

Poison of 'Silent Spring' lingers on

by Dr. Thomas H. Jukes

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Thirty years after its publication, we still live in the shadow of Rachel Carson's book *Silent Spring*, which has many untruths, exaggerations, and, worst of all, omissions.

Here is how she started her fable.

"Some evil spell had settled on the community. Mysterious maladies swept flocks of chickens. The cattle and sheep sickened and died. Everywhere was a shadow of death. The farmers spoke of much illness among their families. There had been several sudden and unexplained deaths not only among adults, but even among children, who would be stricken suddenly while at play and die within a few hours.

"The few birds seen anywhere were moribund. They trembled violently and could not fly. It was a spring without voices. On the farms, the hens brooded, but no chicks hatched. The apple trees were coming into bloom, but no bees droned among the blossoms, so there was no pollination.

"In the gutters under the eaves of the roofs, a white granular powder still showed a few patches; some weeks before it had fallen like snow upon the roofs and the lawns, the fields and the streams."

This was Carson's introduction to her condemnation of DDT, which had saved more lives and prevented more diseases than any synthetic chemical in history. The World Health Organization had pointed out that whole populations had DDT dust in their clothes, and millions of people had the interior walls of their houses sprayed year after year, sometimes for more than 20 years, and that the only injurious effects had been with huge overdoses such as using DDT by mistake for pancake flour. What a supreme irony that a woman should attack the use of DDT that has saved the lives of countless children from the deadly disease of infant malaria.

No effect on hatchability

In contrast to Carson's allegations, DDT had no effect on hatchability in chickens, even when fed to hens at 200 parts per million (ppm) of diet. Honeybees are resistant to DDT. DDT had virtually eradicated malaria in many nations, including the United States. Countries that were uninhabitable because of malaria were freed from the disease, and people moved in. Their crops were protected against insects

by DDT, so the food supply increased.

In postwar Europe, DDT halted the spread of typhus fever, which is transmitted by lice, and is considered to be a deciding factor of all wars preceding World War II. Conditions in Germany in 1945 were ripe for a catastrophic outbreak of typhus fever. The infamous Dachau and Belsen extermination camps were packed with innocent people whom the Nazis had marked for slaughter. And 20,000 cases of typhus fever were estimated to have occurred in Belsen in early 1945. Dusting with DDT powder was started in Germany in May, and by June typhus had practically disappeared. Similar experiences with DDT in the control of typhus fever have been reported in six other countries.

Allegations were made that DDT would interfere with reproduction in animals. This was investigated in detail by the California Department of Public Health, and Dr. Alice Ottoboni, an experienced toxicologist, was in charge of the experiments. She found that DDT in a diet had no effect on the number or the health of young rats. Females receiving 20 ppm in the diet reproduced for 15 months, while the controls only had a reproductive life of 9 months. Dogs were kept for three generations with a daily dosage up to 10 milligrams daily. No adverse effects were seen on these beagle dogs. Indeed, the females came into breeding two or three months earlier than did the controls. These results were reported in 1977, but by then most people had become convinced that DDT was a poison that should be banned. . . . The results lead me to wonder whether, perhaps, DDT killed parasites in the digestive tracts of these experimental animals.

Rachel Carson's most emotional statements were reserved for songbirds, and she said that the American robin was "on the verge of extinction." Unfortunately for her, but fortunately for the robin, the well-known ornithologist Roger Tory Peterson, one year after the publication of *Silent Spring*, announced that the robin was probably the most numerous bird on the North American continent. He also pointed out that the red-winged blackbird was undergoing a population explosion. I pointed out that this bird lives in marshes and swamps, which carry the avian malaria parasite in mosquitoes. Perhaps spraying with DDT had led to a rapid increase in red-winged blackbirds.

No cancer increase found

Carson also related anecdotes of people who had sprayed their houses with DDT and had shortly afterwards died from leukemia. The actual facts are that no cases of cancer occurred in a group of 35 workers in a DDT factory who, for periods ranging from 9-19 years, absorbed daily up to 400 times as much DDT as the general population. The total number of workers in this factory was over 1,000 in 23 years of operation, and no cases of cancer came to light. This was investigated by the U.S. Public Health Service.

More recently, it was found that the inhabitants of Triana,



Bud Houston, moderator of Conference-14's May 21 Washington press conference on DDT, exposed the unprincipled role of William Ruckelshaus (shown here), who, as chairman of the Environmental Protection Agency (EPA), banned DDT 20 years ago. Said Houston:

"The environmental movement is based on the idea that mankind is too hard on Mother Earth, and the only way to reduce the impact on Mother Earth is to reduce the population, and they want to do that by starvation and disease. Groups like the Audubon Society and the Environmental Defense Fund forced Ruckelshaus to outlaw DDT 20 years ago. He didn't even read the EPA research study that he had commissioned, a study that said there's hardly anything wrong with DDT.

"But he outlawed it, and 40 million have died from malaria in the Third World countries. So, they say their program is working. I don't agree with that."

Alabama had accidentally participated in an experiment in exposure to DDT. This was because DDT residues at the site of an insecticide plant had gotten into the local river, and were present in fish. These fish were being caught alive and well, with DDT contents ranging up to 627 ppm. The people of Triana were investigated by the U.S. Public Health Service, and the main measurable effect was an increase in a blood enzyme. The conclusion was, "The effect is small and probably does not influence well-being." Nevertheless, the company which was responsible settled out of court for \$24 million, saying, "We live in a time when the popular perceptions regarding a chemical are inconsistent with the scientific facts." The person in Triana with the highest blood levels of DDT was about 90 years old, and rode a bicycle to work every day.

Natural pesticides in food more common

A second legacy of *Silent Spring* is a deeply rooted public fear of pesticide residues in food. The first question is, "Are the residues there?" A survey by the California Department of Food and Agriculture showed that 99% of 9,000 samples were within tolerance levels set by the U.S. Environmental Protection Agency; indeed, 76% of the samples had no detectable residues. Only 0.23% were in violation. A similar survey in Oregon turned up only 0.5% in violation, and even in these cases, there was a big margin between the residue found and the toxic level.

The story does not end here. Prof. Bruce Ames of the University of California has shown that 99.9% of pesticide residues in food are those of natural pesticides that have been developed by plants to fight their enemies. Some plants even make cyanide. Ames's calculations show that the daily intake of synthetic pesticides is less than 0.1 milligrams per day,

compared with about 1,500 milligrams of natural pesticides. Moreover, half of the natural pesticides that have been tested are shown to be carcinogenic at the maximum tolerated dose. He points out that there are 10 milligrams of known carcinogens in a cup of coffee, more than the pesticide residues that you eat in a year.

We are protected against these poisons by our own defense mechanisms, and by antioxidants in our diet. Ames points out that we are spending 3% of our gross national product on EPA regulations, most of which are unnecessary. For example, the EPA sets tolerance levels as 380,000 times below the level that harms an experimental rat. Dr. Ames regards this as "sheer insanity," and he points out that pesticides are actually protective against cancer because they greatly increase the supply of fruits and vegetables which are essential for the protection of human beings against cancer. He lists the causes of cancer as 30% smoking, 35% from unbalanced diets that are high in fat, 30% as a result of chronic infections, 25% from hormones that are produced in our bodies, only 2% as occupational, and less than 0.1% as a result of pollution.

Much needs to be done in preventing cancer, and we should focus on the elimination of use of tobacco and alcohol, coupled with improvements in diet, including lowering the fat content and increasing the consumption of fruits and vegetables produced with the aid of pesticides.

Finally, in the words of Dr. Samuel Simmons of the U.S. Public Health Service, "Most of the peoples of the globe have received benefit from DDT, either directly by protection from diseases carried by insects, or indirectly by better nutrition, cleaner food, and increased disease resistance. The discovery of DDT will always remain a historic event in the fields of public health and agriculture."