NATURE AND PURPOSE OF A UNIVERSITY*

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IT was in the second half of the nineteenth century that a greatly increased demand for university education spread throughout Great Britain. This followed naturally on the provision for general elementary education; but it was also the result of a realization that a university education was not merely an ornament but also of practical value. No man played a greater part in furthering this idea than did Richard Haldane. It is just fifty years ago, in 1902, that his book of essays, "Education and Empire", was published. In it he made an eloquent plea for the establishment of more universities in the great cities of Britain. He asked why Liverpool, Manchester and Leeds should not have universities of their own. He said: "Courage, energy and enterprise are in these modern days of little more avail against the weapons which science can put into the hands of our rivals in commerce than was the splendid fighting of the Dervishes against the shrapnel and the Maxims at Omdurman". He pointed out that the brewing and the coal-tar colour industries, which at one time had been the virtual monopoly of Great Britain, had been largely taken over by Germany owing to the development of universities in that country. That development was due to the fact that their universities had a double aim: pure culture on one hand and the application of the higher knowledge to commercial enterprise on the other. "It is evident," he said, "that the reason of popularity of the Universities is not that they are free, for they all charge fees, but that they help the students to a position in life." In an even more prophetic manner he predicted that the United States would make a striking advance in the years to come, not only because of her natural resources but also because of the American enthusiasm for universities. He said: "You have only got to look at the books America is beginning to pour out on abstract subjects . . . to see that in abstract knowledge as in commerce America is going ahead by leaps and bounds. Why is it? I put it down, partly at least, to the development of higher teaching that has taken place in America".

In the fifty years since Lord Haldane delivered his lectures, the truth of his statements has been strikingly demonstrated. To-day the lesson of the Second World War has taught us that the armed forces of a nation depend to an ever-increasing degree on the man of science in his laboratory. We are beginning to see that the university can make an essential contribution to every branch of national life. The result has been that in the past few years the number of university students has almost doubled in Great Britain, although in proportion to the population it is still lower than in many other countries. This great increase in number has brought again to the forefront the question which is always concerning those who are responsible for the universities. What is the true purpose of a university? The number of students who should have the privilege of university training ought not to depend either on the physical capacity of the existing

universities, or on the number of available teachers, for both can be increased if necessary. We can only decide how many students ought to be university men if we are clear in our own minds what is the function of a university. This will therefore be the subject of my lecture.

In that much-discussed recent book entitled "Red Brick University", the author defines a university as "a society which devotes itself to a search after knowledge for the sake of its intrinsic value". He holds that the primary purpose of a university is research, and that teaching, although of great importance, is not an essential function of a university. I myself would reverse his statement; to my mind a university is primarily and always a teaching institution. In every university that is worthy of the name we find, of course, that research work of the greatest importance is being done; but this is not its essential purpose. It is true that the teacher who does no research work of his own will probably be of less value than one who is making an original contribution to knowledge; but the university teacher ought to be a teacher in the first place and only secondarily a researcher. There are, of course, exceptions to this rule; but no university can support more than a limited number of them.

I begin therefore with the proposition that a university is a place for teaching. This, however, will not give us a satisfactory answer, for there are many other places besides a university where men are being taught. The purpose of a university is, I believe, to develop the complete man in the sense in which this phrase was used by the Greek philosophers. The complete man is not the man who has the most knowledge, but he is the one who is best equipped to acquire it. It is not what a man has learned but how he has learned it that matters. Just a century ago, Cardinal Newman, one of Oxford's most famous sons, described the purpose of a university education in these words: "A habit of mind is formed, which lasts through life, of which the attributes are, freedom, equitableness, calmness, moderation, and wisdom; or what in a former Discourse I have ventured to call a philosophical habit. This then I would assign as the special fruit of the education furnished at a University as contrasted with other places of teaching or modes of teaching. This is the main purpose of a University in its treatment of its students".

This habit of mind does not depend on the particular subject which the student is studying; it is clearly applicable to philosophy, history, law, economics and to the natural sciences. On this point it is, I think, unfortunate that to-day we tend to draw a distinction between the arts on one hand and science on the other, as if they represented two conflicting methods of thought. This error is due in large part to the scientists themselves, who seem to claim some superior virtue for what they call the scientific method. On analysis this does not seem to mean more than that a student must be logical and accurate in his thought processes. But this is as true of the art student as it is of the scientist. Our ancestors were on sounder ground when they spoke

* From the Haldane Memorial Lecture delivered at Birkbeck College, University of London, on May 7.

of science as a natural philosophy. We are beginning to realize the truth of this, for many of our most distinguished modern philosophers, such as Bertrand Russell and Alfred Whitehead, began as scientists or mathematicians before they turned to philosophy. I am not denying, of course, that there is a distinction between science and the arts, but I do claim that the basic mental training of the science scholar and the art scholar is the same. If we fail to recognize this then we shall fail to understand the true purpose of a university, and what it can give to its students.

It is, however, of little value to talk of university training in a general manner. Just as the purpose of army education is to develop the qualities of discipline and courage, so we are faced with the question whether there are any qualities which are essentially those of a university man. Ought we, the teachers, to have these particular qualities in mind whatever may be the subject-matter we are trying to teach?

Before I try to answer this question, I want to make it clear that I do not think that an accumulation of facts, however valuable they may be, constitutes a university education. As university teachers we must remember that we have only three or four years in which to educate our students. The number of facts which we can teach them is necessarily limited, and may be of small value. But when we turn from the teaching of facts to the inculcation of ideas, we find that three or four years are not too short in which to influence a receptive mind in its approach to the problems of a whole lifetime.

What then are the particular qualities which a university ought to impart to its members so as to give them what may be called the university stamp? What are we entitled to expect from the university man who has undergone its intellectual training? The list is not a long one. It consists of two qualities only, but they are of transcendent importance: the first is clarity of thought, and the second is intellectual curiosity.

Clarity of thought is essential because the scholar who is not accurate, whose ideas are confused and uncertain, is not a true scholar. It was this emphasis on clarity of thought which was the major contribution made by the medieval universities. We have been taught to believe that those trained in scholasticism spent their time in discussing such problems as "How many angels can stand on the point of a needle?" It would be difficult to paint a more inaccurate picture. Scholastic education was a magnificent instrument for the training of the mind. In his "History of the Medieval Universities", Prof. Rashdall said: "It was not the wont of the practical men of the Middle Ages to disparage academic training. . . . In a sense the academic discipline of the Middle Ages was too practical. It trained pure intellect, encouraged habits of laborious subtlety, heroic industry, and intense application, while it left uncultivated the imagination, the taste, and the sense of beauty. It taught men to think and to work rather than to enjoy. . . . The greatest service of the medieval universities to mankind was simply this, that they placed the administration of human affairs—in short, the government of the world—in the hands of educated men. The actual rulers—the kings or the aristocrats—might often be as uneducated or more uneducated than modern democracies, but they had to rule through the instrumentality of a highly educated class".

I believe that that emphasis on clarity and accuracy of thought may still be regarded to-day as an essential

part of university training. When I first went to Oxford in 1930 one of the best-known tutors there was H. W. Joseph, of New College, whose books on logic are still authoritative. His pupils have made a remarkable record both in the academic life at Oxford and in their later careers in London. I once asked him what his method of teaching was, and he said to me: "When a man comes to my rooms to read me his first essay, I stop him after he has read the first paragraph and say to him, 'What exactly do you mean by that?' When he brings me his last essay and reads the last paragraph, I say to him, 'What exactly do you mean by that?' Between the first and the last essay I hope that I have taught him something of permanent value". I have taken my illustration from the Oxford tutorial system, but the point is just as true when applied to the lecture system which exists in most other universities. If the professor answers all the questions in his lectures, even if his answers should be correct, then he deprives his students of an essential mental exercise. On the other hand, if he encourages his students to think for themselves by presenting both sides of every difficult problem, then he is giving them the training which will lead to true scholarship. That does not mean that the professor need be neutral, for that is often a form of dullness, but he must be fair. He must make it clear that he is not asking his students to accept his statements without further consideration: he must insist that it is their duty to decide the problem themselves and that they must achieve an answer which they themselves find satisfactory.

I believe that to-day in our national life there is no quality which is more essential than is this clarity or honesty of thought. It has been said with some truth that the danger to-day is the cult of the cheap, the shoddy, and the false. That has always been a danger; but mechanical developments, such as the wireless and television, have made it a more immediate one for us. It is the duty of the universities, who are the trustees of the great traditions of the past, to make it clear that the half-truth is the deadly academic sin.

The second quality which it is the purpose of a university to develop in its students is an inquiring mind. This is the major contribution which the modern university has made to education, for we now question our original premises instead of accepting them on authority alone. In Britain the modern approach is frequently ascribed to the philosophy of Francis Bacon; but it is, of course, part of the whole Renaissance attitude towards life. It is in this emphasis on inquiry that we find the essential difference between a university and a purely technical school. There has, I believe, been confusion on this point, because in the debate which has raged around the distinction between a university and a technical school the word 'technical' has been used in two different senses. When we turn to the Oxford Dictionary, we find that in one sense 'technical' is defined as "appropriate or peculiar to or characteristic of a particular idea, science, profession or occupation". In this sense such a technical school is a proper part of a university, because the fact that it teaches only one particular art or science does not, of course, deprive it of its university standing. Thus no one would argue that such a school as the famous *École des Beaux Arts* in Paris ought not to be regarded as of university calibre, for it is concerned with the fundamental concepts of art. On the other hand, the Oxford Dictionary gives a

second meaning to the word 'technical', which reads "the formal and mechanical part of an art". In this sense, of course, a technical school is not a proper part of a university, because a university does not and cannot limit its interest to mechanical skill however important this may be. The university teaches its students *why* a thing is done, while such a technical school teaches him *how* a thing is done. Or, in other words, the university inculcates a method of thought, whereas this type of technical school develops a special skill. This distinction does not depend on the subject-matter which is being taught, but is based on the manner in which it is being taught.

The highest form of education consists in encouraging a man to ask questions. Perhaps as a lawyer I am naturally interested in this method of education, because the famous cross-examiners in the history of the courts of Great Britain have not been those who scattered questions wholesale, but those who knew how to direct their examination to the salient point. It may have been his legal training which encouraged Lord Haldane to place so much emphasis on the search for truth. It is interesting to note that in his essays he twice makes the same reference to the German philosopher Lessing. He said: "It was Lessing who declared that were God to offer him the Truth in one hand and the Search for Truth in the other, he would choose the Search. He meant that, just as the Truth never stands still, but is in its nature a process of evolution, so the mind of the seeker after it can never stand still. Only in the process of daily conquering them anew do we, in this region also, gain life and freedom". But this life and freedom of the mind cannot be gained without a struggle. The years which a man spends at a university should be those in which he is prepared, as was his medieval brother, to put forth every effort. This inquiring mind requires intellectual courage, because every question is a kind of adventure and in the nature of a challenge. The man who does not feel a sense of excitement when faced with such a challenge has no place in a university.

That brings me finally to the most difficult problem with which the universities throughout the world are faced to-day. Ought we to admit all those who are seeking to enter our doors? The recent development of the natural sciences has been one of the causes which has brought about an astonishing increase in the number of applicants; but there seems to be an almost equal demand in the other subjects. This is admirable in so far as those students who are seriously seeking a university education are prepared to undergo its discipline; but it is dangerous if what they hope to receive is nothing more than a mechanical training. If we in the universities lower our standards, we shall be sacrificing an essential part of our civilization. But if we make it clear that we are maintaining our standards, then we ought to exclude no one who wishes to receive a university education. We ought so far as possible to take as many students into our existing universities as they are capable of receiving, and if necessary we ought to be prepared to increase the number of the present institutions. It is sometimes said that if we increase the student population then we will not be able to find a sufficient supply of adequate teachers; but here as elsewhere I believe that the supply will be able to satisfy the demand, if they are paid an adequate stipend. It is also said that if the number of university graduates is increased then they will find difficulty in obtaining employment. This will be true only if university

education is inadequate, because, as Lord Haldane emphasized again and again, there is no field in which the university man ought not to take a leading part if he is adequately trained. This means that at the universities we must not be afraid to teach those subjects which may be said to be of practical value. It is *how* we teach and not *what* we teach that makes a university. No one would advocate a university course in cooking; but if we regard it as the science of dietetics, then it is obviously of the greatest importance to the life of a nation. Mr. Justice Holmes, of the United States Supreme Court, once said that a university law school was a school in which law was taught in the grand manner. That grand manner can be applied to other subjects. I think that it is interesting to find that in recent years the Harvard School of Business Administration has become of major importance in American commercial life. Ought we not to consider the establishment of a similar institution in London, which is the centre of the banking and commercial life of the world? Why, for example, should we be ready to teach company law at a university, but ignore the system of accounting with which that law is so intimately concerned? We should regard all forms of human knowledge as our province, even those which are of practical value.

To-day there is no branch of social or economic life which can rest solely on experience. In facing the changes which are inevitable we must depend on the adventurous, inquiring mind, which has also been trained to be accurate. It is the function of the university to develop men of that calibre. I believe that Lord Haldane was right when he demanded, fifty years ago, that we should have more university students in Great Britain, so that they could compete with the university-trained manufacturers and industrialists in other countries. That is a duty which the universities cannot ignore. It is not enough, as he said, for the scholar to look down on those engaged in the battle of life. He must be prepared to play an active part himself. I cannot do better than to close with the words Lord Haldane used in his rectorial address to the University of Edinburgh in 1907: "Rather does the University exist to furnish forth a spirit and a learning more noble—the spirit and the learning that are available for the service of the State and the salvation of humanity. The highest is also the most real; and it is at once the calling and the privilege of the teacher to convince mankind in every walk of life that in seeking the highest of its kind, they are seeking what is also the most real of that kind. Whatever occupation in life the student chooses, be it that of the study or that of the market-place, he is the better the greater has been his contact with the true spirit of the University".

INTERPRETATION OF GRAVITY ANOMALIES

A GEOPHYSICAL discussion on this subject arranged jointly by the Royal Astronomical Society and the Geological Society was held on February 22, with Dr. G. M. Lees, president of the Geological Society, in the chair. The principal contributors were B. C. Browne, P. Evans and N. L. Falcon; and Dr. T. C. Richards, Brigadier E. A. Glennie, Dr. J. de Graaff Hunter, Dr. J. Phemister, D. R. Brown, Dr. A. H. Cook, Dr. R. Tomaschek,