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ADDRESS BY ROBERT M. PAUL, SPECIAL ASSISTANT TO THE ASSISTANT SECRETARY OF THE INTERIOR FOR FISH AND WILDLIFE, BEFORE THE MEETING OF THE AUDUBON SOCIETY, CORPUS CHRISTI, TEXAS, NOVEMBER 10, 1962

The Federal Pest Control Review Board

When Carl Bucheister invited me to speak at this meeting, I accepted with enthusiasm. Not because I like public speaking--in fact the reverse is true--but this was my first opportunity to do two things I have looked forward to for a long time--attend a National meeting of the Audubon Society and to visit Aransas Refuge when there is a chance to see a whooping crane. I'm sure many of you are here for the same reason, and I want to extend my personal thanks to Carl for holding an Audubon meeting outside of New York City.

I also welcomed this invitation at this time because I wanted a chance to talk briefly with the citizen's group that has consistently demonstrated more concern than any other I know over man's efforts to modify his environment by using (or misusing) the techniques and technology of this chemical age. In a sense, pesticides are only one small facet of the major problem we face today--how to maintain the healthy, fulfilling environment that is required for our future existence.

Dr. Luther Terry, the Surgeon-General, pointed out recently:

"Modern man is living in a new kind of environment, which has been largely created in the incredibly short time of twenty years. In this brief period, at least half a million new chemical compounds have come into existence."

Of these half million new chemical compounds, I'm sure you will agree that few, if any, are causing more public concern than the new chemical pesticides. It is a healthy sign that these relatively new chemicals are suddenly the subject of an unparalleled public discussion because, I believe, it means that the public has suddenly become aware that the usually unnoticed warnings of the ecologists have meaning for man as well as for some little-known animal whose environmental niche is endangered. Perhaps this is the real meaning of the public's interest in Rachel Carson's "Silent Spring."

At the start, I must confess that it is probably not possible for me to be completely objective on the subject of Miss Carson's book because my own professional career has been spent worrying about the effects of pollution and pesticides on fish and wildlife.

In addition, we are proud that so much of "Silent Spring" is based on Fish and Wildlife Service research. And, with no modesty at all, we like to point out that Miss Carson is nobly carrying on a tradition that employees of the Department of the Interior, beginning with Walt Whitman nearly a century ago, have written some of the Nation's most important books.

Fortunately perhaps, my remarks today are in no way intended to fan the flames of controversy. Instead, I hope to tell you briefly about the effort this Administration is making to make sure that all Federal pesticide programs are conducted in such a way as to absolutely minimize all hazards to public health and fish and wildlife.

The need for a top-level, policy review of Federal pest control activities was first expressed publicly several years ago. In 1957, serious wildlife losses resulted from application of two pounds per acre of heptachlor for fire ant control in the South. As a result, several bills were introduced during the 86th Congress to require conservation agencies to be consulted before federally financed pest control programs were undertaken. No legislation was passed, however.

Shortly after taking office, President Kennedy sent a message to Congress outlining his Administration's program for natural resource conservation. Among other things, the President called for "consistent Federal leadership" that would end "various conflicts" among Federal agencies, such as that of "one agency encouraging chemical pesticides that may harm the song birds and game birds whose preservation is encouraged by another agency."

As a result, the four Departments concerned, (Agriculture; Defense; Interior; and Health, Education, and Welfare) established the Federal Pest Control Review Board, consisting of two members from each Department, on June 22, 1961.

The order which set the Board up describes the job it is to do.

First,

"In particular, the Board shall consider problems arising from pesticide uses that involve hazards to human health, to livestock and crops, to fish or wildlife, or to the economic well-being of business, industry, agriculture, or the general public."

This is a short statement, but it defines a mission that specifically prevents the example of "harm to song birds and game birds" cited by the President.

In addition, the order says:

The Board "shall review" Federal programs "with particular reference to possible adverse effects"; "shall advise Federal agencies . . . with a view to achieving the results desired with minimum undesirable effects"; "shall review technically complicated or controversial problems"; and shall prepare recommendations "in the light of Departmental responsibilities established by law . . ."

The Board held a preliminary organizational meeting on August 30, 1961, and during the ensuing twelve months, twenty-four regular meetings have been held, at which all programs of the four member Departments on which substantial amounts of pesticides were used were carefully reviewed.

In order to give you a better idea of the operation of what the Board has done, I will discuss a few of the programs that have been of most concern and some of the actions that were taken before the programs were "cleared."

Let's start with the fire ant control program in the southeast. This has been easily the most controversial Federal pest control program. The Board devoted more time to the history of the program, procedures, side effects and accomplishments of the fire ant program than any other. Data supplied by the Departments of Agriculture and Interior were supplemented by a special report on the technical aspects of the program assembled by the Interdepartmental Committee on Pest Control at the request of the Board.

The whole scope of procedures, State and local participation and the operations manual which had been developed as a guide to Federal and State supervisors was reviewed in detail. Answers were developed to a number of questions pertaining to the chemicals used, rate and manner of application and the precautions observed to avoid risk to human health and wildlife resources. The Board was particularly concerned with the steps that had been taken to establish liaison with other agencies having an interest or responsibility with this program.

Particular attention was given to the research work accompanying the control operations. The history of the program showed methods of control had changed radically since 1957. The amount of heptachlor used had been reduced from two pounds per acre to one and one-quarter pounds per acre--later to one-half pound per acre applied in two applications of one-quarter pound each, three to six months apart.

The Board found that the most recent and promising research was the development of a new bait composed of granulated corncobs as the carrier, crude soybean oil as an attractant, and a recently discovered analogue of Kepone called Mirex as the toxicant. The rate of application is 5 to 10 pounds of corncob grits treated with soybean oil containing only one-seventh of an ounce of the toxic chemical per acre. The Board encouraged substitution of this treatment for the wide-spectrum pesticide previously used. This bait has shown no evidence of affecting fish or wildlife this year. It has now replaced previously used treatments in all States where cooperative work is underway.

Finally, the Board wrote to the Secretary of Agriculture approving continuation of the program for one year, subject to certain conditions, including establishment of priorities of areas to be treated; limitations on application rates and total acreage to be treated in any one county; protective measures to be taken; maintenance of close liaison with interested Federal health and conservation agencies; and other requirements.

Other programs were scrutinized in similar fashion and also demonstrate the Board's emphasis on investigations aimed at finding treatments which would be more specific, less costly and safer to use in all environments. I am very pleased to report that much of the current research looks very encouraging.

In the case of the gypsy moth, a spray combining Bacillus thuringensis with a virus, both of which attack larvae of the gypsy moth under controlled conditions, holds some promise for field use. This biological control would offer no risk to the health of man or animals.

On the grasshopper and Mormon cricket programs in the west, the Board directed attention to a preventive approach of spot treatments of breeding areas in order to eliminate incipient infestations, rather than widespread aerial spraying after the population builds up. The chemicals now used are effective in extremely small amounts (one-half to two ounces per acre) that minimizes side effects, but investigations are continuing in an effort to find substitute, safer chemicals or other controls. A relatively new chemical (Sevin) is proving a very desirable, but more costly, substitute and the search for a biological control continues.

As far as Japanese beetle control is concerned, a comprehensive study is underway in an effort to mass-produce milky spore disease (a disease producing bacteria that attacks only Japanese beetle grubs) on synthetic media. This biological approach to the control of a major pest which, in a period of 40 years has spread over 15% of the land area of the United States, will be widely used if and when we can make it available commercially at reasonable cost.

In all of these programs, and the others that were reviewed, the Board was primarily concerned that all reasonable precautions to avoid adverse side effects were being exercised. At the same time, we must realize that only a very small percent of pesticides are used by Federal agencies. Our major effort is to put our own house in order and make sure that the operating agencies are equally concerned with research aimed at improving methods and materials that other pest control operators can use.

I also want to talk briefly about some of the special problems of the Department of the Interior. We are most concerned with making a start toward the establishment of a chemical screening program where new chemicals, known to possess some biological activity but not yet marketed, can be tested. We need to learn more about the toxicity, both immediate and long term, of these chemicals long before they have a brand name and are being sold.

Here on the Gulf Coast, I want to particularly call your attention to one phase of this problem that has probably not received enough attention. That is the effects of pesticides on our marine resources. Perhaps half of the many pesticidal chemicals in use today have been specially developed for their selective toxicity to terrestrial arthropods. Unfortunately, several of our most important marine food species, including lobsters, crabs and shrimp, are also arthropods. We shouldn't be surprised then that these animals are particularly vulnerable to the effects of agricultural insecticides that wash down to salt water.

Shrimp are very sensitive to chemical poisons and are doubly vulnerable because they spend the early part of their lives in the upper reaches of estuaries nearest the source of pollution. The larval stages of oysters and clams are similarly vulnerable to chemical poisoning. Another disturbing factor is that adult mollusks have the ability to store within their tissues concentrations of chemicals thousands of times greater than the amounts present in the environment. This could render them unsuitable as food and seriously damage the oyster and clam industry.

The direct toxicity of insecticides is not the only problem of concern to the Gulf Coast.

Some of our recent research indicates that some species of plankton that are important as food for clams and oysters can be killed by very small concentrations of herbicides--much smaller concentrations than are used for weed control upstream.

The importance of this research is obvious in this area where the commercial and sport fishing industries are so important. The problem of pesticides in salt water add a new dimension--or perhaps a new frontier--to the more familiar wild-life and fresh-water water pollution problems.

In conclusion, I can sum up the philosophy of the Federal Pest Control Review Board as one of recognizing that proper usage of pesticide chemicals to destroy unwanted pests and disease organisms has an enormous potential for the public good. For example, the contribution of DDT in eradication of malaria and typhus can hardly be over-estimated.

At the same time, we must recognize that chemicals which will kill or control pests are, in many cases, capable of causing harm to other species. We believe it essential that any contemplated use of a pesticide chemical be first evaluated as to the benefits that its use can achieve, the harm which may result and the precautions which should be taken to minimize harmful effects. A clear, impartial decision must be made as to whether any risk that may be involved is warranted in the light of the benefits we can reasonably expect.

Earlier this year, President Kennedy said, "We must reaffirm our dedication to the sound practices of conservation which can be defined as the wise use of our natural environment; it is, in the final analysis, the highest form of national thrift--the prevention of waste and despoilment while preserving, improving and reviewing the quality and usefulness of all our resources." I am confident that the Federal Pest Control Review Board can continue to meet its responsibilities to the public interest in carrying out this policy.

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