

The Future of Agricultural Science in India

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The experience of the past few years during which the country passed through blight and hunger is a challenge for survival. There is no doubt that science can play a decisive part in solving this problem. More than any other, the responsibility of agricultural science in this respect is the greatest. The function of agricultural science is in content, form and purpose fundamentally social and collective and it could be a powerful instrument to help to disclose new productive forces in nature and new means of production to satisfy man's elementary needs of food and clothing and his commerce, trade and industry. Its development is also an indispensable condition for social progress in every epoch. If you look back at the history of scientific advance in agriculture in this country, it will be apparent that it received stimulus at important stages of political and social development. The present interest in agricultural science is born of a necessity to achieve freedom from foreign bread and freedom from hunger. The same problem is faced by many other countries. But yet the possibilities of agricultural science to transform the present situation have not been visualised. Many countries in the world have set up commissions for Atomic development but the same impelling force for the development of agricultural science is not manifest. Men with foresight like Lord Boyd Orr have drawn attention to the need for agricultural development. The two important branches which may be said to constitute agricultural science are Biology and Agronomy, but the work done in these branches is so little when compared to the attention paid to other sciences like physical and chemical sciences, which are supposed to advance the industrial development of a country. Even in England the work done on Biology is not one-tenth of that done in other branches and it is said that one Chemical Industries Corporation alone employs more chemists than the number of biologists in the whole of the United Kingdom. Great attention is now paid to antibiotics but E. B. Balfrow calls agriculture a medical necessity and food the best antibiotic. In India too the work on plant genetics and selection is meagre. Agriculture is going on, more or less on conventional lines except for episodic work of scientists, some of them very eminent, which Sir John Russel calls as only their 'personal achievement'. Such work is outside any conscious plan or social objective. The agriculture of tomorrow calls for limitless researches for the evolution of new crops both by vegetative and sexual hybridisation in order that natural deficiencies brought about by climatic shifts may be overcome. The new

biology will have to evolve crops which will be all the year-round crops and not bound by season. If, for example, paddy is planted in experimental plots at intervals of 10 days all the year round and watered by whatever irrigation commandable, it would reveal the phasic development of the crop not according to its calendar age but according to its physiological age and climatic complex. The agrobiological work of Krenke and Lysenko can be said to be attempts to train crops which will not depend upon the season, but their scientific theories are vitiated by dialecticism. The future of agriculture in India no less than in any other country, will depend upon the achievements in the sphere of plant and animal breeding and phyto-geography and these achievements will have to be made not only by the formal scientists but also by intelligent farmers. Michurin and Burbank were not conventional scientists but naturalists. Fabre did not work through the microscope but would lay on the ground for days at a time to watch the ways of ants and insects. The domestication of plants or animals to conditions which human ingenuity cannot alter will require intimate contact with Nature and patient observation. Agricultural science of tomorrow will not achieve anything if it withdraws from Nature and isolates itself behind academic walls. A re-approximation between Man and Nature will be a first condition to draw from Nature the succour which she can abundantly give. In other sciences, theories containing a little truth and many pre-conceived ideas can exist in laboratories or books for a long time but in agriculture millions of people work with the aid of those theories to test them on a large-scale. The agriculture of tomorrow in India might have to discover plants which would be immune to drought by atmospheric fixation of water and synthetic fixation of chlorophyll within the plant organism. The present incubus of water shortage may be removed to some extent if not wholly by the completion of giant irrigation projects, but assuredly the problems of the agricultural scientist will not be solved by them. In western countries biology was given a secondary importance and results were sought to be achieved by high dams, machines, artificial fertilisers and the like. In India the emphasis in future must be on biology and agronomy as in China and Japan and all else are only adjuvants.