

portray G.M. seeds as a panacea, a way to alleviate poverty and feed the hungry. Robert Shapiro, Monsanto's president during the 1990s, once called G.M. seeds "the single most successful introduction of technology in the history of agriculture, including the plow."

By the late 1990s, Monsanto, having rebranded itself into a "life sciences" company, had spun off its chemical and fibers operations into a new company called Solutia. After an additional reorganization, Monsanto re-incorporated in 2002 and officially declared itself an "agricultural company."

In its company literature, Monsanto now refers to itself disingenuously as a "relatively new company" whose primary goal is helping "farmers around the world in their mission to feed, clothe, and fuel" a growing planet. In its list of corporate milestones, all but a handful are from the recent era. As for the company's early history, the decades when it grew into an industrial powerhouse now held potentially responsible for more than 50 Environmental Protection Agency Superfund sites—none of that is mentioned. It's as though the original Monsanto, the company that long had the word "chemical" as part of its name, never existed. One of the benefits of doing this, as the company does not point out, was to channel the bulk of the growing backlog of chemical lawsuits and liabilities onto Solutia, keeping the Monsanto brand pure.

But Monsanto's past, especially its environmental legacy, is very much with us. For many years Monsanto produced two of the most toxic substances ever known—polychlorinated biphenyls, better known as PCBs, and dioxin. Monsanto no longer produces either, but the places where it did are still struggling with the aftermath, and probably always will be.

"Systemic Intoxication"

Twelve miles downriver from Charleston, West Virginia, is the town of Nitro, where Monsanto operated a chemical plant from 1929 to 1995. In 1948 the plant began to make a powerful herbicide known as 2,4,5-T, called "weed bug" by the workers. A by-product of the process was the creation of a chemical that would later be known as dioxin.

The name dioxin refers to a group of highly toxic chemicals that have been linked to heart disease, liver disease, human reproductive disorders, and developmental problems. Even in small amounts, dioxin persists in the environment and accumulates in the body. In 1997 the International Agency

for Research on Cancer, a branch of the World Health Organization, classified the most powerful form of dioxin as a substance that causes cancer in humans. In 2001 the U.S. government listed the chemical as a "known human carcinogen."

On March 8, 1949, a massive explosion rocked Monsanto's Nitro plant when a pressure valve blew on a container cooking up a batch of herbicide. The noise from the release was a scream so loud that it drowned out the emergency steam whistle for five minutes. A plume of vapor and white smoke drifted across the plant and out over town. Residue from the explosion coated the interior of the building and those inside with what workers described as "a fine black powder." Many felt their skin prickle and were told to scrub down.

Within days, workers experienced skin eruptions. Many were soon diagnosed with chloracne, a condition similar to common acne but more severe, longer lasting, and potentially disfiguring. Others felt intense pains in their legs, chest, and trunk. A confidential medical report at the time said the explosion "caused a systemic intoxication in the workers involving most major organ systems." Doctors who examined four of the most seriously injured men detected a strong odor coming from them when they were all together in a closed room. "We believe these men are excreting a foreign chemical through their skins," the confidential report to Monsanto noted. Court records indicate that 226 plant workers became ill.

According to court documents that have surfaced in a West Virginia court case, Monsanto downplayed the impact, stating that the contaminant affecting workers was "fairly slow acting" and caused "only an irritation of the skin."

In the meantime, the Nitro plant continued to produce herbicides, rubber products, and other chemicals. In the 1960s, the factory manufactured Agent Orange, the powerful herbicide which the U.S. military used to defoliate jungles during the Vietnam War, and which later was the focus of lawsuits by veterans contending that they had been harmed by exposure. As with Monsanto's older herbicides, the manufacturing of Agent Orange created dioxin as a by-product.

As for the Nitro plant's waste, some was burned in incinerators, some dumped in landfills or storm drains, some allowed to run into streams. As Stuart Calwell, a lawyer who has represented both workers and residents in Nitro, put it, "Dioxin went wherever the product went, down the sewer, shipped in bags, and when the waste was burned, out in the air."