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Science needs roots in the soil

THE PROBLEMS challenging agricultural scientists are challenges first to the people who grow and market crops. The first step, then, toward agricultural problem solving is determining what the problem really is. Agricultural Extension, the arm of the Division of Agricultural Sciences out in the field, undertakes to answer that first question. It can be answered only with scientific competence.

Creative Extension work today cannot be neatly separated from the work of the Agricultural Experiment Station—nor should it be. Research—applied, adaptive, or by some other name—is an essential tool of agricultural diagnosis. Through research we identify problems. Through research we adapt laboratory solutions, techniques, and controls to regions, counties, and districts.

The increasing research function has had profound effects on the people who make up Agricultural Extension in California. It will have greater effects in the future. Not only the specialist in plant pathology, or soils, or economics but the county farm advisor himself must be a scientist. The farm advisor with a doctorate in his specialty is no longer unusual. As Extension's work demands increasing specialization and county lines fade away as boundaries of Extension programs, the highest available scientific training must become the rule.

What meaning can we read into the changes coming to Agricultural Extension—the higher level of exposure to science demanded of new staff members, the “updating” or “retreading” of long-time staff members through graduate study, a deeper interest in effects of agricultural change on people?

Some of the implications are clear. One is in the scope of the University's outreach among the people of California. Agricultural Extension has always reached more widely than any other segment of the University into the lives of people. This outreach is at an increasingly higher academic level. Greater scientific education must necessarily bring

closer together all functions of the Division of Agricultural Sciences—research, resident teaching, and extension. Research scientists, professors, and Extension specialists speak the same language. Their interests cannot be separated. The teaching functions of Agricultural Extension—and it always has been a teaching organization—must approach the graduate level to serve scientific California agriculture. Only an Extension staff so trained can effectively fill a role between the laboratory scientist and the men and women in agricultural industry today, who must themselves be at least practical scientists, economists, or engineers.

The participation of Agricultural Extension specialists and farm advisors in CALIFORNIA AGRICULTURE authorship shows the growing use of research as an Extension tool and the growing role of Extension in team research. The team approach to problem solving may involve scientists of a dozen disciplines, specialists, farm advisors, and farmers.

The problem itself may be as much urban as rural. Air pollution ignores city and county lines. The research-extension problem-solving team must do the same. Poverty and poor nutrition are more urban than rural problems in California. The Expanded Nutrition Education Program, Agricultural Extension's immediate approach to these problems, is predominantly urban. Problems of youth and poverty exist where youth population is dense. Research, by Extension, is seeking the means of applying 4-H methods in the city.

It must be part of the Extension function to see the relationship of a problem and its solution to people, rural and urban. It must be part of research to include the social sciences. The Agricultural Extension role has broadened to touch the whole process of environmental problem solving. It is a scientist's role, from identification of the problem to solution and local adaptation. It must include seeing and responding to implications for people and their world.