CHAPTER I

THE AIMS OF EDUCATION

Culture is activity of thought, and receptiveness to beauty and humane feeling. Scraps of information have nothing to do with it. A merely well-informed man is the most useless bore on God's earth. What we should aim at producing is men who possess both culture and expert knowledge in some special direction. Their expert knowledge will give them the ground to start from, and their culture will lead them as deep as philosophy and as high as art. We have to remember that the valuable intellectual development is self-development, and that it mostly takes place between the ages of sixteen and thirty. As to training, the most important part is given by mothers before the age of twelve. A saying due to Archbishop Temple illustrates my meaning. Surprise was expressed at the success in after-life of a man, who as a boy at Rugby had been somewhat undistinguished. He answered, "It is not what they are at eighteen, it is what they become afterwards that matters."

In training a child to activity of thought, above all things we must beware of what I will call "inert ideas"—that is to say, ideas that are merely
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received into the mind without being utilised, or tested, or thrown into fresh combinations.

In the history of education, the most striking phenomenon is that schools of learning, which at one epoch are alive with a ferment of genius, in a succeeding generation exhibit merely pedantry and routine. The reason is, that they are overlaid with inert ideas. Education with inert ideas is not only useless: it is, above all things, harmful—Corruptio optimi, pessima. Except at rare intervals of intellectual ferment, education in the past has been radically infected with inert ideas. That is the reason why uneducated clever women, who have seen much of the world, are in middle life so much the most cultured part of the community. They have been saved from this horrible burden of inert ideas. Every intellectual revolution which has ever stirred humanity into greatness has been a passionate protest against inert ideas. Then, alas, with pathetic ignorance of human psychology, it has proceeded by some educational scheme to bind humanity by fresh ideas of its own fashioning.

Let us now ask how in our system of education we are to guard against this mental dryrot. We pronoune two educational commandments, "Do not teach too many subjects," and again, "What you teach thoroughly."

The result of teaching small parts of a large number of subjects is the passive reception of disconnected ideas, not illumined with any spark of vitality. Let the main ideas which are introduced into a child's education be few and important, and let them be thrown into every combination possible. The child should make them his own, and should understand their application here and now in the circumstances of his actual life. From the very beginning of his education, the child should experience the joy of discovery. The discovery which he has to make, is that general ideas give an understanding of that stream of events which pours through his life, which is his life. By understanding I mean more than a mere logical analysis, though that is included. I mean "understanding" in the sense in which it is used in the French proverb, "To understand all, is to forgive all." Pedants sneer at an education which is useful. But if education is not useful, what is it? Is it a talent, to be hidden away in a napkin? Of course, education should be useful, whatever your aim in life. It was useful to Saint Augustine and it was useful to Napoleon. It is useful, because understanding is useful.

I pass lightly over that understanding which should be given by the literary side of education. Nor do I wish to be supposed to pronounce on the relative merits of a classical or a modern curriculum. I would only remark that the understanding which we want is an understanding of an insistent present. The only use of a knowledge of the past is to equip us for the present. No more deadly harm can be done to young minds than
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by depreciation of the present. The present contains all that there is. It is holy ground; for it is the past, and it is the future. At the same time it must be observed that an age is no less past if it existed two hundred years ago than if it existed two thousand years ago. Do not be deceived by the pedantry of dates. The ages of Shakespeare and of Molière are no less past than are the ages of Sophocles and of Virgil. The communion of saints is a great and inspiring assemblage, but it has only one possible hall of meeting, and that is, the present; and the mere lapse of time through which any particular group of saints must travel to reach that meeting-place, makes very little difference.

Passing now to the scientific and logical side of education, we remember that here also ideas which are not utilised are positively harmful. By utilising an idea, I mean relating it to that stream, compounded of sense perceptions, feelings, hopes, desires, and of mental activities adjusting thought to thought, which forms our life. I can imagine a set of beings which might fortify their souls by passively reviewing disconnected ideas. Humanity is not built that way—except perhaps some editors of newspapers.

In scientific training, the first thing to do with an idea is to prove it. But allow me for one moment to extend the meaning of "prove"; I mean—to prove its worth. Now an idea is not worth much unless the propositions in which it is embodied are true. Accordingly an essential part of the proof of an idea is the proof, either by experiment or by logic, of the truth of the propositions. But it is not essential that this proof of the truth should constitute the first introduction to the idea. After all, its assertion by the authority of respectable teachers is sufficient evidence to begin with. In our first contact with a set of propositions, we commence by appreciating their importance. That is what we all do in after-life. We do not attempt, in the strict sense, to prove or to disprove anything, unless its importance makes it worthy of that honour. These two processes of proof, in the narrow sense, and of appreciation, do not require a rigid separation in time. Both can be proceed with nearly concurrently. But in so far as either process must have the priority, it should be that of appreciation by use.

Furthermore, we should not endeavour to use propositions in isolation. Emphatically I do not mean, a neat little set of experiments to illustrate Proposition I and then the proof of Proposition I, a neat little set of experiments to illustrate Proposition II and then the proof of Proposition II, and so on to the end of the book. Nothing could be more boring. Interrelated truths are utilised en bloc, and the various propositions are employed in any order, and with any reiteration. Choose some important applications of your theoretical subject; and study them concurrently with the systematic the-
that some reviewer will say that it will be difficult to teach from it. Of course it will be difficult to teach from it. If it were easy, the book ought to be burned; for it cannot be educational. In education, as elsewhere, the broad primrose path leads to a nasty place. This evil path is represented by a book or a set of lectures which will practically enable the student to learn by heart all the questions likely to be asked at the next external examination. And I may say in passing that no educational system is possible unless every question directly asked of a pupil at any examination is either framed or modified by the actual teacher of that pupil in that subject. The external assessor may report on the curriculum or on the performance of the pupils, but never should be allowed to ask the pupil a question which has not been strictly supervised by the actual teacher, or at least inspired by a long conference with him. There are a few exceptions to this rule, but they are exceptions, and could easily be allowed for under the general rule.

We now return to my previous point, that theoretical ideas should always find important applications within the pupil's curriculum. This is not an easy doctrine to apply, but a very hard one. It contains within itself the problem of keeping knowledge alive, of preventing it from becoming inert, which is the central problem of all education.

The best procedure will depend on several factors, none of which can be neglected, namely, the genius

oretical exposition. Keep the theoretical exposition short and simple, but let it be strict and rigid so far as it goes. It should not be too long for it to be easily known with thoroughness and accuracy. The consequences of a plethora of half-digested theoretical knowledge are deplorable. Also the theory should not be muddled up with the practice. The child should have no doubt when it is proving and when it is utilising. My point is that what is proved should be utilised, and that what is utilised should—so far as is practicable—be proved. I am far from asserting that proof and utilisation are the same thing.

At this point of my discourse, I can most directly carry forward my argument in the outward form of a digression. We are only just realising that the art and science of education require a genius and a study of their own; and that this genius and this science are more than a bare knowledge of some branch of science or of literature. This truth was partially perceived in the past generation; and headmasters, somewhat crudely, were apt to supersede learning in their colleagues by requiring left-hand bowling and a taste for football. But culture is more than cricket, and more than football, and more than extent of knowledge.

Education is the acquisition of the art of the utilisation of knowledge. This is an art very difficult to impart. Whenever a text-book is written of real educational worth, you may be quite certain
of the teacher, the intellectual type of the pupils, their prospects in life, the opportunities offered by the immediate surroundings of the school, and allied factors of this sort. It is for this reason that the uniform external examination is so deadly. We do not denounce it because we are cranks, and like denouncing established things. We are not so childish. Also, of course, such examinations have their use in testing slackness. Our reason of dislike is very definite and very practical. It kills the best part of culture. When you analyse in the light of experience the central task of education, you find that its successful accomplishment depends on a delicate adjustment of many variable factors. The reason is that we are dealing with human minds, and not with dead matter. The evocation of curiosity, of judgment, of the power of mastering a complicated tangle of circumstances, the use of theory in giving foresight in special cases—all these powers are not to be imparted by a set rule embodied in one schedule of examination subjects.

I appeal to you, as practical teachers. With good discipline, it is always possible to pump into the minds of a class a certain quantity of inert knowledge. You take a text-book and make them learn it. So far, so good. The child then knows how to solve a quadratic equation. But what is the point of teaching a child to solve a quadratic equation? There is a traditional answer to this question. It runs thus: The mind is an instrument, you first sharpen it, and then use it; the acquisition of the power of solving a quadratic equation is part of the process of sharpening the mind. Now there is just enough truth in this answer to have made it live through the ages. But for all its half-truth, it embodies a radical error which bids fair to stifle the genius of the modern world. I do not know who was first responsible for this analogy of the mind to a dead instrument. For aught I know, it may have been one of the seven wise men of Greece, or a committee of the whole lot of them. Whoever was the originator, there can be no doubt of the authority which it has acquired by the continuous approval bestowed upon it by eminent persons. But whatever its weight of authority, whatever the high approval which it can quote, I have no hesitation in denouncing it as one of the most fatal, erroneous, and dangerous conceptions ever introduced into the theory of education. The mind is never passive; it is a perpetual activity, delicate, receptive, responsive to stimulus. You cannot postpone its life until you have sharpened it. Whatever interest attaches to your subject-matter must be evoked here and now; whatever powers you are strengthening in the pupil, must be exercised here and now; whatever possibilities of mental life your teaching should impart, must be exhibited here and now. That is the golden rule of education, and a very difficult rule to follow.

The difficulty is just this: the apprehension of
general ideas, intellectual habits of mind, and pleasurable interest in mental achievement can be evoked by no form of words, however accurately adjusted. All practical teachers know that education is a patient process of the mastery of details, minute by minute, hour by hour, day by day. There is no royal road to learning through an airy path of brilliant generalisations. There is a proverb about the difficulty of seeing the wood because of the trees. That difficulty is exactly the point which I am enforcing. The problem of education is to make the pupil see the wood by means of the trees.

The solution which I am urging, is to eradicate the fatal disconnection of subjects which kills the vitality of our modern curriculum. There is only one subject-matter for education, and that is Life in all its manifestations. Instead of this single unity, we offer children—Algebra, from which nothing follows; Geometry, from which nothing follows; Science, from which nothing follows; History, from which nothing follows; a Couple of Languages, never mastered; and lastly, most dreary of all, Literature, represented by plays of Shakespeare, with philological notes and short analyses of plot and character to be in substance committed to memory. Can such a list be said to represent Life, as it is known in the midst of the living of it? The best that can be said of it is, that it is a rapid table of contents which a deity might run over in his mind while he was thinking of creating a world, and had not yet determined how to put it together.

Let us now return to quadratic equations. We still have on hand the unanswered question. Why should children be taught their solution? Unless quadratic equations fit into a connected curriculum, of course there is no reason to teach anything about them. Furthermore, extensive as should be the place of mathematics in a complete culture, I am a little doubtful whether for many types of boys algebraic solutions of quadratic equations do not lie on the specialist side of mathematics. I may here remind you that as yet I have not said anything of the psychology or the content of the specialism, which is so necessary a part of an ideal education. But all that is an evasion of our real question, and I merely state it in order to avoid being misunderstood in my answer.

Quadratic equations are part of algebra, and algebra is the intellectual instrument which has been created for rendering clear the quantitative aspects of the world. There is no getting out of it. Through and through the world is infected with quantity. To talk sense, is to talk in quantities. It is no use saying that the nation is large,—How large? It is no use saying that radium is scarce,—How scarce? You cannot evade quantity. You may fly to poetry and to music, and quantity and number will face you in your rhythms and your octaves. Elegant intellects which despise the theory of quan-
tity, are but half developed. They are more to be pitied than blamed. The scraps of gibberish, which in their school-days were taught to them in the name of algebra, deserve some contempt.

This question of the degeneration of algebra into gibberish, both in word and in fact, affords a pathetic instance of the uselessness of reforming educational schedules without a clear conception of the attributes which you wish to evoke in the living minds of the children. A few years ago there was an outcry that school algebra was in need of reform, but there was a general agreement that graphs would put everything right. So all sorts of things were extruded, and graphs were introduced. So far as I can see, with no sort of idea behind them, but just graphs. Now every examination paper has one or two questions on graphs. Personally, I am an enthusiastic adherent of graphs. But I wonder whether as yet we have gained very much. You cannot put life into any schedule of general education unless you succeed in exhibiting its relation to some essential characteristic of all intelligent or emotional perception. It is a hard saying, but it is true; and I do not see how to make it any easier. In making these little formal alterations you are beaten by the very nature of things. You are pitted against too skilful an adversary, who will see to it that the pea is always under the other thimble.

Reformation must begin at the other end. First, you must make up your mind as to those quantita-

tive aspects of the world which are simple enough to be introduced into general education; then a schedule of algebra should be framed which will about find its exemplification in these applications. We need not fear for our pet graphs, they will be there in plenty when we once begin to treat algebra as a serious means of studying the world. Some of the simplest applications will be found in the quantities which occur in the simplest study of society. The curves of history are more vivid and more informing than the dry catalogues of names and dates which comprise the greater part of that arid school study. What purpose is effected by a catalogue of undistinguished kings and queens? Tom, Dick, or Harry, they are all dead. General resurrections are failures, and are better postponed. The quantitative flux of the forces of modern society is capable of very simple exhibition. Meanwhile, the idea of the variable, of the function, of rate of change, of equations and their solution, of elimination, are being studied as an abstract science for their own sake. Not, of course, in the pompous phrases with which I am alluding to them here, but with that iteration of simple special cases proper to teaching.

If this course be followed, the route from Chaucer to the Black Death, from the Black Death to modern Labour troubles, will connect the tales of the mediaeval pilgrims with the abstract science of algebra, both yielding diverse aspects of that single theme, Life. I know what most of you are thinking
at this point. It is that the exact course which I have sketched out is not the particular one which you would have chosen, or even see how to work. I quite agree. I am not claiming that I could do it myself. But your objection is the precise reason why a common external examination system is fatal to education. The process of exhibiting the applications of knowledge must, for its success, essentially depend on the character of the pupils and the genius of the teacher. Of course I have left out the easiest applications with which most of us are more at home. I mean the quantitative sides of sciences, such as mechanics and physics.

Again, in the same connection we plot the statistics of social phenomena against the time. We then eliminate the time between suitable pairs. We can speculate how far we have exhibited a real causal connection, or how far a mere temporal coincidence. We notice that we might have plotted against the time one set of statistics for one country and another set for another country, and thus, with suitable choice of subjects, have obtained graphs which certainly exhibited mere coincidence. Also other graphs exhibit obvious causal connections. We wonder how to discriminate. And so are drawn on as far as we will.

But in considering this description, I must beg you to remember what I have been insisting on above. In the first place, one train of thought will not suit all groups of children. For example, I should expect that artisan children will want something more concrete and, in a sense, swifter than I have set down here. Perhaps I am wrong, but that is what I should guess. In the second place, I am not contemplating one beautiful lecture stimulating, once and for all, an admiring class. That is not the way in which education proceeds. No; all the time the pupils are hard at work solving examples, drawing graphs, and making experiments, until they have a thorough hold on the whole subject. I am describing the interspersed explanations, the directions which should be given to their thoughts. The pupils have got to be made to feel that they are studying something, and are not merely executing intellectual minuets.

Finally, if you are teaching pupils for some general examination, the problem of sound teaching is greatly complicated. Have you ever noticed the zig-zag moulding round a Norman arch? The ancient work is beautiful, the modern work is hideous. The reason is, that the modern work is done to exact measure, the ancient work is varied according to the idiosyncrasy of the workman. Here it is crowded, and there it is expanded. Now the essence of getting pupils through examinations is to give equal weight to all parts of the schedule. But mankind is naturally specialist. One man sees a whole subject, where another can find only a few detached examples. I know that it seems contradictory to allow for specialism in a curriculum especially.
designed for a broad culture. Without contradictions the world would be simpler, and perhaps duller. But I am certain that in education wherever you exclude specialism you destroy life.

We now come to the other great branch of a general mathematical education, namely Geometry. The same principles apply. The theoretical part should be clear-cut, rigid, short, and important. Every proposition not absolutely necessary to exhibit the main connection of ideas should be cut out, but the great fundamental ideas should be all there. No omission of concepts, such as those of Similarity and Proportion. We must remember that, owing to the aid rendered by the visual presence of a figure, Geometry is a field of unequalled excellence for the exercise of the deductive faculties of reasoning. Then, of course, there follows Geometrical Drawing, with its training for the hand and eye.

But, like Algebra, Geometry and Geometrical Drawing must be extended beyond the mere circle of geometrical ideas. In an industrial neighbourhood, machinery and workshop practice form the appropriate extension. For example, in the London Polytechnics this has been achieved with conspicuous success. For many secondary schools I suggest that surveying and maps are the natural applications. In particular, plane-table surveying should lead pupils to a vivid apprehension of the immediate application of geometric truths. Simple drawing apparatus, a surveyor's chain, and a surveyor's compass, should enable the pupils to rise from the survey and mensuration of a field to the construction of the map of a small district. The best education is to be found in gaining the utmost information from the simplest apparatus. The provision of elaborate instruments is greatly to be deprecated. To have constructed the map of a small district, to have considered its roads, its contours, its geology, its climate, its relation to other districts, the effects on the status of its inhabitants, will teach more history and geography than any knowledge of Perkin Warbeck or of Behren's Straits. I mean not a nebulous lecture on the subject, but a serious investigation in which the real facts are definitely ascertained by the aid of accurate theoretical knowledge. A typical mathematical problem should be: Survey such and such a field, draw a plan of it to such and such a scale, and find the area. It would be quite a good procedure to impart the necessary geometrical propositions without their proofs. Then, concurrently in the same term, the proofs of the propositions would be learnt while the survey was being made.

Fortunately, the specialist side of education presents an easier problem than does the provision of a general culture. For this there are many reasons. One is that many of the principles of procedure to be observed are the same in both cases, and it is unnecessary to recapitulate. Another reason is that specialist training takes place—or should take place—at a more advanced stage of the pupil's course,
and thus there is easier material to work upon. But undoubtedly the chief reason is that the specialist study is normally a study of peculiar interest to the student. He is studying it because, for some reason, he wants to know it. This makes all the difference. The general culture is designed to foster an activity of mind; the specialist course utilises this activity. But it does not do to lay too much stress on these neat antitheses. As we have already seen, in the general course foci of special interest will arise; and similarly in the specialist study, the external connections of the subject drag thought outwards.

Again, there is not one course of study which merely gives general culture, and another which gives special knowledge. The subjects pursued for the sake of a general education are special subjects specially studied; and, on the other hand, one of the ways of encouraging general mental activity is to foster a special devotion. You may not divide the seamless coat of learning. What education has to impart is an intimate sense for the power of ideas, for the beauty of ideas, and for the structure of ideas, together with a particular body of knowledge which has peculiar reference to the life of the being possessing it.

The appreciation of the structure of ideas is that side of a cultured mind which can only grow under the influence of a special study. I mean that eye for the whole chess-board, for the bearing of one set of ideas on another. Nothing but a special study can give any appreciation for the exact formulation of general ideas, for their relations when formulated, for their service in the comprehension of life. A mind so disciplined should be both more abstract and more concrete. It has been trained in the comprehension of abstract thought and in the analysis of facts.

Finally, there should grow the most austere of all mental qualities; I mean the sense for style. It is an aesthetic sense, based on admiration for the direct attainment of a foreseen end, simply and without waste. Style in art, style in literature, style in science, style in logic, style in practical execution have fundamentally the same aesthetic qualities, namely, attainment and restraint. The love of a subject in itself and for itself, where it is not the sleepy pleasure of pacing a mental quarter-deck, is the love of style as manifested in that study.

Here we are brought back to the position from which we started, the utility of education. Style, in its finest sense, is the last acquisition of the educated mind; it is also the most useful. It pervades the whole being. The administrator with a sense for style hates waste; the engineer with a sense for style economises his material; the artisan with a sense for style prefers good work. Style is the ultimate morality of mind.

But above style, and above knowledge, there is something, a vague shape like fate above the Greek gods. That something is power. Style is the fash-
ioning of power, the restraining of power. But, after all, the power of attainment of the desired end is fundamental. The first thing is to get there. Do not bother about your style, but solve your problem, justify the ways of God to man, administer your province, or do whatever else is set before you.

Where, then, does style help? In this, with style the end is attained without side issues, without raising undesirable inflammations. With style you attain your end and nothing but your end. With style the effect of your activity is calculable, and foresight is the last gift of gods to men. With style your power is increased, for your mind is not distracted with irrelevancies, and you are more likely to attain your object. Now style is the exclusive privilege of the expert. Whoever heard of the style of an amateur painter, of the style of an amateur poet? Style is always the product of specialist study, the peculiar contribution of specialism to culture.

English education in its present phase suffers from a lack of definite aim, and from an external machinery which kills its vitality. Hitherto in this address I have been considering the aims which should govern education. In this respect England halts between two opinions. It has not decided whether to produce amateurs or experts. The profound change in the world which the nineteenth century has produced is that the growth of knowledge has given foresight. The amateur is essentially a man with appreciation and with immense versatility in mastering a given routine. But he lacks the foresight which comes from special knowledge. The object of this address is to suggest how to produce the expert without loss of the essential virtues of the amateur. The machinery of our secondary education is rigid where it should be yielding, and lax where it should be rigid. Every school is bound on pain of extinction to train its boys for a small set of definite examinations. No headmaster has a free hand to develop his general education or his specialist studies in accordance with the opportunities of his school, which are created by its staff, its environment, its class of boys, and its endowments. I suggest that no system of external tests which aims primarily at examining individual scholars can result in anything but educational waste.

Primarily it is the schools and not the scholars which should be inspected. Each school should grant its own leaving certificates, based on its own curriculum. The standards of these schools should be sampled and corrected. But the first requisite for educational reform is the school as a unit, with its approved curriculum based on its own needs, and evolved by its own staff. If we fail to secure that, we simply fall from one formalism into another, from one dung-hill of inert ideas into another.

In stating that the school is the true educational unit in any national system for the safeguarding of
efficiency, I have conceived the alternative system as being the external examination of the individual scholar. But every Scylla is faced by its Charybdis—or, in more homely language, there is a ditch on both sides of the road. It will be equally fatal to education if we fall into the hands of a supervising department which is under the impression that it can divide all schools into two or three rigid categories, each type being forced to adopt a rigid curriculum. When I say that the school is the educational unit, I mean exactly what I say, no larger unit, no smaller unit. Each school must have the claim to be considered in relation to its special circumstances. The classifying of schools for some purposes is necessary. But no absolutely rigid curriculum, not modified by its own staff, should be permissible. Exactly the same principles apply, with the proper modifications, to universities and to technical colleges.

When one considers in its length and in its breadth the importance of this question of the education of a nation's young, the broken lives, the defeated hopes, the national failures, which result from the frivolous inertia with which it is treated, it is difficult to restrain within oneself a savage rage. In the conditions of modern life the rule is absolute, the race which does not value trained intelligence is doomed. Not all your heroism, not all your social charm, not all your wit, not all your victories on land or at sea, can move back the finger of fate.

To-day we maintain ourselves. To-morrow science will have moved forward yet one more step, and there will be no appeal from the judgment which will then be pronounced on the uneducated.

We can be content with no less than the old summary of educational ideal which has been current at any time from the dawn of our civilisation. The essence of education is that it be religious.

Pray, what is religious education?

A religious education is an education which inculcates duty and reverence. Duty arises from our potential control over the course of events. Where attainable knowledge could have changed the issue, ignorance has the guilt of vice. And the foundation of reverence is this perception that the present holds within itself the complete sum of existence, backwards and forwards, that whole amplitude of time, which is eternity.
CHAPTER VII

UNIVERSITIES AND THEIR FUNCTION

I

The expansion of universities is one marked feature of the social life in the present age. All countries have shared in this movement, but more especially America, which thereby occupies a position of honor. It is, however, possible to be overwhelmed even by the gifts of good fortune; and this growth of universities, in number of institutions, in size, and in internal complexity of organization, discloses some danger of destroying the very sources of their usefulness, in the absence of a widespread understanding of the primary functions which universities should perform in the service of a nation. These remarks, as to the necessity for reconsideration of the function of universities, apply to all the more developed countries. They are only more especially applicable to America, because this country has taken the lead in a development which, under wise guidance, may prove to be one of the most fortunate forward steps which civilisation has yet taken.

This article will only deal with the most general principles, though the special problems of the various departments in any university are, of course, innumerable. But generalities require illustration, and for this purpose I choose the business school of a university. This choice is dictated by the fact that business schools represent one of the newer developments of university activity. They are also more particularly relevant to the dominant social activities of modern nations, and for that reason are good examples of the way in which the national life should be affected by the activities of its universities. Also at Harvard, where I have the honour to hold office, the new foundation of a business school on a scale amounting to magnificence has just reached its completion.

There is a certain novelty in the provision of such a school of training, on this scale of magnitude, in one of the few leading universities of the world. It marks the culmination of a movement which for many years past has introduced analogous departments throughout American universities. This is a new fact in the university world; and it alone would justify some general reflections upon the purpose of a university education, and upon the proved importance of that purpose for the welfare of the social organism.

The novelty of business schools must not be exaggerated. At no time have universities been restricted to pure abstract learning. The University of Salerno in Italy, the earliest of European univer-
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imperting of information is concerned, no university has had any justification for existence since the popularisation of printing in the fifteenth century. Yet the chief impetus to the foundation of universities came after that date, and in more recent times has even increased.

The justification for a university is that it preserves the connection between knowledge and the zest of life, by uniting the young and the old in the imaginative consideration of learning. The university imparts information, but it imparts it imaginatively. At least, this is the function which it should perform for society. A university which fails in this respect has no reason for existence. This atmosphere of excitement, arising from imaginative consideration, transforms knowledge. A fact is no longer a bare fact: it is invested with all its possibilities. It is no longer a burden on the memory: it is energising as the poet of our dreams, and as the architect of our purposes.

Imagination is not to be divorced from the facts: it is a way of illuminating the facts. It works by eliciting the general principles which apply to the facts, as they exist, and then by an intellectual survey of alternative possibilities which are consistent with those principles. It enables men to construct an intellectual vision of a new world, and it preserves the zest of life by the suggestion of satisfying purposes.

Youth is imaginative, and if the imagination be

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ities, was devoted to medicine. In England, at Cambridge, in the year 1316, a college was founded for the special purpose of providing 'clerks for the King's service.' Universities have trained clergy, medical men, lawyers, engineers. Business is now a highly intellectualized vocation, so it well fits into the series. There is, however, this novelty: the curriculum suitable for a business school, and the various modes of activity of such a school, are still in the experimental stage. Hence the peculiar importance of recurrence to general principles in connection with the moulding of these schools. It would, however, be an act of presumption on my part if I were to enter upon any consideration of details, or even upon types of policy affecting the balance of the whole training. Upon such questions I have no special knowledge, and therefore have no word of advice.

II

The universities are schools of education, and schools of research. But the primary reason for their existence is not to be found either in the mere knowledge conveyed to the students or in the mere opportunities for research afforded to the members of the faculty.

Both these functions could be performed at a cheaper rate, apart from these very expensive institutions. Books are cheap, and the system of apprenticeship is well understood. So far as the mere
strengthened by discipline this energy of imagination can in great measure be preserved through life. The tragedy of the world is that those who are imaginative have but slight experience, and those who are experienced have feeble imaginations. Fools act on imagination without knowledge; pedants act on knowledge without imagination. The task of a university is to weld together imagination and experience.

The initial discipline of imagination in its period of youthful vigour requires that there be no responsibility for immediate action. The habit of unbiased thought, whereby the ideal variety of exemplifications is discerned in its derivation from general principles, cannot be acquired when there is the daily task of preserving a concrete organisation. You must be free to think rightly and wrongly, and free to appreciate the variousness of the universe undisturbed by its perils.

These reflections upon the general functions of a university can be at once translated in terms of the particular functions of a business school. We need not 3inch from the assertion that the main function of such a school is to produce men with a greater zest for business. It is a libel upon human nature to conceive that zest for life is the product of pedestrian purposes directed toward the narrow routine of material comforts. Mankind by its pioneering instinct, and in a hundred other ways, proclaims the falsehood of that lie.

In the modern complex social organism, the adventure of life cannot be disjoined from intellectual adventure. Amid simpler circumstances, the pioneer can follow the urge of his instinct, directed toward the scene of his vision from the mountain top. But in the complex organisations of modern business the intellectual adventure of analysis, and of imaginative reconstruction, must precede any successful reorganisation. In a simpler world, business relations were simpler, being based on the immediate contact of man with man and on immediate confrontation with all relevant material circumstances. To-day business organisation requires an imaginative grasp of the psychologies of populations engaged in differing modes of occupation; of populations scattered through cities, through mountains, through plains; of populations on the ocean, and of populations in mines, and of populations in forests. It requires an imaginative grasp of conditions in the tropics, and of conditions in temperate zones. It requires an imaginative grasp of the interlocking interests of great organisations, and of the reactions of the whole complex to any change in one of its elements. It requires an imaginative understanding of laws of political economy, not merely in the abstract, but also with the power to construe them in terms of the particular circumstances of a concrete business. It requires some knowledge of the habits of government, and of the variations of those habits under diverse conditions. It requires an
imagination of the binding forces of any human organization, a sympathetic vision of the limits of human nature and of the conditions which evoke loyalty of service. It requires some knowledge of the laws of health, and of the laws of fatigue, and of the conditions for sustained reliability. It requires an imaginative understanding of the social effects of the conditions of factories. It requires a sufficient conception of the role of applied science in modern society. It requires that discipline of character which can say 'yes' and 'no' to other men, not by reason of blind obstinacy, but with firmness derived from a conscious evaluation of relevant alternatives.

The universities have trained the intellectual pioneers of our civilisation—the priests, the lawyers, the statesmen, the doctors, the men of science, and the men of letters. They have been the home of those ideals which lead men to confront the confusion of their present times. The Pilgrim Fathers left England to found a state of society according to the ideals of their religious faith; and one of their earlier acts was the foundation of Harvard University in Cambridge, named after that ancient mother of ideals in England, to which so many of them owed their training. The conduct of business now requires intellectual imagination of the same type as that which in former times has mainly passed into those other occupations; and the universities are the organisations which have supplied this type of men-

tality for the service of the progress of the European races.

In early mediaeval history the origin of universities was obscure and almost unnoticed. They were a gradual and natural growth. But their existence is the reason for the sustained, rapid progressiveness of European life in so many fields of activity. By their agency the adventure of action met the adventure of thought. It would not have been possible antecedently to have divined that such organisations would have been successful. Even now, amid the imperfections of all things human, it is sometimes difficult to understand how they succeed in their work. Of course there is much failure in the work of universities. But, if we take a broad view of history, their success has been remarkable and almost uniform. The cultural histories of Italy, of France, of Germany, of Holland, of Scotland, of England, of the United States, bear witness to the influence of universities. By 'cultural history' I am not chiefly thinking of the lives of scholars; I mean the energising of the lives of those men who gave to France, to Germany, and to other countries that impress of types of human achievement which, by their addition to the zest of life, form the foundation of our patriotism. We love to be members of a society which can do those things.

There is one great difficulty which hampers all the higher types of human endeavor. In modern times this difficulty has even increased in its possibilities
for evil. In any large organisation the younger men, who are novices, must be set to jobs which consist in carrying out fixed duties in obedience to orders. No president of a large corporation meets his youngest employee at his office door with the offer of the most responsible job which the work of that corporation includes. The young men are set to work at a fixed routine, and only occasionally even see the president as he passes in and out of the building. Such work is a great discipline. It imparts knowledge, and it produces reliability of character; also it is the only work for which the young men, in that novice stage, are fit, and it is the work for which they are hired. There can be no criticism of the custom, but there may be an unfortunate effect—prolonged routine work dulls the imagination.

The result is that qualities essential at a later stage of a career are apt to be stamped out in an earlier stage. This is only an instance of the more general fact, that necessary technical excellence can only be acquired by a training which is apt to damage those energies of mind which should direct the technical skill. This is the key fact in education, and the reason for most of its difficulties.

The way in which a university should function in the preparation for an intellectual career, such as modern business or one of the older professions, is by promoting the imaginative consideration of the various general principles underlying that career.
little to do with the case. It is perfectly just to hire a man to perform any legal services under any legal conditions as to times and salary. No one need accept the post unless he so desires.

The sole question is, What sort of conditions will produce the type of faculty which will run a successful university? The danger is that it is quite easy to produce a faculty entirely unfit—a faculty of very efficient pedants and dullards. The general public will only detect the difference after the university has stunted the promise of youth for scores of years.

The modern university system in the great democratic countries will only be successful if the ultimate authorities exercise singular restraint, so as to remember that universities cannot be dealt with according to the rules and policies which apply to the familiar business corporations. Business schools are no exception to this law of university life. There is really nothing to add to what the presidents of many American universities have recently said in public on this topic. But whether the effective portion of the general public, in America or other countries, will follow their advice appears to be doubtful. The whole point of a university, on its educational side, is to bring the young under the intellectual influence of a band of imaginative scholars. There can be no escape from proper attention to the conditions which—as experience has shown—will produce such a band.

The two premier universities of Europe, in age and in dignity, are the University of Paris and the University of Oxford. I will speak of my own country because I know it best. The University of Oxford may have sinned in many ways. But, for all her deficiencies, she has throughout the ages preserved one supreme merit, beside which all failures in detail are as dust in the balance: for century after century, throughout the long course of her existence, she has produced bands of scholars who treated learning imaginatively. For that service alone, no one who loves culture can think of her without emotion.

But it is quite unnecessary for me to cross the ocean for my examples. The author of the Declaration of Independence, Mr. Jefferson, has some claim to be the greatest American. The perfection of his various achievements certainly places him among the few great men of all ages. He founded a university, and devoted one side of his complex genius to placing that university amid every circumstance which could stimulate the imagination—beauty of buildings, of situation, and every other stimulation of equipment and organization.

There are many other universities in America which can point my moral, but my final example shall be Harvard—the representative university of the Puritan movement. The New England Puritans of the seventeenth and eighteenth centuries were the
present needs. It is evident that these three groups merge into each other, and also that men engaged in practical affairs are properly to be called inventors so far as they contribute to the progress of society. But any one individual has his own limitation of function, and his own peculiar needs. What is important for a nation is that there shall be a very close relation between all types of its progressive elements, so that the study may influence the market place, and the market place the study. Universities are the chief agencies for this fusion of progressive activities into an effective instrument of progress. Of course they are not the only agencies, but it is a fact that to-day the progressive nations are those in which universities flourish.

It must not be supposed that the output of a university in the form of original ideas is solely to be measured by printed papers and books labeled with the names of their authors. Mankind is as individual in its mode of output as in the substance of its thoughts. For some of the most fertile minds composition in writing, or in a form reducible to writing, seems to be an impossibility. In every faculty you will find that some of the more brilliant teachers are not among those who publish. Their originality requires for its expression direct intercourse with their pupils in the form of lectures, or of personal discussion. Such men exercise an immense influence; and yet, after the generation of their pupils has passed away, they sleep among the innumerable unthanked benefactors of humanity. Fortunately, one of them is immortal—Socrates.

Thus it would be the greatest mistake to estimate the value of each member of a faculty by the printed work signed with his name. There is at the present day some tendency to fall into this error; and an emphatic protest is necessary against an attitude on the part of authorities which is damaging to efficiency and unjust to unselfish zeal.

But, when all such allowances have been made, one good test for the general efficiency of a faculty is that as a whole it shall be producing in published form its quota of contributions of thought. Such a quota is to be estimated in weight of thought, and not in number of words.

This survey shows that the management of a university faculty has no analogy to that of a business organisation. The public opinion of the faculty, and a common zeal for the purposes of the university, form the only effective safeguards for the high level of university work. The faculty should be a band of scholars, stimulating each other, and freely determining their various activities. You can secure certain formal requirements, that lectures are given at stated times and that instructors and students are in attendance. But the heart of the matter lies (beyond all regulation).

The question of justice to the teachers has very
learning is lighted up with imagination. This is the problem of problems in university education; and unless we are careful the recent vast extension of universities in number of students and in variety of activities—of which we are so justly proud—will fall in producing its proper results, by the mishandling of this problem.

The combination of imagination and learning normally requires some leisure, freedom from restraint, freedom from harassing worry, some variety of experiences, and the stimulation of other minds diverse in opinion and diverse in equipment. Also there is required the excitement of curiosity, and the self-confidence derived from pride in the achievements of the surrounding society in procuring the advance of knowledge. Imagination cannot be acquired once and for all, and then kept indefinitely in an ice box to be produced periodically in stated quantities. The learned and imaginative life is a way of living, and is not an article of commerce.

It is in respect to the provision and utilisation of these conditions for an efficient faculty that the two functions of education and research meet together in a university. Do you want your teachers to be imaginative? Then encourage them to research. Do you want your researchers to be imaginative? Then bring them into intellectual sympathy with the young at the most eager, imaginative period of life, when intellects are just entering upon their mature discipline. Make your researchers explain themselves to active minds, plastic and with the world before them; make your young students crown their period of intellectual acquisition by some contact with minds gifted with experience of intellectual adventure. Education is discipline for the adventure of life; research is intellectual adventure; and the universities should be homes of adventure shared in common by young and old. For successful education there must always be a certain freshness in the knowledge dealt with. It must either be new in itself or it must be invested with some novelty of application to the new world of new times. Knowledge does not keep any better than fish. You may be dealing with knowledge of the old species, with some old truth; but somehow or other it must come to the students, as it were, just drawn out of the sea and with the freshness of its immediate importance.

It is the function of the scholar to evoke into life wisdom and beauty which, apart from his magic, would remain lost in the past. A progressive society depends upon its inclusion of three groups—scholars, discoverers, inventors. Its progress also depends upon the fact that its educated masses are composed of members each with a tinge of scholarship, a tinge of discovery, and a tinge of invention. I am here using the term 'discovery' to mean the progress of knowledge in respect to truths of some high generality, and the term 'invention' to mean the progress of knowledge in respect to the application of general truths in particular ways subservient to
most intensely imaginative people, restrained in
their outward expression, and fearful of symbolism
by physical beauty, but, as it were, racked with the
intensity of spiritual truths intellectually imagined.
The Puritan faculties of those centuries must have
been imaginative indeed, and they produced great
men whose names have gone round the world. In
later times Puritanism softened, and, in the golden
age of literary New England, Emerson, Lowell, and
Longfellow set their mark upon Harvard. The
modern scientific age then gradually supervenes, and
again in William James we find the typical imagina-
tive scholar.

To-day business comes to Harvard; and the gift
which the University has to offer is the old one of
imagination, the lighted torch which passes from
hand to hand. It is a dangerous gift, which has
started many a conflagration. If we are timid as to
that danger, the proper course is to shut down our
universities. Imagination is a gift which has often
been associated with great commercial peoples—
with Greece, with Florence, with Venice, with the
learning of Holland, and with the poetry of England.
Commerce and imagination thrive together. It is a
gift which all must pray for their country who desire
for it that abiding greatness achieved by Athens:

Her citizens, imperial spirits,
Rule the present from the past.

For American education no smaller ideal can suffice.