SCIENCE

FRIDAY, JUNE 7, 1918

CONTENTS

MSS. intended for publication and books, etc., intended for review should be sent to The Editor of Science, Garrison-on-Hudson, N. Y.

UNIVERSITY IDEALS AND THEIR LIMITATIONS[1]

WHEN I was asked to address the "Forum," it was with a thrill of pleasure that I accepted, for I felt that this invitation would give me the opportunity of addressing the soul of the student body, for this student body has a youthful, forceful soul, where a clearly conceived and beautiful idealism aspires to adequate self-expression.

It may seem unnatural to some of you that I should find it possible to speak today upon a topic which has no *special* relation to the great war. In so doing, however, I have merely followed the example of Professor George Sarton, who so recently delighted and instructed us in his lectures on "The New Humanism," and my special reason for imitating this distinguished Belgian is that, whatever may be our part in the great struggle now in progress, our outlook on this or any other crisis must of necessity be from the point of view of university men, men whose acts are directed and whose thoughts are inspired by university ideals. It is therefore as imperative at this time as at any other to enquire into the natue of these university ideals, which have been our heritage from the past and form our background in the present and whose influence is none the less profound in that we are generally quite unconscious of its operation.

The terms "university" and "state university" are quite distinct. The institutions so named may have very little in

[1] Address delivered before "The Wisconsin Forum," January 20, 1918, at the University of Wisconsin.

common. A university is a postgraduate school devoted to the pursuit of truth regardless of its material usefulness. A state university may be only a college, by which I mean a sort of advanced high school. Thus the word "university" designates a distinct entity; while "state university" is a title of dignity.

Wherever there is a university there is also a tendency for the formation of other educational units, a college, professional schools, technical schools and art schools, and the name "university" tends to be stretched to cover all these. Whatever may be the original character of a state university, it tends to develop a postgraduate school after the model of the university and ultimately to comprise, in addition to this postgraduate school, a college, professional, technical and art schools. The formation of these large educational aggregates is a feature of the times. They are the results of economy and convenience.

Naturally the close association of several component institutions causes great modification in all of them through mutual interaction, so that we might expect to find the postgraduate school of a state university, like the University of Wisconsin for example, somewhat different from, let us say, the Johns Hopkins University in the eighties or Clark University at the present time. The degree and character of the development of the various constituent organizations which go to form such an educational aggregate as above referred to will depend largely upon the special causes which have brought the institution as a whole into being and those by which it is maintained.

From the foregoing and from the title of this address, "University Ideals," it might be expected that this discussion would concern itself with the ideals of an isolated post-graduate school. Strictly speaking this is not the case. For practical reasons, which I need not stop to enumerate, I shall discuss an institution where in addition to the work of the university proper, undergraduate teaching is carried on to at least a small extent.

It may be remarked, however, that although I speak specifically of science and the scientific, I *believe* that, *mutatis mutandis,* for example the substitution of the word "creation" for the word "discovery," the statements which I am about to make would apply to any component art or literary institution.

The ideals of a university concern its activity and its attitude. The former, as already stated, is the *pursuit of truth* regardless of its material usefulness and in so far as the college is concerned with the exposition of this truth to the undergraduates. The ideal attitude of the university is characterized by its being *agnostic* (a term which will be carefully defined later) and also what I shall designate for want of a better word *universal.* To a consideration of these we shall now turn our attention beginning with a discussion of the search for truth.

Guizot once said:

> Science has its sublime speculators who are, so to speak, its prophets who detect instantly the great laws of the universe and grasp them, as Columbus discovered the New World, hastening to the search in the faith of an idea. Around them are drawn up the sagacious observers who excel in searching out, establishing particular truths, describing them and uniting them successively to the domain of science. And into this domain so enriched enter the legislative minds who classify the facts received, note their relations and determine their laws, and transform them into those general formulas which define the present state of science and become the points of departure and the instrument of future conquests.[2]

[2]Quoted by E.-F. Dubois, "Eloges lus dans les séances publique de l'Academie de Médecine," II., p. 116.

Such is the activity of a university, always bearing in mind the fact that the "sublime speculators" are few and far between and that most of us while following the path laid down by them and enjoying the fruits of their genius must content ourselves with the study of lesser problems. To devote ourselves to such activity and then to return from time to time from expeditions into the unknown with our sack full of treasures which our enthusiasm loves to show to eager and inquiring students whose highest ambition is to follow us and to wrest from Nature the secrets which she in playful reluctance yields to us, is one of the keenest joys the intellect can experience.

But this very simile of an expedition carries with it this question, who is to pay for the expedition? Who is to fit out the ships of Columbus? Who is to endow our laboratories and our professional chairs? It is indeed an important fact that every researcher is dependent either directly or indirectly upon the bounty of some person or persons who may be called the patrons of learning and who, whether they be the people of the state or some smaller group, are always on the watch for what they deem adequate returns. It is only in heaven, where the pangs of hunger can not reach us, that there can exist such a condition as is described in the stanzas,

No one shall work for money, and no one shall work for fame;
But each for the joy of the working, and each in his separate star,
Shall draw the Thing as he sees It, for the God of Things as They Are![3]

For all our pursuings of truth must sooner or later be endorsed by the patrons at whose expense we dine or at least lunch. Thus the range of activity of the university is limited not only by the intellectual shortcomings of the researchers themselves but by the attitude of the patrons. These persons, being only human, may be affected unfavorably, and therefore in the direction of limitation, by two factors, namely, their incapacities and their prejudices.

Of these the second, namely the prejudices, are the more potent if less conspicuous, and are also singularly resistant toward external, ameliorative influences. The mode of action of these prejudices is very familiar to us all. All are aware that no researcher whose results are offensive to the patrons can retain their support, for

This same truth is a naked and open daylight, that doth not show the masks and mummeries and triumphs of the world half so stately and daintily as candlelights.[4]

We have but little reason to hope that this form of limitation may be relaxed through changes in the political order. We are too prone to believe and to assert that in a *real* democracy research of every sort will be encouraged and all truth will be welcome. This naïve over-confidence in democratic institutions is rudely shaken when we recollect that it was in the most intellectual and cultivated democracy that the world has ever known that Socrates was tried and convicted, "firstly of denying the gods recognized by the state and introducing new divinities, and secondly of corrupting the youths of Athens." Thus, although Athenian democratic society was eminently fitted to develop intellectual brilliancy, it was hostile to intellectual liberty and when brought into opposition to the dominant prejudice and dominant public opinion, the way of the innovator was hard.

There are few who would expect that a consideration of post-Athenian ways and customs would lead to encouraging comparisons.

[3] Rudyard Kipling, "L'Envoi" of "Seven Seas."

[4] Francis Bacon, "Essay on Truth."

Although the stigma of intolerance may cling to mankind forever there is a second factor which also limits intellectual freedom but which is capable of very great amelioration. This is the failure on the part of the patrons to appreciate the choicest fruits of scholarship and research.

It is more rare that a failure of appreciation leads to dismissal of a professor, but it is a matter of not unusual occurrence that persons whose vision is not easily followed are thwarted, nagged and otherwise actively encouraged to go somewhere else where the patrons are more enlightened.

As an example of this nagging which is none the less disagreeable for being unpremediated, I can not refrain from quoting a story, as realistic as it is imaginary. It is told by President Maclaurin, of the Massachusetts Institute of Technology, in his article on "Efficiency and Education":

> The superintendent of buildings and grounds, or other competent authority, calls upon Mr. Newton. *Superintendent:* Your theory of gravitation is hanging fire unduly. The director insists upon a finished report, filed in his office by 9 A.M. Monday next; summarized on one page; typewritten and the main points underlined. Also a careful estimate of the cost of the research per student hour.
>
> *Newton:* But there is one difficulty which has been puzzling me for fourteen years and I am not quite . . .
>
> *Superintendent* (with snap and vigor): Guess you had better overcome that difficulty by Monday morning or quit.[5]

If, however, an investigator insists on continuing upon his way through fields of investigation which make no obvious appeal to the patrons unless it be to arouse their spirit of economy, then two courses are open to him. He must either accept a situation which acknowledges that poverty is the patrimony of the Muses or he must find some method of winning the approval of the patrons for his cherished line of research.

In connection with the first of these alternatives, I recall with the greatest pleasure a certain penniless scholar whom I know and greatly admire but whose example I will not recommend for the reason that his mode of life is too ascetic and his privations too severe. Indeed I feel with Burton, that delightful old chatterbox, when he asks in his "Anatomy of Melancholy,"

> What Christian will be so irreligious, as to bring up his son in that course of life [that of the poor scholar] which a beggar's brat taken from the bridge where he sits a-begging, if he knew the inconvenience, had cause to refuse it![6]

If on the other hand the investigator rejects the undowered Muse as a proposition not only personally inconvenient but also incompatible with his own highest efficiency, he must find some way of winning the approval of the patrons. It is here that the privately endowed universities may have some advantage over those which rely on popular support. For in the former pure science may be cherished not only because its more cultured patrons are more appreciative of æsthetic and spiritual values but also because of the affection which their class (the wealthy and leisure class) has for activities, which, because of their apparent uselessness, contribute the more to their social prestige. Such non-material returns are not likely to appeal at once to the patrons of a state university, that is, to the common man, still less to the "hard-headed" (that is, unimaginative) business men who sometimes dominate a board of

[5] R. C. Maclaurin, "Education and Industrial Efficiency," Science, XXXIII., p. 101, 1911. This story I once had the mischievous pleasure of sending to Mr. Allen, of the Wisconsin University Survey, and was complimented by having him write me requesting the exact reference!

[6] Robert Burton, "The Anatomy of Melancholy," Pt. I., Sec. 2, Mem. 3, Subs. 15, 1652.

regents, so that to some vigorous procedure resort must be made.

Offering themselves for our trial or consideration are two such procedures, namely the method of exaggeration and the method of education.

The first of these consists in an effort to make the patron, who in the case of the state university is the common man, feel that the pursuit of pure science will soon and in some way contribute to his physical well-being. Science, it is said, must be cultivated because of its useful application, and so, under the ægis of a useful application of some science or other, the rest of the pure sciences hurry to place themselves, like the acquaintances of a man with an umbrella. The method of exaggeration is in all instances unfair and in the case of the state universities undemocratic. It assumes that the attainment of truth by ourselves is of more importance than its appreciation by the patrons, an assumption which is especially pernicious in the state universities, where the patron is the common man, the people of the state. The method tends to create an intellectual aristocracy on the one hand and a suspicious commonalty on the other. It is a hard saying that those who believe they are investigating purely for "the glory of God and the benefit of man's estate" are often damaging society. But they are when they give to others the material benefits of their labors and keep to themselves the glory of God which has been revealed to them.

But even when we emphatically reject the method of exaggeration and seek to create a real appreciation of the higher values for which the university stands, if, in other words, we set about employing the method of education, even then through force of habit we are very prone to emphasize the lesser and more obvious at the expense of values which, though actually far greater, we consider to be less obtrusive.

As an example in this connection I recall a plea which I once encountered for the study of Latin. The plea consisted in showing the vast numbers of English words having Latin origins. From these data the thoughtless observer was expected to infer a great practical advantage in learning Latin! The common man is quite susceptible to a better and truer argument. He is quite ready to admit the value to the Chinese of a familiarity with our culture; it is not difficult to persuade him that he too might derive much benefit from a knowledge of the culture of the Chinese; it is but a small step from a people living to-day to a people who lived long ago, but who possessed a remarkable culture; and having gone so far, is the common man likely to balk when he finds that the language should not be separated from the literature, the art and institutions of this interesting and instructive people? The common man will admit the advantage of seeing himself as others see him, of viewing our own times and institutions as one freshly arrived from Mars. But such an advantage is possible only to those who have acquired a second culture, that of another race or of another time, in the light of which our times can be less naïvely regarded.

Be it reiterated, then, that we intellectual aristocrats are only too prone to lower our tone to the supposed level of the common man. We should rather encourage him to demand that what he does not understand be made at least partly intelligible to him and we should ever stand ready to disclose our real motives and to share with him our real joys.

In the informal and personal application of this method of education of the common man, the patron of the state university,

we must rely upon the endeavors of those who are in touch not only with the common man but also with the university, who from their origin can sympathize with the one, while by their training they can appreciate the other. I refer to our college graduates. Let these men and women go forth and teach that the benefits which science confers are not only of a material but also of a spiritual character, and that it only remains for the common man to claim the enjoyment of the second as he has already appropriated the first to his use; furthermore that although these benefits are the sole claim which the investigator has upon the patronage of the common man, still these benefits will suffer if made the sole object of impatient search.

It should also be made clear that in many cases, I can not say how many, the value of research is not only measured by what it contributes to science but by what it contributes to the investigator. The theses which our undergraduate students write are in many cases wholly untrustworthy. He must repeat their work step by step before the careful contributor dare present it to a scientific periodical and yet who can doubt the effectiveness of thesis writing as an educational exercise. It is the same with members of a faculty. It is a hard saying, but I believe it is true, that many of our productions achieved with care and accuracy are too insignificant to justify the time expended on them were we to exclude their benefits to the investigator. The patrons need not feel obliged to support such research unless it be performed by one who is at the same time a teacher. In the latter case his researches may be regarded as a most important preparation for his daily task of instructing others. It is only when one devotes his entire time to research that the intrinsic value of those researches demands the serious attention of those concerned with economical administration.

Unfortunately for the spread of our gospel of culture there is a large element in our population which is not likely to be touched by any of our appeals. People who have not enough to eat or to wear, who have been made stupid or angry through economic pressure, do not wax enthusiastic over the rings of Saturn, the origin of the heart beat or the structure of snow crystals. Before this class can become sympathetic with the search for truth regardless of its material usefulness, there must be a considerable modification in the economic structure of society. For such a modification the extension of our ideals in this direction must wait. If it be deprecatingly asked if this is not a subtle endorsement of the doctrine of economic determinism, it may be replied that it means nothing more nor less than the similar affirmation that "Food will win the War."

Having discussed at some length the pursuit of truth and the limitations which are imposed upon it, let us turn from the activity of the university to the second category in which its ideals are manifested, that is, as stated in the beginning of this address, to the ideal attitude. The university attitude is characterized by being critical or rather agnostic and universal, and these we shall discuss in turn.

The terms agnostic and agnosticism have been used in so many ways that many persons have entirely lost sight of their real and original meanings. The word "agnosticism" has been used in theology to designate the inability of finite man to comprehend an infinite God; it has been used in philosophy to describe the impossibility of the mind to know reality, the "Ding an Sich"; it has been used by popular controversialists as a synonym of infidelity. I

now use it in its original sense, the sense given it by the scientist who first coined the term, and if it be necessary to add to it a distinctive adjective to rid it of any ambiguity or invidious implications, it might be called "scientific agnosticism." It is this attribute of scientific agnosticism which is the characteristic of the ideal university attitude.

The agnostic attitude is doubtless as old as human intelligence. This it is which prompts us to cry like Othello

> . . . Give me ocular proof
> Make me to see 't; or, at least so prove it
> That the probation bear no hinge nor loop
> To hang a doubt on.[7]

Alas that Othello should have been so easily satisfied! It is, however, to men of the generation of Tyndall and Huxley that we owe most for the popular exposition of this attitude. The latter, who, by the way, first coined the word "agnostic," points out that this attitude consists in the acceptance of a principle which is as much ethical as intellectual, that it is wrong to affirm as certain that for which we can not produce evidence which may logically justify that certainty. He then continues:

> The results of the working out of this principle will vary according to individual knowledge and capacity, and according to the general condition of science. That which is unproven to-day may be proven by the help of new discoveries to-morrow. The only negative fixed points will be those negations which flow from the demonstrable limitations of our own faculties. And the only obligation accepted is to have the mind always open to conviction.[8]

From this we see that what has been called the agnostic attitude is really a combination of skepticism and openmindedness.

An example will press home this conception more than any number of generalizations and I shall consequently quote from the life of Pasteur an incident which is charmingly illustrative.

When Pasteur claimed to have discovered that the salts of racemic acid consisted of two kinds of crystals, one kind right-handed and turning the plane of polarized light to the right, the other left-handed and turning the plane of polarized light to the left, a discovery of extraordinary importance, the veteran chemist Biot, then seventy-four years old, showed some skepticism. Holding his head on one side, speaking very slowly and smiling ironically Biot kept saying to the friend of Pasteur who had communicated these results to him, "Are you quite sure?" "I should like to investigate this young man's results."

Hearing this, Pasteur arranged an interview with Biot at the Collège de France, where the latter resided. There Biot produced a specimen of racemic acid which he himself had proved to have no effect on polarized light. Then under the direction of Pasteur he proceeded to prepare the solution from which the crystals might be obtained. This done, Pasteur was sent away. When the crystals had been deposited from the mother liquor, Pasteur was sent for to demonstrate to Biot the two sorts of crystals. After he had done so Biot said: "So you affirm that your right-handed crystals will deviate the plane of polarized light to the right, and your left-handed ones will deviate it to the left?" "Yes," said Pasteur. "Well, let me do the rest," and Biot was again left to dissolve the two sorts of crystals separately. Soon after this in Pasteur's presence Biot convinced himself that the assertions of the former were correct. Then taking Pasteur by the arm he said: "My dear boy, I have loved Science so much during my life, that this touches my very heart."[9]

[7] Shakespeare, "Othello," Act III., Sc. III.

[8] Thomas H. Huxley, "Collected Essays," V., pp. 245–246, 1897.

[9] René Vallery-Radot, "Life of Pasteur," pp. 40–41, 1906.

There are times, however, when we find that skepticism is not combined with openmindedness. Many a great advance in science has been greeted with a storm of ridicule or abuse by skeptics with closed minds. Of Van't Hoff they cried: "See this young man fly his Pegasus borrowed, no doubt, from the stalls of the veterinary college where he is a professor!" So it was with Semmelweis and Oliver Wendell Holmes, the discoverers of the infectious nature of child-bed fever, and so also with Darwin and a host of others.

"We used to debate the Darwinian Hypothesis privately," writes Professor Shaler of the time when he was a pupil of Agassiz, "for to be caught at it was as it is for the faithful to be detected in a careful study of a heresy. We had both read the 'Vestiges of the Natural History of Creation,' Lamarck's 'Philosophie Zoologique,' and first the Darwin-Wallace papers and then the newly published 'Origin of Species.' Agassiz had given a large part of his lectures in one term to denouncing these works and to the assertion that species were absolute creations. He never even suggested how the special creation came about, and when, at the end of a lecture, I pressed him for some conception of how a species first appeared, he stated that it was a 'thought of God!' "[10] An answer which, though it may be true philosophically, is biologically speaking quite irrelevant!

This fact, that skepticism is so often divorced from openmindedness, limits greatly the influence of the university upon the common man. The common man has discovered in the universities not only the agnostic attitude but also this counterfeit which he improperly calls "conservatism." This is an unfortunate use of a good word and leads us into endless ambiguities. "Conservatism" is the sentiment which seeks to preserve all that is truest and best both in the present and in antiquity. When on mature consideration we have decided what is best, it is conservatism which directs us reverently to cherish it. But the counterfeit which the common man has detected is the mind which, though skeptical, is tightly closed, it is the mind that believes that that which is, is best and, in refusing to sanction any novelty, claims to be exhibiting the agnostic attitude. This attitude, when it is not actually assumed for selfish motives, is an indication of precocious mental senility, of mental inflexibility or calcification. Its presence is always obstructive; its appearance is always ugly. It may lead a thoughtful nature to such outbreaks of exasperation as we find in the play of Faust:

By that I know the learned lord you are!
What you don't touch, is lying leagues afar;
What you don't grasp is wholely lost to you;
What you don't reckon think you can't be true;
What you don't weigh, it has no weight, alas!
What you don't coin, you're sure it will not pass.[11]

It is a great misfortune that there is as yet no adequate way for the common man to distinguish the genuine agnostic attitude from this counterfeit, for it is owing to the discovery that such a counterfeit exists that the universities have been viewed for years with suspicion by many thoughtful members of society, especially of the intelligent working class. For in the case of the academician or scientific expert, what common man can distinguish wise caution from dull or self-seeking immobility!

But the old are unable to grasp a new idea; are they then to be condemned to euthanasia by chloroform at sixty years, as has been playfully suggested? By no

[10] Nathaniel S. Shaler, "Autobiography," p. 128. 1909.

[11] Goethe, "Faust," Pt. II., Act I., Sc. II., Bayard Taylor's translation.

means. Symmetrical old age is beautiful, not ugly. For along with slowness to grasp new ideas, there is increase in toleration and in benevolence. The growth of the mind has given place to growth of the heart and so "the best is yet to be." It is asymmetrical old age which is ugly. It is mental rigidity without spiritual growth which, like old-sightedness in the young, is so much to be regretted.

The scientific attitude is not only agnostic but also universal. To the scientific mind there are no isolated facts or discrete phenomena, but all are integral parts of the great structure of knowledge. To him the separate sciences and subsciences become of importance and significance only as he sees them as elements of more comprehensive units, which in turn make up the ultimate unit which he calls Nature, Weltanschauung or world picture.

In his "Nature of Truth" Joachim shows how such bald statements as "Cæsar crossed the Rubicon," "This tree is green," or "A whale is a mammal," represent not only a minimal degree of truth but possess no importance nor significance whatsoever. To be fully cognizant of the meaning contained in these statements, one should view each in its proper "setting." But what is to limit the indefinite expansion of this setting? Nothing. And it is a fact which need only be expressed to be grasped that none of these apparently simple statements can be *completely* comprehended except by a mind which is omniscient.[12]

Or again if I say "This is a lead pencil" the meaning of my remark will depend upon the mind to which it is addressed. To the child the remark will have relatively a small content; to the learned the connotation of the word "lead pencil" will be extraordinarily extensive. The pencil has a chemistry and physics, even an astronomy. It has a manufacture and a manufacturer with his anatomy, physiology and sociology. Nay more, it may be found to form an integral part of art and ethics and religion! We are all accustomed to being told that the world of to-day can not be understood without its historical background, but the conception just presented leads one step further and we may add no fact is *completely* intelligible or significant except when seen against the background of universal knowledge.[13]

This, then, is what is meant by the term "universality" and we ask what limitations are there to this attribute of the scholarly mind? Promptly comes the answer that to demand of the scientist that he should view every fact of nature in the light of omniscience is absurd. Doubtless this is true, but that his thinking should bear some traces of this universality is not too much to expect. His strict attention is naturally di-

[12] Harold H. Joachim, "Nature of Truth," on degree of truth in Chap. III., 1906.

[13] It is most interesting to note in passing how closely this conception of the universal element of the scientific mind parallels Schleiermacher's conception of religious feeling. The religious feeling, says Schleiermacher (Friederich Schleiermacher, "Reden über die Religion," 1799; trans. of John Oman, 1893, entitled "On Religion, Speeches to its Cultural Despisers," 1893) may arise from the contemplation of the universe or of any part of it, of all that lives and moves, all growth and change, all doing and suffering. This then is the immediate cause of the religious feeling, but what is the character of this feeling? It is a "sense of the whole." When he looks at a finite object the religious man sees it not in its discrete individuality but always as a "fragment of the whole." The soul and life of the individual is felt by the religious man to be of significance only because it is a part of the universal soul or life which he calls God. With Schleiermacher the feeling is religion and the whole is God. With the scientist there is an imperfect acquaintance with a whole which is nature. To each the feeling of fragmentariness is an accompaniment of finite impressions.

rected to a particular group of phenomena peculiar to the science of his choice. This group lies in the field of his direct vision, so to speak, but surrounding this lies the field of indirect vision, the field of universal knowledge, where objects are less distinctly seen. Between these two fields there is, as already stated, no logical boundary. To be sure our ideas of universal knowledge must be imperfect and vague for any achievement of universality can be but partial. Yet although we may not possess the mind "which is a mirror or glass, capable of the image of the universal world, and joyful to receive the impressions thereof as the eye joyeth to receive light,"[14] yet some effort so to do must be made as our response to this ideal of universality.

Besides this finiteness of man which limits our universality there is another limitation which when it exists is fortunately more amenable to amelioration. It is a certain reluctance to reflect broadly. We live in an age of enforced and minute specialization. Each one of us is anxious to shine in his chosen sphere but also correspondingly reluctant to appear as a dilettante in any other field. We feel, however much we may regret it, that we have no time for mere culture. Ultimately we may even become like coal miners devoting their lives to sending their laden trucks up to the surface of a world they know not of.

This is of course contrary to what I conceive to be the university ideal, and furthermore it is pedagogically undesirable. For I do not think that it can be denied that students would suffer from contact with men who are wilfully limited in horizon. I say "wilfully" because, to the student, contact with aspiration may be as inspiring as contact with achievement. In an atmosphere of limitation the student becomes a specialist also, not in one field but in several. He may study Latin and sociology and music and physiology and become at least for a time a miniature specialist in each, for between these subjects there are to the student's mind no obvious connection. They form no part of a universal scheme of things. Called on to construct such a scheme he would be as helpless as the ancient geographers who

> in Afric maps
> With savage pictures filled their gaps,
> And o'er unhabitable downs
> Place elephants for want of towns.[15]

At length he is permitted to depart from our institutions of learning, taking with him his compartmental knowledge, the more compartmental the more closely he has devoted himself to his studies, whether prescribed or chosen.

How fond we all are of the quotation that Sophocles "saw life steadily and saw it whole."[16] Our veneration of Sophocles rests upon the fact that from necessarily limited data he made a great synthesis, a great induction, and the example of Sophocles commends itself to us as appropriate to set before aspiring young men. But it may be (and that chiefly through our own fault) that few of our students have ever learned that any synthesis, however crude, is possible, much less that it is expected of them. Should not the student take with him from his alma mater the vision of such a synthesis not as a finite act to be performed but as a process continuing all through his intellectual life and evolving as it goes his picture of truth as he sees it?

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[14] Francis Bacon, "Advancement of Learning," Bk. 1, pgf. 6.

[15] Jonathan Swift, "On Poetry, a Rapsody," pgf. 10, 1733.

[16] Matthew Arnold, "Sonnet to a Friend."