources, both human and material." It was felt that such a statement would be very useful, as the basis for any further study, and although analytical in its purpose, it should be of such a nature as to inspire the reader to turn that purpose into reality.

After extended deliberation the subcommittee invited one of its members, Isaiah Bowman, president of The Johns Hopkins University, to undertake the task of preparing the initial draft of such a statement. President Bowman's long and varied experience, including his membership on the faculty of one of our principal State teachers colleges, and some of our leading universities, his leadership of the American Geographical Society, the National Research Council, and other research organizations, including various international commissions, and his present position as head of one of our most distinguished universities, seemed to make his selection for this task very fitting.

President Bowman prepared a preliminary statement in the form of a conference memorandum on the graduate school. This was sub-

mitted to the subcommittee for study at a second meeting held at the Office of Education, October 29, 1937.

In addition to criticisms by the subcommittee, criticisms of the statement were invited from the presidents of member institutions of the Association of American Universities and their deans of graduate schools and also of a number of other officials and scholars.

In the light of these criticisms President Bowman prepared a revised draft of his statement. This was presented at the final meeting of the subcommittee held at The Johns Hopkins University, June 19–21, 1938.

After this meeting President Bowman again revised the memorandum and later submitted it in its present form under the title The Graduate School in American Democracy.

I feel sure that President Bowman's contribution will not only be helpful in laying the basis for further study of graduate work, but it will be stimulating to members of graduate school faculties, university administrators, and others immediately connected with graduate study and research. It should prove of the greatest value to the large and increasing number of young scholars whose talents are leading them in the direction of membership in university faculties and in research organizations. The orientation thus provided may help the future leaders of scholarship and investigation to see the problems of advanced study and research as a whole, in their larger purposes and relations, rather than in those which are narrow or one-sided. Agencies and individuals concerned with the cultural and scientific leadership of the United States should also gain new viewpoints of the best ways in which this country may strengthen its contributions to the world.

On this occasion I wish to express on behalf of the Office of Education my great appreciation for President Bowman's contribution. He has done this exacting task in connection with the heavy pressures of administrative activity and without cost to the Government. Also, I am greatly indebted to the members of the conference committee and its subcommittees and to all others who gave of their time to the study of this project. Recognition should especially be given to the General Education Board whose financial cooperation made it possible to provide the traveling expenses of non-Government committee members.

J. W. STUDEBAKER,
U. S. Commissioner of Education.

SCHOLARSHIP

"To live continuously on the edge of intellectual discovery is to grow continuously in power."

CITIZENSHIP

"The true business of a University is to train liberty into responsibility, to teach a young man to think for himself yet so as he remembers he is a citizen."—SIR ARTHUR QUILLER-COUCH.

PURPOSE AND ZEST

"There remains now to foster that undefinable something which, for want of a better term, we call the university spirit (purpose and zest combined), a something which a rich institution may not have, and with which a poor one may be saturated, a something which is associated with men and not with money, which cannot be purchased in the market or grown to order, but which comes insensibly with loyal devotion to duty and to high ideals. * * * The specific is not to be sought in endowments alone, but in the leaven which may work a much-needed change."—WILLIAM OSLER.

THE LONG AIM

"The business of leadership is to prevent the abandonment of the long aim for the sake of the short."—F. S. OLIVER.

Prologue

RIGOROUS DISCIPLINE of the mind and freedom of expression have a profound importance in the continued growth of creative power. They are equally important in the preservation and further evolution of democracy itself. The theme of this study is the *growth of intellectual power through a combination of discipline and freedom in graduate work.*

The graduate school is a social agency designed to stimulate men of intellectual power. Its methods are summed up in the words *opportunity* and *self-discipline*. Like other social agencies, American graduate schools have their opportunities and terms set, in part, by democratic principles. They are not governed by a class. Their judgments are not bought. The police neither control their acts nor edit their opinions. No coercive government tells them what their philosophy or point of view shall be. These are favorable outer conditions of freedom. Discipline, on the other hand, is largely an inner and self-generating process. It is conditioned in students not only by hard work under masters, but also by intellectual integrity in both masters and students and by an unquenchable desire, in all fields of thought, to come nearer the truth.

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The Graduate School in American Democracy

Chapter I: The Problem of Defining Objectives

THE "INCESSANT single-minded search for truth is the condition essential for both the material and intellectual progress of the Nation and the race."—C. W. ELIOT. Two things are wisely combined in this sweeping doctrine of progress—the material and the intellectual. Higher education, in Eliot's view, is neither a luxury nor the business of a privileged class. It has become a prime condition of material progress as well as an intellectual calling, and it is the Nation's business, not merely the individual concern of the scholar.

In the past 150 years, four concurrent and interactive forces have contributed most to the comfort and security of living and to the enrichment of intellectual pursuits in America. They are the maintenance of a form of civil liberty which, with all its faults, is yet so effective as to be continuously acceptable; the maintenance of the guarantees of religious liberty which has become both a tradition and a symbol of general tolerance of opposing opinion; the growth of the biological and physical sciences and their dependent inventions which have supplied innumerable instruments of power for the partial mastery of nature and the tying together of the advantages of the world's diverse geographical parts as revealed by field exploration; and the encouragement of intellectual liberty which, in a wide sense, is the foundation of all liberty and all modern achievement.

Through these forces and in this period most intellectual advances have been matched by significant material effects. The farther research and education have gone the more intimately they have dealt with the body as well as with the spirit, with all that a man does and is. They have taught us that frontier living in the intellectual sphere is good living and that to live continuously on the edge of intellectual discovery is to grow continuously in power.

What we still sadly lack is a fifth force or group of forces which shall harmonize the conflicting economic interests and codify the corresponding practices of men in both the national and the international fields. Through science and discovery the world has revealed its abundance, its rich diversity, and its potential capacity to feed and clothe mankind. But through economic rivalries, chiefly, the liberties

and the gains that we have won may yet be lost. Enduring civilization requires fair dealing and how can fairness be achieved through international action? This is today's tragically urgent problem of social living on the planet. Can it be solved by a combination of reasonable and spiritual means or will passion and unreason prevail? Democracy in America now squarely faces these exigent questions. It will pay us to reexamine the part that higher education plays in the democratic process through which we hope to make a distinctively American contribution to the settlement of such problems.

The Present Widely Accepted Liberal Philosophy of Education Is an Objective of the First Order.

Educational objectives are based upon obvious utilities, curiosity about the unknown that investigation makes known, conviction based on experience with knowledge, and faith or the substance of things hoped for. Taken together, these elements form what is commonly called our philosophy with respect to intellectual endeavor. Graduate study, like the rest of formal education, must have a philosophy and serve discernible basic purposes. If a school disavows both philosophy and policy, the disavowal itself gives it a policy.

Scientific method, within the social field as well as the natural field, is the foundation of the most liberal philosophy which the world has ever known. Its elements are freedom, experiment, self-criticism, revision, and rationality. Instead of storming the citadel of truth, scientific method calls for the time-consuming siege methods of experimentation. An experimental habit of mind does not permit the uncritical adoption of simple Utopian schemes or of dogmas about the physical world and social life, or of authoritarian utterances.

Positivism and absolutism will always provide a neat philosophy, a paper scheme. Liberalism, their natural enemy, is annoying with its emphasis on revision, on thinking the thing through over and over again, instead of accepting doctrines, authority, and unrevised systems of the past. The scientific method does not produce a rationality that stands for all time. On the contrary it is self-critical, ever on the march, evolving, adapting, approaching a better state.

Authority was long the monster of education. Modern science became its Nemesis. Only the tired, bewildered, and ignorant now seek refuge in authority. "Let us limit our respect for the ancients," said Pascal. "As our reason originates that respect, it should also measure it. * * * They [the ancients] used the discoveries which had been bequeathed to them only as means to make new ones. * * * We should take their own discoveries in the same way, and make of them the means and not the end of our study, just as the ancients did. Thus we should try to surpass them by imitating them."

While Building on the Past, Scholars Are Concerned With the Present and the Future.

The Greeks forged or assembled almost all of the primary intellectual and aesthetic conceptions that are embraced in that ample term *civilization*, as we have come to know it historically. "The love of science, the love of art, the love of freedom—vitally correlated to each other, and brought into organic union," were the essential attributes of Greek genius. They brought individual freedom and tolerance of opinion into responsible association, set the terms of democracy within the range of a citizen class that had both rights and duties, devised codes of social practice, and put the highest quality into diverse forms of beauty.

Within civilization thus conceived the Greeks had their tutoring systems and their schools that their youth might be trained for the enjoyments and duties of life, particularly citizenship. The best of their thought had to do but little with the long past. Their genius was wrought out of thought and experiment in their "present." Their work and the work of their successors, recorded and interpreted by men of learning, widens our own social knowledge, deepens our thought, and helps us to confirm or reject them.

Our present is an especially critical time for democracy because an older routine is disturbed by the swiftness of transition from a once widely diffused domestic economy to a mechanical industry with mass production concentrated in fewer and larger units. The wide enjoyment of the advantages of new methods and productions are quickly taken for granted as reciprocal dis-

advantages crowd forward and demand new solutions through widened social agencies.

The individual scholar, like his contemporaries in other fields, wants recognizable improvement in his day: He is not content merely with the abstractions and historical experiments that are behind social progress. In quite modern times the universities have reached out progressively into contemporary experience. It is, and must remain, a cautious reaching-out. For, once there is commitment to a contemporary cause, scientific or critical methods and judgments are likely to be neglected. True, the scholar's principles in the social field run the risk of being abstractions uncontrolled by *agreement*, that indispensable principle of associative living. The scholar's privileges include freedom to analyze the accepted best as part of the race-old and intuitive search for something better. On the material level his methods and achievements are all but universally applauded. On the social level his discoveries and conclusions are challenged continuously. Both challenge and university have coexisted for 800 years, the products of higher education having proved all but indispensable to the advance of every society of which universities have formed a part.

Laws of Higher Education Are Always Evolving, as They Embody Elements From the Ever-Extending Past.

In commenting on the new and critical circumstances and problems which concern "teachers and college managers," Gilman thought that an inquiry into educational experience "would establish several principles so clearly that they might almost be called the laws of higher education." He thought that some day a Newton or a Grotius of educational doctrine might appear who would reduce such laws to a series of formal statements.

However, the task of formulating "principles" is highly involved. It is not settled by extolling quality, hard work, and the liberal arts idea, or by advocating nonprofessional or nonpractical education. The problems of education are insoluble in the sense that new conditions and new issues constantly arise. We can only state their characteristics in each age and indicate where emphasis seems to be required today. Few things are common to all ages. They are mostly the generalities, written

out in "tall, opaque words." Getting down to cases in the present is the hard job.

Whether or not we criticize higher education because there is too much of the present in it, it seems clear that we do not think hard enough about the present. If we thought as hard about it as the Greeks did about the problems of their day, we might do as well as they did. "The origin and progress and future promotion of civilization are ill understood and misconceived. They should be made the chief theme of education."—J. H. ROBINSON. This is *using* the past, not merely finding refuge in it. It is using it for the present-future in which we live. Educators too commonly talk in vague general terms about culture and history, whereas civilization is forged or corroded here and now by specific acts and policies. A university must be of this world at least to the degree of recognizing that too often in the past the scholar, the idealist, has been content merely to set the lighted candles on the altar.

The Experimental Is Bound To Be Tempered by the Practical.

The founding fathers set the seal of experimentalism upon American life, and its impression remains so long as the Constitution endures. Our society, like our Government, is a "frame of reference for people of opposite opinions."—O. W. HOLMES. There is no single superlative frame of reference for associative living except the framework of experiment itself, which allows a minority to enjoy the freedom of voicing its objections and having them taken into account. The same principle has all but universal acceptance in the university world likewise.

Some business and professional men consider university faculty members as academic theorists and liken them to refugees in a monastery: "They are obviously second-rate men who could not succeed in the hurly-burly of life." This charge assumes further that facing hurly-burly is a more severe and important test of virility than, say, the interpretation of a codex. Isn't the question, rather, what does one wish to be virile about? The man of primordial and predominant action impulse has been known to be appalled at the physical punishment involved in a protracted search for critical source material in historical investigation.

There is big-game hunting of the laboratory type also, which may require the highest courage and virility.

But there stands the accusation; and, in the face of it, universities try to be useful, *Veritas et Utilitas*, ready to serve, appeasing to the man who reiterates, "of what use is it?" Abraham Flexner calls the result, "draping the ugly practicalities of life in academic finery" and lowering intellectual standards, and adds that only medicine and law are worthy of university attention. Opposed is Whitehead's view that the energizing issues of professional (i. e. practical) departments give point and deeper meaning to university effort.

Higher education has been under attack for 500 years because the (perhaps momentary) wants of civilization are not always, or often enough, the focus of university research. Thomas Jefferson put it more simply. The Nation needed talent in public and private affairs. Education enabled talent to flower. It followed, in his view, that really talented boys should have a highway opened to them whether they were poor or rich. Thus the whole of society would prosper both materially and intellectually. This is the thought echoed by Eliot 100 years later.

The Search for Fundamentals Involves a Regard for the Interconnections of Knowledge.

In the search for acceptable objectives in higher education the word "fundamental" has come into general use. It would seem better to say elemental in contrast to complex. The one is as difficult and important as the other. Plato wrote that when we learn the "intercommunion and connection" of studies and consider "their mutual affinities, then, I think, and not till then, will the pursuit of them have a value." Osler called this the salvation of science, the *scientia scientiarum*. Is it not the salvation of all studies in an age of vastly more studies? First, of course, we must know the things. We must determine their *nature*. In science this is accomplished in large part through the measurement of their properties, so far as they can be measured—mass or weight, numbers, distances, times, the "terrific idols of the modern mythology." Of equal difficulty and of greater importance is the discovery of the relations of the elementals. These relations are now so vast in number that they have led to tempo-

rary confusion in the educational sphere. Less careful thought is being given to science as a movement than to scientific discovery in detail. More important surely than science is what science is doing to humanity, a problem in the connection of things.

Science and industry had a vague general relation in the past. Today their relation is intimate and this presents a current social problem that is bound to be reflected in any statement of educational objectives. To take a single facet of the problem: The rapid growth of inventions and the rise of vast industries based upon them, have made it necessary to create industrial research laboratories which now number 1,500 or twice the number of liberal arts colleges and universities in the United States. In them are experts who make what may be called mass attacks upon sectors of an industry where further advance is held up. If left to educational institutions which are concerned primarily with students and with individually directed research, advance in these sectors might or might not be undertaken. So great are the financial and social possibilities of advance at particular points that closely directed group research has proved desirable. All this has greatly increased the number and speeded the impacts of applied science upon social life. Such impacts compel recognition in any statement of educational aims and principles.

Television and synthetic rubber may be cited as examples of inventions of possibly great social consequence in the near future. Their interrelations with existing things and forces are expected to be so many and their effects so deep that every recognized aspect of their potentialities should be studied. Health, wholesome family life, and individual opportunity are some of the main elements in the social structure and there is special concern for possible effects upon them each time that a great discovery or invention is thrown into the power pool of civilization.

The Generalized Objectives of Education Are Drawn Out of Social and Physical Circumstances so Diverse as To Make Their Simplification Increasingly Difficult.

In an earlier epoch, educational salvation was to be achieved by a 3-point program of training of head, hand, and heart. We now read of four fundamentals on Monday which become five on

Wednesday and six on Saturday. Numbered objectives or fundamentals are illusory. There are no such absolutes, either in kind or in number. Truth about our varied natures, as they are caught in the far-reaching interactions of self-discovery and self-evolution is a complex thing and "fundamentals" are generalizations about the complexities. They are commonly reduced to a series of formal statements to facilitate group teaching and administrative arrangements. They are of value only if we remember that no individual was ever educated by categories.

A modern commentator puts man first in the list of objects of study in education, environment second, and the constructive works of man third. This reminds one of Goethe's "seven great ignorances" of man respecting his origin, his race, his world, his thoughts, and so on. To improve American democracy within the frame of reference of humanitarianism and social adjustment, E. E. Day names seven objectives of the schools:

> (1) To sensitize the student to the existing social situation; (2) to cultivate student impulses to do something constructive about those phases of the situation which appear to be unsatisfactory; (3) to give to the student an understanding of social structure and social processes; (4) to acquaint the student with the difficulties of arriving at the truth in the social field; (5) to inculcate tolerance of honest differences; (6) to habituate the student to cooperative group activity; (7) to develop in young people an unswerving loyalty to democratic ideals.

This is not put forth as a complete school program, but rather as a program in civic education, since it leaves out vocational aspects of citizenship.

The purposes of education in American democracy as set forth in its recent publication by the Educational Policies Commission of the National Education Association are grouped under four categories: Objectives of self-realization, objectives of human relationship, objectives of economic efficiency, and objectives of civic responsibility.

It is obvious from these illustrations that there is no simple statement of objectives of education which can serve as a blue-

print in building an educational program. Education is far too comprehensive, experimental, and complex to be thus circumscribed.

Are Certain Objectives Especially Applicable to Higher Education?

At the risk of being charged with the formalism and oversimplification that we have just decried we set down six cardinal objectives of higher education with apologies for the number, the order, the phrasing, and the implied limits. Toward the attainment of these objectives books may be selected at the lower undergraduate level and investigations conducted at the higher graduate level.

(1) An understanding of the realities of experience toward which we have an evolving attitude: Knowledge is not a standardized body of fact and doctrine but an incomplete revelation of the world that is constantly enlarged by new investigation.

(2) Experience in critical methods of work: the use of sources, the value of logical processes, the need for analysis, each of which has varying significance according to the nature of the field of investigation.

(3) A knowledge of the history of science and learning: How men made progress in learning to observe and to think and how that progress came to benefit mankind.

(4) An appreciation and some technical study of the environment: man's geographical surroundings, man working under measurable conditions, man and nature in interaction. The closely associated study of alternative choices, opportunities, limitations, and compulsions of the environment and not the study of civilization in a vacuum, as if man did it all himself without regard to terrain.

(5) An experimental knowledge of the way the modern world works: The applications of humanitarian concepts, the growth of codes, and the origin and present-day operation of social machinery.

(6) The acquisition of an outlook or a philosophy that embraces all men understandingly in their different environments, occupations, and cultures.

Within these Limits Are Also Found the Specific Objectives of the Professional Schools.

The discussion of objectives in higher education has generally centered upon the graduate school, rather than the professional schools, largely because it is in the graduate school that there is the greatest freedom from the restraints imposed by the demand for standardized skill and the training which it requires. At present no such line of division can be drawn between the graduate school and the professional schools. As professional groups have increased in number and importance in our multiform society, the standards of the several groups, the nature of their training, and the place of such schools within the university orbit have all become matters of general concern, not the concern of small groups only. The research now under way in the graduate schools has relationships with and impacts upon the professional schools to a degree hardly anticipated in the days when graduate schools first came into being. Historically, the graduate school has done far more than it is now fashionable to admit. The social significance and the importance of graduate school work today bring their purposes and procedures in relation to the professional schools sharply to the attention of university administrators.

What are the difficulties, both special and general that confront the professional schools and what are their objectives? Is it possible to provide any generally acceptable standard of admission, any agreed continuity of training, and to secure the general recognition by State governments of the importance and value of standard licensing according to specified achievement? Cutler [1] names five general objectives in professional education:

1. The *acquisition of the professed knowledge* of a department or division of science or learning. This requires special attention to adequate pre-professional preparation as a basis for curriculum building in the professional school.
2. *The attainment of an understanding of the practical application* of this professed knowledge to the affairs of others. Through the systematic collection of data from practitioners and the determination of practices

[1] Cutler, J. E. Professional education, Educational Record, 19: 47-55, January 1938.

and techniques which are effective under given conditions, familiarity is gained with the field itself.

3. *Skill in practice.*—This requires special facilities such as laboratories, clinics, wards, hospitals, shops for engineers, schools for practice teaching, public health agencies, social agencies, and departments of government. These are indispensable to professional education today.
4. The inculcation of *the guiding principle of service* to others. Personal character and adaptability enter at this point. Will the student subscribe to a body of professional ethics and codes that pertain to the interest of the public, of clients, patients, and pupils?
5. The maintenance of *a progressive examining and licensing authority* for determining minimum qualifications for admission to practice: Registration, certification, and licensing. Professional groups here exercise a determinative influence, to foster and promote or, contrariwise, to restrict the efforts of the schools to increase professional distinction. Here leadership is essential in academies, bar associations, societies, and federations.

No Professional Service Is More Important, and None Involves More Definitely the Policies of the Graduate Schools, Than Does the Preparation of Teachers.

One of the major pressures upon our graduate schools is that of providing high-school teachers with advanced degrees. This is due, in large part, to the recent enormous expansion of the secondary schools and the raised requirements for certificates. There is no more important contribution to progress in American life than a real advance in such training requirements. It offers the best opportunity we have ever had to enrich and strengthen the education of American youth.

When functioning as a training school for high-school teachers, the graduate school is essentially a professional school. As such, the graduate school should recognize the professional needs of teachers over and above the requirement of having a degree. No graduate school which accepts the responsibility for training secondary teachers can ignore professional teaching needs. Both the subject matter and the professional courses required should

be dominated by what the prospective teacher needs from the standpoint of continued intellectual growth and the special requirements of youth of a given age.

Advanced teacher training is chiefly advanced general education that will enable the schools to attain the dignity and excellence demanded by their place in American society. Among the more urgent needs of high-school teachers is a better understanding of the contribution which sound scholarship can make in secondary education as well as greater skill in the art of teaching. America is so dependent on secondary education to perpetuate and strengthen its civilization that nothing short of the best scholarship is good enough.

The Objectives of the Graduate School as Distinguished From the Objectives of Other University Schools.

One can scarcely assert that objectives are of no consequence in the graduate school or that the sole responsibility is to turn out investigators. *The use that is made of one's education matters or education does not matter.* It is clear that objectives will differ according to the kind of education it is desired to secure. It is equally clear that education in the graduate school is an advanced and necessarily a specialized thing.

When a student enters a school of law or a school of medicine the objectives are well defined. He is going to be a lawyer or a doctor. It follows that a consistent program of work can be laid out for him. Methods and content will vary somewhat from institution to institution and from student to student but the variation is not too wide to be encompassed in a single scheme; and the pre-law and pre-medical preparation aims at both general education and the organization of a substantial group of courses on a rational basis with professional use in view. In the graduate school no equally clear definition of purpose is understood. What degree of diversity does college preparation show? What do the students wish to make of themselves? What would the institution like to have them become? Are student diversities so wide that they cannot be encompassed within other than individual plans of work?

Those graduate students who are going to teach in the colleges and secondary schools form an especially large group. A second

important group of students is engaged in preparation for work in industrial laboratories, libraries, research institutions, and business. A third group engages in advanced work in preparation for scholarly careers in college or university departments. A fourth group consists of those who have the time and the means to continue the liberal education of the college.

The purpose in the case of many of these is to gain proficiency in the use of technical knowledge and skill. Their immediate employment depends upon their usefulness to other people as understudies or apprentices. What is not so clear is the manner in which provision shall be made for the interconnections of knowledge. This is the most important, as it is the most difficult, of graduate school problems.

It is important because the extent of its solution will determine in large measure the range and depth of knowledge that a student can acquire in a given time. If range is desired, will not depth be sacrificed? If depth is sought through specialization, will the student not be cut off from many fields of knowledge which he will in time wish or be compelled to explore? And will he not be hampered in his necessarily wider explorations of later years by a lack of training in the logical prerequisites? The difficulty mounts, in time, because with increase of knowledge to its present vast scale it is more and more urgent that keener choices be made of educational essentials. What does the graduate school do to prevent those choices from becoming either arbitrary or accidental? Can the student become usefully acquainted with some of the most powerful tools of thought in lines allied to his specialty?

Is there a common denominator for these various groups? Are lectures and seminars and independent work planned adequately to meet their different needs? Does one group get in the way of the other and retard its progress? Can standards be maintained at sufficiently high levels when such different objectives are in view? Should all those who are not in preparation for a scholarly career have opportunities provided for them in a part of the institution outside the graduate school? Is it possible to limit the enrollment in the graduate school to those whose abilities and accomplishments indicate that they have the capacity to pursue a scholarly career? Is it not appropriate for both the

college and the graduate school to give serious attention to the training of those who are to teach in the secondary schools and colleges? Is it sufficient that such training be technical or scientific in character or should some attention be given to the art and the principles of teaching? Should a degree be a symbol of a finished education or a symbol of preparation for further and continuing education on the part of the student himself? Has not the time come when the function of an educational institution should be quite definitely that of training a man for continued study rather than attempting to provide him through a multiplicity of courses with "all the information he is ever going to have?"[3] If an alumnus is expected to increase in interest to himself and in value to society he must continue studying by himself, and why not encourage the process by teaching him how to work independently?

The objectives and procedures of graduate schools are put thus in the form of questions rather than affirmations, first because no one has yet offered convincing answers to many of them, and, second, because the later sections of this publication are designed to supply some of the elements out of which answers may be developed.

[3] Some of these questions are raised in a paper by L. P. Eisenhart, The graduate school of arts and sciences. School and Society, 45: 497–503, April 10, 1937.

Chapter II: Mind as a Conditioning Factor

The educational idealist may advocate a program suited only to supermen. Effort may be wasted unless educational plans recognize the limitations of the minds of learners as well as their special gifts and ambitions.

Ability To Think, Which Is the All-Inclusive Goal of Study, Grows Mainly Out of a Sense of Problem and Is Motivated by Interest.

Improvement of the thinking process is the general goal of higher education. The emphasis is commonly put upon ability to think rather than disinterestedness in thinking. Pasteur sought to remove the threat to two major industries, silk and wine. He was both profoundly interested and emotionally stirred by the practical as well as the theoretical problems which confronted him. Human beings *care* about many of the answers to their questions. Pure, disinterested, cold intellect is too rare to build into a system of training. Indeed "pure" scholarship, in an absolute sense, is unattainable. The application and use of scholarly results follow inevitably. Moreover, facts are not sacrosanct, to be always certainly identified and built into logical systems. Most so-called facts have fuzzy margins. Uncertainty and doubtfulness hover about the edge of all scientific thought. No single intellectual discipline can achieve universality. There are limits as well as possibilites in each field of study.

To most minds, learning what is known is called thinking. Few are the minds that see gaps in knowledge which, if filled, would provide a new pattern of thought, clearer analysis, and sounder conclusions. A man may know principles and examples and yet see in every situation only what he has long known. Not a few are the scientific men who continue in the way of error because the facts familiar to them so nicely fit accustomed compartments. To attack the logic itself, to search out some new and apparently irreducible fact that will not fit, as a way of gaining closer approach to truth—these are dynamic intellectual processes that are native to but few men. Can they be acquired

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by a greater number? Such acquisition is often a slow and painful experience. Will prolonged training and practice help in both attack and approach? Unquestionably to some but emphatically not to all.

Thinking Is a Biological Necessity Born of the Need of Applying the Experience of the Past to the Uncertainties of the Present. Education Is a Continuous Pioneering Process.

Thinking arose out of biological necessity. Action became suited to need by improvements that were first conceived or identified in the mind. From first to last, man invented because he desired improvement. He *wanted* something—which means that he was engaged in an interested search. This quality of "interestedness" has been carried over into the highly organized social life of our day. But hope and desire may become blind hope and greedy desire which tend to obstruct the thinking process. How can we extract the sound judgment, identify the good end? By letting thought dominate rather than blind impulse, by learning from accumulated experience, by giving reason precedence over wish, by constant recognition of the fact that action based on thought has lifted man above the beast, has forged civilization, and is the only agent we know that appears to be able to provide further improvements in social life.

There are no universally applicable forms of inquiry; but in every form there are at least one ancient group and one modern group of ingredients. The *ancient* group comprises the great human experiences which every division of knowledge and every form of inquiry embodies. An awareness of the historic thresholds of intellectual experience, and how men came to cross them, may be of the profoundest import in developing further advances. The *modern* group is in and of the culture of the age in which we live. That culture provides both restraints and opportunities. Despite wide popular curiosity about the discoveries of science the world is in a large sense never ready for a new idea. The implications and applications are bound to meet skepticism and protest. *Education must not be afraid to pioneer in the face of inertia or disbelief or obstruction.* "Safety first" is a poor rule on a voyage of discovery.

The Instrument With Which Thinking Is Done Should Receive More Study in Any Institution Devoted to the Improvement of Thinking.

It is curious that the tool which plays so large a part in providing its own edge—which is lawyer, judge, and jury as it scans its own acts and devises new methods—that this tool is itself so little known. Whereas it is an organ in balance with other organs we commonly treat it as if it were a self-contained absolute. The effect of so-called education is too often a habit, a pattern, a verbalization process, a dulling of a naturally good tool. We have not yet thought out universally applicable laws and conformable tests which enable us to know whether we injure or improve a mind in the process of stimulating the patterned responses of which education so largely consists.

Should not mind itself be a prime object of study in a process so largely built on mind? Should not higher education deal with the nature and limitations of mental processes to an increasing degree in the pioneering phase of advanced study known as research? It is notorious that no such responsibility is assumed toward a Ph. D. candidate. We read the man's thesis; we ought to ask him to read *himself* out to the examiner. Is he a person of narrow skill and plainly defective personality? How can we judge a man's mind without knowing the whole man? Thinking has much physiology and sociology in it. All generalizations fail, of course, when we confront genius.

Think and Try, Reason and Cautious or Controlled Experiment, Embody the Chief Methods of Discovery, Social Applications, and Improvement.

The discoveries of the human mind, aside from the accidental identification and the intuitive flash, are made (1) by the observation and analysis of the facts and relations of the environment, material substances, and processes (science); or (2) by the interpretation or restatement, in fresh here-and-now terms, of recorded social and spiritual experience (humanities); and (3) by statistical and other forms of analysis of contemporary or recent social

experience (social sciences).[1] Each field of investigation requires the use of all the mental processes involved in the gathering of the facts of experience, systematic collection of data, rigid testing of conclusions, frequent revision of both theory and methods, as well as that turning over in the mind which is commonly called thought. Each of the above processes has helped to achieve discovery and hastened the evolution of civilization.

Experiment has played probably as great a role as preconception. If trying is not more important than thinking in so-called logical terms, at least it is more decisive in experimental science and also in the unfolding of folk knowledge. The reasoned conclusion gives way to the experiment when they conflict. John Hunter said, "Do not think, try!" Again and again, facts have had a lethal effect upon deductions, however useful the latter may be in localizing the search for critical facts. It has been said that thinking is but a fallible instrument for helping to decide what to try, "but the *last* word must be try." This relates to the nonhuman part of the environment. In the social field, concurrent stability and progress require public acceptance, and experiment is not so simple a matter. Atoms do not care, people do.

Universities are themselves a form of social experiment, *both* a symbol and an agency of progress. They change the times and are changed by them. Until the need for legal education arose, a university could scarcely train lawyers. The evolution of law and the training of lawyers were concurrent and reciprocal processes. Law grew out of accumulated historical records of experience, out of experiments with social codes, and out of a desire to apply such knowledge and experience to the better ordering of both old and new social complexities. The universities became not only repositories but also active agencies of legal learning, scientific learning, humanistic learning, medical learning, and learning in general.

[1] There is no sharp division between these three conventional groupings. At its core each represents distinctive materials and methods, but each also borrows from and contributes to the others. Their common borderlands have been especially fruitful because of the unusual juxtapositions and interplay of techniques, facts, and principles found useful far beyond their fields of origin.

Ideas are Evaluated in Terms of Their Bearing Upon Social Progress.

Intellectual processes playing upon accumulated experience led to the identification of supposedly better goals. Practical values growing out of university methods and accumulated knowledge were recognized by rulers who required trained men in government and by a society growing in experience with the rule of reason while holding on to that page of history (i. e., experience) which is worth a volume of logic. Ideas multiplied as records widened the view of experience and of the world.

Ideas require experiment for they are complex things in origin and in evolution, and they are uncertain in relation to future experience. Each one has locked within it an unanswered question—the question of its contingent and unpredictable effect that will be revealed only in the future. One may argue with some plausibility, therefore, that they guide us rather than that we guide them. Ideas are elemental and revolutionary forces. In a large sense all new ideas are subversive, whether we like and adopt them or whether we dislike and reject them. In any event, we cannot stop the idea-breeding process. We can only experiment with them and analyze their results. Higher education has to do with both the creation of ideas and their uses, and with the checks and balances that make ideas operable in society.

If we can neither predict the sources of ideas nor their effect upon society, why trouble to cultivate them or aim at social improvement either through universities or otherwise? It is because we believe that civilization has been made and advanced by thought, and that in choosing useful ideas from among the many, good and bad, offered for selection, the score has been above the level of mere chance.

In discovery the chief ingredient is the man. In social applications, on the other hand, an acceptable system is the first condition. In the end it is judgment that molds a social decision, and one of the important components of a judgment on action is a nonrational feeling (growing out of experience) for *what men may do or may be persuaded to do* when confronted with the need for social experiment.

Flexibility of Mind and Variety of Method Promote the Evolution of Sound Objectives.

A trained mind is a flexible mind. Education is not an absolute. Its processes are multiform and its methods diverse. It deals with different individuals who think at different intellectual levels. It varies with types of materials and records. It has several main objectives. Its problems for the most part spring out of the swiftly changing environmental elements. Its fixed elements are substantial but few in number. Its chief purpose is to provide or discover a way toward deeper insight into the facts of life and learning, higher wisdom, and happier and more useful living within the framework of our own civilization—the only civilization we are able to deal with experimentally and intimately.

The Value of Self-Discovery Is Lost in Regimentation.

Democracy is unlike other forms of civil organization in its emphasis upon self-direction, while regimentation works toward the absolute in social control. Insofar as education is an individual matter we must beware of simple schemes, programs leading to regimentation, and complacency resting upon administrative neatness. Students are diverse combinations of our infinitely varied human qualities. It is often observed that the individual alone is substantial reality and alone has real value in any approach to the problem of man and the universe. That is why educational schemes cannot make men; they can only show men some of the ways in which men can make and have made themselves. There is no more profound experience in life than the self-discovery of individual powers and combinations of powers. There is no greater educational duty than the maintenance of the right of self-direction and individualization. That right is as imperative as the claims of associative living.

The Present Rapid Rate of Social Change Is in Contrast to the Slowness of Historical Evolution.

Let us consider thinking, as well as discovery and application through experiment, on two levels of human accomplishment, the primitive and the modern. The use of the first eoliths or

primitive implements has been called the greatest step in man's career and one which marked the greatest *psychological* advance in the history of man at any age. Beside the early mental step that put to conscious use flint-engendered sparks, the discovery of the electron is child's play: Prometheus in a bark shirt surpassing a million-dollar laboratory! Yet both steps were mental-physical (not physical alone), and involved experiment, selection, and judgment. Through them and their sequent effects the wild animal became a man.

Vital to further progress was the discovery that plants and animals reproduce themselves and can be made to improve through the selection and cultivation of useful types. Their contribution to man's welfare was of incalculable value for all subsequent social development. But to primitive man, progressing from eoliths to stone axes, a thousand years were as a day. He had not learned consciously to invent, the second and higher of the two main levels of human accomplishment. He took what was within close reach as he stumbled over dimly lighted thresholds of experience.

In the modern world, developments have come thick and fast. In a certain large sense, unless we now see life on the run we do not see it at all. Two inventions added to two inventions make perhaps a hundred others necessary or desirable or obvious. Whereas primitive man used what he had or made a discovery or saw its application only after long lapses of time, modern man has reached the point where he quickly recognizes gaps in knowledge and sets out consciously to think his way through a difficulty and not just happen upon a solution. Conscious change has taken a place beside accustomed use.

Whether or not this means improvement we cannot be sure, but we think it does as we look at our selectivity score in the long past. In any event the growing complexity of life is a fact, and at each new stage we are required to redefine the ends of life and try to readapt the ethical systems which embody them. We have learned that we resolve one difficulty only to face another. "No matter how many centuries of culture have preceded, the new man always finds himself standing on the brink of chaos, always in a crisis." Now it is the machine that we rail at: "Machinery is aggressive * * * The machine unmakes the man." This was written by Emerson. The inten-

sity of the situation it describes and the ramification of causes and effect have increased rather than diminished since his day.

The Learner Takes Account of Both the Relative Fixity of Human Nature and the Changefulness of Codes of Social Conduct.

It is useless to hope for social improvement, one hears it said, for human nature does not change: Socrates, Christ, and Mohammed looked deeply into the hearts of men and saw what we still see there today. This view overlooks the fact that we influence human nature not by changing it but by inventing, adopting, securing assent to, and experimenting with, *codes of conduct*. If all agree to respect a given code the effect is almost the same as if human nature had changed. Thought then becomes a controller. A nonbiological force may thus gain recognition and preeminence.

Somewhere along the road of human evolution there came into being a curious inner monitor that persisted in taking account of the *rights* of men. The Sumerian code of laws, devised 3,000 years before Christ, embodied the customs and habits that were in acceptable use probably a millennium before they were written out by Hammurabi. Under the code, the community became the first concern of all. When a man broke the law he violated a code of conduct upon which the community had agreed. Thus, if the robber escaped, the community paid the victim; if he was caught, the community punished him. The code was an orderly series of restraints upon human beings who could be changed ever so little if at all.

We have glanced at two great chapters in the history of human progress: (1) The discovery of and experiments with instruments of power which aided man to rise in craft and skill above the rest of the animal world, the use of fire, and the domestication of animals and plants; and (2) the embodiment in experimental codes of conduct of community customs and attitudes—justice, in short. The fundamental social problems of four and five thousand years ago are the fundamental problems today. Only the forms and examples vary. We still seek control over wider areas of physical power in order to raise the bent back, provide leisure, make life richer and potentially more secure. At the

same time we refine and enlarge the codes that have sprung out of accumulated experience, widen the area of justice, include our distant as well as our immediate neighbors, and attempt to raise the general level of community cooperation and responsibility. Change thus becomes not mere chance and adventure but rather a means of validating judgments upon repeated experiments of the past that have been built into our social system.

To hammer out a code and to try it takes time, and, therefore, a certain conservatism also has its place in social beginnings. Curiosity, reason, and intuition lead to discovery, discontent, change, and experiment. Codes call for acceptance of specific rules and their trial (sometimes prolonged), for the adjustment of things as they might be to things as they are, for movement, not all the time and in any direction, but rationally, along "the diagonal of contending varieties." But codes also make for stability. The history of a period, our period, is not written in terms of change merely. To be stable, even for short periods, a social system must be reduced in large part to routine and automatic response on the part of large numbers.

The Ability To Doubt in the Face of a Desire To Believe Is at the Heart of the Scientific Method.

The prime and inescapable advantage of the scientific method of reason and experiment is that the method is based upon orderly sequential propositions, stages, and processes. Its goal can be set in advance, and a way thither can be sought more readily. Intuition flies to its goal and leaves no trace of its course.[1] Reason tells us to beware of bias. It sets men to seek fundamental causes. Its aim is not to feed the hungry, for example, but to find out why there are hungry people. The one is a simple, humanitarian, and proximate question; the other is complex, scientific, and ultimate. The intellectual man is always dissatis-

[1] The term "intuition" deserves much more extended treatment than can be given here. Both in scientific discovery and in human relations it may be a trail-breaking force of the highest value. However, it is largely a personal and inexplicable force. Its value varies greatly in different parts of the vast field of human knowledge and experience. It is a widely shared social power. Mathematics and poetry, symbolically so unlike, both pay tributes to it. It is "feeling," in contrast to demonstration. Whatever the source of an idea outside the broad fields of religion, aesthetics, and art, it is not intellectually acceptable to other men unless its rationalities can be shown.

fied with the product of the intellect—a healthy state of mind! The habit of mental attack makes and keeps learning vital. The ability to doubt in the face of a desire to believe is one of the indispensables of scientific method.

The Perils of Scholasticism Are Not Yet Ended.

Scholasticism is not a vanished force—it is a peril of modern science also. Thought may get in the way of further thought by too much respect for the pronouncements of "those most competent to judge." There is habit and fashion in thinking as in dress, manners, and prejudices. "In the life of the mind as in life elsewhere, there is a tendency toward the reproduction of kind. Every judgment has a generative power. It begets in its own image."—CARDOZO. Science makes our world understandable in parts only; most of life is still beyond our comprehension and far outside of our present means of control. Inquiry leads the student to the border of the unknown, that strangely productive no-man's land of the trained mind, where broods the spirit of doubt and uncertainty. It takes opinion into account but only so that a new way may be found or fresh confirmation of an old way disclosed.

Method alone may be as barren intellectually as were the medieval abuses of the scholastic period when dialectic degenerated into the art of splitting logical hairs. A man who cares only for the formal methods or processes involved in obtaining a degree is an object of wasted time and money. A doctor's degree too often means mechanical proficiency, knowledge of accepted methods, principles or rules, and a reasonable acquaintance with the "literature" of the field of inquiry. Too few are the candidates who become discoverers, philosophers, exceptionally well-balanced men.

One of the Major Tests of the Educated Person Is the Extent to Which Reason Is Placed Between Belief and Desire.

When we say that this is an age of science we imply that the educated man must learn what science is, ascertain its limitations and its applications, and employ its obvious powers more widely.

In doing so he is reminded that while reason and experiment are the right and left hands of science, reason is not infallible: the reasoners are often diametrically opposed. This results partly because of the limitations of logic, partly because of the indeterminate nature of the results of many experiments. But rational methods, further applied, permit the elimination of weaknesses and errors. By contrast, intuition can claim anything and everything in the social field so long as it is backed by power. Its errors may persist indefinitely. Valuable as a kind of foresight or hunch, it is also first cousin to vagrant belief. "Men freely believe that which they desire," wrote Caesar, and Samuel Johnson added, "It is easier to believe than to be scientifically instructed."

It is an imperative duty of the profession of education *to put reason between belief and desire* in every significant phase of social activity. This is a social no less than a scientific ideal. To take a single facet of social life, the law, for example, "the life of the law has not been logic; it has been experience," said Holmes; but, adds Cardozo, Holmes did not say that logic is to be ignored when experience is silent. "The misuse of logic or philosophy begins when its methods and its ends are treated as supreme and final." It was science that put a check-rein upon both intuition and formal logic by insisting upon observed and controlled experiment. The "propositions" that preface innumerable historic charters, declarations, constitutions, and treaties embody truths that are widely felt or thought to be rational and experiential.

Reasoning is still our greatest social task today. No social structure can long endure unless its foundation stones are bonded by reason and supported by fairness. This, despite the fact that the human lot has been called an unmeasured and measureless complex of uncompleted processes, an affair of accidental human groupings impelled by generally primitive wants, the exercise of one function commonly deranging others. Reason and faith strike hands at this point: the one discerns repeated, if not causally controlled, relationships, sequences, and conditions, and aims at a partial though certainly useful measurement of some of them; the other impels men to enlarge the area of the controllable in human affairs by a clearer definition of rational social ends and a wider measure of intelligent cooperation in reaching for them.

Each cultural institution has both reason and faith in it. Each represents a procedure that is expected to improve society. The sum of social effort may be happy, commonplace, or tragic in any given place or time but, with widening knowledge and experience, man is driven to ever fresh attempts to make new discoveries in the hope that they will light the way forward.

Chapter III: Society as a Conditioning Factor

The inner drive of the rare scholar aside, society provides the chief motivating forces of democratic education. On the other hand, society also imposes conditions and limitations, particularly upon graduate education. Graduate schools develop their programs in relation to powerful social forces.

There Is a Constant Interaction Between Society and the Learner, Between the Practitioner and the Scholar.

When the race was young, practically the only knowledge that men had at command was what they remembered of their traditions and of their day-to-day experiences or could themselves discover. In time, ingenuity and need spurred rare minds to create the symbols and mechanisms of record-keeping, and folk memory became less important. Accumulated knowledge could thereafter be drawn upon to improve the quality and enlarge the scope of social organization. Governments, armies, institutions, came at length to be organized and run on a documentary basis. Records enable both individual and group to shortcut otherwise wasteful and endless relearning through contemporary experience alone. They also vastly extend the reach and power of organization. Finally, they provide a review of wide-ranging human experiments and opinions thereon.

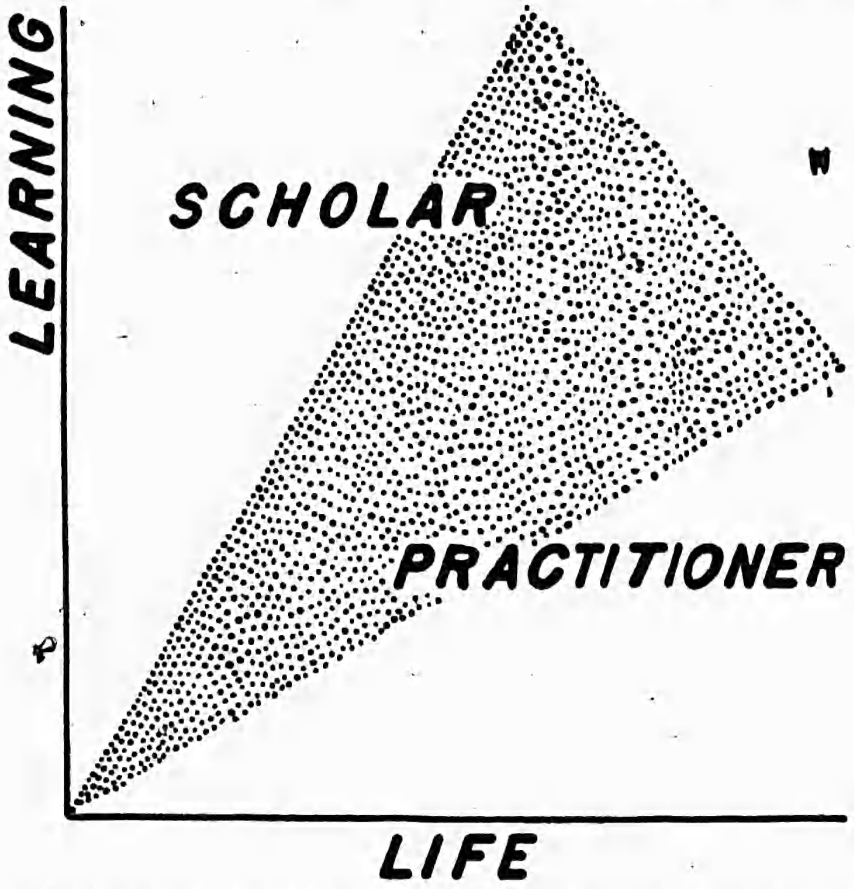
It results that we advance along a diagonal determined by both life and learning; "life" meaning contemporary life, both biological and intellectual, and "learning" meaning the records of past life and discovery and their interpretation. The accompanying diagram is admittedly too simple and mechanical an illustration of the intricate relationship between life and learning. But at least it suggests the middle position which advance takes between the natural course of events and the theoretical course which learing alone might indicate without the qualifying effect of experience in what men can be persuaded to do or will agree to do.

The relations of practitioner and scholar to life and learning may be sketched as follows:

The PRACTITIONER is primarily a selector in the fields of life and learning. His chief concern is to make things work—cure

the patient, build the tower, produce the machine, market the goods—in the practical here-and-now world that is limited, and in a sense ruled, by the clock and the calendar. A trained practitioner uses learning and may contribute to it, but his expertness is directed mainly to applications of knowledge in the fields of action and use.

The SCHOLAR contributes to human advance in the social field by physical and biological discoveries and applications and by



analyzing what men are now doing and what they have done both recently and in the past. He searches for facts and their meaning and looks most often at the record, which may be an inscription, or a text, or an object of any age, or the statistics of last year's budget. His first concern is with the accuracy of of the record and the soundness of its interpretation, not with the utilities of the moment. Since records are of many kinds and generally fragmentary, it follows that both accuracy and depth of interpretation demand *specialization*.

Specialization has been likened to polarized light—a means of identifying that which is not revealed in mixed sunlight. Con-

fusion of color thereupon becomes order. In the order lies a means of identifying a fact and even forecasting the discovery of new facts. In any ultimate sense, said Pascal, we cannot understand things but only the properties of things, such as number, weight, and measure. Only prolonged and intensive training will enable a man to determine these properties with the required or desired accuracy.

However different life, as served by the practitioner, or as served by the scholar, may appear to be at the core, both participate in human advancement. Through accumulated experience the scholar finds probable cause and effect in some chapters of human history, introduces examples of conscious social improvement, and lifts life above the level of fatalism. Ideals are largely drawn out of heroic examples of the past that got into the record. The winnowing hand of time has let slip some grains of good seed but a sufficient number has been saved to give us an abundant crop in our day. Educators believe that choice examples are good for all men, including youth. Before he died, Caesar was regarded as a god by his people and some of his imperial creations lasted for five centuries, but it was the *record* of his deeds and institutions that gave them force and perpetuity after the empire crumbled. Scholarship not only keeps records alive, it interprets specific examples in our day and for our day. It deals with new discovery and also with some of the most inspiring creations and past experiences of the human mind.

The Best Must Be a Blend of the New and the Old.

Custom has at least one great merit; it works, albeit in a groove. This is important because most of our acts are necessarily based on suppositions that work. A social scheme still in the formulative stage may be said to be better than an existing one but it may require either more intelligence or more idealism than the crowd possesses and therefore will not work. The febrile state of mind which daily requires that something new be tried out, *on the other fellow*, overlooks the assurance and stability that come from a going concern. *Uncertainty* and *Doubt* are the labels on the signposts at every crossroad of human experi-

ence. There is a mutual directiveness between theory and experiment that it is fatal to ignore.

> Those who would make a new social order can scarcely imagine that there is no good whatever in the present array of things, or in the men and women out of which the new order is to be made. Nor will any who fain would limit education to the mere maintenance of the present order, assuming that it will not change in the future, be bold enough to say that it is Utopia, a good without possibility of improvement, unmixed with evil. Although extremists may enjoy the luxury of such views, educators loyal to the knowledge which they are bound by their office to cherish cannot accept either of them as a dictate for educational theory and practice. If the past is all wrong, why study it or hope for the future? If the present is perfection, why the poverty and distresses of children in the schoolroom and the conflicts of party and interest outside? The sharp antithesis sometimes drawn between those who would have the schools create a new social order and those who would confine them to a mere defense of a *status quo* does not correspond to the known facts in the case.[1]

The fresh terms in which we state or interpret the records of past experience are required for the enjoyment, the understanding, and the improvement of *our* life in this unique present which always presents itself problem-wise. Higher education, especially in the social sphere, works creatively upon the bond which ties past and present.

Education in the contemporaneous only, is education in the vanishing instant, the ephemeral; education that is retrospective only may be but indiyidual mental exercise, the enjoyment of the "story" of mankind. If too much time is spent on the present, on what we now have, there will be too little time to spend on the study of what we have had. What we have done or failed to do is often a guide to what we may do again or what we may reasonably desire and do not yet have.

[1] The unique function of education in American democracy. Educational Policies Commission, National Education Association, 1937. p. 86.

Idealism, Linked With the Practical, Is an Indispensable Element of Progress.

The practical and the ideal are commonly put into opposition or mutual exclusion. Their linkage is a matter of prime importance to universities. The results of higher learning will not be hunted out and a social linkage supplied by that inchoate mass known as "the public." The statesman or the administrator is rarely interested in scientific advance and adjustment to it or in the technical forces that are shaping society.

When social life was primitive there could have been little room for idealism. When social life became complex its welfare grew progressively more dependent upon foresight. No doubt as men looked ahead they became more and more sensible of alternative choices. A few men in all societies habitually thought in terms of what might be; they gave attention to ideas not yet realized. Improvement became a common aim of civilized peoples and so remains today—with sharp differences as to what it is and how to develop it. This difference should not surprise or discourage one. The good society may be almost infinitely remote but the *better* society can be just at the next turning.

Anyone who does not believe in progress should study (to take but a few examples) the workings of the poor laws of England down to about a century ago and their application to orphans or the conditions of employment of apprentices or the public attitude toward slavery. The laws governing these practices would not have been altered except for the well-defined purposes and the sustained toil of implacable idealists. Purpose makes a difference; intelligence *is* power; and the desires and aspirations of humanity are determiners in the operation of the universe on the same footing with physical determiners. A man with an idea or an ideal behaves differently from a man without one. A human choice is at the bottom of "progress," however we define the word.

Social Pressures Have a Strong Influence Upon Graduate Work.

Graduate work cannot thrive on a philosophy of escape from the dominant social forces of the times. In learning and discovery, as in business and diplomacy, a good deal depends upon

the prevailing wind. For example, science has flowered because of its obvious social use. If its benefits had not come to be shared and appreciated by the many, it might have starved underground.

The Selection of Enduringly Valuable Material Is a Constant Goal but the Results Are Necessarily Experimental and Uncertain.

Higher education, like any other education, changes with the times but in general more slowly than the times. Yet some part of it is always providing the newest and most forward element in the world. With its emphasis on new truth or discovery, science has led in the social advance of the past century. The world in fact cannot keep up with science. Another set of values asks recognition when the humanities come into consideration. If education is to include the best of life it must include the best of earlier times as well as the recent best, the aesthetic best as well as the scientific best. The tempo of man's advance and the varieties of his experience have been so greatly increased during the past 150 years that new selections of things worth while have had to be made more frequently than would have been required in Aristotle's time or Newton's time. The selection of enduringly valuable material is a task of conservation, revision, and restatement.

Education can claim a great deal; it can also claim too much. Its solid achievements are discounted by immodest claims. While we advance because of a new discovery here, we are laying the groundwork for retrogression there. Things never work out as we thought they would. New contingencies arise and no one seems to be wise enough to foretell them. Good and evil are inextricably mixed. The contingent circumstance is always beyond either our intuitive wisdom or our science. It is only when looking at the simplified past that the observer can pretend to be sure of cause and inevitable effect. To learn why past civilization failed will never help us directly to save our own. Taking the present as a starting point no one seems able to tell us what is going to happen next or ultimately except in vague general terms. "Those who wish to enjoy security in the future must learn caution from the present hour," wrote Sidonius of

the "vanishing culture" of Rome from his pleasant and luxurious villa near Clermont toward the end of the fifth century. What was "caution" then? What is it now?

Pooling of Ideas Is an Essential of Educational Method in a Democratic Society.

On the whole, the mental and social atmosphere in the United States is favorable for graduate work. There is relatively little professional jealousy. Good will and cooperation between leaders of thought are common. Consultation is a widely recognized democratic process. We exalt democratic procedures because they so largely shape the ends in view and provide for voluntary acceptance of such ends. Compromise and agreement are root and branch of democratic government seeking to achieve justice and effective cohesion, unity, and freedom.

The Diversity of the Interests of Men and the Scale of Development of the United States Greatly Complicates the Task of American Education.

The United States consists of diverse groups of people in the diverse environments of Omaha, Savannah, Yazoo, Texarkana, Birmingham, Newport, Gary, the High Plains of Oregon, and the Connecticut Valley, for example, as well as a group of founders in Valhalla, with the Constitution and the Bill of Rights pointing the way for all to the vaguely outlined peaks of freedom. Education has to do with the minds and the characters of all groups of people within our borders and with the material things which feed and clothe their bodies in their several environments. The higher the education the more intensively, creatively, and comprehensively it must deal with the interactive parts of man, his work and his enjoyment of life, his character, and the social use of his powers.

The American patriot was once concerned chiefly with local applications when he talked of his country in political and economic terms. The machine has since imposed or encouraged development on so great a scale that a patriot now has to think nationally because so many questions transcend neighborhood and bear on all neighborhoods. Unemployment on a large scale affects everybody. Neither statesmanship nor education can

keep silent about it, or about old-age pensions, or public-health measures that affect a mobile and wide-ranging population. Speed and size have changed the nature of problems near and far. The newspaper now deals with the whole world and does "its best to make every square acre of land and sea give an account of itself at your breakfast table."

Size brings special forms of complexity. When growth has reached a certain point the growing thing is not merely larger, *it is different*. With this difference must come a different attitude towards ourselves and our responsibilities. A railway from Philadelphia to St. Louis is not merely an extension of a railway from Philadelphia to Harrisburg. The one is interstate and interregional, the other local and the concern of one State only, to mention but one item of difference. The modern million-souled city is not merely a city of a quarter of a million made larger. So, too, the dominating social forces of today are not merely weak forces grown powerful—they are new forces.

Democratic Concepts, Facts, and Actions and Behaviours Based on Them Create Special Educational Difficulties.

The democratic setting of higher education in America invites at least two principal risks; that graduate work, with its philosophies, abstractions, and specializations will isolate men from the forces of their time; and, on the other hand, that intellectual disinterestedness may disappear or graduate work may cease to be fine in a disciplinary sense. If it is dogmatic or narrow or merely popular it is not worth its keep; the world is already full of popular agencies. If it pretends to be something that is socially useful, and only fits a student to earn a better material living, it is a fraud. Nor is mere democratic amiability an acceptable substitute for intellectual enterprise. Between the everlastingly earnest, the high, and enterprising on the one hand, and the slack, the easy, and the conventional on the other, a choice must be made, and each institution engaged in graduate work is making it, consciously or unconsciously. Self-criticism will quickly identify the choice.

With these choices before us, what are the conditions, dangers, and opportunities of higher education in that democracy in which all schools have a part? What link has the graduate school with

democratic ideas and philosophies? Ideas about democracy must start with ideas about alternative forms of government. To choose or to prefer democracy is to imply that one has deliberately discarded undemocratic systems as inferior in the local situation. Mere assertions about democracy do not prove its superiority.

There was a time when democracy was a new and untried idea, yet sufficiently exciting and promising to lead men to experiment with it. Later on, it was discarded or defeated. Whenever it rose again it was because men had tried and tired of nondemocratic schemes and had drawn fresh lessons from them. Also new forces came into play. The humane concepts of Christianity took at least shallow root. Communication became swifter and, with mechanical developments that included printing and cheaper books in their sweep, gave democracy new instruments of education and new possibilities of agreement. The gleanings of accumulated experience were more widely distributed. Laid open for popular use were what George Washington in 1783 called "The treasures of knowledge, acquired by the labors of philosophers, sages, and legislators, through a long succession of years." *Collected wisdom*, he termed it. Thus new ways of expanding and implementing the democratic concept could be devised. At length the people of America committed themselves and us, their posterity, to a venture in democracy; and education, including higher education, has had many of its terms prescribed by the liberties and ideals as well as by the experimental shortcomings of a democratic state.

Democracy in America is still too largely a creed of promise. It is based on the idea that the general emergence of man from lower forms of social living took place because man aspired to reach higher forms. It is permeated by the belief that the realization of many social potentialities can be effected only by the continued pressure of general intelligence. The intellectually free university has come to be one of the symbols of a progressive society. It preaches and practices responsible self-direction because disciplined self-direction best brings out latent powers. Two widely accepted functions of higher education—contributions to knowledge through intensive research and training for competence in a field of practice—involve consideration of the social role of reason and intelligence in civilization.

Democratic ideas are subject to analysis like any other ideas. Even the severely practical in government, school, and society, is based upon ideas and how they may affect the unknown future. We speak of stubborn facts. They do not give us half the trouble that stubborn ideas do. The practical man may also be a man of limited experience and narrow life who forgets that imagination rules our lives to a greater extent than raw facts. The human mind, says Dixon, is not a debating hall but a picture gallery. "Around it hang our similes, our concepts. The tyranny of the concept * * * is one from which the human mind never escapes." Thus the concept of a machine universe, or the concept of progress, may exercise a powerful if almost unconscious influence.

Education in a democracy should be alert to the danger of catch phrases, of "practical" solutions drained of all imagination, of education by uncritical indoctrination on the basis of prejudices masquerading as principles. Education must also give great weight to the practical. John Buchan regards profound practical intelligence a rarer thing in history than a seminal idealism. A good deal of time may be wasted in belittling the making-things-work and uncritically extolling that which might work.

In a democracy there are wide gaps between the accustomed real and the glittering ideal. A false supposition is current in most democracies that all of the people have knowledge of social affairs, or care about them, or can develop competence in thought about or action on them. The autocratic or special-privilege or Fascist points of view have kept or made their places largely because democratic processes have in many respects weakened or failed in some countries. Politics in a democracy, as elsewhere, deals emotionally with selfish interests as well as rationally with the applications of the principles of liberty. Universal education is designed in part to bring the actions of greater numbers up to a higher level of political and social competence and stability. So conceived, democratic education is still largely an experiment in faith.

Such education is also much wider in scope than the schools. Indeed most of it is outside the schools. It is upon the schools, however, that we rely for the critical reexamination of democratic principles and ideals in the minds of imaginative youth. This

may conceivably be done best in concrete and limited fields, such as the democratic use, which really means *fair* use, of natural resources. Here the idea of fairness extends to both private economic conduct and political conduct.

By democratic do we not really mean democratic enough to suit the majority? The term democratic, used in a realistic sense, includes not all of the people but only those effectives who contribute to the democratic process. Neither inspiration nor guidance is to be found in the uninformed opinions and irrational acts of the ignorant. A few men in all systems tend to exercise control within limits set by ideals, social tolerance, and drift. Size has much to do with the limitation of self-expression on the part of the people. An ancient Greek city could do, and Switzerland now does, what America has never done in demonstrating public opinion. The radio is for leaders with a program: the followers can write "to the editor," or pass a group resolution, or wire their Congressmen. The moment that *representation* is brought into play democracy is diluted or qualified. As a part of the social machinery the schools should recognize their responsibilities in explaining how democracy really works, lest words and idealizations detached from realities take the place of understanding.

Of all forms of government, wrote a British critic, democracy is the most delicate and it is more dependent than any other upon the supply of leaders. It is therefore the very real and immediate business of a democracy to select and train those who are most likely to make a democracy work. The crucial difference between a democracy and a regimented state has come to be this: In the one, thought is free to play upon the structure and working of everything, including the state itself and its leaders; in the other, a particular brand of thought is shaped or distorted and certified by the state as a means of carrying out the ambitions, good or bad, of those who have seized power.

No thinker should be flattered by the practical political value of his work. Flattery has been called the anaesthesia of thought. The critical man will not lower his flag because a high official smiles on him. A democracy is improved not by fawning but rather by the intelligence of the people in selecting, training, and supporting leaders (and followers) of causes which aim at the welfare, the outlook, and the happiness of the people. How can

"people" select leaders and identify welfare? Democracy is fact and action based upon experience and reason, not theory alone, nor is it an interplay between pretty words and emotional outbursts.

The Concept of Fair Play Is the Compass by Which Democracy Steers Its Course.

If it were possible for a democratic society at a given moment to believe nothing, it would will nothing and it would at once begin to disintegrate. The continuance and the permanence of a going society depend upon belief, if only a belief in the wisdom of continuance along existing lines of organization and endeavor. Common belief and consent help create social will. But common belief and a social will can also drive a society headlong to disaster. Reason and experience tell us that we avoid disaster and insure continuance of the good through fair play. To be fair is not merely to be legal. To be fair means agreement between parties as to what is fair in the light of the particular circumstances of the time. These circumstances are continually changing. However often they may be appraised by legislators and courts, and however neatly the relations of men are formally crystallized, new circumstances arise which demand reappraisal of existing definitions or understandings of fairness.

Human folly, Santayana has Demosthenes say, is flanked by two protecting deities, Punishment and Agreement. When social mistakes are punished, agreement finds its way made easier. Agreement is a force as definite as reason or belief. It has led to the common assertion that what men can agree upon is right. "If I get too far ahead," said Gompers, "my constituency will not see me." Lincoln asserted that the moral principle must always be subsidiary to the maintenance of the means to enforce it.

This is another way of saying that experience, rather than logic or desire, serves as a check upon fairness and the organization required to administer fairly. The Roman jurists looked upon the common customs of men (based on experience) as the witness of reason "without indulging in the construction of speculative Utopias." For a thousand years of Roman history the law progressed by adaptation of existing rules to changing social environment within the limits of a continuous tradition.

A Sense of Fair Play and the Habit of Utilizing Past Experience Are the Products of Both Disciplined Minds and Freedom.

We commonly allude to intellectual freedom as one of the gifts of democracy. It were better to say that democracy is one of the gifts of intellectual freedom. It was the free play of the mind that created the concepts of democracy; it has been the continued free play of the mind that has given those concepts vitality and popular support and developed others to fit the needs arising out of the revolutionary social changes of the past 150 years. We believe that the disciplined minds of freemen will best amplify and defend democracy in the future. Almost no European continental power of the first order today provides the intellectual freedom requisite for the full task of scholarship and education.

Science is free or it is nothing. Its main tenet in the social field is free-ranging self-criticism. Where dogma is labelled science there is no science. Science once lived in the house of dogma and history recalls its trials and set-backs. Freedom is an ideal—one of the greatest the world has known. Democratic progress has been made because disciplined freedom gained room in the minds and institutions of men. The word discipline is essential. One of the conditions of survival of free institutions is the willing sacrifice of individual rights to group welfare.

A democracy requires the intelligent cooperation of leaders and higher intellectual qualities in that growing number of citizens who form the opinions and persuade the acts of the rest. Education on any level and in any profession or trade is a one-sided and weak thing today if it does not include social education, if it does not "inspire a vision of the whole"; if it does not point out that mere specialization in one's personal interest will not do. There is no protection for democracy except in the critically armed mind, armed with facts and relevant evidence to be sure, but armed, more importantly, with a knowledge of method in order that false methods and propaganda may be identified.

A growing challenge to democracy springs from the rapidly increasing complexities of government administration. Government penetrates ever more deeply into social life. Eventually

the courts decide questions of constitutionality and interpret legislative acts, but the courts do not decide what is socially desirable. It has been said that the State is now doctor, nurse, teacher, chemist, railway comptroller, supplier of gas, water, and electricity, town planner, pensions distributor, provider of transport, hospital organizer, road maker, and many other things. To control the administration of all of these ramifications *through the public* is impossible because it is impossible for the public to understand the ramifications in detail. Nor can legislators understand them much better. The survival of democratic institutions may eventually depend upon the competence of democracy to control, through expert agencies as well as citizen participation, the multifarious administrative acts that bear upon individuals and groups, business and the professions, schools, and other social agencies.

Democracy Cannot Survive If It Submerges the Best in Mediocrity.

A democracy can have any scale of education it wants and is willing to pay for. It can educate any class it desires or all classes in any way that it pleases, within the limits of its mental and cooperative powers, and even compel attendance in school and participation in "education." But if, unhappily, it set up the ideal of state dominance and individual complacency, if it set *the pattern of the average* above tolerance for variation in the person, if the infinite variety of man be lost in devotion to a "system," democracy will lose the vitalizing effects of diversity. It will mean the end of most creative thought except within narrow limits of prescribed action. *Talent must also find a place if democracy is to improve.*

Democracy was originally conceived as the government of the many by the best. Too often we are unable to identify the best minds until their work gets into the historical record. It takes time to see the effects of action and more time to see if the effects ought to live. Within the limits of a Greek city-state it was less difficult to identify and put forward talented men than it is in our day, for the public square could contain the entire citizen class (the dissensions of the city-states through lack of a unifying ideal represent but the other side of the same shield). By contrast,

the hundreds of thousands of voters of Julius Caesar's Rome had no machinery for large-scale discussion even if all of them had been able to find room within the restricted space of the Field of Mars. Communication alone presented ever-growing difficulties. Caesar's device of posting summaries of important news on white-washed walls in various parts of Rome sufficed only for his purposes, his times, and his Rome.

For 2,500 years the democratic idea has been involved in the problem of growing numbers which tend to submerge talent. Only as modern society invented and cheapened the means for the swifter transport of men and news could its improved methods forestall disintegration. When the first newspaper was published in 1609 there existed no considerable democratic state. Democracy was an academic idea with remote historical illustrations. Popular education was unknown. Rulership was a matter of physical power chiefly. The prime difficulties of democracy have not altered in two millenniums: *To identify intelligent leaders and prevent the social machinery from falling into the hands of a self-serving class.*

Democracy is not made by telling "the masses" that power is in their hands, if they are incapable of identifying the demagogue or the dictator. It is not sustained by an electorate that has no taxes to pay, no civic duties to perform, no responsibility for public order, no intelligence. It is not led intelligently if a privileged class is in control. Its vitality and welfare depend greatly upon the selection of good interpreters and leaders whatever their class. Democracy is not yet aware of the part which advanced training can play if coupled with wide social resolution that the finest things are created and perform their social work only if they are resolutely defended by intelligent men.

The danger in wider democratic education is obvious—that with increase of numbers quality goes down and that what we get in the way of scholarship may be mere pretense. Graduate work is no exception. In too many institutions which are poorly equipped with men and materials, education on "the graduate level," to employ the current mechanical phrase, has put on cap and bells. It masquerades. It has borrowed the idealistic phrases, but it avoids the steep path. What is fine is rare, partly if not chiefly because there are so few who can stand the self-

discipline that fineness requires. Institutional self-criticism instead of self-glorification is not yet a habit. No part of an institution requires such constant and vigorous attack as the graduate school and the professional schools where standards are made for both the scholar and the practitioner.

High Standards of University Requirements in a Democratic State Combined With a Pervasive Sense of Social Responsibility Are Required to Promote Confidence in the Few by the Many.

If the people of the United States were to centralize control of their educational policies at Washington, as France has focussed its policies and control at Paris, we should quite obviously feel deep concern over the outcome of the struggle between the two contending philosophies of the few and the many, or the cultural and the practical as some would prefer to label them. If a state or a private donor wishes to support the practical, so much the greater need exists for examining the cultural and providing for its permeating development. Democracy has need of its intellectually elite, and if it puts a low estimate on their value democracy itself will be weakened and endangered. Its own fate may be bound up with its decision to stake everything on a shilly-shally type of democracy and degrade learning or suffocate it in an atmosphere of false "equality," man's "native genius" to be appraised more highly than any form of disciplined learning.

Higher education, says Vincent, may be for the few but its uses must be for the many, and if the few forget this truth we shall not raise civilization to higher levels. "Progress today is made, not by the single genius, but by the common effort. * * * The genius raids, but the common people occupy and possess."—T. E. LAWRENCE. Risk arises if there is too high an appraisal of superficial values and the blind following of muddy-minded but persuasive personalities whose honesty is stained by self-interest and the impulse of self-preservation.

General progress depends upon the acceptance by the many of the findings of the few; and only the few can find. If the many refuse to recognize any difference in ability and training as undemocratic, we shall end by having the governance of children who act on impulse and care nothing for that collected wisdom

upon which all codes of law, ethics, and other forms of social engagements are founded. What are the conditions under which the few can discover new truth and attain a deeper wisdom? What are the conditions of development, not of rare and incorrigible genius, but of high talent? Accepting the need for talent in a democracy, how may we supply it?

Clearly there is wanted an intellectual atmosphere, a high degree of freedom and appreciative associates. But where is the line to be drawn between the trivial and the significant, between folly and wisdom, between narrow training and preparedness for uncertain life? Is there an active search in each institution for principles, tests, guides? The courses that overrun the catalogs of some of our largest universities are notoriously easy, trivial, and encyclopedically detailed.

In a Democracy a Citizen's Claim to Rights Must Be Matched by a Lively Sense of His Duties or Obligations.

A main element in the success of the New England settlements was the austerity for which their leaders are commonly criticized. Duty was the first law, and it was directed toward the maintenance of authority in the family, in the state, in the field of morals and conscience. The several communities were disciplined for the most part by single-track minds, but they were disciplined. The purpose of education was high—to train men for the service of church and state.

A large part of the difficulty of running a democracy grows out of the lack of popular resolution toward duty. There is today and there always has been a pervasive resolution to get material advantages by class and section. That is an inescapable process in a democracy, as elsewhere. Through the compromise of such demands a going democratic concern is kept going. It is easy to think in terms of advantage; it is hard to think in terms of duty. We have to be *taught* our obligations. When only rights are remembered and duties are forgotten, decadence sets in. Our Bill of Rights may yet be accompanied by what Pound calls a Bill of Duties. Education for advantage to the educated, without the growth and respect for a corresponding sense of social duty, is education that fosters the disintegrating process. Faced with quite modern complexities, is society going to expand its resolution, its intelligence, and its sense of duty accordingly?

Education should take account of these realities. Armed only with a copy of the Constitution, a young man of 21 would be bewildered by a city council meeting or a party convention. Nor would that document help him at all if he tried to analyze the congressional vote on a specific measure. To understand that vote in detail would require him to go back to every congressional district and look at the political machinery there, and the deeps and shallows of business and social life. Education limited to political generalities and ideals is education in cloudland. The schools are not in politics but they are in a democracy that is run largely through politics or by political processes.

Contest is the dominating theme of democracy: contest of groups in labor, education, agriculture, business, government. A compromise of contesting interests is attained by discussion, by understanding, and by *a working acceptance of the will of the majority*. One might argue for a new national holiday of greater significance than any now celebrated—the day after election. It is then that a democracy-in-fact accepts the will of the majority and continues unshaken on its course under the law.

The scholar cannot resolve these contests, nor can he avoid their challenges. Diogenes said that a man needs either reason or a halter, and the cynics of Alexander's day thought that sages should rule those who were not sages. Unfortunately it is not so easy as that, since scholars themselves differ in methods and there is nothing inevitable or inexorable about the effects of their reasoned conclusions as applied to public affairs. It might be thought that education could claim more authority if in the end men thought alike. Paradoxically, an effort to win unity of opinion is not wasted because it fails. Out of the effort arises an appreciation of the complexities of life, the limits of knowledge and reason, the possible existence of several equally "right" ways of attaining a desired result. Education, we insist, encourages the habit of mental attack. It is sterile if it ignores the realities of contest. It is incomplete and unpractical if it leaves out the value of compromise.

Education in a democracy is education for a better democracy. A democracy is not alone a set of first principles; it is also a body of accumulated experience in managing and developing an association of living men. Democracy means change as well as order

under system. This was recognized in provisions for altering the Constitution, in 22 amendments to it, and in the wide acceptance of the principle that in interpreting the law the judge inevitably expands the law. Formed to accord with contemporary ideas and interests, a law not infrequently outlasts the conditions that called it into being. Higher education in the social field challenges and reinterprets what has been, perpetually restates current needs, frames new objectives in its attempt to prevent dangerous tension, and searches endlessly for better means to attain improved ends.

It is a characteristic of real democracy that there is constant conflict between the politician who is in a hurry for effect and wants immediate solutions and the man of science and reason who says, "Here is a promising solution but I want to think about it a little longer." The politician quickens his judgment and action with respect to what people will do or can be persuaded to do. The scholar is absorbed in what people *ought* to do. With every actual choice democracy runs risks—and what form of government does not? Even calamity may not teach it to make a better choice; but it is a free choice and ever new choices may supervene. These realities and responsibilities ought to be a part of higher education in our modern academies, set in groves perhaps as of old, but at least accessible to the highways of men.

Implications.

The implications of this chapter are: Every graduate student should be grounded in human biology and psychology, and he should have reflected upon and be informed about social values and purposes. If he proposes to teach he should train himself to welcome new experiences and new facts, even the uncomfortable ones, while holding on to his page of history.

Chapter IV: Institutionalized Education as a Conditioning Factor

In addition to the limiting factors inherent in the learner and in society, the graduate school must take into account its own institutional nature. As part of a university it is affected by general university practices, standards, and traditions. Financially, it presents the most difficult of administrative problems. The whole setting must be realistically considered before the objectives of the graduate school can be determined.

The Process of Education Only Begins in School and College.

A recent prospectus promises that a certain college will give young men "the capacity to think clearly and act wisely." The author of the statement must have forgotten that, as Ellis put it, a man cannot possibly become educated by the time he is 21, for the simple reason that he is not yet all there to be educated. Clear thinking on questions involving the correct choice of a present process for a future benefit would involve the power of forecast. Who has that power at 21? How is it proposed to "give" it? Is wisdom not justified or condemned by the event? A whole nation may agree that it has chosen wisely only to find that is has merely believed in what it wanted and that it was guided by emotional rulers rather than by rationality. The schools have not yet found a yardstick for wisdom. They but partially analyze and understand the elements that combine in the process of making wise decisions.

Wisdom is not to be had in the schools; only the beginnings of wisdom, better beginnings to be sure than one might otherwise make, because the schools deal with authentic example, completed event, and seasoned experience, as well as with incomplete processes and the receding present. There is no way of guaranteeing wisdom or a good result. We can only rely on certain beliefs, convictions, and rational methods of thought and action in attempting to attain them.

The Graduate School Is the Heart of the University.

The graduate school has slowly moved to the center of the university scheme during the past 50 years. It is often described

as the heart of the university. The junior staffs of our higher educational institutions are recruited from among its scholars. Its standards, outlooks, and philosophies also affect the undergraduate schools and to an increasing degree help determine the type of education which will be offered to that great majority of college students who go into business, or the smaller, though still large number, who seek training in the professional schools.

The graduate school became the heart of the university not by declaration but by achievement in humanistic and scientific fields and by proving the worth of discovery as a stimulating force as well as by its insistence upon the principle that *education is nothing if it is not evocative.* The work of the graduate school is barren if curiosity and the zest of discovery are subordinated and if faculty members cease to be frontiersmen in their fields. Only as a graduate student lives on or at least near the frontier of his subject can he expect to make effective use in the future of *new* facts and methods in the unending process of the advancement and reorganization of knowledge and the improvement of a changing society. Frontier living is hard living: we assert that the intellectual process is a tough process. Only the casual acceptance of things as they seem to be makes life simple and exact. Beneath the surface are its errors, illogicalities, complexities, and untamed forces, and also its opportunities.

Though the graduate school is the heart of the university, many of its problems can be considered only in relation to the whole university. Therefore, much of the discussion in subsequent pages will be in terms of the university in general as well as in terms specifically applicable to the graduate school.

The Concept of Disinterested Intellectual Enterprise Is Alluring but Largely Fallacious.

The distinction between institutional and individual purpose and work is a limited one, but it is important to make it in determining social responsibility on the part of both learner and institution. Learning as an end in itself is a wholly worthy objective. An institution, however, is a corporate group working under a social contract, in contrast to an individual who works under a different order of liberties and restrictions. Institutional activities in the field of learning are pursued not primarily as

ends in themselves but for human applications of learning through wider understanding of reasonable possibilities and forms of material, spiritual, and social progress.

A university faculty as a whole must therefore stand in active relation to the problems and people of the day, although it may be and should be tolerant to the occasional recluse who is immersed in learning as a personal end. University history contains brilliant examples of unguessed utility in apparently vagrant and irresponsible intellectual effort. This experience provides administrative caution in dealing with the intellectual individualist, but it does not prove that an institution can be founded and developed on habits of vagrancy.

Graduate study aims at the acquisition of power to deal effectively *at first hand* with the materials and affairs of life, the power of learning about things from the things themselves. Upon such power, effective practice is based and original contributions made to authentic knowledge in every field. Close on the heels of this purpose is the secondary purpose of gaining power in the critical use of the reports of others, and passing judgment upon their value and their limitations. In pursuing these objects deliberate choices are made between things that appear fundamental and things that are immediately practical.

In contrast is the view that the sole purpose of a university is "disinterested intellectual enterprise." This is a high ideal, continues Veblen, which is not to be displaced by the "commonplace ideals" embodied in occupational courses and schools, showy magnitudes, and the spectacular and diverting "new" features commonly associated with aggressive histrionic management. In Veblen's view the aim of *university* training "is to equip the student for the work of inquiry, not to give him facility in that conduct of affairs that turns such knowledge to 'practical account.'" The proponents of pure university work and of the sheerly intellectual process have this much in their favor: without disinterested intellectual enterprise an institution is not a university; and without the permeation of this idea or process through all of its schools in at least conspicuous measure a university can be at best only a second-rate agglomeration of schools.

Training for other purposes than the further pursuit of knowledge, says Veblen, is a lower order of endeavor and it does not

become university work by calling it so. It almost comes down to respectability, in this austere view. Not for the purpose of dissent but for the sake of clarity it may be pointed out that this is university work *by definition* as emphatically as is the case when we include occupational schools in a university definition. We get nowhere by defining a university as we please and then saying of a different scheme "You see, it is not a university!" The question is rather, what do we want a university to become, or what should it become? To answer this question we are required to examine the materials and the processes whereby we desire to achieve agreed purposes. Are there *principles* to which we can subscribe? What part do *ideals* play? As universities stand, what advantages of *association of schools* can be identified? What is the associative process whereby a school elevates its *standards* through the influence of those who pursue disinterested intellectual enterprise?

Training for Use, in the Broad Sense of the Term, Is the Motivating Force Behind Almost All University Work.

In his review of European ideals and methods, former President Gilman of the Johns Hopkins, who set the pace for the university leaders of the country for a quarter of a century, expressed no feeling of contamination from occupational schools. What mattered to him was the intellectual content. Was higher education inquiry or was it merely higher technical expertness? He wanted a university to be fine and high, but he also insisted on university *influence*, on leavening the whole social lump. In his inaugural in 1876 he asked, "How may the university better provide for the innumerable modern callings, which lie outside of the old 'professions' but require an equal culture?" It does society no good to train a man unless he will use his training for applications to society or for further creative work. Learning for use encompasses learning for enjoyment, which is also a use.

Gilman could not have succeeded had his university idea lacked distinction, or conviction, or the light of his own peculiar genius. Free inquiry was a sort of gospel to him: education must be liberal, not technical alone; principles must be placed above methods; there must be freedom to investigate and report. But these were *conditions*, not ends. They were the charter or con-

stitution—not the things done or the purposes aimed at, under the constitution. The purpose of a university, said Gilman, is *social* in character. "The object of the university is to develop character—to make men. It misses its aim if it produces learned pedants, or simple artisans, or cunning sophists, or pretentious practitioners." Its work was not done unless and until it strengthened the judgment and invigorated the intellectual and moral forces. The significance of university activity lay in a reaching out for a better state of society, less bigotry in the temple, less suffering in the hospital, less fraud in business, less folly in politics, more intelligence, more happiness, more religion. We must draw upon young men for the performance of these tasks, he concluded (1882).

Gilman wrote university purpose in the specific terms of a social charter. It was his opinion that a linkage must exist between what a university does and what society is and may become. He would have agreed that ultimate human use is the objective of all activities and that every participant in graduate instruction should make the pursuit of truth a contribution to ethical living, an achievement in the round, not only in detail. In the social milieu of 1882 this was good doctrine. What is wanting in it in 1939? Does disinterested intellectual enterprise mean dissociation of character and mental growth? Can a man be a proficient liar and also a good chemist? Do we not expect young men to use their knowledge? How can they use it except in relation to their fellow men? It is young men and women of the schools who take their turn in social management, in keeping before mankind the remembrance of great ideas, and who may acquire the power (glorious chance!) to do some things surpassingly well. Nothing is worth while in education that does not create in the learner the ability to do something which he could not do before or to do it better; and however he exercises that ability there will be social effects.

The university seeks to train students in the organization and, if possible, the discovery of knowledge, including useful knowledge, in fields having real intellectual depth. How is intellectual depth defined and determined? The University of Cambridge now reflects a changed English point of view in this respect by looking beyond the traditional schools and including schools of

agriculture, forestry, and engineering. The enrollments in the subjects appropriate to these schools, and still others, such as English and Geography (which now has its separate school and new and well-equipped laboratory), have almost doubled the size of the university since the World War. At that, the view was put forward by one of the speakers at the 1938 meeting of the British Association for the Advancement of Science that a new type of "eye-and-hand" university was needed rather than the existing old type of "voice-and-pen" university.

Probably most critics would agree that the intellectual processes of learning tend to wilt when nourished only in marginal fields devoted to the production of specially skilled practitioners. Preoccupation with practice tends to crowd out creative work as surely as cheap money tends to drive out dear money. However, in the development of university policy at the older universities of England the either-or point of view has not been accepted. It has been concluded that practice and creative work can coexist. This was Gilman's view: the professional schools were to be vitalized by the creative principle and the university need not be pulled down by such association. Society, investing in universities, first secures the trained staff that mans the social services; second, it provides itself with additional mechanisms whereby the upwelling creative energy of individuals can find encouraging conditions of development.

A graduate school cannot ignore either one of these forms of return on the social investment which it represents. The highbrow attitude is that creative work only is the job of the graduate school and we will admit that the scarcity of great men makes the hunt for them all the more exciting and worth while. The trouble is that creative ability does not go about wearing a label. It has to be discovered. A bushel of grain must be sorted to get at one seed. If it takes *time* to think, it also takes time to identify the thinker. A practical noncollege man said recently, "When the exceptional university man does spring up, he's worth what all the rest cost." But the cost of the rest is not lost. If we left the intellectual service of the country to genius, we should soon pitch over the precipice. Truly creative minds are rarely interested in "the relation of the parts" of socially useful knowledge and in its varied forms of social dissemination.

Utility May or May Not Be Included in the Purposes of the University Scholar.

Does interest in the dissemination of ideas stifle the creative impulse? One may not generalize. Pasteur and Faraday were discoverers *and* disseminators. Neither Willard Gibbs nor Gregor Mendel was a disseminator in the immediate sense. Do we not have to leave this facet of the question to time and individual choice? Many of the greatest thinkers turned their minds to the social implications of their thought. Some worked with the social ideal always before them. How can we be sure of the worth of the man who calls himself an individual thinker? Is he not on trial like the rest of humanity? Because he is disinterested can we assert that he is always right? On the other hand, must one be thinking about the effects and contingencies of a discovery in order to make a good discovery, or to make a discovery at all? Can one think effectively if someone else—say an administrator—is to stand guard over one, himself not knowing the field or its evaluations? Clearly we are confronted with a dilemma. Who is to identify, label, and vouch for genius? That question precedes an equally vital one in any social enquiry—who is to pay for it?

A university has its *ideal* of free thinking and its *hope* that now and then genius as well as talent may emerge with beneficial effect upon the world. It cannot waste its resources by subsidizing men who have given no evidence of productive power. This implies choice and selection by someone, with vast risk. Are not the risks equally great in selecting social objectives? "Burning questions of the hour may be ashes tomorrow." Who can calculate or guess the future? Ideas "seem to be potent only when they fit, with some mysterious exactness, into the actuality of things in the process of development, now slowly altering great intellectual patterns by steady accumulation and now effecting fateful decisions in time of crisis when a little push here or there appears to give a new course to human affairs."—BEARD.

The Best Functioning of the Graduate School Calls for Teamwork Between Creation and Practice.

The distinction between education for the many and education for the few may be expressed as *the difference between the spread*

of a practice and the creation of something new. Both provide scope for the intellectually elite but on a different scale. These statements are not intended to imply that creative minds may not come from practice schools. They mean, rather, that neither the purposes nor the systems of organization of such schools provide the most suitable conditions for the discovery and development of creative minds. The processes in which they deal are direct and specific: How to learn a well-known practice, how to do a thing that has been done thousands or millions of times before, how to raise the level of general public accomplishment by extending a good practice.

But what lies behind practices and makes them new or gives them life? It is DISCOVERY! Better canning methods go back to Pasteur, who, with Koch and others, established, through discovery preceded or confirmed by experiment, the modern science of bacteriology. Scientific discovery lies back of the tin can, and more discovery made it a reliable tin can. The balanced diet which is a major objective of nutritional science depends upon discoveries in the effects of food deficiencies upon animals first (in most cases) and then upon humans. The whole population ought to know how to improve the diet, but only a tiny fraction of it has either the ability or the facilities to make the underlying discoveries.

Choosing Subjects Worthy of a Place in a Curriculum.

How much of the sheerly intellectual process is involved in so-called modern research? What are the limits of intellectually worth-while occupational research? What fields of occupational training, if any, should the university recognize and incorporate? What is fundamental research? Upon the answers to these questions depend large issues of present-day university policy with respect to the graduate school and the professional schools that fall within the university orbit, now as throughout university history.

Housekeeping, under the name of domestic science, used to be the horrible example of misdirected university energy. The courses in baseball offered in a few of our largest universities may

now displace it. Business schools were long under heavy fire. The fragmentation of science courses has reached a point in some departments at which technique training excludes all opportunity for original work. The history of science, as a means of learning how men identified and crossed the thresholds of new experience, is all too generally neglected. It is seldom realized that every major laboratory experiment is also a great human epic. Historical periods and literary masterpieces are often treated as if to reveal all that the specialist-teacher knows about them, with little regard for the growth of critical power in the learner. Economic and statistical data are rarely fitted into a pattern of related parts that show the actual working of a fundamental social process. Mental stereotypes may be found in professors' chairs as well as in social clubs.

The answer to outside criticism is found by some institutions in "new" devices. Everything new and progressive is assumed to be better. Such enterprises start with a bang, and their promoters at times announce brilliant results within 2 months! The years are no longer permitted to tell their story of character and achievement. The end is announced before the beginning. The last thing that is tried is *work*. A hunch is enough. Who ever heard of a modest promoter? If these statements appear to be overdrawn look at the educational announcements as reported in any metropolitan newspaper and at the prospectuses of the schools that bid for public support through the outpourings of their publicity bureaus.

Nor does it suffice to employ the word "fundamental" impressively as if it answered all questions. By definition, that is fundamental which relates to a principle, law, or article that serves as the groundwork of a system. We have still to choose our system. Under the definition baseball or housekeeping would still get by! What we mean in the general use of the term is both fundamental and significant. If by significant we mean critical and urgent we must remind ourselves that what is critical or urgent changes with the times and with the region. There are few permanently and generally valuable things. If the people of a mining-and-grazing State were asked their opinion they would probably regard as significant (i. e., critical

and urgent) a study of climatology and soil science as well as forestry and mining rather than, say, the prehistory of Britain.

> "The plea of the 'practical' was strong with Newton as it was with many other great scientists. 'Practical' is a very poor and much abused word; to Newton, the determination of longitude at sea meant safe journeys and the stimulation of intercourse and the spread of civilization among the races of men. The 'practical' often implies more altruism than the thoughtless are willing to admit."—SLICHTER.

Finding One's Way Through the Complexities of Modern Knowledge.

To the complexities introduced into higher education by the diversities of lands and cultures there are added the complexities of modern scientific and specialized knowledge. Some have come to regard modern science as a trackless jungle of irrelevant facts, inviting educational chaos. When the field of choice is so wide, how may one distinguish between trivial and significant? The scene may indeed appear hopeless to the superficial person who must read on the run, or to the incorrigible textbook systematist, or to those who must always have the terms of their salvation set forth in elementary terms.

It is specialists who may be narrow, not their specialties. Pursued far enough, specialization leads toward universality. A man who has done real research understands much about all research while recognizing that each field has its unique qualities. Leibnitz affirmed that despite their unique content all subjects have a more or less distinctly logical pattern. Society needs specialists in ever-increasing numbers, but it is in greater need, in this age, of the generalist or the man who is not afraid to pioneer in the field of interconnections.

The number of highways and signposts throughout the vast fields of specialized knowledge is increasing rapidly. Three national councils were formed after the World War, and the results of their coordinating work are both large and clearly defined. A Commission on the Social Studies, appointed by the American Historical Association, has produced a series of volumes that already have had an influence even on those who disagree with the

conclusions. Committees have been set up in many colleges and universities for the express purpose of locating the general in the particular. The problem is everywhere recognized, and attacks are being made upon it that are both intelligent and resourceful. It is becoming easier to occupy borderlands and to speak a common language of investigation and purpose. Separatism is definitely out of fashion.

The University Must Provide for the Growing Interrelations of Its Several Schools.

An appraisal of professional education as a whole requires study of the interrelations of professional schools. The engineer must now know something of business management and economic and social planning. Law schools now require a knowledge of business administration, and there is increasing pressure upon them for research toward the development of the law and for the study of the law as a social science. Where is room provided for professional standards and ideals? Finally, we have not a few tough problems in the field of aesthetics: Will the engineer be able to speak and write good English? Will the theologian, with his doctor's degree, be merely a churchman and a scholar, or will he be also a spiritual leader? Will the lawyer see in the law an opportunity to get ahead regardless of social good and serve only the interests of the class to which he is bound by pay? The position of the physician with respect to social security in recent years has sharply divided the profession. Do the universities find the answers to all of these questions in departmental independence and professional-school independence, or are such questions of concern to the whole university?

The Standards at Present Prevailing in Many Graduate Schools Are Undoubtedly Low.

If a graduate school admits on a bachelor's degree merely, without specific consideration of student ability, it becomes a catch-all. Without agreement on the philosophic side as to the content and purposes of a liberal-arts education, with the widest variations among the tributary colleges as to curricula and resources, with tradition in small part and economic limitations

in large part having determined each student's choice of a college, there is assembled in too many graduate schools a heterogeneous mass of students headed for purposes whose only common denominator is a higher degree.

The ideal of "research" is raised like a banner to lead this heterogeneous host. At more than one college commencement, audiences are amused by the formula spoken by the president admitting graduating collegians "to the company of educated men." It is no laughing matter when the departments next year admit substantial numbers of these really uneducated men for a higher degree. Many of those who seek a higher degree are not the best men of their class despite the fact that they are going to teach in high schools or colleges. They are not going to do research work. For most of them the thesis preliminary to a degree is the only research they will ever do; and the idea of the thesis itself, if not most of the facts, is too often borrowed from the sponsoring professor.

In the weaker schools, graduate training has been described as "a bunch of courses, plus a thesis." The charge is made that knowledge is acquired by the pigeonhole process rather than the relational process or the search for the undiscovered. If we were to establish two graduate schools with similar student bodies and resources and provide one faculty with but a dozen men whose teaching was inspired by imagination, by the ideal of discovery, by the search for creative minds, and the urge for creative work on at least a small scale, the other faculty consisting of readers of the word only—in 10 years' time their character would be totally unlike. Can anyone doubt this?

Degrees are anonymous at present, in a wide sense. If the product is up to specifications, what are the specifications, and whose label does the product bear? Would every degree-granting institution or department be willing to see the name of the institution written after the name of the degree in the case of every holder of the degree?

Approximately 300 colleges and universities, out of a total of around 800 above the junior-college level in the United States, confer the degree of master of arts, and of these nearly 76 grant the doctorate in from 1 to 33 different fields. What is their

capacity to do what they claim to do? In 9 States of the Southwest (taken as a sample and not because of any special regional deficiency) there are 26 institutions not approved by the Association of American Universities that are offering graduate work. This means that they are undertaking to carry on a graduate program when, as judged by this standard, they are not even able to *prepare* students properly for graduate work.[1] Economic necessity and the convenience of the candidates, coupled with the increasing demands of State and city school systems for teachers holding the master's degree, are tempting many smaller colleges to do what they have neither the personnel nor the equipment to do. Social and economic pressure thus forces a process of degree labeling that is inevitably pulling down standards of scholarship and cheapening the degree. Steady attack upon the process, equally steady commendation of colleges that resist the pressures, and the formulation of standards of quality may help stem the downward tendency.

The Numbers of Graduate Students Affect the Quality as Well as the Kind of Work Done in the Graduate Schools.

In 1870 there were 44 graduate students in the United States; in 1920, there were 15,612; the present number is over 80,000! Faced with these figures, one observer remarks that originality is evidently not a requirement for an advanced degree. This only pushes the question a step farther back, for originality cannot be strictly defined. One can be original about trivialities. Institutions deal systematically with talented men on the law of averages. Geniuses are rare intellectual products who live beyond the law of averages. An institution may help a genius but it never creates him. If we limit the graduate work which the Ph. D. involves to those who manifest the power of seemingly significant discovery (that is, significant in our day), we shall not have enough teachers of the higher ranks to serve our educational needs and demands.

Differences in scale of capacity are to be distinguished. Thousands make their lesser discoveries and teach *in the tradition of discovery* though they have not the capacity to become Newtons.

[1] Dodge, Homer L., Graduate study in the Southwest, 1936; *In Higher Education and Society*. pp. 85–90.

A Ph. D. is a label of effort and capacity at an early stage of student development. Neither it nor any other device or method will guarantee greatness, or even the continuation of the investigative habit. If we propose to have the Ph. D. stand for quite superior ability in a student's chosen field of work we need concentration in the post-doctoral field. We need supereducation for young men and women who will have established their lives by the time they are 30 or 35. After that, let them take their chances. We are throwing away good material if we do not provide special facilities for men of specially high aptitudes before they have reached the age of 30.

To what extent is it possible to originate or to set up significant problems in graduate study? How many of the so-called research problems are pseudo problems? How many theses topics are of even secondary significance? Out of the great mass of organized knowledge and information, represented by the annual supply of 2,900 doctoral and 18,000 masters' theses, how much is fundamental, significant, or useful?

Are there better ways of finding the worthy? Who is wise enough to make the choice except after trial? What may appear today to be wholly worthless may tomorrow be the long-sought clue to one of nature's habits. Can one say that any work which reveals new facts and relationships is not worth the effort which is expended upon it? Student-theses which bear the long names of chemical compounds are repeatedly held up to ridicule; but, on the material side, the age in which we are living is in large part the product of chemical research, and some doctoral dissertations which at the time they were published had no bearing on the welfare of mankind have given rise to things that we now consider essential for our comfort and security. Ninety-five percent of the chemical industry is built upon scientific discoveries made in university laboratories.

Costs Are Bound To Be a Limiting Factor in the Development of Graduate Schools.

The cost of education has risen enormously and funds are not available for the expansion of graduate schools so as to meet all needs of all students as the students see these needs or as employ-

ing institutions prescribe them. Contraction, or at least not expansion, seems to be the inevitable consequence for graduate schools in most privately endowed institutions in the future. No one who views the present situation believes that it is wise to continue on the assumption that everything must be taught everywhere. The encyclopaedia is a cheaper and more useful instrument than a 2-year series of lecture notes. The next great step in graduate school development will probably come, if one may venture a prophecy, as a result of closely reasoned analysis of the student situation from the standpoint of probable worth, and an equally close study of the possibilities of minimizing "courses."

Each Graduate School Will Wish To Set Certain Questions. The Following Are Merely Suggestive.

In the process of institutional self-examination the historical and regional setting must be taken into account as well as resources of money, faculty, and student intelligence. The specific ends of graduate study tend to change in accordance with the needs of a changing society. It would seem, however, as if the following questions had fairly general application:

1. Who should be admitted as graduate students? Standards of scholarship should help determine admission, not mere desire to continue or ability to pay for the additional training or research required for an advanced degree. In experimental work in science the cost of each student to the university is so high that only high student quality can possibly justify the expenditure.
2. What is the optimum number of graduate students which one professor can effectively direct, taking into account the whole program of the professor, and the nature of both the subject and the general field as well as the stimulation of group effort?
3. Is its equipment of libraries and laboratories adequate to sustain the claims of a given institutional program and announcements concerning it?
4. Is a clear distinction made between a research degree and a professional degree?

5. Is a distinction made, and is it followed administratively, between the Ph. D. and the M. A. or is the former like the latter, merely additional training? Is it sound to say that we should encourage additional work of M. A. quality but bear down harder on the number of candidates for and the work of Ph. D.'s?
6. What measure of scholarship aid is available and how much should be available adequately to serve general social purpose? All institutions ask for additional scholarship support. Is existing aid demonstrably well spent? Can we justify the present policy and scale of assistantships? What tests of later achievement are made as a check on practice? Is student need or student intellectual potential the chief criterion? There are no longer any "rich men's universities." Half the students at Oxford and Cambridge now receive some degree of aid. The percentage is higher at our leading American privately endowed universities. The correct apportionment and amount of student aid is a major and universal concern of universities today, and bears directly on the objectives of each institution, on selection of students, on degree of emphasis upon research, on the scope of the institutional work and the equipment available, and on regional demand.
7. With great increase in the number of graduate students much more consideration should be given to the supply of degree holders in relation to the demand. Whose supply and what demand? Is it socially or nationally desirable to respect and conform to present supply and demand or should we increase both? Shall accident alone determine the growth of faculties and the chance of putting to use extremely expensive training?
8. What are the basic assumptions of any given program of graduate work in a given institution? Are they professional—to train men to *practice* law or medicine or engineering? Are they creative—to make additions to knowledge? Are they broadly educational—to train

teachers? Are they selective with respect to the assumed future needs of society? All educational work, including university work and specifically graduate work, is directed toward the future. Is it possible to provide more than general direction? Upon what social assumptions of cost, extent of service, etc., is it determined that 5,000 new medical students, for example, represent an optimum number? Is the work of a university coordinated, even if only roughly, or is it a shambles of courses, credits, and abortive degrees? Is the student the property of his department or is he expected to continue some degree of general education in cognate fields?

Epilogue

WE SOMETIMES SAY that the exciting part of the story is in retrospect, as we recall the romance of past times, the glory and mystery of emerging man. In truth this is the less exciting part because we already know most of the answers to the mechanical questions that perplexed the men of far times. We see the products of their artisans completed before us, we know who won the battles, held the sceptre, discovered the far lands. But the unanswered questions are far more exciting! To a man with a sense of social responsibility it is the world ahead whose outlines he is most eager to see, however dimly. What will the times bring? Who will solve the problem of cancer, for example; find some of the many needed ways of using our many natural resources more rationally; increase well-being through widened opportunity; discover still hidden secrets of matter and space; find new sources and modes of aesthetic satisfaction; deepen social understanding? The far beginnings have their special appeal; the beginnings of tomorrow constitute *our* creative opportunities. In realizing these opportunities we may often follow the stars of our ancestors, but our tents must be pitched far beyond their dead campfires.

Appendix

Reports of Committee Meetings

The Commissioner of Education called a meeting of the Advisory Committee on Graduate Study and Research, March 29, 1937, at the Brookings Institution, Washington, D. C. The members of this committee included:

Albert L. Barrows, Executive Secretary, National Research Council.
Isaiah Bowman, President, The Johns Hopkins University.
Roy J. Deferrari, Dean, Graduate School, The Catholic University of America.
Bess Goodykoontz, Assistant Commissioner of Education, Office of Education.
Ernest S. Griffith, Dean, Graduate School, The American University.
Walter A. Jessup, President, The Carnegie Foundation for the Advancement of Teaching.
Walton C. John, Senior Specialist in Higher Education, Office of Education.
Fred J. Kelly, Chief, Division of Higher Education, Office of Education, Chairman.
Waldo G. Leland, Permanent Secretary, The American Council of Learned Societies.
Leverett S. Lyon, Vice President, The Brookings Institution.
Clarence S. Marsh, Vice President, The American Council on Education.
Cloyd Heck Marvin, President, The George Washington University.
Fernandus Payne, Dean, Graduate School, Indiana University.
John E. Pomfret, Secretary, Social Science Research Council.
R. G. D. Richardson, Dean, Graduate School, Brown University.
Henry B. Ward, Permanent Secretary, The American Association for the Advancement of Science.
A. F. Woods, Director, The Graduate School, United States Department of Agriculture.
George F. Zook, President, The American Council on Education.

Fred J. Kelly, the chairman, introduced Commissioner Studebaker who welcomed the members of the committee and pointed out the need for an open and frank discussion of the question at issue. Dr. John then gave an account of the developments that led to the calling of the meeting. The following report gives the gist of the day's discussion:

Notes on the Conference on Research and Graduate Instruction Called by the Commissioner of Education—Washington, D. C., March 29, 1937

1. Summary of comments by conferees:

While the conference was conducted in a quite informal way, notes were made of the comments as they were contributed by the different

members of the conference. Later these comments were organized into categories and grouped in the following outline.

No formal actions concerning the topics were taken by the conference but these topics constitute in general problems which the conference members appeared to recognize quite generally. The problems appear as successive lettered topics or questions, while the numbered topics under each of these represent the types of information which would need to be gathered to shed light upon these problems.

A. To help the prospective graduate student select the best graduate school for his particular purpose.
   (1) Gather and publish data *by departments* in principal graduate schools, covering (*a*) staff, equipment, and library; (*b*) giving rating as to standing; and (*c*) scholarships, fellowships, and other aids available. This would be an attempt to make a somewhat more comprehensive study than the one made by the Committee of the American Council on Education under the Chairmanship of R. M. Hughes.
   (2) Obtain by personal visit descriptive accounts of departments to supplement (1).
   (3) Gather and publish data as to research training opportunities outside of universities in (*a*) research institutes, (*b*) industrial laboratories, (*c*) social service agencies, (*d*) Government agencies, including schools, etc.

B. To help the graduate school select students more wisely.
   (1) Gather information about current admission devices and recruiting methods used.
   (2) Investigate proposals for testing prospective students.
   (3) Study the values of other evidences of ability and interest besides testing.
   (4) Study the methods whereby amounts available for fellowships may be made (*a*) ample, and (*b*) may be gotten into the hands of the best qualified students, (*c*) in the right amount for each student.

C. Great confusion exists at present in the minds of graduate school officials as to the various functions of the graduate school. The conflict was discussed at length, for example, between the graduate school as a professional school for the training of college teachers and as an institution for the training of competent research workers. It was also recognized that the graduate school has a responsibility for the development of both teachers and research workers for the various professions. Above all it was recognized that social well-being and national prosperity and security place upon the graduate school a heavy responsibility in the fields both of research and leadership. In consequence one of the most important problems was recognized to be the development of a clear

statement of the functions of the graduate school. This will necessitate studies dealing with:

(1) The graduate school's relation to the Nation's resources, both human and material.

(2) The distinction particularly between preparing for research jobs, and for jobs in teaching and in other professions.

(3) The possible voluntary limitation of its work by each graduate school to the particular field or fields for which it is qualified to do high-class work.

(4) The master's degree, its relation to undergraduate college work, to research work, and to Ph. D. course work.

(5) The distinction between graduate professional study and study in a professional school which requires a bachelor's degree for admission.

D. How the internal operation of the graduate school may be improved. This will require the assembling of data with respect to:

(1) Initiating the student into methods of independent study and research.

(2) Supervision of thesis writing.

(3) The synthesis of materials from many courses so as to give them maximum meaning and significance.

(4) Assuring ample contacts between student and professor.

(5) Probably many other items.

E. How to make the research program of the graduate school most effective and economical. This will require the assembling of data with respect to:

(1) Possible goals for research students.

(*a*) Types of jobs.

(*b*) Income.

(*c*) Relation of type of job to (1) work done in graduate school and (2) record made in graduate school.

F. What becomes of the Ph. D. holders?

(1) The types of jobs held.

(2) Income (possibly).

(3) Relation of type of job to (*a*) work done in graduate school, and (*b*) record made in graduate school.

G. A special study of the master's degrees.

H. A special study of graduate instruction for college teaching.

I. A special study of the problem of accrediting graduate schools.

2. The following actions were taken by the conference:

A. That a small committee be set up to formulate the definite problems in the field of research and graduate study and proposals for action in respect to them.

B. That each member of the conference be requested to write his comments concerning the subject of the conference for the consideration of this small committee.

C. That the report of this small committee be submitted back to the members of the conference for their criticisms.

D. That the Office of Education name the committee.

In harmony with the action of the conference as indicated under 2 A–D, The Commissioner of Education named the following subcommittee:

Isaiah Bowman, president, The Johns Hopkins University.
Guy Stanton Ford, dean, The Graduate School, University of Minnesota.
H. P. Hammond, president, The Society for the Promotion of Engineering Education.
Walter A. Jessup, president, The Carnegie Foundation for the Advancement of Teaching.
Walton C. John, senior specialist in higher education, Office of Education.
Fred J. Kelly, Chief of the Division of Higher Education, Office of Education. Chairman.
William W. Pierson, dean, Graduate School, University of North Carolina.
R. G. D. Richardson, dean, Graduate School, Brown University.
Henry B. Ward, permanent secretary, American Association for the Advancement of Science.
George F. Zook, president, The American Council on Education.

The subcommittee held its first meeting in the Office of Education, May 21, 1937. Discussion was devoted to a number of items in the aforementioned summary of comments, and finally was centered on C–1. The development of a clear statement of the functions of the graduate school with reference to its relation to the Nation's resources, both human and material.

After due deliberation the committee voted to ask President Bowman to prepare a preliminary statement covering the topic given above, this to be used as the basis of group deliberation at the next meeting of the sub-committee in the fall. President Bowman manifested a deep interest and agreed to prepare during the summer the type of statement requested. He also asked that committee members and other interested persons should be requested to send letters or printed materials such as would contribute to his thought in preparing the statement.

The subcommittee held its second meeting at the Office of Education, October 30, 1937. The committee, slightly enlarged, included:

Isaiah Bowman, president, The Johns Hopkins University.
Luther P. Eisenhart, dean, Graduate School, Princeton University.
H. P. Hammond, dean, School of Engineering, Pennsylvania State College.
Aloysius J. Hogan, dean, Graduate School, Georgetown University.

Walter A. Jessup, president, The Carnegie Foundation for the Advancement of Teaching.

Walton C. John, senior specialist in higher education, Office of Education.

Fred J. Kelly, Chief, Division of Higher Education, Office of Education, Chairman.

Fernandus Payne, dean, Graduate School, Indiana University.

R. G. D. Richardson, dean, Graduate School, Brown University.

F. K. Richtmyer, dean, Graduate School, Cornell University.

H. B. Ward, American Association for the Advancement of Science.

George F. Zook, president, The American Council on Education.

On this occasion the subcommittee reviewed the statement prepared by President Bowman which had been printed as a Conference Memorandum on the Graduate School and distributed to the committee members before the meeting. As a result of the observations of the committee, President Bowman agreed to continue work on the Memorandum.

Shortly prior to this meeting of the subcommittee the Commissioner of Education wrote to the presidents of universities that are members of the Association of American Universities and to the deans of their graduate schools regarding the activities of the advisory committee and the subcommittees, requesting their comments and criticisms for the use of President Bowman and the committees. Many favorable responses were received as well as helpful suggestions.

As a result of these observations President Bowman prepared a revised edition of his Conference Memorandum which was again sent to subcommittee members and others for further study and criticism.

The Commissioner then called the final meeting of the subcommittee, which met at The Johns Hopkins University June 19–21, 1938. The committee was considerably enlarged. Those present were:

John W. Studebaker, Commissioner of Education, Office of Education.

Isaiah Bowman, president, The John Hopkins University.

Karl T. Compton, president, Massachusetts Institute of Technology.

Homer L. Dodge, dean, Graduate School, University of Oklahoma.

E. S. Evenden, professor of education, Teachers College, Columbia University.

Wilson Gee, professor of rural economics and sociology, University of Virginia.

R. A. Gortner, Chief, Division of Agricultural Biochemistry, University of Minnesota.

H. S. Jennings, professor of zoology, director of the zoological laboratory, The Johns Hopkins University.

Walter A. Jessup, president, The Carnegie Foundation for the Advancement of Teaching.

Walton C. John, senior specialist in higher education, Office of Education.

Fred J. Kelly, Chief, Division of Higher Education, Office of Education.

J. A. Leighton, professor of philosophy, Ohio State University.

George B. Pegram, dean, Graduate Faculties, Columbia University.

Charles W. Pipkin, dean, Graduate School, State University of Louisiana.

John E. Pomfret, dean, Graduate School, Vanderbilt University.

R. G. D. Richardson, dean, Graduate School, Brown University.

W. E. Wickenden, president, Case School of Applied Science.

George F. Zook, president, The American Council on Education.

The report having again been revised in the light of the discussion at this meeting President Bowman completed the statement in its present form under the title "The Graduate School in American Democracy."

Acknowledgment is made of the cooperation of the following men who reviewed the Memorandum and submitted observations or materials to President Bowman:

Thomas Woody, professor of education, University of Pennsylvania.

Albert J. Harno, provost, University of Illinois and dean of the Law School.

I. L. Kandel, professor of education and associate, International Institute, Teachers College, Columbia University.

C. B. Lipman, dean, Graduate School, University of California.

Oliver C. Lester, dean, Graduate School, University of Colorado.

F. L. Whitney, dean, Graduate School, Colorado State College of Education.

George D. Stoddard, dean, Graduate School, State University of Iowa.

Henry W. Holmes, dean, Graduate School of Education, Harvard University.

C. S. Yoakum, dean, Graduate School, University of Michigan.

James B. Edmonson, dean, School of Education, University of Michigan, and W. C. Trow, professor of educational psychology of the School of Education.

Fred W. Upson, dean, Graduate School, University of Nebraska.

Edwin B. Fred, dean, Graduate School, University of Wisconsin, also Dean Emeritus Slichter of the Graduate School.

J. Orin Powers, professor of education, University of Maryland.

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