The Field of Entomology
Its Past, Its Present, Its Future

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It is interesting to look at the past and speculate on the future. As I have said on other occasions, we study the past to understand the present and prepare for the future.

From Doctor Montgomery's paper you have learned that entomology and insect problems are as old as history. From Curtis Wilson you have found that insects were recognized as a problem from the earliest history of Indiana. However, Entomology, at least economic or applied entomology, is a comparatively new science. To be sure, we are celebrating the 100th anniversary of Professional Entomology and yet the science of insect control is perhaps only 75 or 80 years old. It seems to me we can consider the development and use of Paris green in the late 70's as the beginning of scientific insect control.

During the sixty years following the discovery of Paris green there was a gradual development in insecticides, each new development being brought about because of a special need. Therefore, arsenate of lead was developed because of the need of a safe stomach poison on a variety of plants to control the gypsy moth, calcium arsenate as a dust for use on cotton, oil sprays to replace lime-sulphur for scale insects, and so on. During this period greater and greater emphasis was given to good practices as a control and this of course applied primarily to field crops which were extensively grown and whose value did not warrant the use of expensive insecticides. It should be noted here, that in spite of new insecticide developments during the past 12 or 15 years, good practices such as good agronomic practices, sanitation and the like, are still more important to insect prevention and control than anything else. And may I remind you these are preventive practices, operating before damage is done by providing conditions unfavorable for insect development.

Then came World War II and with it a realization that our armed forces would be in areas where insect-borne diseases would be a factor. It is to the credit of the Swiss scientists that the first effective chlorinated hydrocarbon, DDT, was discovered as an effective insecticide and in particular effective against insect carriers of disease, such as fleas, flies, mosquitoes, and body lice. We have ample evidence that the discovery of DDT and aerosol bombs, and their use in the Southwest Pacific were responsible for shortening the war against Japan perhaps by many years. To be sure, the atom bomb ended the strife but the insecticides were a major factor in setting up the final stroke.

Since the advent of DDT dozens of other organic chlorinated hydrocarbons have been developed and these have been followed by the phosphate compounds. The end is not in sight.

As I intimated a minute ago, entomologists are losing sight of the good agronomic and sanitation practices which are so essential if we expect full use of insecticides, whatever they may be.

There is no question that we have come into an era of chemical control. The present chemicals can be used in almost unbelievably small quantities resulting in a low cost per acre. Likewise low pressure type sprayers and the airplanes have made it possible to use insecticides profitably on such extensively grown crops as corn, legumes, and others. The development of insect resistance to the new chlorinated hydrocarbons is a factor we had not anticipated in the beginning.

As for the future, perhaps my guess is as good as yours. New chemicals are certain to be developed and we should expect them to be as good or better than those of the present. Greater emphasis will be given to safer insecticides and safer methods of application. Farmers will provide themselves with low-pressure sprayers as a part of their regular essential equipment. The airplane and perhaps especially the helicopter, will become major factors in insect control, because there are innumerable situations where ground equipment will be impractical. The telephone lends itself to obtaining immediate information which is so essential in prompt and effective control of insect pests. The telephone is being utilized more than ever before in place of mail correspondence. Dealers are maintaining adequate stocks of insecticides being recommended so that materials are increasingly more available. County agents, who are such important contact agents, are keeping abreast of developments and are in a position to make recommendations in many cases. The successful long-range predictions by meteorologists and the likelihood of even longer predictions, provides an aid of great importance in predicting insect troubles. And finally, there is an increasing number of professional operators to do service work. All of these factors are certain to make insect control more effective in years to come and this, in turn, will be a major factor in increased production of food and at a lower cost.