

UNIVERSITIES AND POST-WAR RESEARCH ORGANISATION.

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I confess to a certain sense of unreality when we discuss post-war organisations relating particularly to the future development of this country. All will depend on what that post-war period may mean for us. If that post-war period means a free and independent India, which is the master of her own destinies, an unlimited vista of development lies before her. If, however, our national status continues to be approximately what it is, much of our planning today would be sterile for obvious reasons. Nevertheless, such discussions on scientific research organisations have value for clarifying our own ideas, defining our objectives and visualising our best lines of advance in future.

Few people would deny today that science must subserve human needs directly or indirectly. It is also recognised that the so-called pure and applied sciences are not only not disparate, but inter-penetrate into each other and must do so if progress has to be maintained on a secure basis. Long-term and short-term researches are also similarly related to each other and they must dovetail into each other if the best results are to be obtained.

The next question is that of applying scientific knowledge to national progress according to a plan. This is a question on which both bold and clear thinking is desirable. National independence in the present day is not enough to ensure a country's progress, prosperity and defence. While political and economic freedom would undoubtedly stimulate industrial development, in the absence of a planned socialist economy, the amazing rate of progress which has, for instance, been achieved by the Soviet Union would be unthinkable. Britain and the U.S.A. were able to accomplish their all-round industrialisation without a planned economy in past years because the world at that time was very largely uncompetitive. This is no longer possible today. If we desire a 'forced march in industry' as our President indicated and if that march is to be a rhythmic balanced march in all aspects of national economy, if national might has to be acquired in as short a time as possible, the State will have to take recourse to planning on the Soviet model. Any organisation of scientific research will largely fail in its social objective if the State fails to accept and implement a socialist plan of economic development.

Coming now to the question of Universities in relation to the organisation of scientific research, I would like to touch on two or three points. One is that the Universities should exemplify what we have described above as the inter-penetration of pure and applied science. In other words, the scientific research organisation of the Universities must be fully cognisant of its social utility and consciously promote economic and cultural progress without being divorced from the moorings of fundamental scientific work and thought. The second point about Universities is that their scientific research organisation should have the freest possible scope and more than adequate finance for development. This is possible only if the State is conscious of its duty to the Universities and if the policy of the Universities is guided by individuals who believe like the Soviet Government in 'Scienceocracy', that is to say, in the central and dominant rôle which science plays and will increasingly play in the changed world of today. While humanities are certainly not to be neglected, first thing must come first if a backward country has to compress a century's development into a quarter of a century. Science is absolutely the pivot on which civilization turns today. It makes the difference between life and death, health and ill-health, strength and weakness, victory and defeat. We can forget this only at our own peril. The third point about the University research organisations is that they are the chief training centres of scientific personnel necessary for all branches of economic development and therefore their standard of teaching and research should be maintained at a high order to meet the national requirements. Fourthly, I believe that the system on which most University post-graduate departments in India function does not help

efficient and permanent schools of research to be built up. Most teachers in Indian Universities have hardly any permanent co-workers in research. They have only temporary research scholars or assistants provided by the Universities or by one or other of the Government research organisations like the B.S.I.R., I.R.F.A. or I.C.A.R. It is time that attempts were made to attach a nucleus of at least four or five permanent research workers to the University teachers so that the experience gained could lead to the establishment of authoritative schools of research at different University centres. In this matter, the research organisations like the B.S.I.R., I.R.F.A. and I.C.A.R. can also help by providing at least a small nucleus of permanent research workers at the University centres, while they may also finance *ad hoc* temporary research schemes at these centres. The great contributions of German Universities to science seem to arise to a large extent from their having fairly large and permanent or semi-permanent research staff to carry out as a team long-term research programmes for years together. I would commend this system to the consideration of the National Institute.

The Universities, it will be admitted, occupy a highly important position in any scheme of scientific and economic advancement of this country. To the extent that their research organisations are strengthened and adjusted to the needs of a modern community, to that extent would they be able to fulfil the rôle that is allotted to them. As seats of learning, untouched by fear and favour, they would for ever be the torch-bearers for the unending march of humanity.