The revision of the "Pharmacopœia" from such a point of view would be an ideal work, but of course could not be consistently carried through at the present time. But a beginning may be made and in this the council may indirectly lend a hand. Our work is primarily for the good of medicine. The physician can not follow the highly specialized developments of physiological chemistry or pharmacology and he has the right to ask that the facts which he needs for use be put before him in sharp and unequivocal terms. In the past physicians have paid too little attention to the actual composition of the remedies they use, leaving this largely to the pharmacist. But in the newer developments in the use of curative agents they must have more of this exact knowledge, and there is no body better qualified than the American Medical Association to collect and classify this knowledge. The work of the association in the cause of medical education has been of enormous value, and the education of the physician in the field of rational therapeutics is but a natural and legitimate specialization of the general activity.

As already intimated it may not be practicable for a body organized as is the present Council on Pharmacy and Chemistry to proceed with a program as elaborate as the one just suggested. Possibly a new and permanent commission may have to undertake it and a natural outgrowth of the work of such a commission would be the gradual creation of a pharmacopœia suited to the actual needs of the American physician.

J. H. LONG

THE TWOFOLD FUNCTION OF THE UNIVERSITY[1]

THE ideal university, like the ideal state, is yet in the utopian stage. That a vigorous university is necessary to the life of a vigorous state is a principle or policy generally admitted and acted upon, not only by the European peoples wherever they are located, but also to an ever-increasing degree by those other races of mankind which have been brought under the immediate influence of the dominant civilization of the world. One can, however, still find communities, happily dwindling rapidly in number, on this American continent, where it is necessary to plead for the very existence of a real university. The need of such an institution is obscured by the fact of the community's parasitical dependence upon their more enterprising and far-seeing neighbors, from whom they get their supply of educated professional men.

Wherever the university is firmly established in the appreciative intelligence of the people it is conceived to have many functions. Such are seen in its relation to the state; its relation to the professor; its relation to the student; its relation to the discovery of truth; and its relation to the advancement of the civilization of the world.

The conception of the university as merely an intellectual restaurant to prepare in the most readily assimilable form a certain definite amount of mental food for a certain number of students every year is essentially an unworthy one. Yet I believe it is not an exaggeration to say that a large proportion of the higher institutions of learning in America (I use that word in its geographical sense) have regarded their duty as almost entirely performed when their students, having been lectured to with all possible diligence for several years, have been provided with

[1] An address delivered on September 28, 1910, at the University of North Dakota on the occasion of the inauguration of President Frank L. McVey, LL.D., and the celebration of the twenty-fifth anniversary of the founding of the university. Later this was given as the university address at the opening of the session of the University of Manitoba.

suitable parchments—written in an equally suitable dead language—certifying that they have remembered at least a certain specified minimum of what their teachers have told them.

No one would now advocate shutting the door of the university in the face of any student of whatever grade of ability, provided he is able to pass those reasonable standards imposed by the university to test his capability of profiting by the instruction provided therein. Yet it is nevertheless true that the capable student has a life-long grievance against the university if he is allowed to leave without a vision of the realms of assured knowledge, and some appreciation of the regions yet to be explored, which shall be to him an intellectual inspiration throughout the remainder of his days.

Various men, some at very great length, have given expression to what in their estimation constitutes a university. And on this occasion I wish to refer to two "ideas" of a university which have the great virtue of brevity, both of which are of American origin.

In establishing the great university which bears his name, Ezra Cornell set forth his ideal in these words: "I would found an institution where any person can find instruction in any subject." This statement contains several truths. It recognizes the universality of instruction requisite in a great modern institution; it implies that new branches of learning as they are organized must find suitable recognition in its courses of study; it ensures that no small aristocratic group of subjects, of ancient and honorable lineage, from their medieval dais shall look down with unregarded scorn upon a wider circle of newer, equally educative, and even more humanistic divisions of knowledge; it teaches implicitly that culture, that most distinguishing and characteristic charm of the truly educated man, is not a product of the study of a particular group of subjects.

It denies to no man the right of admission on account either of race or of religion. No chapter in the history of education affords more melancholy and lamentable reading than that recording the brutal policy of admitting to the university only those who were willing to subscribe to the particular religious belief or form of worship embraced by its controlling body. No responsibility surely can be more terrible than that of denying to any inquiring mind full and free access to the fountains of knowledge. But those dark days of bigotry and intolerance, and of a singular perversion of the spirit of religion, have so far receded that our indignation is now purely vicarious; and that once vital educational policy lies in the dust of history dead in deathless dishonor.

This ideal of Mr. Cornell, however, has one fatal demerit which renders it singularly unfit to be the confession of faith of a great university. As it reads it implies merely the dissemination of knowledge, not its creation; it invites the student to quench his intellectual thirst from placid glacial pools, not from living streams. Acting up to the fullest extent of the letter of this declaration would give but half a university, or rather not a university at all in the full and proper conception of that term. But, lest I should be misunderstood in my reference to Cornell University, an institution which I venerate as my alma mater in this country, let me hasten to add that that university from its inception has been under the administration of men possessed of those qualities of wisdom, ability and energy which have characterized the illustrious succession of distinguished American university presidents; and under their guidance that seat of learning has

developed so as to fulfil not only this ideal of the founder, but one far loftier and broader.

The second "idea" of a university to which I shall refer is contained in President Garfield's eulogistic remark concerning his old teacher and friend, that Mark Hopkins at one end of a log and a student at the other constitute a university. This epigrammatic statement, stripped of all superfluous words, vividly typifies the essential elements of a university, and implies their proper mutual relations.

On this occasion, the reference to this ideal is surely a happy one, inasmuch as Hopkins was not only teacher and investigator, but president as well; while the log is here represented by these splendid university buildings, two of which are now to be opened.

It is obvious that President Garfield's arrangement of the three elements of a university in order of importance was, Hopkins, student, log. In modern practise, however, this order is often reversed. While in some cases it may be difficult to decide whether the log or the student is first, Hopkins, as teacher, seems always to be last.

In order to have a university at all there must be administrators, teachers and students; there must also be buildings, properly located and equipped for the work that has to be done. An additional importance in this last respect attaches to the modern university in contrast with the ancient. Constant attention must be given to equipping those essentially modern science departments, if the institution is to give adequate instruction in the more recent extensions of natural knowledge. To an ever-increasing degree these contribute to the education of the modern scholar both through the importance of the facts themselves and the methods and spirit of investigation.

There is a grave danger, too, that the popular method of estimating importance by magnitude may here work almost irreparable harm. For if the people who provide the support for the institution see palatial buildings, richly equipped, and beautifully situated on a spacious campus, and if they see students consorting thither in hundreds and even in thousands, they may conclude in their enthusiasm that what they behold is surely a great university. Infected by the pride of the people, this feeling may be entertained by students and faculty alike. Yet it is not impossible for a university even under these favorable conditions to possess hardly a single element of real greatness.

There is now an expanding popular interest in the development of higher and technical education in America, and indeed throughout the world. Large gifts from men and women possessed of great wealth are yearly flowing to many of our institutions; and the people are emulating them by generously granting through their legislatures continually larger appropriations for all university purposes. Small buildings are replaced by larger, expensive equipments are ever added to, libraries are rapidly expanded, and gymnasiums lavishly supplied with all the paraphernalia deemed necessary for the highly specialized athletic activities of the modern student. No one will question the usefulness and importance of these aids in the development of the body, the mind and the character of the student. From the desire of greater ease and effectiveness in working, as well as from an appreciation of the stern necessities of the student, there are few professors but would submit to pecuniary and other sacrifices, as indeed they are submitting, in order that the material resources and greatness of their institutions may be increased. But I repeat, that as a people, or as peoples, we are in great

danger of having our judgment overwhelmed by the material part of the university, and lamentably fail to recognize that the university may not be accomplishing its larger purpose. No objection can be urged against these things in themselves, provided that a necessary and fundamental distinction is observed between such aids to intellectual development and intellectual development itself.

It must ever be kept in mind that the university has two great general functions: first, the creation; second, the dissemination of knowledge. I put the creation of knowledge first in importance, for, obviously, if the university had not originated and systematized knowledge, there would have been little to disseminate. Upon the second of these functions, the greater, but still not too great, stress has hitherto been laid in American universities. Yet we are not satisfied that we are getting the best results possible; or perhaps we can speak with certainty, and say we are satisfied that we are not getting the best possible results. For, as President Woodrow Wilson, of Princeton, is reported to have said:

> We must remember that information is not education. The greater part of the work that we are doing in our colleges to-day is to impart information.

However imperfectly it may perform its function, the university does serve its community by educating the youth of that community. But by virtue of its power of creating knowledge, the university benefits not only its own immediate constituency, but the world at large; for knowledge when published becomes available for the instruction of students wherever an institution of higher learning exists. By acting merely as an information bureau a teacher may instruct a hundred students; by discovering and elucidating a new truth the same teacher will instruct a hundred thousand. His power and influence, when investigation is added to teaching, are multiplied beyond measure. To make but a single reference: Had Sir J. J. Thomson confined himself to teaching mathematical physics he would have instructed a few score students: through the profound and brilliant researches which he has conducted and inspired, he is teaching in every university in the world. How immeasurably greater has been his influence, and that of his university, than it would have been had he chosen or been compelled to devote his life to teaching!

Civilization advances by the advancement of knowledge. Should investigation cease in every line of mental activity, the world would progress no further than it would be carried by the intellectual momentum which it has acquired through the wonderful and almost intoxicating increase of knowledge in the last century. Should investigation cease, should we not repeat the history of China? That intelligent people had at one time progressed far in knowledge, which must have been the result of a great mental activity. But from some cause or probably combination of causes, intellectual inquiry was stifled, with the result that for centuries China, self-satisfied, has been, if one may use such an expression, a living mummy, wrapped in the impeding cerements of a frigid pride in its past, a backward vision and strange forbidding customs.

In order that the necessary progress in extending the ever-widening boundaries of knowledge may be made in the best and most economical manner, some special class of men must adequately prepare themselves for this high duty, and "lay aside every weight that they may run with patience the race that is set before them." A divine impulse urges mankind to the in-

vestigation of the universe, with all diligence, and from all possible points of vantage. This will not be done at all except in fragmentary manner, unless some make it the business of their lives. No professional class of men is in a position to undertake this work except those who compose the faculties of our universities. If these will not do it, or are prevented from doing it, new agencies will be created for this special purpose, beyond the reach or control of the universities.

Professor William North Rice, of Wesleyan, has eloquently emphasized the importance of the faculty, more particularly perhaps from the teaching standpoint. But if true in reference to teaching, it is doubly true in reference to investigation. He said:

> When the old universities of Europe kindled anew the light of learning in the Dark Ages, it was the fame of great thinkers and great teachers that caused the ardent youth to throng by thousands to those centers of learning. Vast endowments and stately halls were a secondary development. And to-day the title of a college to the love of students and alumni and to the support of the public rests upon the intellectual activity, the high scholarship, the aptness to teach, the loyalty to truth and to all high ideals, of the members of the faculty. Secondary to these are stately buildings, rich museums, and even well furnished libraries and laboratories; and without these the college is dead—a body without the inspiring soul.

The university has always been the home of research. Throughout the middle ages men resorted thither that they might come in close contact with the great masters of learning. While at times faculties were timid in accepting or even positively hostile to new truth, yet it was from other faculties that the new truth emanated.

There are certain universities in the world whose names every educated man knows. Their fame has gone out through all the earth. With them we instinctively associate great names in science, philosophy, literature, and, indeed, great names in all intellectual realms. In these universities there seem always to have been great men; in them are great men to-day. From these fountains of learning there have issued in a never-ceasing stream, investigations, treatises and other multitudinous influences which have impressed the intellectual life of the world to an extent beyond all estimate. Why should this be true of some universities and not of all? Why should not all universities, at least those of larger income, occupy, as far as their age permits, equally honorable places in the records of the advancement of learning? Of how many universities can it be said that the fullest history of the mental achievements of the world might be written without the least occasion to mention their names? Every effect has its precedent cause; and either there are not enough great men born to supply all the universities, or else in some institutions there are not the right conditions to develop or to attract men of genius. A university is great and influential only as its faculty comprises great and influential men. With the development of scholars the environment has much to do. A faculty that either from choice or from necessity confines itself exclusively to teaching can not develop the beneficent characteristics of profound scholarship. Whatever may be its local influence, in the larger intellectual world it is comparatively impotent.

Examples of universities whose ideal is merely teaching, spring to my mind. I know several well where anything savoring of research is discouraged, privately and at times publicly, by some of those in authority, and their attitude has been approved by an equally short-sighted press. It seems often to be accepted as axiomatic that teaching and investigation can not both thrive together; whereas the reverse is more often true that the most inspiring

teaching and that most effective in the development of scholars is indissolubly joined to research. To magnify research is not to minimize teaching. The professor who can carry his pupils to the very confines of knowledge, and who even may venture to tell what may perhaps be hidden in those pathless regions beyond is himself "the pathfinder of those new lands" of knowledge. "The most painful defect in the American college at the present time," President Lowell is reported to have said, "is the lack of esteem for excellence in scholarship." How can we remove this reproach if we do not begin by esteeming scholarship at its source? What reality is there in our appreciation if we do not allow scholarship free and unrestrained development; nay, further, if we do not create such an environment in our universities that scholarship will naturally issue?

As a teacher in that division of knowledge, I have often wondered how much science we in America would have to teach to-day if all that was produced in Europe were eliminated. In how many branches of learning are the American universities merely disseminating the discoveries made by the professors in the universities of Europe? Should any one wish to learn how emphatically true this is in science let him read the impressive presidential address delivered by Professor E. L. Nichols before the American Association for the Advancement of Science at its Baltimore meeting. In one sense it matters nothing who discovers truth so long as it is discovered. Yet our feelings of patriotism will not allow us to content ourselves with that doctrine, nor is this desirable. Sentiment is a powerful stimulus to all our activities. Every patriot glories in the deeds of valor of his countrymen, and should likewise rejoice in their intellectual triumphs. In one of the sciences—astronomy—the long series of brilliant discoveries by American astronomers is such as to warrant a feeling of genuine pride and satisfaction on the part of every citizen of their country. What has been achieved in astronomy may also be accomplished in every branch of knowledge, provided the necessary conditions are observed; but not otherwise.

One respect in which many American professors work against their own ultimate interests, is the practise of publishing their investigations abroad, especially in Great Britain and in Germany. Such a course is the open and undisguised confession of a great superiority of the constituency of learning in foreign countries over that in America, a contrast which this procedure tends to perpetuate. As a British citizen I appreciate the delicate compliment to one of these countries. Nevertheless, it is a cause of never-failing surprise to me to observe a practise that appears to involve an injurious lack of national self-respect.

There are at least two ways in which the university can make itself fruitful in productive scholarship: one, by the establishment of a research school or faculty; the other, by giving every professor, who so desires, the opportunity and encouragement to investigate the unknown regions of his own particular branch of knowledge. Not only should the university afford the opportunity, but should expect it to be utilized by the faculty at large. As regards the former of these general policies, let me quote President Schurman, who has given this subject a great deal of attention.

> In the graduate department as in the university as a whole there is constant danger that the national tendency to worship mere magnitude may distort the vision of the faculty, and especially of the trustees and friends of the university. It is important, therefore, to keep clearly in view

the essential objects of a graduate school. These are the enlargement of existing knowledge and the training of young men and women of superior ability and education in methods of independent investigation so that they too may in time make some contribution to the stock of human knowledge. A love of knowledge, and an ardent desire to wrest something from the unknown, a conviction that science and scholarship are along with virtue the chief good of human life, would seem to be the animating motives of a life of research. Given this subjective equipment in combination with superior powers of observation, reasoning and imagination, and productive scholarship and science are assured. But these gifts are not possessed by all professors, and still less by all graduate students. . . . Similarly there should be a differentiation among professors of those who are qualified to engage in research and guide others in the same path, and those who are preeminent as teachers and assimilative scholars. Surely both are honorable careers, though different. That everybody is fit for everything is a fallacy dangerous enough in politics, but in education it is fatal and paralyzing.

The problem, therefore, which confronts the university in connection with the graduate school is to find the right sort of men for investigators whether as professors or students. And having found them it is the duty of the university to provide the necessary means for the prosecution of their work. This involves suitable salaries for professors, leisure for productive work, and the requisite apparatus and other instrumentalities for research.

A separately organized research faculty is by no means necessary, and possibly not the best agency, to accomplish the higher part of the duty of the university. Therefore, it is quite possible for any institution to participate in the toilsome delights of research. Where several enthusiastic men are associated in the same department, there ought to be that mutual interest, assistance and encouragement, so helpful in stimulating the spirit of investigation. Where but one man is in a department it is with much greater difficulty that a living active interest in research is maintained. If laboratory and library facilities are meager and the environment depressing, then interest wanes, action is deferred, and ambition dies a lingering and rebellious death, accompanied sometimes, too, by the death of the interest in teaching. These, it seems to me, are some of the chief and fundamental disadvantages under which smaller institutions labor.

In further elaboration of my argument let me quote from Professor Nichols's Baltimore address:

> But it will be found that the conditions for maximum scientific productiveness are precisely those which would exist in the ideal university. All attempts at a machine-made science are doomed to failure. Science-making syndicates are likely to meet ship-wreck on the very rocks on which our American educational system is already aground. No autocratic organization is favorable to the development of the scientific spirit. No institution after the commercial models of to-day is likely to be generously fertile. You can contract for a bridge, according to specifications. If a railway is to be built and operated a highly organized staff with superintendents and foremen and an elaborate system reaching every detail may be made to yield the desired results. No one, however, can draw up specifications for a scientific discovery. No one can contract to deliver it on a specified day for a specified price. No employee can be hired to produce it in return for wages received.

There is another aspect to this question. Whether in small or large institutions the professor has certain natural rights and privileges of which he can not justly be dispossessed. He is employed by the institution at a certain remuneration to perform certain stipulated duties; yet he can not be regarded merely as an employee of the university. He is not selling anything that belongs to the university; but he himself possesses that which the university sells. Without him the university has nothing to offer the student.

It has been asserted in extreme cases, that even the book that a professor might write is the property of his university. The arguments with which any one would

defend such an unprincipled doctrine would but succeed in proving him incapable of understanding the relation between university and professor, and in demonstrating his unworthiness to be associated in any capacity with an institution of learning. The professor has surely inherent rights of which the university can not properly deprive him by institutionalizing him for teaching purposes, and the greatest of these to my mind is the right to engage in the investigation of truth.

In some universities there are now being established research chairs. While much can be said in favor of such endowments, some objections can be raised. Far be it from me to deprecate the giving of a large salary to any professor! But what reason is there for attaching relatively lavish remuneration to any position simply because it is called a research chair? Truly the recognition of research is gratifying; but surely the same reasons can be urged why all who so desire it should be research professors. If abundant means are available for the establishment of more chairs in a department, the desired result will be more certainly attained if all professors, old as well as new, are given larger salaries and the same privileges. Moreover, if some chairs are specifically research, others will be looked upon, perhaps looked down upon, as non-research or teaching, with possibly a lowering of the estimation in which teaching is held—a condition as regrettable as it is unnecessary. Further, it is a policy of very doubtful wisdom to permit any professor to become practically inaccessible to students; and the more illustrious the professor, the greater is the folly of such a course. A large part of the duty of professors engaged in research must ever be to train and inspire other men for similar pursuits.

President Schurman quotes the late Lord Kelvin, as saying "that the ideal arrangement for the investigator is to combine research with teaching, but with the amount of teaching reduced sufficiently to leave leisure and vigor of faculty for research." To quote further:

> The biographer of Pasteur records that that eminent scientist entertained similar sentiments. "Pasteur did not suggest that a scientist should give up teaching; he recognized on the contrary that public teaching forces him to embrace in succession every branch of the science he teaches. But let him not give too frequent or too varied lectures! They paralyze the faculties," he said, being well aware of the cost of preparing classes.

Of the conditions that make for success in research, no one could speak more authoritatively than Helmholtz. In a celebrated address given near the close of his long and richly fruitful life, he said:

> There are many narrow-minded people who admire themselves enormously if they have one stroke of luck, or think that they have had one. A pioneer in science or an artist, who has a repeated run of happy accidents, is indubitably a privileged character, and is recognized as a benefactor of mankind. But who can count or weigh such lightning flashes of the mind? Who can trace out the secret threads by which our conceptions are united? . . . I must confess that the departments in which one has not to trust to lucky accidents and inspirations have always had the greatest attraction for me. Yet as I have often been in the predicament of having to wait on inspiration, I have had some few experiences as to when it came to me, which may perhaps be of use to others. Often enough it steals quietly into one's thoughts and at first one does not appreciate its significance; it is only sometimes that another fortuitous circumstance helps one to recognize when, and under what conditions, it occurred to one; otherwise it is there, one knows not whence. In other cases it comes quite suddenly, without effort, like a flash of thought. So far as my experience goes it never comes to a wearied brain, or at the writing table. I must first have turned my problem over and over in all directions, till I can see its twists and windings in my mind's eye, and run through it freely, without writing it down; and it is never possible to

get to this point without a long period of preliminary work. And then, when the consequent fatigue has been recovered from, there must be an hour of perfect bodily recuperation and peaceful comfort, before the kindly inspiration rewards one. . . . It came most readily, as I experienced at Heidelberg, when I went out to climb the wooded hills in sunny weather. The least trace of alcohol, however, sufficed to banish it. Such moments of fertile thought were truly gratifying, but the obverse was less pleasant when the inspiration would not come.

That Helmholtz did not believe in a divorce of teaching from investigation is evident from another quotation from his biography:

Nor did he regard the university lectures simply as an obligation laid upon him by the state, which provided him with sustenance, with scientific instruments and with a goodly proportion of spare time, and therewith had the right to claim from him that whatever he discovered by this aid should be freely communicated to his students and his fellow citizens; he always appreciated the fact that lecturing compelled him to test each isolated proposition strictly, to formulate each conclusion correctly, and, since he could only assume a limited amount of previous knowledge in his hearers, to state the evidence for the views he was maintaining in as simple a manner as possible.

It is evident that research requires a considerable amount of time, free from teaching and other work of a routine character. What would have been the state of science to-day had Newton been obliged to teach many hours per week for nine months in the year? How much of that profound and necessary abstraction of mind could he have cultivated under the conditions which circumscribe the professors in our universities? The history of research proves that truth is purchased at a heavy price; if we will not consent to pay that price we shall have no share in its discovery. Truth might well say: "Ye shall seek me, and shall find me, when ye shall search for me with all your heart."

Another way in which much time and energy of the faculty is consumed is in excessively frequent examinations. This is the secondary school method carried into a place whence its usefulness has departed. It has its origin in a species of paternalism which in the university often defeats the very end it was designed to serve. Examples of university departments occur to me where fortnightly or other examinations were indulged in *ad libitum*, and, I may say, *ad nauseam*, with no conspicuously good results. When in addition, as is sometimes the case, there is added exemption from a final comprehensive examination of high and rigorous standard, positive harm results to the student, who, however, is not easily persuaded that he has been thereby deprived of an educational blessing.

For stimulating and inspiring the professor in the exercise of his function as an investigator, there exist other exceedingly valuable agencies, which, though not a part of the university nor under its control, can be and should be morally supported by the university. These are the societies and associations formed for the advancement of knowledge. Cardinal Newman has set forth the value of such meetings as those of the British Association for the Advancement of Science in his discussion of "What is a University" (written in 1854), from which I venture to quote:

As regards the world of science, we find a remarkable instance of the principle which I am illustrating, in the periodical meetings for its advance, which have arisen in the course of the last twenty years, such as the British Association. Such gatherings would to many persons appear at first sight simply preposterous. Above all subjects of study, science is conveyed, is propagated, by books, or by private teaching. Experiments and investigations are conducted in silence; discoveries are made in solitude. What have philosophers to do with festive celebrities, and panegyrical solemnities with mathematical and phys-

ical truth? Yet upon a closer attention to the subject, it is found that not even scientific thought can dispense with the suggestions, the instruction, the stimulus, the sympathy, the intercourse with mankind on a large scale which such meetings secure. . . . The novelty of place and circumstance, the excitement of strange, or the refreshment of well-known faces, the majesty of rank or of genius, the amiable charities of men pleased both with themselves and with each other; the elevated spirits, the circulation of thought, the curiosity; the morning sections, the outdoor exercise, the well-furnished, well-earned board, the not ungraceful hilarity, the evening circle; the brilliant lecture, the discussions or collisions or guesses of great men one with another, the narratives of scientific processes, of hopes, disappointments, conflicts and successes, the splendid eulogistic orations; these and the like constituents of the annual celebration are considered to do something real and substantial for the advance of knowledge which can be done in no other way. . . . They issue in the promotion of a certain living and, as it were, bodily communication of knowledge from one to another, of a general interchange of ideas, and a comparison and adjustment of science with science, of enlargement of mind, intellectual and social, of an ardent love of the particular study, which may be chosen by each individual, and a noble devotion to its interests.

Lastly, scholarship can not thrive except in an atmosphere of freedom of thought, of speech and of action. No restraint should be laid upon the professor, nor indeed should any be necessary, other than that an educated gentleman necessarily lays upon himself.

The Declaration of Independence of the United States recognizes as one of the rights of man the privilege of the pursuit of happiness, though philosophers tell us that that pursuit can never be crowned with complete success. Happiness is a by-product, as it were, of devotion to duty. Similarly, if the highest educational interests of the students are desired, and if the university is most completely to serve the state, these issues will best come not by directly seeking them, but as a certain result of promoting in a large and generous measure the interests of the faculty.

How mightily influential for good is the president of the university, whose high privilege it is, not only to be a master in his own special department, but to work in or through all departments of the institution's activities! All the conspicuously great American and Canadian presidents have themselves been eminent in their own fields as investigators and teachers; but they have also exercised a stimulating influence upon all other members of the faculty. Many of the greatest of these, notably the late President Harper, of Chicago, remained a teacher to the end, and refused to allow himself to be absorbed wholly by administrative duties. As a consequence, the new university over which he presided very speedily took its place as a seat of higher learning by the side of other institutions with histories going back to the previous century.

The president more than any one else can act as a powerful force in developing public opinion to recognize the high functions of a university, and in winning the support of those to whom the university must look for maintenance, and can enlist their sympathy in the intellectual task of the discovery and dissemination of truth, which is the twofold function of a university in the world's work.

Perhaps the most impressive feature of the nineteenth century was the remarkable development of the United States as a nation. A vast and empty territory has been filled with a strong and vigorous people; there have been great political upheavals and industrial movements; colossal commercial enterprises have been conceived and executed, from which fabulous private and corporate wealth has been accumulated. Yet among them all there is nothing more impressive and significant than the

universal spread of popular education, the only secure foundation upon which democracy can rest. A great feature of this movement has been the establishment of the state universities, whose evolution has been so rapid as to appear not gradual, but *per saltum;* in some cases they seem to have sprung forth fully armed, like Minerva from the head of Jove.

In some of the provinces of my own country we are paying you the sincere compliment of imitation. We have therefore a direct interest in hoping that you will place your institutions upon the broadest possible basis. By constantly turning the searchlight of an educational higher criticism upon the methods and subjects of instruction, what is relatively useless will gradually be eliminated, and what is useful will be preserved and strengthened. Signs are not wanting that the universities are realizing that their functions have not all been exercised, that the greater part of their power for investigation has been a talent uselessly hidden in the earth.

The unexampled annals of the discoveries of truth of the nineteenth century are written, and they chronicle largely the magnificent achievements of the universities of Europe. The century upon which we have entered, which has already witnessed profound extensions of knowledge, will be yet more remarkable, and in it shall not the American universities play an equally triumphant part? And when its record of mental conquests shall be completed, among those inscribed therein, I trust that this university, whose semi-jubilee we celebrate, and whose president is now being inaugurated, will have its name written in that book of intellectual life.

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A COMPARISON BETWEEN FRATERNITY AND NON-FRATERNITY EXPENSES AT THE UNIVERSITY OF ILLINOIS

MUCH has been said and written recently, about the justification for the existence of the fraternity in the college and university, and, from all indications, the investigations are merely begun.

The purpose of this article is to set forth the results of a personal investigation into and comparison of the total expenses of about three hundred fraternity men and a like number of non-fraternity men at the University of Illinois. A member of each of the twenty-three fraternities was asked to canvass his respective fraternity and secure from each eligible member the total amount of his expenses during the nine months of the preceding school year or 1908–9. If the man had no accurate account of his entire expenses he was asked to make as close an estimate as possible. The answers were obtained from the non-fraternity men by a personal canvass by three students among them either on the campus or at their rooms. For sake of accuracy of figures, those men were avoided who were working a considerable portion of their way. The figures and a graphical picture of the data are shown.

Attention is called to the fact that the two curves are very similar, and with the exception of the extremely high values for the fraternity expenses, the corresponding points of the two curves differ on the average by $150, which seems to show that the average fraternity man at Illinois spends about $150 more than the average non-fraternity man.

The 284 fraternity men spent $166,725, or an average of $587.06, while the non-fraternity men spent $115,348.25, or an average of $407.56. The modes of the curves show that the largest single group of fraternity men spent between $500 and $550, and that the largest group of the non-fraternity men spent between $400 and $450. Only three non-fraternity men were found who spent $700 or more. Sixty-nine fraternity men spent $700 or more. Forty-four fraternity men spent $750 or more, while fourteen went to the $1,000