

The University in Africa

An Inaugural Lecture

GIVEN IN THE UNIVERSITY COLLEGE OF
RHODESIA AND NYASALAND

Professor
H. Jac. Rousseau

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by

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THE UNIVERSITY IN AFRICA

'Homo sum: humani nil a me alienum puto' (Terence).

I am a human being: nothing that concerns human beings do I consider outside my province.

HERE come times in the life of Everyman when he asks himself, 'What am I, and for what purpose am I here? How can I best achieve that purpose?' In particular, crises like the last war jolt him out of his acceptance of things as they are. But the crises pass, the thinking is painful and yields no complete answer—and he drifts on: 'We're here because . . . we're here!'

No university can afford the luxury of intellectual lethargy, least of all the university in Africa. All universities today face, in Sir Richard Livingstone's phrase, 'a world adrift', but the university in Africa doubly so. The world we live in is smaller than Paris at the time of the Revolution, and equally turbulent. While the words of a speaker are travelling across a hall in London, they are starting their work in the minds of men in Salisbury and Singapore. On our shrunken earth global problems bubble up in our own backyards, and as bulldozers scoop towns and dams out of deserts and jungles and smash into communities undisturbed for ages, the winds of discontent arise and shake the curve of the globe out of centuries-old somnolence.

In the stresses of this 'age of anxiety', bewildering to young persons everywhere and particularly to young nations like those in Africa, survival requires unusual competence and wisdom, a combination of specialized technical training on the one hand and breadth of character and outlook on the other undreamt of even fifty years ago.

Not only has our knowledge of Man and his betterment lagged far behind our knowledge of Nature and its harnessing, but in our human relations we have lost what guidance we once received from a sure code of values. For knowledge is not enough. The Germany of Hitler and the Japan of Pearl Harbour possessed schools and universities which in factual mastery out-topped all others in West and East—but their jungle ideologies plunged the world into a holocaust of scientific inhumanity. With more knowledge than ever before in history, both the West and Africa are experiencing unprecedented personal, family, and community maladjustments.

In short, we have never been master of so many facts and sure of so few principles. To establish in Africa the scholarly standards of Western universities will require strenuous effort but is not enough. Faced by problems often radically different from those in the West, the new universities in Africa cannot justify this or that policy on the ground that it is done at Oxford, Brussels, or Paris. True, if centuries of thought and experience have created a custom there, it is probably wise there but possibly not here: in the African bush we cannot travel on the London Tube's time-table. It is therefore an exhilarating experience to be in a band of scholars from the four corners of the earth who are hammering out with vigour, sanity, and lively disagreement many of the basic principles of the university in Africa. Under this stimulus I sketch in this lecture a purely personal view of the university in Africa.

Briefly, this view is that, as Plato declared, 'the noblest of all studies is the study of what man is and what life he should live', and that the university was created by man to provide (in the words of Sir Walter Moberly, former

chairman of the British University Grants Committee) an 'education in the art of living'.¹ What does this mean? Let Milton reply:²

I call that a complete and generous education which fits a man to perform justly, skilfully and magnanimously, all the offices, both public and private, of peace and war.

It follows that there is, as the mathematician and philosopher Whitehead maintains, 'only one subject for education, and that is Life'³—life in all its aspects, twenty-four hours a day:

The understanding which we want to develop by education is an understanding of an insistent present. The only use of a knowledge of the past is to equip us for the present. . . . Ideas which are not utilized are positively harmful.⁴

Earning a living by serving the community to which both the individual and the university owe their existence constitutes an essential part of life. In short, nothing of human concern is alien to a university. It is therefore the first duty of every university, but above all the new university in Africa, to examine what are the basic needs of wise living in the community it serves, and to ensure that the young leaders it is training for that community are capable of meeting those needs.

Universities today [says Moberly] lack any clear, agreed sense of direction and purpose . . . (and live) in a moral and cultural fog. . . . When the world is in convulsion . . . it is unthinkable that the university should go on its way with objectives, standards and methods unchanged.⁵

¹ Moberly, W., *Crisis in the University*. London: S.C.M., 1949, p. 304.

² Milton, J., *Tractate on Education*, 1644.

³ Whitehead, A. N., *The Aims of Education and other Essays*. London: Williams & Norgate, 1950, p. 10.

⁴ *Ibid.*, p. 3.

⁵ Moberly, *op. cit.*, pp. 21, 28, 305.

While fully conscious of the fact that for centuries many Western intellectual leaders have come from the universities, I feel that the universities would succeed still better if they would honestly reassess their function in today's world and select, in the light of educational research, the most effective means of performing that function. 'We may recognize the great services of the university to society,' wrote Oxford Vice-Chancellor Sir Richard Livingstone, 'but wish them to be greater still.'¹ This feeling has led to much thinking and some experimentation in recent years, especially in America, and even one experimental British university, the University College of North Staffordshire.²

Not that we can invent a new type of university. Western civilization and universities are the only ones we know and can promote—and they are the only ones the people of British Africa will accept today. Moreover, a university that deviates far from Western tradition forfeits academic respectability. What then are the essential features of a university, and how should these be focused on the special problems of a multi-racial society at widely differing levels of culture, changing more rapidly in one generation than their forbears did in twenty? In an endeavour to answer this query we briefly trace the history of learning and universities.

The story of Western learning is a fascinating one. It stems from a few brown nations at the eastern end of the

¹ Livingstone, R., *Some Thoughts on University Education*. Cambridge, 1948, p. 11.

² In addition to Livingstone, Moberly, and the great amount of American material see especially B. Truscot, *Red Brick University* (London: Faber, 1943), A. Nash, *The University and the Modern World* (London: S.C.M., 1945), various Reports of the Commission on Higher Education in the Colonies (e.g. W. Indies and W. Africa: H.M.S.O., 1945), Report of the Inter-University Council for Higher Education Overseas (H.M.S.O., 1955), W. H. G. Armytage, *Civic Universities* (London: Benn, 1955).

Mediterranean about 6,000 years ago. As wandering tribes settled along the fertile Tigris and Euphrates, they developed farms, villages, and cities. Farming, building, trading, and living, they accumulated a wealth of knowledge about people and plants, seasons and stars, calculations and countries. As they produced food and drink, clothes and medicines, jewellery and leather, they built up a knowledge of chemistry. As they re-established farm boundaries after the annual floods, they developed 'earth measurement' or geometry. Then as now, knowledge was power¹—a tool shaped in man's struggles for better living, and then used to aid his victory.

Scholars used to dismiss this knowledge of Babylonia and Egypt as empirical and utilitarian, and to date the rise of scientific knowledge with the rise of Greece. This is a calumny against Man. *Homo sapiens* rose above the beasts as his brain evolved into his keenest weapon in the struggle for survival. Thus he is an indissoluble body-mind which can live neither by bread alone nor by brain alone. Incurably inquisitive, he can as little avoid puzzling over problems and drawing out of them the 'purest' knowledge as he can avoid living. Man's knowledge must therefore also be an indissoluble unity of theory and practice, of 'faith and works', with a dual function, as Bacon put it, of light-bringing and fruit-bearing. In order to think, however, the scholar tends to withdraw from everyday life and thus to forget that even the purest knowledge is rooted in life and must be tested by life. This the great English educationist and mathematician, Sir Percy Nunn, calls 'the academic folly that cuts culture off from its roots in common life'.²

¹ Bacon, F., *Novum Organum: Summary*, 1620, Pt. ii, Aph. 3.

² Nunn, T. P., *Education, its Data and First Principles*. London: Arnold, 1945, p. 260.

The don who proposed the toast, 'Here's to Pure Mathematics, and may it never be of any use to anybody!' was blind to the roots and the results of his subject—on the one hand the carpenter's rule, the merchant's scales, the surveyor's rope, and on the other the atomic age.

The purest knowledge has always been regarded as mathematics, and mathematics as the creation of the Greeks. Unhappily for that theory, insignificant clay tablets in the Baghdad Museum of Antiquities, discovered in the last decade, show the practical Sumerians proving the 'pure' propositions of Euclid 1,700 years before Euclid—and playing with quadratic equations 2,700 years before Arabic algebra. Use and thinking are not in conflict. On the contrary, it is in periods of economic prosperity that the greatest flowering of the human spirit has occurred—in Babylon, in Egypt, in Athens, in Rome, in Baghdad, in Venice, in Paris, in London. It is thinking that makes *homo sapiens*, but when thinking cuts itself off from life then it shrivels. 'Professional exaltation of theory to the detriment of practice is the hall mark of cultural decay.'¹

Everybody knows how streams from Egypt, Palestine, Phoenicia, and Crete broadened the river of civilization that had sprung from Mesopotamia. All of them, flowing from daily life and sparkling with mental activity, fed flourishing islands of advanced learning and research.

The first Europeans who stepped from the shadows of barbarism after contact with Asia's culture, the Greeks, came to decry whatever was useful and to stress theory for its own sake as they increasingly depended on slaves.² Disparaging the 'servile, base, mechanical' arts³ which had

¹ Hogben, L., *Dangerous Thoughts*. London, 1939, p. 242.

² This is the theme of B. Farrington, *Greek Science* (London: Penguin, 1953). See also Sir W. C. Dampier, *A History of Science and its Relations with Philosophy and Religion* (Cambridge, 1942), pp. 20, 545.

³ Plato, *Republic*, vii. 522.

created their magnificent culture, the intellectuals deified intellect untrammelled by work. 'The life of pure thinking', declared Plato, 'is the highest life of all.'¹ This passion for inquiry produced great advances, but when untrammelled by reality also serious errors. To test thinking by experiment involved manual work and was vulgar. Just as the athlete developed his body not by toil in the fields but by running and wrestling in the gymnasium, so the scholar, by wrestling with the strenuous symbols of abstract thought, strengthened his mental muscles to attack any problem.

This belief in mental gymnastics which trains mind and character for any situation lives on in the scholar's regard for tough, unreal subjects like grammar, Latin, and pure mathematics. When in the nineteenth century English tried to find a place at English universities, it was opposed on the grounds that Latin was a far finer 'discipline' for writing and appreciating English than English itself. This myth of mental discipline was given its death blow by research, but its ghost still haunts us. Plato's belief that 'arithmetic has a great and elevating effect, compelling the soul to reason about abstract number',² we now realize resulted mainly from a clumsy numerical notation that turned simple sums into mental gymnastics. We also realize that Euclid's axioms, such as 'A straight line is the shortest distance between two points', are not the eternal truths of abstract logic but conclusions from everyday experience. But in the spirit of the age the greatest engineer of antiquity, Archimedes, regarded 'everything that ministers to the needs of life as ignoble and vulgar'³ and was ashamed of his numerous practical inventions. Yet even his theoretical

¹ *Ibid.* 535.

² *Ibid.* 525.

³ Quoted by Farrington, *op. cit.*, p. 123.

discoveries derived from real problems. Everybody knows how in his bath, pondering a problem that his friend the King of Syracuse had set him—to find out whether a new crown was of pure gold or not—he had a flash of insight into the principle of specific gravity.

‘Abstract thought and general ideas’, says Nunn, ‘have influenced profoundly the development of civilization’,¹ and I shall return to them later, but Plato went too far in proclaiming, ‘The man whose mind is on eternal realities has no time to look down to the petty problems of men.’² And so, states Sir William Dampier, ‘the scientific spirit vanished from the earth for a thousand years’³ as intellectuals in the West withdrew themselves from the workaday world because their function was not to act but to think⁴—a divorce between living and learning that still plagues us today.

Much of the culture of Greece passed to Rome. After our forbears had toppled the Western Roman Empire into the ‘Dark Ages’ about A.D. 500, the sheer struggle for survival occupied most of men’s energies in the West and it was the Arabs who caught the torch of learning and carried it throughout the Near East, along North Africa, and into Sicily and Spain. By the ninth century the trading village at the east-west caravan crossing of the Tigris had grown into the fabulous City of the Arabian Nights, centre of wealth, learning, and research famous all over the world. From Baghdad brown scholars established in Spain Europe’s first centres of advanced studies and first astronomical observatory.

Out of the growing economic, political, and intellectual ferment of Christendom, to which the Arabs contributed

¹ Nunn, *op. cit.*, p. 271.

² Plato, *Republic*, vi. 500.

³ Dampier, *op. cit.*, p. 28; cf. pp. xiv, 39, 66; Farrington, *op. cit.*, p. 142.

⁴ Farrington, *op. cit.*, p. 123.

in many ways, arose our centres of learning amid the bustle of commercial and industrial towns and rarely in monastic seclusion.¹ The first university institution in Christendom was a medical school which developed at Salerno in south Italy during the ninth century. Pursuing both learning and some research, its staff and students were international from the start—Jews, Arabs, Latins, and Greeks.

The second was a law school, the University of Bologna in north Italy about A.D. 1000, also international and also the outgrowth of human needs. Legal knowledge was always profitable, but particularly at a time when the struggle between the Papacy and the Emperor was at its height. In support of one or the other, men delved furiously into legal records, even fabricating them at times. Hailing from the four corners of Christendom, the students were mainly adults holding good positions in Church and State, and aiming at better. For self-protection in an alien city they banded themselves into guilds, the Latin term for which was 'universitas'—hence our 'university'. But this did not mean a university in our sense, for it excluded the professors, who were virtually hired and fired by the students' guilds.

About 150 years later teachers of theology built up the University of Paris, mother of universities in the English-speaking world. From here scholastic reasoning never tested by reality spread over the West about questions like: 'Can an angel move from one point to another without passing through the intervening space?', or 'Can the devil create artificial thunderstorms but not natural ones?'² So subtle was the reasoning of its famous professor from

¹ The most thorough accessible account is that given by H. Rashdall (ed. F. M. Powicke and A. B. Emden), *Universities of Europe in the Middle Ages*, 3 vols. Cambridge, 1936.

² Dampier, *op. cit.*, p. 156.

Scotland, Johannes Duns Scotus, that his name has passed into English as 'dunce'. Nevertheless Scholasticism, practising Abelard's principles that 'doubt is the road to enquiry—by enquiry we perceive the truth', led to progress.

Like the University of Paris, its most famous daughter, Oxford, was established to train for Church and State;¹ its oldest chair was that of Divinity.² Oxford's most famous offspring, Cambridge, performed a like function, and so in turn did Cambridge's daughter Harvard in the New World.

Scotland's ancient universities, St. Andrews, Glasgow, Aberdeen, and Edinburgh, trained for medicine and law as well as for Church and State and influenced education throughout the empire. Even the university of the imperial metropolis sprang partly from the brain of a Scot, the poet Thomas Campbell, whose letter to *The Times* in 1826 advocating a University of London stimulated the establishment of University College two years later.

In the new countries the story has been the same: out of the workaday world's need for clergymen and teachers, administrators and engineers, lawyers and physicians, have developed leading universities like Yale and Sydney, McGill and Witwatersrand.

What about the knowledge taught in the universities? After fifteen centuries of teaching what So-and-So had said about life, scholars turned increasingly to the study of life itself. Lecturers in anatomy, for instance, had read the ancient authority Galen to their classes for centuries—and if they were lucky, a servant dissected a corpse. Determined to do his own dissections, Vesalius, the first modern physiologist, invented better techniques and corrected

¹ Rashdall, op. cit. iii. 197, 199; also Royal Commission on Oxford and Cambridge Universities, *Report* (H.M.S.O., 1922), p. 12.

² Rashdall, op. cit. iii. 164.

many misapprehensions. A century later, while the Dutch East India Company's directors prepared to establish Cape Town, their compatriot Franciscus Sylvius, Professor of Medicine at Leyden, established the first science laboratory in any university, in order to study the eternal verities—by examining what happens to the food in men's stomachs. Ten years later the Royal Society of London was founded specifically to study and improve human life through experiments performed by members themselves. Half a century earlier, when a Dutch spectacle-maker had invented the telescope, Professor Galileo of Padua immediately used it to study the stars. As he manipulated bits of wire and wood and glass, and dropped two balls from a tower,¹ the whole fabric of medieval thinking began to crumble. Other inquirers employed the jeweller's balance to study chemistry, the mariner's compass to study magnetism, mining pumps to study atmospheric pressure. Once more research was vitalizing teaching as brainwork was fruitfully reunited with handwork and with life.

The world-wide expansion of industry, empire, and the vote in the nineteenth and twentieth centuries led to socio-economic upheavals which have vastly accelerated the study of real problems. No more the privilege of the few but the birthright of all, education, said Herbert Spencer a century ago, was too often divorced from life:²

Men who would blush if caught saying Iphigénia instead of Iphigenía . . . while anxious that their sons should be well up in the superstitions of two thousand years ago . . . care not that they should be taught anything about the structure and functions of their own bodies.

¹ Perhaps a disciple of Galileo dropped the balls: Butterfield, H., *The Origins of Modern Science* (London: Bell, 1949), p. 70.

² Spencer, H., *Essays on Education and Kindred Subjects*. (Everyman.) London: Dent, 1915, p. 14.

But life is stronger than theory. In Spencer's day Oxford's defences began to yield to natural science, fifty years ago even to English, and twenty years later to the ladies. More virile and scientific, Cambridge resisted for a longer period, capitulating to the monstrous regiment of women barely four years ago. Today, the looming figure of Russia is changing British universities, particularly as regards the rapid expansion of scientific and technological training.

What conclusions can we draw from this summary review of university history? First, *knowledge and universities are made by man for man*. Sometimes they are directly useful: the first university in Christendom trained physicians, the second lawyers, the third clergy; when first studied, even Latin and the 'liberal arts' were useful subjects.¹ But as *homo sapiens* is a body-mind thinking about life and its beauty, the urge for 'intellectual control of the world'² also spurs on Newtons, Einsteins, and Toynbees, while the beauty of music, art, and literature profoundly moves many mature minds. Material and mental, every concern of Man concerns the university. 'The university', declares Ortega y Gasset, 'must be open to the whole reality of its time. It must be in the middle of real life, and saturated with it.'³

Second, there are *teachers*, skilled, learned, and sometimes inspired men, regardless of race, religion, or nationality.

Third, regardless of race, religion, or nationality, *students* flock to the teachers. Usually the teachers are the masters, for without them the students cannot learn the complicated things they want to learn.

Finally, as this indicates, universities are engaged in

¹ See e.g. Rashdall, *op. cit.* i. 93.

² Nunn, *op. cit.*, p. 239.

³ Ortega y Gasset, J., *Mission of the University*. London: Routledge and Kegan Paul, 1946, p. 76.

comparatively advanced studies and training. They do not teach activities more effectively taught at home, at primary or trade schools, or on the job. What are 'advanced' studies? The answer has varied widely. Medieval universities often did what primary schools do today; at Oxford, for instance, there were students of 7 and 8. As schools have raised their standards, universities have been able to raise theirs. What was first-year university work ten years ago is now final-year school work. The essential is that the university must foster individual excellence by stretching students' abilities to the full.

To sum up: *A university is a community of teachers and students pursuing 'higher' learning based on human needs.* Subjects, teaching methods, and examinations can never be final, for they must grow with the needs of the community, to which there is no limit. A century ago Newman could declare, 'Mercantile occupations are not liberal at all';¹ today British universities teach not only the medieval vocations of Medicine, Law, and Theology, but Accountancy, Administration, Aeronautics, Architecture, Brewing, Broadcasting, Commerce, Dairying, Domestic Science, Dyeing, Engineering, Farming, Fine Art, Gardening, Journalism, Mining, Music, Nursing, Veterinary Science, and much else.

Many scholars look askance at these 'absurd excrescences', as the University of London's School of Librarianship is described by Flexner, who concludes that London 'fails to qualify as a university'.² Flexner and others would restrict universities to professions like those of the Middle Ages which (he claims) do not involve the hands or per-

¹ Newman, J. H., *On the Scope and Nature of University Education.* (E.L.) London: Dent, 1915.

² Flexner, A., *Universities, American, English and German.* O.U.P., 1930, pp. 255, 234.

sonal profit. This is false. Without skilled hands no surgeon can operate, no scientist experiment, no artist paint. And as we have seen, the medieval lawyer was motivated at least as much by the desire for position, power, and profit as by altruism—while today commerce increasingly stresses ‘Service before Self’. In accepting commerce as a study the Carr-Saunders Committee on Education for Commerce (1949) has advanced beyond Newman and Flexner but errs in maintaining that vocational education or ‘the study of the underlying principle’ is appropriate to a university but not vocational training or ‘training in the skills and techniques of . . . the . . . professions for the purpose of making competent practitioners’. Imagine a teacher who knows all the principles of education but cannot teach a class, or an engineer who knows all about levers and cantilevers but cannot design a bridge! Ah, says Flexner in effect, that cannot happen.¹ Give a man the mental discipline of a liberal education and he can do anything: direct an army, manage an insurance company, or build Kariba. Sir Walter Moberly is much sounder in maintaining, ‘The university must combine these aims, the occupational and the cultural’,² or Truscot: ‘Far from stifling vocational aspirations we must encourage students to speak of them, relating both scholarship and vocation to the ideal of service.’³

Let us repeat: education is part of Man’s search for life abundant, to which nobody can set limits—*nothing that concerns Man is alien to a university*. Some academics place departments like Hotel Administration at Cornell or Business Research at Harvard beyond the pale. Our criterion is: Are they of human concern? Then it is no wonder

¹ Flexner, *op. cit.*, pp. 30–31, 70, 99, 102, 113, 158–9, 161, 330.

² Moberly, *op. cit.*, p. 172.

³ Truscot, *op. cit.*, p. 55.

that Harvard's Business Research, investigating factory efficiency, rediscovered a principle of basic importance in human affairs: at least as potent as physical conditions like lighting, rest periods, or bonuses in releasing the energies of men is the glow of human friendship. Truly, man shall love his neighbour as himself! This fascinating research has already influenced industry in many countries.¹ As the great physicist Lord Kelvin declared:²

There cannot be a greater mistake than that of looking superciliously upon practical applications of science. The life and soul of science is in its practical applications, and many of the greatest advances in physical science have been made from the beginning of the world to the present time in the earnest desire to turn the properties of matter to some purpose useful to mankind.

Today's best-known example? Atomic science!

Is every human activity then to find a niche at the university: barbering and bebop, typing and ticket-collecting? Yes: any human concern is worthy of research; and if it affects *basic, widely branching, complex human needs* it also merits teaching. While brick-laying and architecture both serve the basic human need of shelter, the former is relatively simple and repetitive, the latter complex and infinitely variable. In consequence brick-laying can be better learnt in trade school and on the job. We would therefore not appoint a Professor of Brick-laying, but we do need a Professor of Psychology to investigate the human problems of brick-laying, factory efficiency, or race relations, and to teach the bases of human behaviour.

¹ See F. J. Roethlisberger and W. J. Dickson, *Management and the Worker* (Harvard, 1939), and E. Mayo, *The Social Problems of an Industrial Civilisation* (Kegan Paul, 1949).

² Thomson, W., *Popular Lectures and Addresses*. London, 1891, i. 87-88.

It may of course be inexpedient to introduce a certain course; at present, for instance, our college cannot afford courses in engineering or art.

What are the basic needs we must aim at satisfying? The following are suggested, based on the most searching research ever made into what constitutes university success:¹

1. *To earn a living* by serving the community.
2. *To train our minds* for life, not only by mastering our studies but by developing both the desire to investigate throughout life, and sound reasoning habits to enable us to face life's problems sanely.
3. *To evolve a philosophy of life*, a code of values giving meaning to studies and to life, and guiding and sustaining us by faith in God and in man.
4. *To become alive to and informed about human problems* and willing to make personal sacrifices to help solve these problems.
5. *To develop a balanced personality*—integrity and initiative, self-confidence and self-control, tolerance and friendliness, mental health and varied interests.
6. *To enjoy beauty* and perhaps create it in music, painting, literature, drama, nature.
7. *To be physically fit* and healthy.

Echoing Plato, Flexner objects that the university in the pursuit of knowledge for its own sake is concerned only with item 2 above: intellect.² We have maintained throughout that Man is a body-mind who, as Freud, Adler, and history show, cannot live by reason alone. Even our Platos reason largely according to whether they are slave-owners or slaves,³ hungry or well fed, white or black, young or old. Intellect and person are inseparable. How

¹ Chamberlin, D., and others, *Did They Succeed in College?* New York: Harper, 1942.

² Flexner, op. cit., p. 28.

³ Farrington, op. cit., pp. 106-7.

can a student who is starving or distraught concentrate on intellectual matters? Even the medieval university established hostels to care for students as persons. Indeed, the very word 'university' derives from the trade unions of the Bologna students. We need all-round humans to deal with an all-round world, of which they are inescapably a part. Increasingly expertise in a narrow field (which has produced our high level of material culture) is being paid for by a crippling ignorance in others. Yet increasingly the specialist has to make decisions of crucial significance to the community, decisions for which he often has no preparation. The university's prime responsibility is to provide the community that creates it with the most competent citizens it can produce, persons who are human beings first and chemists or classicists second. To survive, all of us need a grasp of the vital problems of our time, from atomic power to human relations, at a higher level than the superficial, often biased and frequently false odds and ends we pick up from gossip and press. How can we combine education for wise living with specialist competence?

Much of this human education is provided in more vital ways than by lectures and labs.: the friendly contacts among students and staff possible particularly at a small university; the give-and-take of student life (especially in residence) with its interminable discussions and its student government; the societies for art, religion, politics, science, sport; dignified buildings and attractive surroundings. All these help to train youth to know life broadly and face it sanely, to evolve philosophies of life, to waken to human problems, to develop personality and character, to enjoy beauty, and to be fit. Such keenness, breadth, and awareness cannot be developed in a tribal university—hence our

multi-racial character and our attracting graduates from other countries to the education course.

But more and more scholars are realizing that our world is far too complex and urgent for its leaders to depend on such random experiences as their chief sources of learning. Our college is considering one way of remedying this: by courses of lectures outside the degree, surveying the main fields of knowledge, and relating their major principles to life. This may be thinly spread, secondhand learning, but it is sounder than the 'Daily Gossip' and may stimulate deeper study. As the great biologist T. H. Huxley remarked, 'If a little knowledge is dangerous, where is the man who has so much as to be out of danger?'¹

Even before our students come to us they are being straitjacketed into premature specialization by Sixth-Form advanced-level courses after the School Certificate's relatively low level of general education. When the Federation institutes its own examination system we can counteract this by requiring passes slightly below advanced level in six subjects, to include English language and literature, a foreign language, a science, mathematics, an aesthetic subject like art, music, or craft, and social studies. The pass degree at Scots universities includes at least one Arts and one Science subject. These subjects, however, may still be taught without relation to life. Much more satisfactory if students and parents are willing to devote an extra year to the baccalaureate is the four-year degree of the University College of North Staffordshire established seven years ago by Lord Lindsay, formerly of Balliol. In his first year every student surveys the development of the modern world, the methods and influence of the natural and social sciences in it, and its present problems. Upon this foundation he

¹ Huxley, T. H., *Science and Culture: On Elementary Instruction in Physics*.

specializes in the next three years, but not narrowly. He studies two or three subjects for three years and at least two others for shorter periods, spread over both Arts and Science. Livingstone quotes with approval what American universities have done along these lines.¹ Even the world-famous university of technology, the Massachusetts Institute of Technology, during the four-year degree course builds very high standards of specialization alongside courses similar to those of North Staffordshire.² In Australia the New South Wales University of Technology does the same. The most thorough investigation of this question is the Harvard Report on *General Education in a Free Society*.

If this approach appears too radical, a general education for living plus specialization for earning may be achieved in the usual three years by teaching each specialty in such a way as to show its wider implications. The most famous examples of this are probably Oxford's Classical and Modern 'Greats'. Each Arts subject would then interpret Man's progress, lapses, and continuing problems, including the contributions of groups other than our own, like the thought of Islam and Buddhism, or the literature of other nations. The Sciences would likewise refer to their wider, human implications such as the world's resources, the problems involved in their development for man, and their attempted solutions—atomic power, nutrition, eugenics, education, human relations, and the like. A subject taught in isolation from its human context is not education but mere facts. Men are men twenty-four hours a day—they are lawyers, historians, or physicists only eight or nine. Even the technologist's most difficult problems today lie

¹ Livingstone, *op. cit.*, p. 19.

² An excellent account of American views is given by the American Society for Engineering Education, *General Education in Engineering* (University of Illinois, Urbana, 1956).

in the field of human relations. To be ready for the problem that does not yet exist, to think creatively even in our own fields, we need the cross-fertilization of many fields to discover unsuspected links among them. For this reason great firms like I.C.I. nowadays often prefer broad, versatile competence for adjustment to rapid technological change and for smooth human relations.

Of course, art is long and life is short; a student needs over forty hours a week in labs. and lectures merely to reach the requisite standard in two sciences; passing references to wider matters may be superficial. In Livingstone's words, however, 'time can always be found for what is essential':¹ non-essentials can be eliminated, teaching methods improved. The crux is: *What is our aim*—intelligent citizens, or specialists blinkered by their specialty? Universities need to decide their aims clearly, and to shape their courses towards those aims. If we shoot in the dark we cannot hope to hit the target. I briefly instance the second aim I listed, one that all scholars profess: to train intellects to face life sanely.

What happens? Plato attempted to make Dionysus of Syracuse a wise ruler by teaching him geometry, and of course failed miserably.² Modern students often scribble down lectures as fast as they can, and have no time to discuss, to discover general principles of clear thinking, or to apply these to new situations in the subject and above all in life. At the end of the course most examinations test facts rather than the ability to apply principles to *new* situations, above all in life. Does the study of mathematics, science, or history make students think more clearly about basic life concerns like sex, wages, or propaganda? Both

¹ Livingstone, *op. cit.*, p. 26.

² Lee, H. D. P. (trans.), *Plato: The Republic*. London: Penguin, 1955, p. 16.

experience and research reply, 'No!' 'We learn from history,' said Hegel in effect in his *Philosophy of History*, 'that we learn nothing from history.' In Africa and elsewhere there are science graduates who still believe in magic, to say nothing of thousands with closed minds in matters of politics or race. One science professor even refused to consider a carefully controlled series of experiments to test a witchdoctor's claims—partly because in his view witchcraft was a reality. Through the centuries in every branch of knowledge the weary struggle for advance shows that many learned men have not learned to 'follow the truth wherever it leads'.

Is it then impossible to assist our students to develop a clear-eyed view of real-life problems? On the contrary: but we can succeed only if we ourselves think out clearly what such an approach means, practise it, and help our students to understand, value, and practise it in handling not only test-tubes but life problems. Like the other qualities listed previously as aims of university education, rational habits of thought are unlikely to be developed, and unlikelier to be transferred from lecture room to life, unless they are consciously planned and worked for.¹

This involves the presentation of an intellectual challenge stimulating the students to think and find out for themselves, and the provision of adequate time for active, personal thinking through independent work, problem-solving, crystallizing principles of rational thought, and applying these to everyday problems.

Combined with the urge to know more and more, one principle of clear thinking is humility in the face of the

¹ This is the sum-total of research into learning and the transfer of training: see e.g. W. S. Monroe (ed.), *Encyclopedia of Educational Research* (New York: Macmillan, 1952), on these topics.

Ultimately Unknowable. This was the spirit of Socrates, who declared, 'As for me, all I know is that I know nothing.'¹ In the same spirit Bacon said, 'It is no less true in this human kingdom of knowledge than in God's kingdom of heaven, that no man shall enter into it, "except he become first as a little child".'² A scholar who declares, 'There is no soul—in hundreds of autopsies I have never found one', or who claims to have found the final truth even in the smallest sector of his specialty, does not demonstrate the scientific attitude. Sixty years ago most physicists and chemists thought they had reached certainty about the foundations of their subjects, and then their Ultimate Reality was smashed. Dogmatism is the negation of the search for truth. The university's intellectual aim must be to train staff, students, and community to think calmly, humbly, and tentatively, recognizing their ignorance and their bias, and therefore always eager to obtain fuller facts and ready to revise their hypotheses. All too often we teach *ex cathedra* and sound final and infallible.

This is particularly important in life-related subjects like language or education. If in Education, Psychology, Sociology, and the like we abandoned the Platonic procedure of starting from rigid 'principles' and textbooks and instead studied life situations like schools, prejudices, and wages, and tried to do something about them, both we and our students would find that doctrinaire arm-chair theories do not fit the facts. We would all be on our intellectual toes, facing a real challenge, keenly learning in the diastolic flow of ideas which is the lifeblood of a university, through running a Scout troop or studying a slum family. This is the kind of field-work which Tagore

¹ Plato, *Phaedrus*, sec. 235.

² Bacon, F., *Of the Interpretation of Knowledge*, ch. 1.

and Gandhi had in mind in proclaiming that in a non-Western country the university must break through its traditional shell and reach out to 'the last man'—the forgotten villager. With untrained students, certain obvious precautions would have to be taken; but in the light of increasing first-hand experience, theories would become either real to them, or questionable.¹ Through reading and discussion, students would be led to crystallize from their experience not 'laws' but tentative principles, realizing that even in material subjects like physics the 'laws' of the last century have turned out to be generalizations. Developing general principles from real situations as guides in new situations is central to the human education for wise living that is my theme. 'The spirit of generalization', says Whitehead, 'should dominate a University. During the school period the student has been mentally bending over his desk; at the University he should stand up and look around.'² Generalizations born out of throbbing life are more readily utilized in facing other life situations than textbook theories are.³ 'The proper study of mankind is Man', and would demonstrate that life and learning are not warring entities but one.

At the same time, to discover and to think calmly, university staff and students need leisure and quiet to find the facts and to interpret their findings; they have no time to run government departments, mines, or political parties. Indeed, real life purposes and passions have sometimes obscured the search for truth: witness alchemy's thousand years, Communism's forty, Nazism's ten. At some universities in underdeveloped communities the tide of politics runs so strongly as to blind objective thinking and shake

¹ Cf. Sir R. Livingstone, *On Education* (Cambridge, 1954), pp. 12, 22.

² Whitehead, *op. cit.*, p. 41.

³ See p. 23, n. 1.

intellectual standards. Where emotions run high and people 'think with their blood', training to think clearly is most difficult—and most necessary. The university must always be concerned with difficult human questions to which there are no sure answers. To proclaim, 'My task is not politics but fact-finding' is to leave the arena to the demagogue and his 'knavish tricks'. Calm controversy is the very heart-beat of a university; through the university's teachers and students should pulse the challenging, adventurous current of life. As Plato said, who is better fitted to interpret, proclaim, and defend the truth in public life than the man whose life is a search for truth?¹

Only in this sense must the university be an ivory tower. Even if a professor does 'crazy' things, even if a mathematics professor cannot add up his grocery bills, even if an historian wears a red tie and does not cut his hair, it is better in the long run to leave him in peace. No government can set limits to the human mind and direct it to be Capitalist rather than Communist or to make a discovery in the laboratory rather than in the bath or under an apple-tree. A government which suborns its universities merely discredits itself and its universities. After Joan of Arc had fallen into English hands, the professors of Paris, then in the English zone, proved her a heretic fit for the stake—but England lost France. In this modern age we have witnessed the depressing spectacle of university men teaching history for the glorification of Stalin or Hitler, biology to buttress Marxism or Nazism, psychology to show that intelligence tests are the work of counter-revolutionary capitalists because the scores of the proletariat in these tests are low. Such scholars require extraordinary acrobatic agility when a Khrushchev supplants a Stalin. That this danger is not

¹ Plato, *Republic*, vi. 499, vii. 520.

confined to backward countries was demonstrated by Senator McCarthy's witch hunt which threatened American universities in recent years.

Finally, what of the young men and women we prepare to live intelligently? Should they be an intellectual aristocracy? If so, at what level shall we draw the line? The professor has always groaned in sympathy with Master Gilbert de la Porrée of the University of Paris in the Middle Ages, when universities were certainly not flooded with students, that his students would make better bakers than scholars. We do need students who are able to penetrate the depths and scale the heights, but we have no sure way of selecting them and we urgently need increasing numbers of men who are not only trained teachers, scientists, doctors, industrialists, but sensible citizens. Switzerland has no colonies but proportionately three times as many scientists and engineers as England—and the highest standard of living in Europe. High productivity means more resources and leisure for learning and culture. The fantastic economic development of the United States, Canada, and South Africa is linked with the high proportion of the population at the university: 1 person out of 65 in the United States, 1 out of 130 whites in South Africa, and 1 out of 210 in Canada. To reach the Canadian scale, Scotland would have to increase her university population by about 7,000 and England hers by about 150,000. To maintain her position, the United Kingdom needs both her £100-million plan of scientific and technological education and an expanded university system in general. Some students will be unfit for real university study, but many university students were considered unfit in pre-war days when selection was twice as rigorous as now. Larger numbers may, as in America and South Africa, mean a larger

wastage of students in order to maintain academic standards: but even the 'failed B.A.' has often benefited by the experience. When even today only about two in five of Britain's ablest boys and girls reach a university, one feels that drastic measures are called for.¹

What of the Federation? On the South African scale we need not 500 but almost 2,000 European students, to say nothing of the great untouched pool of African ability. Not to train and use the country's best brains is to waste our most precious resources.

This has been a plea for reassessing the role of a university, particularly in Africa. In this urgent age and amidst Africa's unprecedented problems we need to examine our basic principles and establish clear aims, realizing that vague talk of 'intellectual discipline' without taking cognisance of educational research is not intellectually disciplined. In tracing the history of learning we have concluded that schools of advanced studies have arisen in response to Man's need for material as well as spiritual life abundant. Both in their advancement of learning and in their effect on life they have stagnated when they have turned away from their source. The sum of educational psychology is that we learn to live wisely only by an intimate combination of studying wise living, practising wise living, and crystallizing out of our attempts general principles of wise living.

Since we can master no more than a small fraction of human knowledge today, and cannot prepare for every eventuality of life, more important than masses of facts are widely branching, basic skills, attitudes, and principles.

¹ Barlow Committee Report on *Scientific Manpower* (1946) state 1 in 5 (p. 9).

Universities must be clear about these and consciously develop them. As teacher and student study real problems at first hand, objectively, honestly, and thoroughly, they must be free, on the one hand enjoying the traditional academic freedom of teaching and learning as their consciences dictate, and on the other hand teaching and learning no dogma except the dogma of open-mindedness, especially where passions run high. We can never know the final truth and must never pretend we do. Far too often the history of universities and their graduates has been a story of dogmatic attempts to frustrate progress by refusing to face facts. The true university hovers on the borders of the Unknown in a spirit of inquiry—and of faith. With faith in God our Father and all men our brothers, vital, adventurous, and unafraid, eager to live and to learn, we march towards whatever may happen in our lives and whatever new knowledge we may unearth.

We limit not the truth of God
To our poor reach of mind,
By notions of our day and sect,
Crude, partial and confined:
No, let a new and better hope
Within our hearts be stirred;
The Lord hath yet more light and truth
To break forth from His word.

Through the teachers, journalists, clergy, physicians, lawyers, farmers, and other citizens whom we educate, this spiritual education for wise living spreads into the community, awakening and vitalizing and elevating it. To such a spirit no bounds can be set, and in such a spirit our university can face the far future and train a growing multitude of citizens who will be both capable technicians and wise human beings.