

Editorial & Publishing Offices :

MACMILLAN & Co., LTD.
St. MARTIN'S STREET
LONDON, W.C.2



Telegraphic Address :
PHUSIS, LESQUARE, LONDON

Telephone Number :
WHITEHALL 8831

No. 3486

SATURDAY, AUGUST 22, 1936

Vol. 138

Research and Teaching in Universities

ONE of the most impressive passages in the recent report of the University Grants Committee is that in which attention is directed to the opportunity of service before the universities to-day in training the right type of leader, competent to think strenuously about great issues of right and wrong, liberty and government, and to bring to the grave problems of to-day minds richly informed and unsleeping in the exercise of critical intelligence, and imaginatively alive to the human issues underlying the decisions they are called upon to make. In an age when appeals to mass hysteria often appear to be more successful than appeals to reason, it is of the utmost importance that a university training should enhance a man's equipment not only as a skilled worker but also as a member of society and a human being.

The desirability of closer contact between the universities and the life of the community was also emphasized in speeches at the banquet on June 29 in connexion with the centenary celebrations of the University of London. Prof. L. Cazamian, of the University of Paris, referred to the function of the university in developing the unselfish love of peace, and a creative instinct of fair play to all the nations. The slow victory of a ripe spirit of justice over the promptings of blood, life and force is a subject for noble pride that something of the will to power of past ages might be sacrificed to a new hope and a new faith.

In a speech on the same occasion, Sir James Barrett directed attention to the value of a university as a place where a problem could be discussed without being overlaid by political and financial considerations. A university, however, cannot speak in the collective sense, and if a professor speaks individually he is apt to be criticized

if his notions do not agree with those of some of his hearers. Sir James Barrett suggested that the function of universities as a whole to meet the crying need of a world in constant travail is the production of men with balanced minds, organized intelligence and common sense.

This plea that the universities should no longer be regarded as unco-ordinated centres of specialized knowledge, but should come into closer contact with social problems and give an enlightened lead to the community independently of political parties, has frequently been advocated in different ways during recent years. Essentially it involves two separate questions. The first is the impartial study of social and economic questions, as has been carried out in recent years by the Research Section of the Department of Economics and Commerce at the University of Manchester under the leadership of Mr. John Jewkes. The second is the training of leaders for the community who possess the vision and personality to compel action along the lines indicated as a result of such investigations.

In regard to the first, Sir James Barrett suggested that some system of interlinked university research throughout the world, on the lines of that developed internally in the Commonwealth of Australia under the Council of Scientific and Industrial Research, is required. Without an educated public, however, it is almost impossible to ensure that the results of such investigations are fully utilized for the advantage of the community.

The problem is thus one of education and teaching as well as research or investigation, and the question of the right relation between teaching and research in the universities is one of the most important of those raised by the recent report of

the University Grants Committee. It has since been discussed in a valuable article by Dr. R. Coulborn in the *Nineteenth Century*, and reference was made to the same problem by the Prime Minister in opening the fifth Congress of Universities of the British Empire at Cambridge on July 14.

Unquestionably one of our first needs is the re-orientation of research at the universities, and the institution of research in the biological sciences and the humanities, so that we may be in a better position to deal with the many social problems with which the unparalleled and disproportioned development of the physical sciences has confronted us. In such work the prime need is for creative research, and Dr. Coulborn does well to remind us that much research work can be, and is, undertaken without any preceding act of creation. In fact, the patience, dexterity and precision demanded in so much research to-day tend to blunt the enthusiasm, imagination or vision of the investigator. He tends to become a machine, and cannot easily escape some warping of his mind or loss of humanity.

These effects of specialization cause the research worker to lose interest in teaching, and it is for this reason rather than to free the investigator from other distractions, as Mr. Baldwin suggests, that some reconsideration of the close connexion between research and teaching which at present exists in the universities is desirable. Undoubtedly it is true that the investigator of genius, the man with really creative ability, should be free from other claims on his time so far as possible. It is equally true that he is likely to be lacking in the patience which research demands, and will require a number of other workers to carry out the detailed work along the lines his genius suggests. It may also be true that his creative ability will be combined with a capacity for inspiring enthusiasm in others and thus for some measure of teaching, which is the fundamental reason for believing that the university teacher should himself be engaged in original work in his subject.

Such men, however, will always be the exceptions, and Dr. Coulborn's warning as to the damaging effects of research in university education cannot be lightly disregarded. He considers that the numbing influence of research on character destroys the teacher's ability to interest and inspire, while undergraduate studies are also usually planned on a basis of progressive narrowing down towards research minutiae instead of being

such as to offer the student the deepest understanding of his subject. If we accept the view urged by Mr. C. H. A. Wilson, vice-chancellor of the University of Cambridge at the recent Universities Congress, that the universities are national and imperial institutions, and that it is their duty to train against a background of pure scholarship men and women who are fitted to take a lead, or at any rate a creditable part, in the conduct of social, commercial and political administration, the question of the quality of the teaching given acquires primary importance.

The evidence cited by Dr. Coulborn suggests that our present practice of linking teaching and research is inefficient even from the point of view of research, and that much superior results would be obtained if the functions of research and teaching were entirely separated and made full-time occupations. Not only is it probable that teaching would be more effective and inspiring and more adapted to the social needs of the student if such a division were effected, but also it would be easier in the transition to secure a re-orientation and direction of academic research in the fields in which it is most demanded by the needs of the community. Moreover, a check would be given to that untoward tendency for undergraduate training to approximate to a soul-destroying professional training instead of the training in scholarship, in strength of character, and in potentialities of good citizenship, which it should be the glory of a university to give as a preliminary foundation of professional training.

There need be no fear that such a separation of functions would lead to any debasement of research. On the contrary, it is more likely to enhance its repute if the conduct of research is a full-time activity of investigators appointed for the purpose rather than the part-time activity of a lecturer or an aspirant for a higher degree. The prestige of research could only be enhanced by being placed on a footing which would enable its real leaders and men of genius to direct and inspire the large army of patient investigators whose co-operation is so essential in any advance to-day.

One of the most important consequences of such a separation of functions would equally be the encouragement which could be given to the really great teacher with a genuine talent for exposition and inspiring others. Such teachers, though teaching may be their whole occupation, will never fail of that constant refreshment at the fountain heads of knowledge which is essential if their

teaching is to retain its freshness and vitality. The present interrelation of research and teaching, in fact, has few more untoward consequences than the way in which it tends to diminish the prestige or status of such expositors who, whether within the walls of a university or in the nation at large, are one of the greatest needs to-day. Only through the work of sincere, able and fearless expositors can we hope that either the alumni of our universities will awake to the vastness of their opportunities of leadership and constructive service in the world to-day, or humanity at large realize how great are the benefits which the acceptance of such

leadership could confer upon them. The separation of teaching from research in such ways as these may well advance the dignity of both, and enable the universities to make an ever-growing contribution to our national and imperial well-being. This service will be rendered alike through the provision of exact and impartial knowledge and analysis of the factors concerned in many of our grave social or economic problems to-day, and in the training and inspiring of those who can bring to bear upon them constructive criticism, moral courage, a wide vision and a keen sense of human values.

Native Agriculture in Africa and its Relationship to Population

The Improvement of Native Agriculture in relation to Population and Public Health

By Sir A. Daniel Hall. (University of London : Heath Clark Lectures, 1935, delivered at the London School of Hygiene and Tropical Medicine.) Pp. vii + 104. (London : Oxford University Press, 1936.) 10s. 6d. net.

IN this book, Sir Daniel Hall deals with some of the many problems which have arisen from the impact of modern civilization on the native tribes of Africa. The increase in the human population and in the number of cattle which followed the stoppage of war and the reduction in epidemic disease has led to a dangerous condition—"The eminent consequences are disease due to inadequate diet, tribal unrest and the spread of the desert".

Primitive native agriculture is carried on by the method of 'shifting cultivation'. A piece of bush or forest is burned, and the ashes scattered. On this virgin soil crops are grown for one or two years, by which time the land is overrun by weeds. It is easier to burn another area than clear the weeds and fertilize the soil, so a further area of primitive jungle or forest is burned. So long as the population was small, Nature could repair the damage at leisure. But the population has increased to such an extent that regeneration no longer keeps pace with destruction. Apart from the increase in the population, the process of destruction is increasing owing to the growing of cotton and other products by the native for sale.

To the destruction of the land by the natives there is added the destruction by domestic animals. The increase in the number of cattle, sheep and

goats has upset the balance between the grazing animal and the pasture. The pasture gets eaten down to the very roots, and even the roots are destroyed by the goats. On the slopes, the tropical rain washes away the top fertile soil, no longer bound by the mat of vegetation. There results an area completely denuded of vegetation. In this way the desert is steadily spreading. This is a problem which is not confined to East Africa. Soil erosion due to over-stocking has become a most serious problem in various parts of the world.

Unfortunately, the native will not sell his cattle. The wealth and prestige of the family and the tribe depend upon the number of cattle, and the possession of cattle is interwoven with the social and religious structure of native life. Cattle, sheep and goats are, to the African native, even more important than money is to the modern European. Immense numbers are kept quite independently of their value for food or any useful purpose, except the maintenance of wealth and prestige. It will be exceedingly difficult to demonetize cattle in East Africa.

Associated with the problem of the growing population with decreased fertility of soil, is the widespread occurrence of malnutrition. Inadequate diet is one "if not the chief source of disease among African natives". If the health of the native is to be improved, the improvement must begin with better food.

After reviewing the present conditions and showing how they have arisen, the author in the final chapter suggests what should be done to prevent "famine and the spread of desert" replacing war and pestilence, as a means of reducing the