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## What Is Agricultural Research?

The continual cacophony about agricultural research and its leadership voiced by persons outside the community of agricultural scientists and specialists leads those of us inside that community to wonder where our critics get their facts. One wonders if these critics have taken a close look at what is going on these days in the laboratories, greenhouses, and field plots of our present-day agricultural scientists. While pesticide critics capture most of today's media spotlights by suggesting there is a preoccupation with chemical pesticide research, much more is under way in the agricultural sciences.

Critics suggest that agricultural research lacks leaders and accuse agricultural scientists of being "hired hands" of agricultural business. Before publicizing that theme, they should look into the laboratories of our leading agricultural scientists to see firsthand what is going on. To cite only a few examples, a group of scientists here at the University of California is trying to unravel the mysteries of nitrogen fixation in order to improve the production of plant protein in cereal and forage crops and utilize solar energy and nitrogen in the atmosphere to replace the chemical fertilizers on which we are so heavily dependent. Another large group of researchers is studying the ecological relationships between insects both harmful and beneficial to plants and animals. Their hope is to define and establish natural conditions that will hold populations of the harmful pests to nondestructive levels, thus leading to a reduction of the present pesticide load in our environment. Still other scientists are seeking ways to reduce and alleviate waste matters of agricultural production which accumulate in ground water systems and in prime agricultural land. Food scientists are engaged in research to improve the nutritional quality of processed food and are studying the problems of inadequate nutrition in the less fortunate segments of our society. Social scientists and agriculturists are working with rural communities and with farm workers to help them develop more economically viable communities and occupations. Our extension activities are directed toward improving knowledge about nutritional well-being and about how to get the most benefit from home gardens and home-canned fruits and vegetables.

Basic research into the causes and nature of plant and animal diseases is under way, with discoveries regularly being made which contribute to a better understanding of the nature and ultimate control of human diseases. For example, last year our agricultural scientists identified a new disease causal agent, the viroid, which may well be a causative agent for some of the mysterious human and animal diseases.

Work of this type absorbs a large part of the total resources available for research in agriculture. The scientists involved are motivated by their own creative interest, and its expression in these new research directions has been abetted and supported by the agricultural leadership that critics find so inadequate.

No disagreement should be found with the suggestion that the academic community accept its responsibilities with respect to the world food and job situations, and a review of recent literature and of world and national conferences will demonstrate the strong effort being exerted in this direction. The aim is to assure that expenditures of public funds on food and agricultural research are one of the soundest investments in the future welfare of mankind that can be made. With a projected increase of 2 to 3 billion mouths to feed in this world in the next 25 years, peace will be in the balance unless hunger and starvation can be overcome. Developing countries will need to place food development as high or higher than national security and industrial development in their national priorities if they are to achieve economic stability. We are fortunate that the past leaders of our nation placed food and agricultural development in such an important place among our national goals. As the world's population rapidly expands, we will have a renewed challenge to meet the need for food. We hope this challenge will be met with the help of our "nonagricultural" colleagues, who perhaps have a greater understanding of the political and cultural barriers to the fulfillment of that goal.—J. B. KENDRICK, JR., *Vice President of Agricultural Sciences, University of California, Systemwide Administration, Berkeley 94720.*