

What Next?

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THE GREAT strides that have been made in agricultural research in a few years are truly impressive. The pages of this book bear witness to the fruit of our labors. I look back over this period with pride in our accomplishments, but I look forward with serious concern, born of the knowledge that we must keep everlastingly on the job if we are to meet the challenges of the future.

We know that livestock diseases and parasites still take a terrific toll from farmers every year. Poultry diseases reduce farm income by 40 to 50 million dollars a year, and poultry parasites cost four times as much. Much remains to be done to eradicate Bang's disease and other widespread diseases of cattle. In some cases further progress in eradication of livestock diseases awaits new discoveries by those engaged in research.

Every cattleman has observed that certain animals gain faster than others grazing side by side. We know that this difference in ability to gain is due in part at least to heredity, and that the more efficient animals may pass on this trait to their offspring. In general, we know that the same is true for other classes of livestock, but except for dairy cattle we have only begun to work out practical methods that farmers can use to build up the productivity of their herds.

We must not be misled by the brilliant work that gave us DDT. The use of that wonderful insecticide creates many new problems—questions on toxicity to livestock, to man, and to the soil. Research must answer these questions. Meanwhile, the search for still other insecticides must go on, so that insects not controlled by DDT may be subdued.

Neither must we become complacent about our successes in breeding crop plants that resist diseases. When disease-resistant varieties of crops are developed, the disease organisms may undergo changes that ulti-

mately enable them to attack the new variety. If we are to keep ahead of the diseases we must constantly develop new varieties.

Our soils are being depleted constantly by losses from erosion and by the crops that are being removed from them. Ways and means must be found for checking such losses and for developing fertilizer and farm-management practices that will permit farmers to keep up production.

As we make progress in more efficient production, we must make even greater strides in more efficient utilization and distribution of farm products. We must find wider use for those products that we now harvest and find ways to convert into byproducts much that is now left in the fields to rot. Current research looking to the use of cereal straws and corncobs as a source of motor fuel is just one example of the kind of research that will pay dividends in the future.

In taking stock of progress in agricultural research, we should not forget that much of the effort that normally would have gone into the accumulation of basic scientific facts was diverted to other, more urgent problems during the war. The result is that our storehouse of facts has been reduced. Basic knowledge must be available before it can be applied to the solution of practical farm problems. That is the reason for stressing basic research in the immediate future.

As we look ahead, we may be led to ask ourselves if the research developments of the past are less wonderful than they have been portrayed. I do not believe they are. But we must remember that agricultural research is not a static thing. Many of the problems of farm production are so intimately bound together that when one factor is changed, the whole system may be changed. Limiting factors under one system of farming may be eliminated, but new limiting factors may develop as the result of a new discovery. In a dynamic, rapidly changing world, all elements, man-made and natural, must be considered.

The broad scope of research developments during the war show the enormous complexity and magnitude of the tasks assigned to agricultural research. The multiplicity of conditions under which plants and animals are grown, changes in economic conditions, the wear and tear on the soil from continued cropping, and the biological changes continually occurring in plants and animals and their parasites make this a never-ending task.

The faith American farmers have placed in research by their continued support has been justified. Their representatives in Congress have reaffirmed this faith in the passage of the Research and Marketing Act of 1946, which promises greater support than ever before for agricultural research. With a better understanding of the interrelationships of the many sciences that enter into the production and utilization of farm products, I believe we are on the threshold of new discoveries that will in their own way take their places beside the notable ones of the past.