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Quick, Timely Reads
On the Waterfront

DDT and Me
My Mother Should Have Known
Rachel Carson

By David Frew, Scholar in Residence
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Editor's note: Following is a classic "On the Waterfront" by Jefferson Scholar-in-Residence David Frew. It was published originally in August 2021.



When my mother passed away it was my job to go to her house and “take care” of all the stuff. There were family relics: photographs, vintage furniture, and other items that were passed along to my children. But there were also hundreds of

items that she had meticulously stored – the beloved and important tools of her life. One of the most glaringly obvious of these hung inside her kitchen storage area, nestled within cupboard shelves where she stored food. I was shocked to see it there, but immediately recalled its prominence in my life on West Fourth Street in Erie, Pennsylvania. It was a bright red, DDT spraying pump.



The DDT advertising tag line

During those years, Dichlorodiphenyltrichloroethane (DDT) was considered to be a miracle of modern chemistry (its primary developer received the Nobel Prize!). First isolated in laboratories in the late 1800s, it was shown to be a devastating toxin for insects. Given contemporary concerns about bug-borne diseases, including Malaria, DDT seemed to hold the key to a better life. By the post-World War II era, the “Atomic Age,” chemical companies had also synthesized dozens of companion consumer products that were sold to consumers with the promise of helping to “make everyday life better.” Popular consumer products included a clear paint called Pestroy that could be applied to surfaces such as kitchen cupboards and widow screens. There was also a DDT-impregnated cedar-paper, which could be glued to closet walls, and even DDT-impregnated children’s wallpaper featuring Disney characters for those who really love their kids.

Schools painted student lockers with DDT coatings, huge foggers were used to spray patios and yards, and DDT bombs were sold to campers for killing insects while in the woods. DDT spray powder was available for shaking on family pets so that they would not carry insects into our homes.

New "brush-on" DDT liquid coating
"wipes out" insects!

PESTROY
6% DDT
LIQUID COATING



**Amazing new Pestroy DDT liquid coating
kills by contact, keeps killing for months!**

Away with troublesome insect sprays,
harmful fumes! Amazing new Pestroy
liquid DDT coating kills bugs *before* they
bother you. Just brush Pestroy on doors,
mouldings, baseboards, screens, etc.

**SPECIAL! Pestroy Applicator, worth
20¢, given with each purchase of
Pestroy 6% DDT.**

**NOW
ONLY
\$1.19
QT.**

Pestroy was a licensed DDT product that could be brushed onto such surfaces as food storage cupboard shelves.



For DuPont, the chemical company that was a primary distributor of the product, however, the most important use of DDT was agricultural. Millions of pounds of the chemical were mixed into spray tanks so that farmers could have their fields sprayed, allowing field crops to grow without insects.



Crop spraying became an important, secondary industry after World War II with many farmers buying old biplanes such as this one, learning to fly and creating short runways on their farms.

The family DDT spray machine was an indispensable “spring cleaning” tool. Each year, seemingly on cue, almost everyone in my neighborhood waited for the first warm day to begin dragging household furnishings out of houses and into backyards for the annual cleanse. It was a ritual. Carpets, small furniture, couch cushions, and other large objects were spread about the lawn and positioned so they could be sprayed. Then my mother (as well as the other neighborhood ladies) shifted to laboratory-chemist mode and began mixing various chemical compounds into kitchen containers in preparation for loading the DDT spray machine. Then the army of neighborhood ladies began spraying. I don’t remember anyone wearing protective gear.

I can distinctly recall the acrid smell as a fog of DDT was applied to everything. First the outdoor stuff was saturated and then the indoor areas. Cracks, crevices, immovable furniture. Anything that did not “get out of the way” was sprayed. When we were done with that terrible spring duty, the awful smell of DDT filled the house and remained for weeks. Eventually, we lugged everything from the yard back into the house and reveled in the satisfaction that disease-ridden bugs had been eliminated for the year.

Enter Rachel Carson.

Born south of Erie on a farm near the Allegheny River, Rachel was drawn to nature. As a child she prowled the riverbanks, forests, and fields upstream from Pittsburgh, ultimately learning about plants, animals, and aquatic creatures. Bright and a precocious writer, Rachel Carson was published at a young age and went off to college (at a time when it was rare for women to follow such a track), where she hoped to major in English and become a writer. Mid-curriculum, her love of nature won out over pure writing, and she ultimately graduated with a degree in biology. She continued her education at Johns Hopkins University, earning a master's degree in zoology in 1932.

Rachel Carson had planned to continue Ph.D. work at Johns Hopkins, but the Great Depression placed her family in economic peril so she took a job instead. Working for the U.S. Fisheries Department, she systematically earned a reputation for being one of America's premier marine biologists. Over a 12-year career, she became a talented field researcher and published several important scientific and popular articles. Her writing skills drove her to begin writing and publishing books in addition to her articles and she ultimately produced three seminal works in marine biology. As she continued her work, however, she became increasingly disturbed by changes that she was observing in the water column. Her research began to link these dysfunctional shifts to chemicals being released in the environment, which caused her to suspect the role of DDT in changes that she was measuring.

Confident in her ability to write and to reach a national audience, Rachel Carson resigned from the Department of Fisheries, moved to Maine and began to plan the book that would become her most important work, "Silent Spring." It took her four years.

The book, which was published in 1962, essentially predicted that if chemicals, including DDT, were to be allowed to be "dumped" into the environment at the rate that they were through the 1950s, the negative results would be absorbed by every living creature from the tiniest plankton in the oceans, to fish, birds, and eventually humans. The book title came from the possibility there would be a spring without birds, the "canaries in the big coal mine of life" and Earth's most sensitive harbinger of environmental danger. She predicted that chemicals, including DDT, would lead to an epidemic of cancer in humans. Carson estimated that the half-life of DDT was approximately 20 years in soil, meaning that even if its use could be slowed, the disastrous impact on the food chain would continue for decades if not centuries.

As "Silent Spring" became a bestseller and its frightening message was fanned by mainstream media (New Yorker Magazine serialized and published it), the chemical companies reacted. The industry giants, facing the loss of millions of dollars of revenue from their "miracle product and all of its licensed spinoffs," hired a publicity firm and launched a nasty national campaign against Rachel

Carson. The essence of the anti-Carson campaign, which continued for years (and still re-appears, episodically), accused her of being a “hysterical woman trying to do a man’s job,” a “low level fishery worker operating well outside her area of expertise,” a “communist,” and a “lesbian.” They were trigger words designed to inflame ordinary people during the 1950s.



Rachel Carson

In retrospect, it is now unclear if it was Carson’s work or the transparently self-serving publicity campaign by chemical companies that was most effective in alerting the public to the dangers of DDT. By the 1960s, worldwide research from dozens of independent sources implicated DDT and other pesticides in myriad environmental threats. DDT was banned from agricultural use in the United States in 1972.

Before she passed away (from cancer) in 1964, Rachel Carson and her work had been vindicated. Interestingly, Carson had never advocated the total ban of DDT. She understood its power in eradicating Malaria. As a pesticide, however, she wrote that its use would become increasingly less effective since her research showed mosquitos adapting to it, genetically.



Getting rid of pesky lawn insects during the 1950s, but at what cost?

Carson is now celebrated. Her Pennsylvania home has been made into a national monument, her statue graces a park near the Chesapeake Bay where she did much of her work, and the Pennsylvania Department of Natural Resources has honored her. Among her many awards, President Jimmy Carter presented her (posthumously) with the Presidential Medal of Honor.

These days, her book, “*Silent Spring*,” is credited with launching the modern environmental movement. In 2004, DDT was banned worldwide in agricultural applications, beginning a long period during which it was slowly, but not completely, disappearing from the human food chain (recall the 20-year half-life). The power of the chemical for eradicating malaria, which has been a terrible problem for Third World countries has allowed continued non-agricultural use. Unfortunately, the malaria spraying that continues adjacent to farm fields in some countries has resulted in DDT being present in produce that is imported to the United States.

Although my parents and their friends were nearly contemporaries of Rachel Carson, they and the rest of my neighbors were oblivious to her dire warnings. Thus, the annual 1950s, Fourth Street fog of DDT has probably influenced the long-term health of all of us.

In recent years, we have learned from animal as well as epidemiological studies that DDT exposure is linked to Type II Diabetes as well as several blood cancers. And as Rachel Carson warned, the half-life of the chemical in both soil and human fatty tissues has assured that it will be with us for a long time. Under the general heading of a “gift that keeps on giving,” the presence of DDT in human tissue has recently been connected to Alzheimer’s disease.

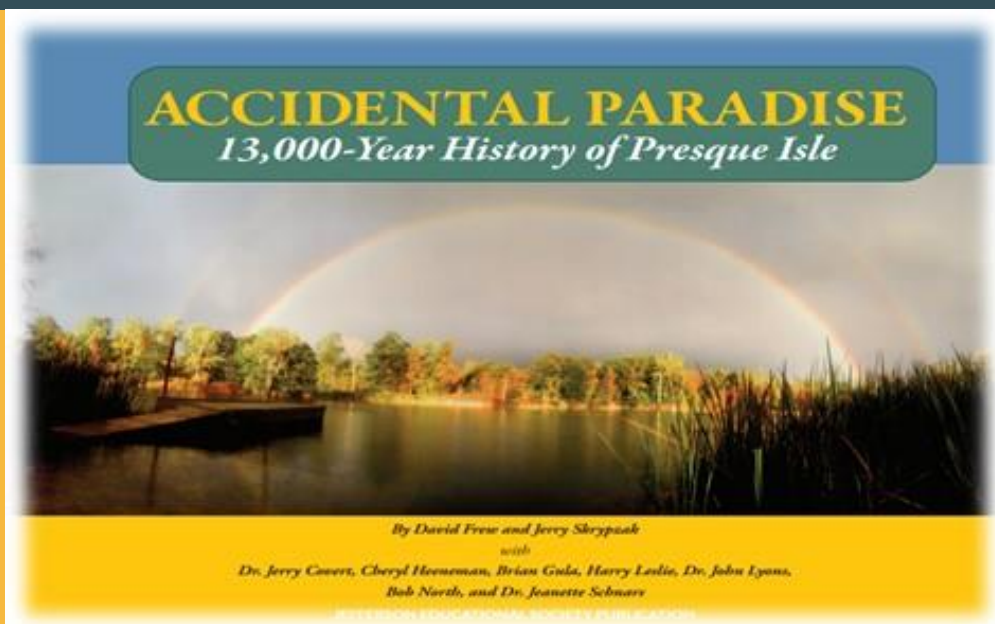
Lately, I have been wondering what Rachel Carson would have to say about the herbicide Roundup.

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by Dr. David Frew and Jerry Skrypzak



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ABOUT THE AUTHOR

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