

Marjorie Spock: An Unsung Hero in the Fight Against DDT and in the Rise of the Modern Environmental Movement

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Few would question that Rachel Carson's lyrical bestseller *Silent Spring* changed the course of human engagement with the natural world. It woke communities up to the dangers of backyard pesticides, and, in 1972, just a decade after the book's publication, motivated the US government to ban most uses of DDT. During the sixties and early seventies, it helped spawn the passage of a slew of environmental laws—from the Clean Air Act and the Clean Water Act to the Wilderness Act, the National Environmental Policy Act, and the Endangered Species Act. It helped motivate the formation, in 1970, of the US Environmental Protection Agency to safeguard the country's air, land, and water. For this public awakening and civil action, Rachel Carson is justifiably credited with launching the modern environmental movement.¹

But the passionate and committed work of another advocate for nature is often overlooked or underplayed in the story of DDT, the provenance of *Silent Spring*, and the rise of citizen-led environmentalism. Without the efforts of Marjorie Spock—who farmed organically in Nassau County, New York, in the late 1950s—to stop the spraying of DDT across Long Island, the outcomes of this critical period might have proven less momentous. Spock initiated legal proceedings against the federal government's actions and shared a voluminous quantity of trial documents and research materials about the harmful effects of DDT with Rachel Carson. Carson biographer Linda Lear writes that “Marjorie Spock was a woman of enormous courage, integrity, and indefatigable spirit who soon became one of Carson's inner circle of friends and the central point of her original research network.”²

Born on September 8, 1904, into a prominent family in New Haven, Connecticut, Marjorie Spock possessed diverse interests, many talents, and an erudite, fun-loving nature. At eighteen, she abandoned plans to study at Smith College and traveled to Dornach, Switzerland, to study with Rudolf Steiner, the founder of anthroposophy—the body of holistic teaching that underlies Waldorf education. She later received her BA and MA degrees from Columbia University, and taught in progressive schools in New York City, as well as the Waldorf Demonstration School of Adelphi College on Long Island, which later became the Waldorf School of Garden City. She translated many

works of Steiner’s from German into English, authored widely read books and pamphlets, and in her one-hundredth year produced and choreographed a video about Eurythmy, a philosophy of the art of movement espoused by Steiner that Spock practiced most of her life. She clearly ventured into territories unfamiliar to her corporate lawyer father, who served as general solicitor of the New York, New Haven, and Hartford Railroad, or her older brother Benjamin Spock, the renowned pediatrician and author.³

It was Spock’s deep commitment to biodynamic farming—a holistic and deeply nature-focused approach to agriculture rooted in anthroposophy—that positioned her to lead the charge against the unprecedented, government-run aerial spraying of DDT across Long Island in the spring of 1957.⁴ Spock and her friend Mary T. (Polly) Richards owned a home and a two-acre organic farm on Whitney Lane and Norgate Road in the Nassau County village of Old Brookville. When DDT from the spray campaign misted down onto their organic fields fourteen times in a single day, the course not only of DDT but also of environmental history more broadly, shifted. Not only did Spock and Rachel Carson become allies in a cause at a critical moment, but the 1958 trial that Spock and Richards launched against the federal government broke new ground as apparently the first modern environmental case initiated by citizens.⁵



Marjorie Spock.
*Photo courtesy
of Alchetron.*

“The human drama of the whole thing is something never to be found in the court record,” Spock said, when queried decades after the spraying and the ensuing trials. “I’ll never forget an instant of it.”⁶

Long Island Gets Inundated with DDT from the Air

On April 23, 1957, an unusual aerial campaign got underway on the eastern end of Long Island, New York: an orchestrated attack to eradicate the gypsy moth, an insect pest that had been defoliating trees throughout the northeastern United States. Federal officials called it the “largest single aerial spraying job ever conducted” in the country. Dubbed Operation Gypsy Moth, the Long Island battle was part of a larger war slated to span 2.5 million acres of New York State, including most of Long Island, as well as about 410,000 acres in New Jersey and Pennsylvania. The three-state offensive was to be carried out by sixty-five aircraft—including biplanes and bombers—and was scheduled to last until June 20th.⁷

The weapon of choice was the insecticide dichloro-diphenyl-trichloro-ethane, popularly known as DDT. It was affordable, effective, and in plentiful supply after the government had approved its release for civilian use right

after World War II. In 1950s America, DDT had a widely held reputation as a miracle worker. During World War II, it had spared many thousands of Allied troops from death due to malaria and other insect-borne diseases. By wiping out lice, it was credited with arresting a typhus epidemic in Naples, Italy, where medical workers administered more than three million body dustings to citizens and troops. In the tropical South Pacific, the insecticide was sprayed aerially to control malaria-bearing mosquitoes, and the incidence of malaria fell dramatically. One British entomologist wrote in 1942 that “the new insecticide appeared to be so exactly what we wanted that it looked too good to be true.”⁸

The vast majority of Long Islanders had no qualms about DDT. Many used it around their own homes, and it was often the insecticide of choice for landscape professionals. In the summer of 1956, the anticipation of an infestation of grasshoppers in the New York area led plant specialist Dorothy Jenkins to advise in the *New York Times* “Around the Garden” column: “Since grasshoppers feed on grass and vegetation in general, a large outbreak can be destructive. In that case spray with DDT.”⁹

Public health agencies on Long Island and elsewhere had taken heartily to DDT to push back nuisance mosquitoes in swamps, ditches, drainages, and suburban neighborhoods. Since 1946, Suffolk County’s Mosquito Control Commission had organized the spraying of 20,000 gallons of DDT each year to keep the biting pests at bay.¹⁰ Images of kids running behind spray trucks, playing in the toxic mist, became the stuff of environmental legend.

But Operation Gypsy Moth was different. It represented a new and unprecedented use of the insecticide. Never before had it been sprayed from the air in such quantities across such a large and heavily populated civilian area—and for a purpose that had nothing to do with the protection of human health. Moreover, the enemy combatant in the air war was doing minimal damage on Long Island. Evidence of the leaf-eating gypsy moth was only “light and scattered” at best, and according to some accounts was barely visible at all.¹¹

By that spring of 1957, Suffolk County’s population had topped 525,000 and was rising fast; it had nearly doubled during the previous seven years. The population of Nassau County, which bordered Queens, and was still drawing newlyweds and young families in droves to its promise of the suburban good life, was fast approaching 1.2 million. Homes, schools, offices, and playgrounds had sprouted across the island like mushrooms in damp woodland. Most of the acreage of farmland and pasture not yet paved over for suburban expansion was producing fruits, vegetables, and milk for local consumption.

Sprayed from the air, the solution of DDT mixed in fuel oil would mist down and drift with the winds. The pilots were instructed to fly no lower than five hundred feet. On the first day, anchored by the B-18 bomber, the planes

had sprayed 1,200 acres on Plum and Gardiner's Islands, 618 acres in the Yaphank, Jamesport, and the Moriches area of Suffolk County; and 100 acres in the Bridgehampton area, between Peconic Bay and the Atlantic.¹² At the prescribed rate of one pound of DDT per acre, some 1,918 pounds—just under a ton—of DDT drifted down through the moist air. Over the next few weeks, the pilots would deposit a payload of some 500 tons (one million pounds) of DDT across the island.¹³

Government officials assured Long Islanders that they had nothing to worry about. They had instructed the pilots to turn off their sprayers over ponds, streams, and cow pastures, and said the planes' activities would be carefully monitored from the ground. Lloyd Butler, assistant supervisor of Long Island's plant-pest control branch for the US Department of Agriculture (USDA) based in Hicksville, said with confidence that "some birds and fish will be killed, but their losses will be negligible."¹⁴

These assurances did not appease all Long Islanders. On May 8, about two weeks into the spray campaign, a group of citizens—including Marjorie Spock and Polly Richards—filed a lawsuit with the US District Court in Brooklyn seeking a temporary injunction to stop federal and state officials from spraying any further in Nassau and Suffolk counties. The group claimed that the spraying of their properties without their consent violated their Fifth Amendment rights to due process and just compensation. They argued as well that no emergency existed to warrant this assault on their property and lives.¹⁵

Two weeks later, on May 24, Judge Mortimer W. Byers of the federal court in Brooklyn denied the Long Islanders' request for a temporary injunction. He left the door open, however, for a formal trial of the issues the citizens had raised—setting the stage for a public unveiling of DDT's potential effects on birds, wildlife, and human health. Meanwhile, the spraying could continue.

Damages Accumulate—Including on Spock's and Richards' Farm

As originally scheduled, the spray campaign had less than a month to go. But tensions were rising between citizens and federal and state officials, as disconcerting reports began to flow into government agencies. The most visible collateral damage came first from counties just north of New York City. In Ulster County's Sandburg Creek, hundreds of trout died. Residents near a twenty-acre pond in Sullivan County found hundreds of poisoned fish, as well as dead frogs, turtles, and spotted newts.

As some scientists had warned, the spraying was killing beneficial insects as well as the targeted gypsy moth. An upstate beekeeper lost eight hundred bee colonies. Sharon J. Mauhs, New York's Commissioner of Conservation, filed reports on fish kills in Orange, Sullivan, and Ulster counties. State water

officials grew concerned about the possible contamination of New York City's drinking water supply, which came, then as now, primarily from reservoirs in the forested Catskill and Delaware watersheds.¹⁶

Meanwhile, Robert Cushman Murphy, a highly accomplished conservation scientist and life-long observer of birds and wildlife, was carefully tracking the spraying's damage to Long Island's waters, land, and wildlife. Murphy, who lived in Old Field (north of Stony Brook on the North Shore of Suffolk County), had retired from New York's American Museum of Natural History in 1955 with the distinguished title of Lamont Curator Emeritus of Birds. He became a respected public voice against the DDT spraying, even sounding alarms before the spraying began. Along with Spock and Richards, he had initiated the request for a temporary injunction.

In a repudiation of the USDA's statements about a "negligible" loss of fish, Murphy claimed there had been "almost total mortality in all fresh waters other than running streams." He found it very disconcerting that there were no fiddler crabs in Flax Pond, a saltwater pond about a quarter mile from where he lived. Writing in the *Three Village Herald*, his local Long Island newspaper, Murphy reported that in two ponds on a property in Wading River "every individual of a variety of fresh-water fishes was afloat and dead within a few hours after the spraying. You may multiply this example many times."¹⁷

Murphy noted the disappearance of water striders and other beneficial aquatic insects as a sign of a broader decimation of freshwater organisms. He reported that the spray had killed wood thrushes, warblers, and orioles. "This is the kind of man-made ecological change that Nature never takes lying down."¹⁸

Murphy also began to alert citizens to the dangers of DDT contamination of Long Island's fruits and vegetables. After a fly-over by the spray planes on the morning of May 30, peas were randomly collected from a four-acre plot at Lloyd Neck in northwestern Suffolk County (just east of the Nassau border) and sent for analysis to the Cornell University Agricultural Experiment Station in Riverhead. The peas were found to have DDT levels double to nearly triple the tolerance levels set by the US Commissioner of Food and Drugs.¹⁹

During the last three weeks of Operation Gypsy Moth, evidence mounted that at least some of the pilots had either been unable or unwilling to follow the strict orders that USDA officials had given them, and that damages to wildlife and property far surpassed what officials had publicly said to expect. Residents spotted spray planes flying as low as one hundred feet off the ground. Some pilots were dispensing much more than the prescribed dose of one pound of DDT per acre by flying over the same area several times. The companies contracted to do the spraying were typically paid by the gallons of

DDT dispersed rather than by the acreage sprayed, so there was a financial incentive to deliver more DDT than the “safe” dose prescribed.²⁰

While a significant number of property owners complained about the spraying, it was Marjorie Spock and Polly Richards who drew a line in the sand. Their firm commitment to produce their fruits and vegetables organically using biodynamic farming methods was at the core of their values about the centrality of the balance of nature. Indeed, they received farming advice from Dr. Ehrenfried Pfeiffer, then the world’s leading exponent of biodynamic agriculture. (Today, the Pfeiffer Center in Spring Valley, New York, honors and continues these practices.)²¹

Moreover, Richards suffered from debilitating digestive problems, so they strove to produce the purest, most nutritious food possible. It was about “bringing vitality and richness to the soil,” said Jennifer Greene, Executive Director of the Water Research Institute of Blue Hill, Maine, and a long-time friend of Spock’s. “Balance was a huge thing for her.” She strove to understand “how nature is connected and what happens when you break those connections—which is what DDT does.”²²

Spock and Richards had placed a plastic covering over their fields to try to protect them from the spraying, but the fuel oil in which the DDT was mixed ate right through it.²³ When the pilots doused their fields fourteen times in a single day, Spock and Richards decided they had little choice but to sue the government. Not only were their vegetables ruined and the milk from their dairy animals contaminated, their soil was now too toxic to grow food free of chemical residues in subsequent seasons. It was a matter, in their view, of unwarranted trespass.

Spock decided to encourage Robert Cushman Murphy, with his respected scientific credentials, to be the suit’s lead plaintiff—and Murphy agreed. They filed the lawsuit in the same Brooklyn court where just a few weeks earlier Judge Byers had denied their request for a temporary injunction. This time, however, they would seek a permanent injunction to ensure that such an “outrageous trespass” would never happen again.

Spock knew that a lawsuit against the federal government would be an uphill battle; but she also knew that it had to be waged. She could not sit quietly by and let the government “ruin this earth,” much less destroy her farm and her friend’s health. Moreover, the government had not given adequate warning to residents. Officials had placed a legal notice about the spraying in the paper, but few people would have seen it. During the hours of spraying, Spock said, “mothers had put babies out in their baby carriages.”²⁴

In a letter dated June 27, 1957, to a group called The Committee of a Thousand, Spock explained more fully her rationale for filing the lawsuit:

You probably already know that a group of Long Islanders, including the undersigned, have a test case pending in The U.S. Court in Brooklyn to restrain the U.S. and New York Depts. of Agriculture permanently from spraying their property. Most of Long Island, and a good part of New York and New Jersey and parts of Pennsylvania have already undergone such an aerial assault with DDT and fuel oil by these departments in spite of widespread and most vehement protest on the part of not only many thousands of single individuals but of whole towns and villages.

The spraying resulted in inestimable damage to the persons and property of countless citizens—damage which the defendants neither intend to nor can remedy. Private and commercial berry plantings, orchards, vegetable farms, gardens and pastures, bird sanctuaries, fishponds and beehives maintained spray-free by their owners were heavily damaged or rendered useless for their special purposes for many years to come. Birds, bees and fish were wiped out in considerable numbers. Beneficial insects which prey upon gypsy moths (the target of the spraying) and other pests were destroyed along with these, thus seriously disturbing natural balance. People were sprayed, not only on their private lands, but on parkways, streets and highways. Children were sprayed on their school grounds, babies in their carriages. Milk sheds and watersheds of sprayed areas were poisoned and rendered a distinct health hazard by the U.S. Dept. of Agriculture's own standards, reflected in warnings to dairy owners to keep DDT away from cattle and their pasturage lest milk be contaminated. Sprayed grains and vegetables present a similar hazard.

The constitutional issue presented in our suit is, we feel, so basic a question of rights that this alone would fully justify—in fact, compel—thoughtful and freedom loving citizens to fight the issue to a finish in the interests of ensuring us all against such outrageous trespass by our government in the future.²⁵

While Operation Gypsy Moth was over, the legacies of the spraying on Long Island and the fight against the government were just beginning to unfold. Both Murphy and Spock believed that the strength of their case would hinge not just on evidence of harm to fish and wildlife, but to human health as well. They went to work lining up experts, amassing as much evidence as they could, and building a case.

Early Warning Signs

Years before Operation Gypsy Moth, controversy had swirled within the halls of government about the safety of DDT. The pesticide kills insects by poisoning their central nervous systems. There was evidence that some people exposed to large enough doses of it could get tremors or achy joints, and become nervous or depressed. Some federal officials worried about the incompleteness of data on the chemical's longer-term health effects, and tests conducted on rats during the Second World War indicated those concerns were justified.

More disturbing, despite the fact that DDT had only been in commercial use for five years, the pesticide was already accumulating in the population-at-large. Edwin Laug with the Division of Pharmacology of the US Food and Drug Administration (FDA) and his colleagues found that people who had not been exposed to DDT occupationally but rather only in "ordinary" ways, such as through their diets, had DDT stored in their fat. Later studies showed that between 1950 and 1956 DDT storage in body fat more than tripled.²⁶

By the early fifties, Beech Nut, the baby food manufacturer, was having trouble getting vegetables that were free of DDT residues for its baby products. Researchers also knew that DDT in a mother's breast milk could be passed on to her baby. Still, despite the concerns raised by the animal studies and the evidence of widespread human contamination, agriculture and industry officials continued to espouse that DDT was safe and that its benefits trumped any potential harm.

That assessment, however, discounted a great deal of evidence about DDT's possible health risks that had come to light during hearings held in 1950 and 1951 by the US House of Representatives Select Committee to Investigate the Use of Chemicals in Food Products. This committee was formed to assess the safety of additives, pesticides, and other chemicals in foodstuffs, as well as the adequacy of legislation regulating the use of these chemicals. The committee was chaired by Representative James J. Delaney from Long Island City in Queens, New York, and while consideration of DDT was only a small part of the Delaney Committee's agenda, the hearings sounded clear early warnings about the pesticide's potential health effects.

The committee heard, for example, from Dr. Morton S. Biskind, an endocrinologist at New York City's Beth Israel Hospital, that DDT could damage the liver, the organ that would metabolize an ingested toxic substance. He testified that "the compounds of the DDT group are all extremely active direct liver poisons" and that a very high incidence of liver disease occurred among troops exposed to DDT in North Africa during World War II. Though typically lumped together as infectious hepatitis, Biskind testified, there is "excellent evidence that a great many of these cases" were actually

DDT-induced liver disease. The claims that DDT had caused no illnesses among troops exposed to the pesticide during the war were simply “not true.”²⁷

Despite evidence of DDT’s potential dangers to human health, the FDA did not have the power or legal authority to stop the pesticide’s use. Some FDA officials were uneasy about the government letting a chemical loose upon the general population when such strong concerns existed about its potential health effects. As Thomas Dunlap writes in his book *DDT: Scientists, Citizens, and Public Policy*, “It was one thing to dust or spray people in obvious and serious danger from insect-borne disease; it was quite another to dose food that would be consumed by an entire population not at risk.”²⁸

The concerns of FDA officials, however, had little chance of winning out over the interests of the more powerful Department of Agriculture and the pesticide industry with which it was aligned. Possessing a new chemical weapon, the pesticide companies were eager to deploy it and prove its utility. Operation Gypsy Moth afforded a welcome opportunity. Moreover, because DDT, like other toxic substances, is but one factor in a causal chain of disease, it would be easy to deny that the spraying had caused any human harm.

The DDT Trials

Clearly, the battle Marjorie Spock and Polly Richards decided to wage would be uphill all the way. Spock asked Robert Cushman Murphy, the eminent ornithologist, not only to serve as lead plaintiff but also to help find a lawyer willing to take the case. All those Murphy queried considered it a losing battle from the start. Spock then turned to Roger Hinds, a “pugnacious lawyer friend,” who was eager to take it on.²⁹

Murphy lined up a number of prominent Long Islanders to join the lawsuit as plaintiffs. Among them were President Theodore Roosevelt’s son Archibald, and financier J. P. Morgan, Jr.’s daughter Jane Nichols, whose large dairy farm had been sprayed. Polly Richards, who came from a wealthy family herself, spent more than \$100,000 (roughly \$900,000 today) financing the legal proceedings. Among the other funders was shoe magnate and philanthropist Ward Melville, who contributed \$5,000.³⁰

The long-awaited trial began on February 10, 1958. The night before, a huge storm dropped a deep blanket of snow across Long Island and New York City. Marjorie Spock, carrying crucial documents, made it to the federal courthouse in Brooklyn by train and foot just five minutes before the proceedings got underway.

Presiding over the trial, which had no jury, was Judge Walter Bruchhausen, who had been appointed to the federal bench by President Dwight D. Eisenhower. Spock, Murphy, and a dozen other plaintiffs had brought the suit against Ezra

Taft Benson, the US Secretary of Agriculture; Lloyd E. Butler, assistant area supervisor of USDA's plant pest division; and Daniel Carey, the New York State Commissioner of Agriculture and Markets. Joining Roger Hinds as a lawyer for the plaintiffs was Vincent Kleinfeld, who, during the Delaney Committee hearings seven years earlier, had questioned and heard the testimony of Dr. Morton Biskind on DDT's impacts on human health.

Spock not only testified at the trial, but also sat through all twenty-two days of it. She knew nearly from the outset that Judge Bruchhausen, who heard some fifty witnesses, would rule in favor of the government. He summarily dismissed most of the medical evidence presented by expert witnesses for the plaintiffs that suggested DDT could be harmful to human health. Among those testifying was Dr. Malcolm Hargraves, a hematologist with the prestigious Mayo Clinic in Rochester, Minnesota, who testified that DDT might be causing more cases of Hodgkin's disease, leukemia, and other blood cancers.³¹

"The government ran roughshod over anyone who got in the way of the new technology," Spock said. "They brushed us off like so many flies." In the end, Bruchhausen threw out seventy-two uncontested admissions by the plaintiffs.³²

The testimonies of expert witnesses for the defense, however, fared far better—especially that of Dr. Wayland J. Hayes, Jr., chief of toxicology for the US Public Health Service. Hayes had been a star witness on the side of DDT's safety during the Delaney Committee hearings, and he never stopped defending the insecticide. Bruchhausen's decision offered up a long list of Hayes' findings and conclusions, many of which were speculative, in support of the overall contention that "while DDT may cause illness if ingested in massive doses, there is no danger to health in a spray of one pound per acre."³³

In ruling against the plaintiffs, Bruchhausen noted their inability to prove that the DDT spraying had directly caused any injury to their own health, his determination that the loss of fish, birds, and bees had been "inconsequential," and his assessment that the plaintiffs' major complaint was one of "annoyance" rather than damage.³⁴ He was equally unpersuaded that the government agencies had acted outside their legal authorities in executing the Long Island spray campaign. Finally, he chose not to address the plaintiffs' constitutionality question, deferring to the earlier court ruling of May 1957 that denied the plaintiffs a temporary injunction against the spraying.

The main issue of law, as Bruchhausen saw it, was whether the spraying operation was a valid exercise of the government's police power. This required the judge to weigh the plaintiffs' private rights—specifically, to have their land remain free of chemical contamination—against the broader public value of the spraying. Bruchhausen did not accept the plaintiffs' claims that

the danger posed by the gypsy moth was remote or that the aerial spraying was unreasonable because a more targeted spraying from ground trucks or helicopters might have accomplished the government's goals while causing less harm. "I hold," he wrote, "that the mass spraying has a reasonable relation to the public objective of combating the evil of the gypsy moth and thus is within the proper exercise of the police power by the designated officials."³⁵

Decades later, Spock could barely contain how much she despised the judge, calling him a "horrible man." Bruchhausen had gone to boot camp with one of the trial attendees, and they joked during the hearings. "To me this was sacrilege," Spock said. "It was so out of place."³⁶

A couple weeks before Bruchhausen handed down his decision, Spock wrote to Rachel Carson that "the trial was a terrible ordeal. . . . One felt so stark a difference in the moral levels of the two sides that it was like two worlds with no contact between them at all. . . . I went in with still some faith in government and came out sickened to the core with disillusionment."³⁷

The trial ended quietly. On June 24, 1958, the *New York Times* ran only a short article on page thirty-three reporting on Bruchhausen's decision. Spock, Murphy, and the other plaintiffs were not surprised by the outcome. They soldiered on and filed an appeal.

Fifteen months later, the US Court of Appeals for the Second Circuit decided that *Murphy v. Benson* was moot because a future aerial spraying in the vicinity of the plaintiffs' properties was unlikely.³⁸ A permanent injunction, therefore, was unnecessary. Without reviewing the merits of the plaintiffs' arguments, the court agreed with Bruchhausen that the plaintiffs had not proven that they had suffered any damages from the spraying.

While disappointing for the plaintiffs, the decision by the appellate court judges—whom Spock viewed as far more seasoned than Bruchhausen—yielded a small but significant victory for the broader goal of environmental protection. The judges noted that in the future any district court faced with a claim concerning a government program that may cause "damage as widespread as this 1957 spraying appears to have caused" should take measures to ensure that unnecessary harm is avoided.³⁹ With this stroke, the appellate court not only partially validated the plaintiffs' depiction of damages, it said that future sprayings, and other government programs as well, would be put to a harder test. Their statement presaged federal regulations to come requiring that government agencies act more responsibly with regard to the environment. Spock and her fellow plaintiffs had "lost the battle but won the war."⁴⁰

Further, the Long Island DDT case continued up the legal ladder to the US Supreme Court. In March 1960, nearly three years after Operation Gypsy Moth had begun, the Supreme Court decided not to review the lower court's

ruling—a third and final loss. But, as with the appellate court decision, there was a silver lining. Justice William O. Douglas believed that his fellow justices were wrong in deciding not to hear the case. In a strongly dissenting opinion, he explained that he was disturbed that the Bruchhausen court had made only one finding on the issue of DDT's danger to human health—the conclusion that it is not harmful—when this matter had been sharply disputed by numerous expert witnesses in the case. He was troubled that Bruchhausen refused to make any findings on the spraying's effect on milk, fruits, and vegetables. And he disagreed with the dismissal of the plaintiffs' complaint on the grounds that further spraying from airplanes was not planned, because the government had made no promises not to spray in that fashion again.

Justice Douglas did not see the Long Islanders' request as moot at all. His dissent also usefully summarized for the court record the potentially harmful effects of DDT as brought forth by the witnesses Spock and Murphy had lined up for their case:

The use of DDT in residential areas and on dairy farms is thought by many to present a serious threat to human health as evidenced by the record in this case as well as alarms sounded by others on the problem. The need for adequate findings on the effect of DDT is of vital concern not only to wild-life conservationists and owners of domestic animals but to all who drink milk or eat food from sprayed gardens.... The DDT enters the milk and becomes stored by people in the fatty tissues of the body. Because it is a potential menace to health the Food and Drug Administration maintains that any DDT in milk in interstate commerce is illegal.

The effect of DDT on birds and on their reproductive powers and on other wildlife, the effect of DDT as a factor in certain types of disease in man such as poliomyelitis, hepatitis, leukemia and other blood disorders, the mounting sterility among our bald eagles have led to increasing concern in many quarters about the wisdom of the use of this and other insecticides. The alarms that many experts and responsible officials have raised about the perils of DDT underline the public importance of this case. . . .

I do believe that the questions tendered are extremely significant and justify review by the Court.⁴¹

With those words, the legal case of *Murphy v. Benson* closed. But the trials pried open a door to stronger environmental protections and brought forth a large and compelling set of scientific evidence about DDT's potential harm to human health and the natural environment.

Spock's Role in *Silent Spring*

Without question, Marjorie Spock and Polly Richards rank among the notable women conservationists who worked to preserve Long Island's natural environment.⁴² But the aftereffects of their efforts, and Spock's in particular, rippled out far from Long Island. By initiating a lawsuit against the government's aerial spraying of DDT, Spock not only assembled a mountain of information that would aid Rachel Carson's writing of *Silent Spring* and the movement to ban DDT, she began the march toward the rights of citizens to sue on behalf of the environment—a hallmark of environmental law.

Each day after attending the district court trial in the winter of 1958, Spock wrote a daily summary of the proceedings called "Today in Court." She made copies of those summaries on an early thermo-fax machine and sent them to a large list of people who she presumed would be interested. Among them were eminent naturalists who had formed a group called the Committee Against Mass Poisoning. A few days into the trial, Spock also began sending the summaries to Rachel Carson.⁴³

Carson's interest in chemical poisons went back two decades and remained with her as she wrote three popular books on the sea.⁴⁴ It was the Long Island DDT spraying and lawsuit, along with the USDA's program to deploy pesticides against the fire ant in the South that brought the subject back to her, according to Carson's biographer Linda Lear. Carson's motivation grew upon learning of the wildlife damage from DDT sprayings in New Hampshire and the mass killing of songbirds following multiple sprayings at her friend Olga Huckins's property in Duxbury, Massachusetts.⁴⁵

During the 1958 Long Island trial, Carson asked her literary agent Marie Rodell to write to Marjorie Spock to request some background material. Spock mailed a "stack of documents," and wrote Carson what proved to be, according to Lear, "a prophetic note" that included the following: "I think you know how grim this struggle with the U.S. government and the whole chemical industry is bound to be. We have marshalled some pretty solid scientific men and data, and are feeling confident."⁴⁶

Besides the inspiration and motivation Carson derived from Spock and the DDT trials, she received a voluminous amount of extremely useful material from Spock. At Carson's request, Spock and Richards supplied her with scientific documents and news items "that flowed to us in a never-ending stream because of our court action," and Carson would regularly ask "to be put in touch with this or that witness from our lawsuit."⁴⁷

It was through Spock that Carson became familiar with toxicologist Morton Biskind and hematologist Malcolm Hargraves, connections that led to numerous other contacts and sources of information. Spock sent to Carson many

papers by wildlife biologist John George, who had documented DDT's killing of birds and fish during a 1946 spraying in upstate New York. She provided research by Michigan State University ornithologist George J. Wallace, who documented dead and dying birds after campus sprayings of DDT. Spock also sent Carson a seminal article on insect resistance by Dutch scientist C. J. Breijer, which Spock and Richards had translated from the original Dutch. During the 1958 trial, Carson wired Spock asking how she might obtain a copy of the court proceedings; that June, Spock and Richards sent Carson a full set of all thirty volumes. Within several months of the trial, Spock had become "an invaluable source of names, citations, references, and opinion," writes biographer Lear, "and Carson had come to depend on her."⁴⁸

Spock's knowledge of organic agriculture also enabled her to provide contacts and resources to Carson that might otherwise have eluded her.⁴⁹ Indeed, after receiving from Spock a paper by Ehrenfried Pfeiffer, the expert in biodynamics who had advised Spock and Richards on their Long Island farm, Carson referred to it as "a gold mine of information."⁵⁰

Marjorie Spock and Rachel Carson became friends, as well as colleagues and allies in a cause. In August 1958, Spock, Richards, and Spock's elderly mother visited Carson and her mother in Southport, Maine, where Carson had a seaside summer cottage. "Spock and Carson had much in common, both sharing the care of elderly mothers and the love of the same part of Maine," Lear writes. "Spock's broad intellect, her independence of life and spirit, and her high passion about the dangers of pesticides energized Carson."⁵¹

Over several years, Carson and Spock corresponded through dozens of letters. Spock also wrote frequent and very amusing letters to Carson's grandnephew Roger Christie, who was in Carson's care and was of great concern to her given her workload and poor health. After receiving one of Spock's thoughtful letters, mostly about young Roger, Carson wrote to Spock, "So few understand. I wish I had known you sooner."⁵²

An Important First Case for the Environmental Movement

Marjorie Spock's contribution to the emergence and shaping of environmental law and policy has remained even more in the shadows. Through the 1950s and into the 1960s, legislation concerning land, air, and water primarily aided extraction and exploitation, not protection and conservation. Spock's initiation of *Murphy v. Benson* set an important precedent. "Working in a legal system that was stacked against them, citizens and local governments had begun to file a small number of adventurous cases—beginning with a challenge to the spraying of DDT for the gypsy moth on Long Island in the late 1950s," writes John E. Bonine, professor of law at the University of Oregon.

This case, Bonine notes, may well have been “the first modern environmental case brought by citizens.”⁵³

Long Island remained a battleground in the war against DDT well into the sixties. In 1966, a group of scientists and lawyers who would go on to create the Environmental Defense Fund (EDF) brought a case against the Suffolk County Mosquito Control Commission and won a temporary injunction against spraying. By the time their case was thrown out of court in 1967, the commission had moved on to a different pesticide—and DDT would never again be used on Long Island.⁵⁴

Through a strategic blend of scientific evidence and legal and administrative action, EDF brought the cause of curtailing DDT’s use to Michigan, Wisconsin, and the halls of the federal government. The final battle was aided greatly by President Richard M. Nixon’s creation in 1970 of the Environmental Protection Agency (EPA). This action moved the regulation of pesticides from the USDA, which had largely remained aligned with agriculture and chemical interests, to the new agency charged with protecting the nation’s air, land, and water. In 1972, EPA Administrator William Ruckelshaus concluded that the evidence “compellingly” demonstrated that DDT threatened fish and wildlife and was a “potential carcinogen” in humans. He banned most uses of DDT in the United States.⁵⁵

Prior to *Silent Spring* and the EPA’s DDT ban, government decisions regarding pesticides were based on evidence almost exclusively provided by the chemical manufacturers, notes environmental historian Mark Hamilton Lytle. “The public had no voice in those decisions.” Going forward, citizens such as “Marjorie Spock from Long Island would have a role in regulating new chemicals that they believed threatened their health or their property.”⁵⁶

While Marjorie Spock paved the way for citizens like herself to have a bigger influence in the future, she downplayed the significance of what she and her cohort had achieved. With nearly a half century’s worth of hindsight, she lamented that the most important lessons of the DDT experience had not yet been learned. She reflected back on Rachel Carson telling her about government studies documenting that DDT had contaminated the Arctic, yet this knowledge had not led to action to prevent other harmful chemicals from entering our bodies and spreading around the globe.⁵⁷

“Today,” Spock said in a 2006 interview, “poisoning is much more complete around the whole planet, and people don’t connect that it’s going to get worse and worse and worse.”⁵⁸

Spock's Later Years

Soon after the DDT spraying on Long Island, Spock moved to a farm near Chester, in upstate Orange County, New York, where she worked closely with biodynamics expert Ehrenfried Pfeiffer. In 1965, she relocated to the town of Sullivan in coastal Maine, an area Spock had loved since childhood. She renovated a house and barn that she had admired while on a bicycle ride through the area in the 1940s. Spock spent the next forty-three years there teaching, writing, translating, farming, practicing eurythmy, and becoming a mentor to many. Visitors from all over the world, as well as neighbors, “were always heartily welcomed and experienced wide-ranging and deep conversations, wise counsel and humor,” writes Jennifer Greene, a longtime friend of Spock’s.⁵⁹

For those last four decades, Spock hosted a weekly study group in her home. At the end of what turned out to be the last session, “she got up and shook our hands, and we all knew,” Greene said. Marjorie Spock died the next week, on January 23, 2008, at the age of 103.⁶⁰



Gravesite of Marjorie Spock in Sullivan, Maine. *Courtesy of Joyce Gaddis.*

Notes

1. Rachel Carson, *Silent Spring* (New York: Houghton Mifflin Company, 1962); see also Jill Lepore, “The Right Way to Remember Rachel Carson,” *The New Yorker*, March 26, 2018; US Environmental Protection Agency, “DDT Regulatory History: A Brief Survey (to 1975),” <https://archive.epa.gov/epa/aboutepa/ddt-regulatory-history-brief-survey-1975.html>.

2. Linda Lear, *Rachel Carson: Witness for Nature* (New York: Henry Holt & Company, 1997), p. 318.

3. Jennifer Greene, Obituary for Marjorie Spock, *Portland Anthroposophic Times*, vol. 4, February 2008; Lear, *Rachel Carson*, pp. 318-19.

4. See the Biodynamic Association website, <https://www.biodynamics.com/biodynamic-principles-and-practices>.

5. John E. Bonine, "William H. Rodgers, Jr. and Environmental Law: Never Give Up, Keep on Going," *Washington Law Review* 82 (2007): 459-92.

6. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.

7. Quote is from John C. Devlin, "Air Spray Attack on Moths Begins," *New York Times*, April 24, 1957, p. 35; areas covered from "First Wave of Planes Hits Suffolk in DDT Assault on Gypsy Moths," *Newsday*, April 24, 1957, p. A-14.

8. For background, see Thomas R. Dunlap, *DDT: Scientists, Citizens, and Public Policy* (Princeton, NJ: Princeton University Press, 1981); the British entomologist is V.B. Wigglesworth, as quoted in William W. Lowrance, *Of Acceptable Risk: Science and the Determination of Safety* (Los Altos, CA: William Kaufmann, Inc., 1976).

9. Dorothy H. Jenkins, "Around the Garden," *New York Times*, July 8, 1956.

10. Supreme Court of the State of New York, Suffolk County, Index N 139,050-66, Carol A. Yannacone, Plaintiffs, Against H. Lee Dennison, et al., Defendants, Affidavit, September 1966.

11. While DDT was eventually banned internationally for many purposes, its use in the control of malaria—a mosquito-borne disease that has killed many millions of people worldwide—has never been discontinued; "light and scattered" from David Cort, "The Pesticide that Came to Dinner," *The Nation*, April 12, 1958, pp. 316-19.

12. Areas covered from "First Wave of Planes Hits Suffolk in DDT Assault on Gypsy Moths," *Newsday*, April 24, 1957, p. A-14.

13. 500 tons from "Did DDT Do It?" *Science*, February 28, 1958.

14. Butler quote from "Expert Says DDT Spray Will Harm LI Fish, Birds," *Newsday*, April 22, 1957.

15. "Liers Start Court Fight to Halt DDT Spraying," *Newsday*, May 9, 1957.

16. Beekeeper losses from Carson, *Silent Spring*, p. 145; drinking water concerns from Dunlap, *DDT*, p. 87.

17. Robert Cushman Murphy, "DDT Dowsing to Date," *The Three Village Herald*, July 5, 1957, accessed courtesy the Lear/Carson Collection, Charles E. Shain Library, Connecticut College, New London, CT; Flax Pond from author's phone interview with Ellie Mathews (Murphy's granddaughter), July 22, 2009.

18. Murphy, "DDT Dowsing to Date."

19. Ibid.

20. Plane operators paid by the gallon is from Carson, *Silent Spring*, pp. 145-46.

21. John Paull, "The Rachel Carson Letters and the Making of Silent Spring," *SAGE Open*, July-September 2013: 1-12; Pfeiffer Center website at www.pfeiffercenter.org.

22. Jennifer Greene, personal phone communication with the author, Blue Hill, Maine, October 30, 2020. Greene was a friend of Spock's for the last 35 years of Spock's life.

23. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.

24. Ibid.

25. Marjorie Spock, letter, June 26, 1957, courtesy of the Lear/Carson Collection, Connecticut College.

26. The Laug study is reported in E. P. Laug, A.A. Nelson, O.G. Fitzhugh, and F.M. Kunze, "Liver Cell Alteration and DDT Storage in the Fat of the Rat Induced by Dietary Levels of 1-50 ppm DDT," *Journal of Pharmacology and Experimental Therapeutics* 98 (1950): 268-73.

27. Testimony of Morton S. Biskind, M.D., Westport, CT., Chemicals in Food Products, Delaney Committee Hearings, December 1950. Recent studies support the finding that DDT can damage the liver, see J.J. van Tonder, M. Gulumian, A.D. Cromarty, and V. Steenkamp, "In vitro effect of N-acetylcysteine on hepatocyte injury caused by dichlorodiphenyltrichloroethane and its metabolites," *Human and Experimental Toxicology* 33, no. 1 (2014): 41-53.

28. Dunlap, *DDT*, p. 63.

29. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.

30. Ibid. Ward Melville reconstructed the business center of Stony Brook in the early 1940s and, with his wife Dorothy, founded in 1942, what is today the Long Island Museum of American Art, History and Carriages in Stony Brook.

31. Hargraves' testimony is reported in "DDT Sprays Called a Cancer Menace," *New York Times*, February 14, 1958.

32. Spock quote and seventy-two uncontested admissions from Lear, *Rachel Carson*, p. 319.

33. *Murphy v. Benson*, U.S. District Court for the Eastern District of New York—164 F. Supp. 120, (E.D.N.Y. 1958), June 23, 1958.

34. Ibid.

35. Ibid.

36. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.

37. Letter from Marjorie Spock to Rachel Carson, June 6, 1958, courtesy the Lear/Carson Collection, Connecticut College.

38. *Murphy v. Benson*, United States Court of Appeals, Second Circuit, 270 F.2d 419 (2d Cir. 1959), September 30, 1959.

39. Ibid.

40. Spock's impression of judges from author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006; quote from Jennifer Greene, "Obituary for Marjorie Spock," *Portland Anthroposophic Times*, vol. 4, February 2008.

41. Supreme Court of the United States, *Robert Cushman Murphy, et al, versus Lloyd Butler, et al.* 362 U.S. 929 (1960), dissenting opinion of Justice William O. Douglas, upon the Denial of Petition for Writ of Certiorari to the United States Court of Appeals, Second Circuit, March 28, 1960.

42. Natalie A. Naylor, "Long Island Women Preserving Nature and the Environment," *Long Island History Journal* 25, no. 2 (2016).

43. Lear, *Rachel Carson*, p. 320.

44. Carson's books on the sea were *Under the Sea-Wind* (1941), *The Sea Around Us* (1951), and *The Edge of the Sea* (1955).

45. Lear, *Rachel Carson*, pp. 312-14.

46. Lear, p. 312; Letter from Marjorie Spock to Rachel Carson, February 5, 1958,

courtesy the Lear/Carson Collection, Connecticut College.

47. Marjorie Spock with Mary Richards, "Rachel Carson: A Portrait," *Rachel Carson Council News*, no. 82, Rachel Carson Council, Inc., Chevy Chase, MD, March 1994. John Paull, in Paull "The Rachel Carson Letters and the Making of Silent Spring," posits that Carson did not acknowledge or mention Spock in *Silent Spring* so as to avoid any apparent affiliation with the organic agriculture movement, thereby depriving the government and chemical industry with an easy rationale for dismissing her arguments.

48. Lear, *Rachel Carson*, pp. 320, 326; Wallace research from William Souder, *On a Farther Shore: The Life and Legacy of Rachel Carson* (New York: Broadway Books, 2012), pp. 286-87; translation of Breijer's article appears in a footnote in Lear, *Rachel Carson*, p. 548; quote is from Lear, *Rachel Carson*, p. 331.

49. Lear, *Rachel Carson*, p. 552, n. 76.

50. Paull, "The Rachel Carson Letters and the Making of Silent Spring."

51. Lear, *Rachel Carson*, p. 552 n. 75.

52. Letter from Rachel Carson to Marjorie Spock, December 4, 1958, courtesy the Lear/Carson Collection, Connecticut College.

53. John E. Bonine, "William H. Rodgers, Jr., and Environmental Law: Never Give Up, Keep on Going," *Washington Law Review* 82 (2007): 459-92. Bonine notes that this distinction typically gets attributed to a case initiated in the early sixties known as Storm King, brought by a citizens group to stop a hydropower project at Storm King Mountain on the west bank of the Hudson River (Scenic Hudson Preservation Conf. v. F.P.C., 354 F.2d 608 [2d Cir. 1965]).

54. Charles F. Wurster, *DDT Wars: Rescuing our National Bird, Preventing Cancer, and Creating the Environmental Defense Fund* (New York: Oxford University Press, 2015), pp. 21-22.

55. Wurster, *DDT Wars*, various chapters; Mark Hamilton Lytle, *The Gentle Subversive: Rachel Carson, Silent Spring, and the Rise of the Environmental Movement* (New York: Oxford University Press, 2007), pp. 212-13. The Ruckelshaus decision permitted the use of DDT for public health purposes and for export to other countries, many of which relied on DDT to control malaria.

56. Lytle, *The Gentle Subversive*, p. 217.

57. Author's interview with Marjorie Spock, Sullivan, Maine, July 6, 2006.

58. Ibid.

59. Greene, personal phone communication with author, October 30, 2020; Greene, "Obituary for Marjorie Spock."

60. Greene, personal phone communication with author, October 30, 2020.