WRITING WORTH READING • ISSUE 47 • JUNE 2010

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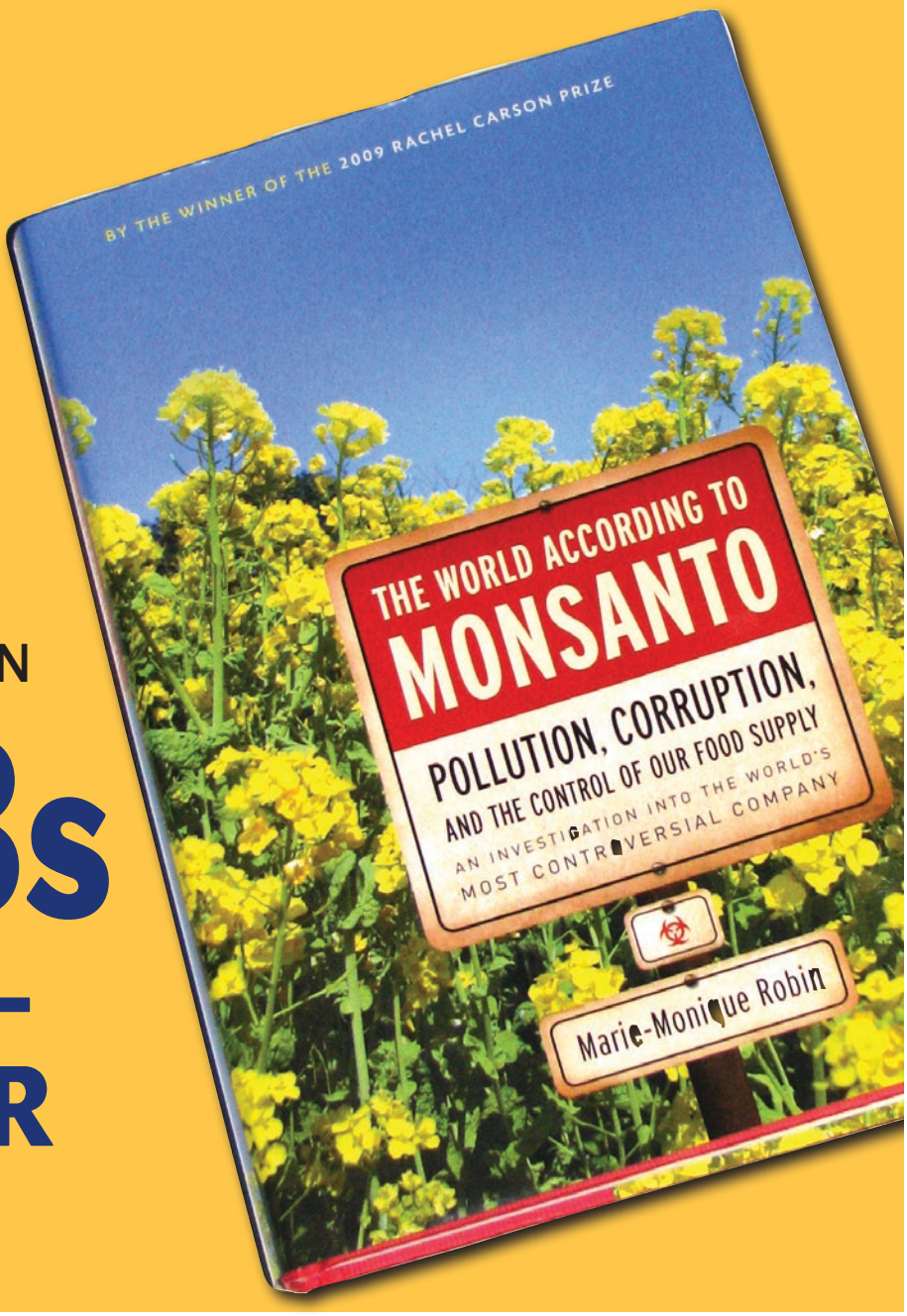
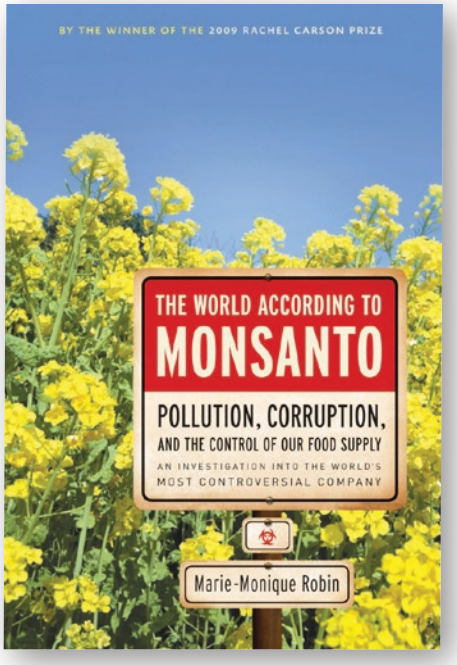
AN EXCERPT FROM

THE WORLD ACCORDING TO MONSANTO

BY MARIE-MONIQUE ROBIN

PCBs WHITE-COLLAR CRIME!





THE WORLD ACCORDING TO MONSANTO

Pollution, Corruption, and the Control of our Food Supply

Marie-Monique Robin is an award-winning French ojurnalist and filmmaker. She received the 1995 Albert-Londres Prize, awarded to investigative journalists in France. She is the director and producer of more than 30 documentaries and investigative reports fo;med in latin America,Africa, Europe and asia.

372 pages. Published by The New Press

978-1-59558-426-7

PCBS: WHITE-COLLAR CRIME

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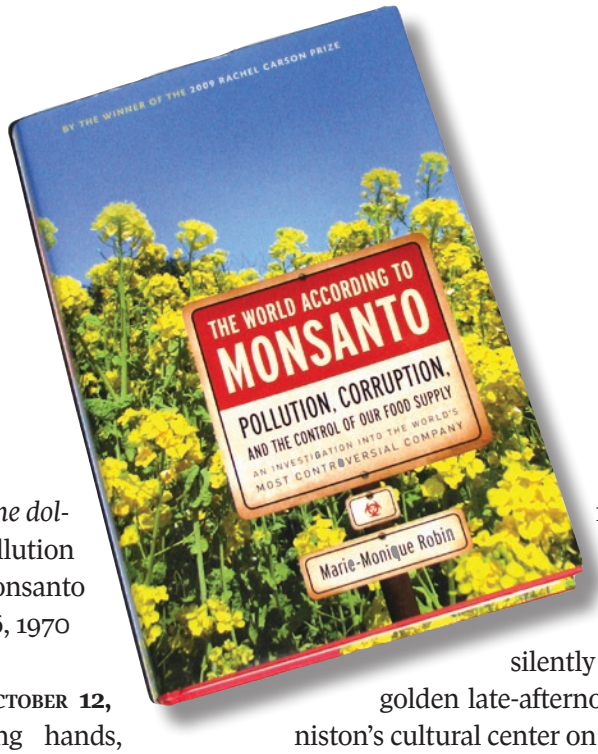

We can't afford to lose one dollar of business. –"Pollution Letter," declassified Monsanto document, February 16, 1970

Anniston, Alabama, October 12, 2006: With trembling hands, David Baker put the cassette into his VCR. "It's an unforgettable memory," the six-foottall man murmured, furtively wiping away a tear. "The greatest day in my life, the day when the people of my community decided to take back their dignity by making one of the largest multinationals in the world, which had always despised them, give in." On the screen were images filmed on August 14, 2001, of thousands of African Americans who walked silently and firmly in the golden late-afternoon light toward Anniston's cultural center on 22nd Street. The *Anniston Star* reported the next day that at least five thousand residents attended the meeting, the largest group many had ever seen in Anniston.

Asked why she had come, a fifty-year-old woman explained, "Because my husband and my son died of cancer."

A man pointed to a little girl perched on his shoulders. "She has a brain tumor. We had lost

hope of getting Monsanto to pay for all the harm its factory has done us, but if Johnnie Cochran is working for us, then it's different."

The name was on everyone's lips. In 1995, the United States had held its breath as the celebrated Los Angeles lawyer defended O. J. Simpson against the charge of murdering his ex-wife and her friend in 1994. After a long and highly publicized trial, Simpson had been acquitted, thanks to the skill of his lawyer, the great-grandson of a slave, who had argued that his client was the victim of a racist police frame-up. From then until his death in 2005,

Cochran was a hero to the American black community. "A god," David Baker said to me. "That's why I knew that by persuading him to come to Anniston, which he didn't even know existed, I had practically almost won the fight."

"Johnnie!" the crowd roared as the elegantly dressed lawyer climbed onto the stage. And Cochran spoke to a reverently silent audience. He was able to find the words that would resonate in this little southern town that had long been torn by the civil rights struggle. He spoke of the historic role of Rosa Parks, an Alabama native, in the struggle against racial segregation in the United States. He quoted the Gospel of Matthew: "Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me."

Then he spoke of the story of David and Goliath, paying tribute to David Baker, the man who had made this unlikely meeting possible. "I look at this audience and I see a lot of Davids," he said with passion. "I don't know if you know what power you have. Every citizen has the right to live free from pollution, free from PCBs, from mercury and lead—that's a constitutional principle! You will rise up against the injustice Monsanto has done you, because the injustice done here is a threat to justice everywhere else! You are doing a service to the country that must no longer be ruled by the private interests of the giants of industry!"

“After a half century of silent suffering, almost the entire black population of the town was challenging a company with a decades-long history as a major world polluter, and would soon receive the largest known settlement paid by an industrial company in U.S. history: $700 million

"Amen!" cried the crowd, giving him a standing ovation. In the course of the next few days, 18,233 inhabitants of Anniston, including 450 children with neurological defects, filed through the small office of the Community against Pollution organization, set up by Baker in 1997 to bring legal action against the chemical company. They joined the 3,516 other plaintiffs, including Baker himself, who were already engaged in a class action suit that had been filed four years earlier. After a half century of silent suffering, almost the entire black population of the town was challenging a company with a decades-long history as a major world polluter, and would soon receive the largest known settlement paid by an industrial company in U.S. history: $700 million.

"It was a tough battle," commented Baker, still stirred by emotion. "But how could we imagine that a company could act so criminally? You understand? My little brother Terry died at seventeen from a brain tumor and lung cancer.1 He died because he ate the vegetables from our garden and the fish he caught in a highly contaminated stream. Monsanto turned Anniston into a ghost town."

The Origins of Monsanto

Yet Anniston had had its glory days. Long known as the "model city," or the city with the "world's best sewer system" because of the quality of its municipal infrastructure, the little southern town, rich in iron ore, was long considered a pioneer of the industrial revolution. Officially chartered in 1879 and named after the wife of a rail-

road president, "Annie's Town" was celebrated as "Alabama's magnificent city" in the Atlanta Constitution in 1882. Run by a minority of white industrialists who were smart enough to reinvest their money locally to foster social peace, it competed with the nearby state capital, Birmingham, to attract entrepreneurs. In 1917, for example, Southern Manganese Corporation decided to establish a factory there for the manufacture of artillery shells. In 1925, the company changed its name to the Swann Chemical Company, and four years later it launched production of PCBs, universally hailed as "chemical miracles," which would soon make Monsanto a fortune and bring disaster to Anniston.

PCBs, or polychlorinated biphenyls, are chlorinated chemical compounds that embody the great industrial adventure of the late nineteenth century. While working to improve the techniques for refining crude oil to extract the gasoline needed for the infant automobile industry, chemists identified the characteristics of benzene, an aromatic hydrocarbon that would later be widely used as a chemical solvent in the manufacture of medicines, plastics, and coloring agents. In the laboratory, the sorcerer's apprentices mixed it with chlorine and obtained a new product that turned out to be thermally stable and to possess remarkable heat resistance. Thus PCBs were born, and for half a century they colonized the planet: they were used as coolants in electric transformers and industrial hydraulic machines, but also as lubricants in applications as varied as plastics, paint, ink, and paper.

In 1935, the Swann Chemical Company was bought by a rising enterprise from St. Louis, the Monsanto Chemical Works. Established in 1901 by John Francis Queeny, a self-taught chemist who also wanted to honor his wife, Olga Mendez Monsanto,

In the United States and the United Kingdom (where the company had a factory in Wales), PCBs were marketed under the name Aroclor, while they were known by the name Pyralène in France, Clophen in Germany, and Kanechlor in Japan

the small company, set up with a $5,000 personal loan, began by manufacturing saccharin, the first artificial sweetener, which it then sold exclusively to another rising company in Georgia, Coca-Cola. It soon began supplying the soft drink company with vanillin and caffeine, and then started manufacturing aspirin, of which it was the largest American producer until the 1980s. In 1918, Monsanto made its first acquisition, buying an Illinois company that made sulfuric acid.

This shift to basic industrial products led to the purchase of several chemical companies in the United States and Australia after its shares went on sale at the New York Stock Exchange in 1929, one month before the crash, which the company survived, renamed the Monsanto Chemical Company. In the 1940s, it became one of the world's major producers of rubber, followed by plastics and synthetic fibers such as polystyrene, as well as phosphates. At the same time, it reinforced its monopoly in the international PCB market, guaranteed by a patent that enabled it to sell licenses almost everywhere in the world. In the United States and the United Kingdom (where the company had a factory in Wales), PCBs were marketed under the name Aroclor, while they were known by the name Pyralène in France, Clophen in Germany, and Kanechlor in Japan.

"That's how Anniston became the most polluted city in the United States," Baker explained to me as we got into his car for a tour of the area. First came Noble Street downtown, which was the pride of the city in the 1960s, with two movie theaters and many stores, most now closed. We then drove through the east side, dotted with pleasant houses where the white minority traditionally lived. Finally, on the other side of the tracks, came the west side, the home of the city's poor, mostly black,

in the middle of an industrial area. That was where David Baker was born fifty-five years ago.

We were going through what he had rightly called a ghost town. "All these houses have been abandoned," he told me, pointing to dilapidated and tumbledown houses on both sides of the street. "People ended up leaving because their vegetable gardens and water were highly contaminated." We turned the corner from a lane full of potholes onto a wide thoroughfare with the sign "Monsanto Road." It ran alongside the factory where the company had produced PCBs until 1971. A fence surrounded the site, which now belongs to Solutia (motto: "Applied Chemistry, Creative Solutions"), an "independent" company also based in St. Louis, to which Monsanto turned over its chemical division in 1997, in one of the company's typical sleights of hand likely intended to protect it from the storm that its irresponsible conduct in Anniston was about to unleash.

"We weren't fooled," Baker said. "Solutia or Monsanto, it's all the same to us. Look, here's the channel of Snow Creek, where the company dumped its waste for more than forty years. It ran from the factory through the town, and flowed into the surrounding creeks. It was poisoned water. Monsanto knew it but never said anything."

According to a declassified report, secretly prepared in March 2005 by the Environmental Protection Agency (EPA), 680 million pounds of PCBs were produced in Anniston from 1929 to 1971. Sixty thousand pounds of PCBs were emitted into the atmosphere, 1.8 million pounds were dumped in streams such as Snow Creek (following facility-cleaning operations), and 68 million pounds of contaminated wastes were deposited in an open pit located on the site, in other words, in the heart of the city's black community.

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Half a Million Pages of Secret Documents

As we started to go around the site on foot, we met a hearse that honked its horn and stopped alongside us. "This is Reverend Jeffrey Williams," Baker explained. "He runs an Anniston funeral home. He succeeded his uncle, who recently died from a rare cancer, typical of PCB contamination."

"Unfortunately, he's not the only one," said Reverend Williams. "This year I've buried at least a hundred people who died of cancer, many young people between twenty and forty."

"I learned about the tragedy that's affecting all of us from his uncle," Baker went on. "For decades we accepted the deaths of our family members as a mysterious fate."

When his seventeen-year-old brother Terry collapsed and died in front of the family home, Baker was living in New York, where he was working as an officer of the American Federation of State, County, and Municipal Employees. After twenty-five years of good and faithful service, he decided in 1995 to go back home, where his experience as a union leader would soon be of great help to him. By chance, he was hired by Monsanto, which was then recruiting "environmental technicians," responsible for decontaminating the factory site. "It was in the mid-1990s," he said, "and we weren't yet informed of the pollution dangers, but the company was quietly starting to clean up. That was where I heard about PCBs for the first time, and I began to suspect that they were hiding something."

At the same time, Donald Stewart, an Anniston lawyer who had briefly been a United States senator, was contacted by a black resident of the west side of town,

who asked him to come to the Mars Hill Baptist Church, located directly opposite the PCB factory. Accompanied by his congregants, the pastor informed him that Monsanto had offered to purchase the church from the community as well as a number of houses in the neighborhood. The lawyer understood that something was going on and agreed to represent the interests of the small church. "In fact," said Baker, "the company was in the process of clearing the ground around itself to avoid having to compensate property owners." Baker thought he knew why Monsanto was doing this, explaining that "it sensed that sooner or later pollution would come out into the open."

In any event, people started to talk in Anniston. The former union organizer from New York set up a first meeting in the funeral parlor of Russell "Tombstone" Williams, Jeffrey's uncle, which fifty people attended. They spoke late into the night of the deaths and illnesses that were devastating families (including those affecting young children), repeated miscarriages, and learning-related problems for the younger children. From this meeting came the idea of setting up an organization called Community against Pollution, presided over by Baker.

In the meantime, the Mars Hill Church affair had progressed: Monsanto offered a settlement, putting a million dollars on the table. During a meeting with the small Baptist community, Stewart found out that Monsanto's offer to buy several of its members' houses was contingent upon them promising never to take the company to court. The lawyer understood that Monsanto was hiding something big, and he suggested that they file a class action suit. Baker's committee was asked to recruit the plaintiffs, with the maximum number set by Stewart at 3,500.

“They spoke late into the night of the deaths and illnesses that were devastating families (including those affecting young children), repeated miscarriages, and learning-related problems for the younger children

Stewart had caught a whiff of the case of his life, but he also knew that it was likely to be long and costly. To deal with legal costs, he decided to contact the New York firm Kasowitz, Benson, Torres, and Friedman, famous for its litigation against the tobacco industry. The joint adventure would last more than seven years and would involve an investment of $15 million, with lawyers' fees sometimes running as high as $500,000 per month. The first stage consisted of organizing blood tests and fatty tissue analyses of the 3,500 plaintiffs, to measure their PCB levels. These tests, which could only be conducted by specialized laboratories, cost about $1,000 each.

While the complaint was being prepared under the title *Abernathy v. Monsanto,* Stewart moved heaven and earth to get his hands on company documents proving that it had known of the toxicity of PCBs. He knew that without this incriminating evidence, the fight would be hard to win, because the company could always offer the defense of ignorance. Intuitively, he was convinced that a multinational full of scientists would operate in a very bureaucratic fashion, with a hierarchy that controlled everything through a very sophisticated document system; the slightest event or decision, he thought, had to have left written traces. He minutely scrutinized the depositions of Monsanto representatives, and he came across a pearl: according to a company lawyer, a "mountain of documents"—500,000 pages that had disappeared from the St. Louis offices—had been deposited in the library of a New York law firm that represented Monsanto. Stewart asked to consult them, but he was told that the documents were inaccessible because they were protected by the work product doctrine, which allows attorneys to keep documents secret before a trial in

order to avoid providing ammunition for the opposing party.

Stewart turned to Judge Joel Laird of the Calhoun County court, who was handling *Abernathy v. Monsanto*: in a crucial decision, the judge ordered Monsanto to open up its internal archives.

Monsanto Knew, and Said Nothing

The "mountain of documents" is now accessible on the Web site of the Environmental Working Group, an NGO dedicated to environmental protection and headed by Ken Cook, who met with me in his Washington office in July 2006. Before meeting with him, I spent many nights combing through this mass of memoranda, letters, and reports drafted over decades by Monsanto employees with truly Kafkaesque precision and coldness.

Indeed, there is something I still have trouble understanding: how could people knowingly run the risk of poisoning their customers and the environment and not stop to think that they themselves or their children might be the victims of, to put it mildly, their negligence? I am not speaking of ethics or morality, abstract concepts foreign to the logic of capitalism, but merely of the survival instinct: was it lacking in the managers of Monsanto?

"A company like Monsanto is a world of its own," Cook told me, admitting that he had been plagued by the same questions. "The pursuit of profit at any price anesthetizes people devoted to a single purpose: making money." He showed me a document that summed up this way of operating. Entitled "Pollution Letter," it was dated February 16, 1970. Drafted by N.Y. Johnson, who worked in the St. Louis office, this internal document was addressed to the company's marketing staff to explain to them how to answer their customers who had learned of the first public disclosures of the potential dangers of PCBs: "Attached is a list of questions and answers which may be asked of you by customers receiving our Aroclor-PCB letter. You can give verbal answers; no answers should be given in writing. . . . We can't afford to lose one dollar of business."

How could people knowingly run the risk of poisoning their customers and the environment and not stop to think that they themselves or their children might be the victims of, to put it mildly, their negligence?

What is absolutely breathtaking is that Monsanto knew that PCBs presented a serious health risk as early as 1937. But the company carried on regardless until the products were finally banned in 1977, the date when its W.G. Krummrich plant in Sauget, Illinois (an eastern suburb of St. Louis, the site of Monsanto's second PCB production facility), was closed down.

In 1937, Dr. Emmett Kelly, Monsanto's medical director, was invited to a meeting at the Harvard School of Public Health, also attended by PCB users such as Halowax and General Electric, along with representatives of the U.S. Public Health Service. At this meeting, Cecil K. Drinker, a Harvard researcher, presented the results of a study he had conducted at the request of Halowax: a year earlier, three employees of that company had died after being exposed to PCB fumes, and several had developed a terribly disfiguring skin disease, which was then unknown but later named chloracne. I will come back in the next chapter to this serious pathology, which is characteristic of dioxin poisoning, sometimes resulting in an eruption of pustules all over the body, and which may last for several years or indeed never go away.

In a panic, Halowax management asked Cecil Drinker to test PCBs on rats. The results, published in the *Journal of Industrial Hygiene and Toxicology*, were conclusive: the test animals had developed severe liver lesions. On October 11, 1937, an internal Monsanto report tersely noted that "experimental works in animals shows that

prolonged exposures to Aroclor vapors . . . will lead to systemic toxic effects. Repeated bodily contacts with the liquid Aroclor may lead to an acne-form skin eruption."

Seventeen years later, the problem of chloracne was the subject of an internal report written in chillingly technical language: "Seven workers developed chloracne in a plant using Arochlor," a Monsanto manager reported, and then calmly explained: "The fact that air tests, even in the presence of vapors, showed only negligible amounts of chlorinated hydrocarbons indicates that this type of intermittent but fiercely long continued mild exposure is not innocuous."

On February 14, 1961, the head of production of Hexagon Laboratories, another Monsanto customer, sent a letter to Kelly in St. Louis: "In reference to our recent telephone conversation, I would like to further discuss the incident wherein two of our plant personnel were exposed to hot Arochlor (1248) vapors generated by a broken pipe connection. For your information and records the two men developed symptoms of hepatitis as you predicted and were confined to a hospital for approximately two weeks. . . . Since we are dealing with a highly toxic material . . . it is felt that a more thorough and clearly written description of the hazards should be described under Safety of Handling."

Monsanto did not follow its customer's recommendation; it had only begrudgingly complied with labeling laws passed in 1958 intended to strengthen safety precautions in the handling of toxic products. "It is our desire to comply with the necessary regulations, but to comply with the minimum and not to give any unnecessary information which could very well damage our sales position in the synthetic hydraulic fluid field."

Sometimes, confronted with urgent questions from their customers, Monsanto managers lost themselves in circumlocutions that might provoke a smile if the stakes were not so serious. For example, in August 1960, a manufacturer of compressors in Chicago was concerned about the possible environmental consequences of the discharge of wastes containing PCBs into rivers. "I would like to say that if small quantities of these materials are accidentally spilled into a receiving stream there would probably be no harmful effect," a representative of the Monsanto medical department answered. "If, on the other hand, a great deal of the material was spilled some readily identifiable damage might ensue."

"The manufacturer had apparently said that in his own plant Aroclor spills on the floor were common. The memo noted: "I was brutally frank and told him that this had to stop before he killed somebody with liver or kidney damage"

As the years went by, however, the tone changed, probably because the threat of legal action brought by its own customers was weighing ever more heavily on the company. In 1965, an internal memo reported a telephone conversation with the head of an electrical company that used Aroclor 1242 as an engine coolant. The manufacturer had apparently said that in his own plant Aroclor spills on the floor were common. The memo noted: "I was brutally frank and told him that this had to stop before he killed somebody with liver or kidney damage."

"Criminal" Conduct

In the face of the alarming reports coming from the field, there were very few voices who spoke up against the general inertia, including Dr. J.W. Barrett, a Monsanto scientist based in London, who suggested in 1955 that studies be conducted to rigorously evaluate the toxic effects of Aroclor. Kelly responded curtly: "I don't know how you would get any particular advantage in doing more work." Two years later, the head of the medical department, with

the same self-assurance, commented on the results of an experiment conducted by the U.S. Navy with Pydraul 150, a PCB used as a hydraulic fluid in submarines. "Skin applications of Pydraul 150 caused the death of all the rabbits tested. . . . No matter how we discussed the situation, it was impossible to change their thinking that Pydraul 150 is just too toxic for use in a submarine."

It is surprising when reading these documents to see the extent to which the company's position was apparently immune to challenge. It conscientiously collected alarming data, which it hastened to lock in a drawer, keeping its eyes riveted on sales instead: "2.5 million pounds per year," crowed the author of a 1952 document. But there were moments when I began to dream of a possible change in the company's behavior.

For example, on November 2, 1966, the report of an experiment conducted at Monsanto's request by Professor Denzel Ferguson, a zoologist from Mississippi State University, arrived in St. Louis. His research team had immersed twenty-five caged fish in Snow Creek, where waste from the plant was dumped and which, as we have seen, flowed through the city of Anniston. "All 25 fish lost equilibrium . . . and all were dead in 3½ minutes and . . . blood issues from the gills after 3 minutes exposure," the scientist reported. He went on to say that at certain points the water was so polluted that it "kills fish in less than 24 hours when diluted 300 times." In their final report, the Mississippi State scientists made several recommendations: "Do not release untreated waste in the future! Clean up Snow Creek." And the conclusions pointed out: "Snow Creek is a potential source of future legal problems. . . . Monsanto needs to monitor the biological effects of its effluents as a protection against future accusations."

The company's irresponsibility was staggering," said Ken Cook. "It had all the data at its fingertips, but it did nothing. That's why I say it was guilty of criminal conduct"

Late in November 1966, the Brussels office of Monsanto Europe received a letter from a correspondent in Stockholm reporting on a scientific meeting concerning research conducted by a Swedish scientist, Soren Jensen. Published in *New Scientist,* this work had caused a great stir in Sweden. While analyzing DDT in samples of human blood, Jensen had accidentally discovered a new toxic substance, which turned out to be PCB. The irony of the story is that DDT, a powerful insecticide discovered in Switzerland in 1939, was also a chlorinated chemical product that Monsanto sold widely until it was finally banned in the early 1970s, in particular because of its human health effects. Jensen discovered that PCBs had already extensively contaminated the environment even though they were not manufactured in Sweden: he found significant quantities in salmon caught near the coast and even in the hair of his own family (his two children, ages three and six, his wife, and his five-month-old infant, who must have been contaminated by breast milk). He concluded that PCBs "accumulated in certain organs of animals and the food chain. They are said to be related to DDT and equally poisonous."

And yet Monsanto management did not change its attitude: one year later it allocated an additional $2.9 million to further development of Aroclor products in Anniston and Sauget. "The company's irresponsibility was staggering," said Ken Cook. "It had all the data at its fingertips, but it did nothing. That's why I say it was guilty of criminal conduct." In fact, no specific measures were taken to protect the workers in the Anniston plant. "At Anniston no special protecting clothing is provided for the Arochlors operators," a 1955 document notes. "A daily change of clothing

was provided in the past but this practice ceased before the war." The only clearly announced recommendation was not to eat in the Aroclor department.

But the company was discreetly collecting data that would be used against it twenty years later: "The effects of exposure of PCBs on our employees have been reviewed by our medical Department and a consultant from the Eppley Institute," explained William Papageorge, known as the "PCB czar because he supervised their production for several decades. "In summary there is no evidence that our employees have been adversely affected by PCBs. . . . We have no program underway to study these "effects." Similarly, technicians in St. Louis confirmed by firsthand observation that toxic products persisted in the environment for at least thirty years. In 1939, in fact, PCBs had been buried in patches of ground to test their effectiveness as termite poison: "There is still visual evidence of the presence of Aroclor," noted an "officer" in 1969.

"The worst thing about all of this," said Cook, "is that Monsanto never warned the residents of Anniston that the water, the soil, and the air of the west side of town was highly contaminated. As for state and local authorities, not only did they close their eyes, but they covered up the company's actions. It's really scandalous. I think one of the explanations of this tragedy is the racism of the leaders at the time: after all, they were only blacks."

Complicity and Manipulation

In the spring of 1970, just after the Nixon administration, with great fanfare, had announced that the Environmental Protection Agency would be established later that year to meet the "public's growing demand for clean air, water, and soil,"

“The worst thing about all of this,” said Cook, “is that Monsanto never warned the residents of Anniston that the water, the soil, and the air of the west side of town was highly contaminated”

Monsanto made a preemptive strike: a note from May 7 marked "confidential" describes a meeting between company representatives and Joe Crockett, the technical director of the Alabama Water Improvement Commission (AWIC), the public body responsible for the state's water quality. The purpose of the meeting was to "inform the AWIC representative of the situation" and "to *build confidence* that Monsanto intends to cooperate with governmental agencies to define the effects of Aroclor on the environment" (emphasis added). This was simply a public relations exercise, which in fact succeeded, since Crockett recommended that no statements be given "which would bring the situation to the public's attention." The note concludes: "The full cooperation of the AWIC on a confidential basis can be anticipated."

At the same time the Food and Drug Administration (FDA) was conducting tests on fish caught at the confluence of Snow Creek and Choccolocco Creek. They determined that PCB levels in the fish were at 277 parts per million (ppm), whereas the safe level for consumption had been set at 5 ppm Curiously, the FDA took no steps to issue an advisory against fishing in the incriminated waterways nor against Monsanto, which thus had an opportunity to put the "cooperation" of the AWIC to the test: "We are now discharging 16 pounds of PCBs per day (compared to 250 in 1969) into Snow Creek," according to an August 1970 document marked "Confidential. FYI and Destroy."

"Joe Crockett will try to handle the problem quietly without release of the information to the public at this time." The residents of Anniston therefore continued to consume fish caught in contaminated streams until 1993, when the FDA issued its first order warning against the practice.

But Monsanto's negligence, which some would call cynicism, did not stop there. I have already noted that the company was discharging some of its wastes in a dump near the factory that, when it rained, produced runoff into neighboring gardens. In December 1970, a neighborhood resident was allowing one of his pigs to forage in a vacant lot next to the dump. He was approached by a representative of Monsanto who offered to buy his animal. As an internal memo reveals, the animal was slaughtered and analyzed: its fat contained 19,000 ppm of PCBs. But in this case as well, no information was ever provided to the residents, who continued to allow their pigs to forage in the vacant lot for many years.

In fact, everything indicates that the company's single obsession was to carry on its business come what may. In August 1970, when PCBs were increasingly gaining attention in the media, company management decided to set up an ad hoc committee to consider the situation. The committee issued a report marked "confidential," which began by listing its objectives: "permit continued sales and profits of aroclors" and "protect image of . . . the Corporation." There followed a long list of all cases of contamination recorded in the country. It turns out, for example, that a University of California researcher had detected elevated levels of PCBs in fish, birds, and eggs in the coastal region. A study conducted by the FDA had revealed that PCBs had been found in milk from herds in Maryland and Georgia; another study conducted by a laboratory of the Commercial Fisheries Bureau of the U.S. Interior Department in Florida had showed that juvenile shrimp did not survive in water containing 5 ppm of PCBs, and so on. Reading the report leads to the conclusion that PCBs were everywhere: they were used as lubricants in turbines, pumps, and food distribution equipment for cows, they were a component of the paint used for the walls of reservoirs, grain silos, swimming pools (particularly in Europe), and road markings and were used in the manufacture of oils used in metal fabrication, solder, adhesives, carbonless copy paper, and more.

“To put it plainly, Monsanto was proposing not to confess its mistake and simply withdraw its Aroclor product line from the market, but on the contrary to do everything possible to keep it on sale

"As the alarm concerning the contamination of the environment grows it is almost certain that a number of our customers or their products will be incriminated. The company could be considered derelict, morally, if not legally, if it fails to notify *all* customers of the potential implication," the committee stated. It concluded that the company was faced with an "extraordinary situation. There can not be too much emphasis given to the threat of curtailment or outright discontinuance of the manufacture and sales of this very profitable series of compounds. If the products, the Division, and the Corporation are to be adequately protected, adequate funding is necessary."

To put it plainly, Monsanto was proposing not to confess its mistake and simply withdraw its Aroclor product line from the market, but on the contrary to do everything possible to keep it on sale. The first stage of the battle plan was to finance a toxicological study to test PCBs on rats. To that end, the company signed a contract with Industrial Bio-Tech Labs (IBT) in Northbrook, Illinois, one of whose new directors was Dr. Paul Wright, a toxicologist from Monsanto recruited for the occasion. A few months later, the preliminary results of the study reached company headquarters: "PCBs are exhibiting a greater degree of toxicity in this chronic study as we had anticipated. . . . We have additional interim data which will perhaps be more discouraging." A letter to Joseph Calandra, the head of IBT, followed: "I think we are surprised (and disappointed?) at the ap-

parent toxicity at the levels studied. We would hope that we might find a higher 'no effect' level with this sample as compared to the previous work." In July 1975, Monsanto's manager of environmental assessment and toxicology attempted to correct the results by strongly suggesting that the phrase "slightly tumorigenic" be replaced by the phrase "does not appear to be carcinogenic."

A Poison as Toxic as Dioxin

Professor David Carpenter, director of the Institute for Health and the Environment at the University of Albany, told me: "We all have PCBs in our bodies. They belong to a category of twelve very dangerous chemical pollutants known as persistent organic pollutants (POPs), because, unfortunately, they are resistant to natural biological decay and they accumulate in the living tissue through the entire food chain.

"PCBs have contaminated the whole planet, from the Arctic to the Antarctic, and regular exposure can lead to cancer, namely, liver, pancreatic, intestinal, breast, lung, and brain cancer, cardiovascular disease, hypertension, diabetes, immune deficiency, thyroid disorders, sexual hormone imbalances, reproductive problems, and serious neurological disturbances, because some PCBs belong to the dioxin family."

He went on to explain that PCBs are biphenyl molecules in which one or more of the ten hydrogen atoms are replaced by chlorine atoms. There are 209 possible combinations, and hence 209 different PCBs, known as congeneric PCBs, the toxicity of which varies depending on the location and number of chlorine atoms in the molecule.

Writing these lines reminded me of an article in *Le Nouvel Observateur* of August 23, 2007, which, following *Le Monde*, *Libération*, and *Le Figaro*, reported on what *Le Dauphiné libéré* had called a "French Chernobyl." According to the weekly, "The Rhône is polluted to its mouth. It contains levels of PCBs that are five to twelve times above European health norms! (According to *Le Monde* of June 26, 2007, "the most contaminated fish had a level forty times above the daily acceptable level.") Analysis after analysis, orders from the prefects came down like guillotines: the ban on the consumption of fish, decreed first north of Lyon and then applied as far as Drôme and Ardèche, was extended on August 7 to the departments of Vaucluse, Gard, and Bouches-du-Rhône. It may soon reach the Camargue marshes, which are fed by water from the river, and even coastal fishing in the Mediterranean and the harvesting of shellfish and crustaceans near the coast."

> **The alarm was raised fortuitously by a professional fisherman who was the victim of his own good faith**

The alarm was raised fortuitously by a professional fisherman who was the victim of his own good faith. "In late 2004, dead birds were found upstream from Lyon," he explained to a journalist. "While they were being analyzed, as a precautionary measure, the veterinary services prohibited all consumption of fish. It was only a case of strictly avian botulism, but no one wanted my fish afterward. I asked for complete analyses to prove that they were good. And bingo! They were stuffed with PCBs!"

Since then, government services have been struggling to determine the origin of the pollution that is said to have affected hundreds of thousands of tons of sediment in the Rhône. I have already noted that the purchase and sale of PCBs or equipment containing them have been prohibited in France since 1987. A decree issued January 18, 2001, incorporated into French law a European directive enacted nearly five years earlier, on September 16, 1996, concerning the elimination of existing PCBs, a process

that is supposed to be definitively completed by December 31, 2010, at the latest.8 A national plan for the decontamination and elimination of equipment containing PCBs was established only in 2003. According to the French Environment and Energy Management Agency (ADEME), 545,610 pieces of equipment containing more than five liters of PCBs had been inventoried in France by the end of June 2002 (450,000 of which belonged to Électricité de France (EDF)), amounting to 33,462 tons of PCBs to be eliminated. But according to the association France Nature Environnement, the goal is far from being reached in light of the fact that the declaration of equipment to be treated was voluntary. "Our fear was of seeing diffuse PCB pollution in the environment due to incomplete elimination of these wastes, with the risk that they would be dumped on industrial wastelands or in improvised dumpsites, or simply used as scrap metal," the association wrote in its February 2007 newsletter.

"The problem," Carpenter explained, "is that PCBs are very difficult to destroy. The only way is to burn them at very high temperatures in special incinerators also able to treat the dioxin produced by their combustion." Two factories in France are certified to carry out this delicate task: one is located in Saint-Auban in Alpes-de-Haute-Provence, the other in Saint-Vulbas in Ain, on the banks of the Rhône. According to a report in *Le Nouvel Observateur,* until 1988 the Saint-Vulbas installation was authorized to discharge three kilos daily of PCB residues into the river (the maximum quantity is now three grams a day). To this possible source of contamination should probably be added discharges by the numerous companies in the "chemical corridor" that use Pyralène: oils containing PCBs were allowed to leak into the ground and from there into the water table

In addition, all the studies found that contaminated mothers transmitted PCBs to their infants in breast milk and that the substances could cause irreparable neurological damage in the babies, who would be affected by what doctors have labeled "attention deficit disorder" and would have significantly lower than average IQs

and nearby streams. "For decades, in the United States and around the world, public authorities preserved the silence organized by Monsanto about the toxicity of PCBs," said Carpenter. "Everyone closed his eyes to this poison, which is as dangerous as dioxin."

One merely has to read a report presented to Congress by the U.S. Public Health Service and the EPA in 1996 to understand that the "health implications of exposure to PCBs" are extremely serious. The thirty-page report enumerates no fewer than 159 scientific studies conducted in the United States, Europe, and Japan that all reached the same conclusion: the three principal sources of human contamination by PCBs are direct exposure in the workplace, living near a polluted site, and, most important, the food chain, with the consumption of fish being by far the riskiest. In addition, all the studies found that contaminated mothers transmitted PCBs to their infants in breast milk and that the substances could cause irreparable neurological damage in the babies, who would be affected by what doctors have labeled "attention deficit disorder" and would have significantly lower than average IQs.

The devastating toxicity of PCBs could be studied in detail because of an accident in Japan in 1968, when thirteen hundred people on the island of Kyushu used rice bran cooking oil contaminated by PCBs because of a leak in a refrigeration system. They were affected by a disease at first called *yusho*, meaning "skin disease caused by oil," characterized by severe skin eruptions, discoloration of the lips and nails, and swelling of the joints. When it turned out that the source of the mysterious disease was PCBs, researchers undertook long-term medical follow-up of the victims. The results showed that children born to mothers contaminated during pregnancy

had an elevated early mortality rate and/or significant mental and behavioral impairment; in addition, the rate of liver cancer was fifteen times higher among the victims than in the normal population, and average life expectancy was considerably reduced. Finally, PCBs were still detectable in the blood and sebum of contaminated people twenty-six years after the accident.

These results were confirmed by a study of two thousand people in Taiwan contaminated in 1979 in circumstances similar to those of their Japanese neighbors (the "Yu-Cheng accident"). These two dramatic events explain the panic that seized Belgian authorities in January 1999 when the "dioxin chicken" crisis erupted. The cause was again the accidental contamination by PCBs of cooking oil that was then added to animal feed supplied to chickens, pigs, and cattle.

From the litany of studies listed in the EPA report, I will take note of two others that were particularly dramatic. One concerned 242 children whose mothers (of Amerindian origin or the wives of recreational fishermen) had regularly consumed fish from Lake Michigan over a period of six years before and during their pregnancies; all the children had low birth weight and persistent cognitive deficits. The other concerned Inuits of Hudson Bay, who were particularly exposed because of their heavy reliance on the meat of sea mammals at the top of the food chain, such as seals, polar bears, and whales, where the highest levels of contamination were found. (In fact, some species of sea mammals, including killer whales, are threatened with extinction caused by PCBs.)

Denial Now and Forever

"There is no consistent, convincing evidence that PCBs are associated with serious long-term health effects," declared John Hunter, CEO of Solutia, on January 14, 2002, in a conference he called with investors and representatives of the press. He was attempting to reduce the impact of an article in the *Washington Post* titled "Monsanto Hid Decades of Pollution," published on January 1, 2002, just before the trial of *Abernathy v. Monsanto* opened. "Despite the extent of the scientific evidence, internal documents, and witness testimony, the manufacturers in St. Louis have continued to deny the responsibility of the firm in the ecological and health disaster of Anniston," stated David Carpenter, called as an expert witness at trial. "They have never showed the slightest compassion for the victims," Ken Cook confirmed to me, "not a word of excuse or a sign of regret, denial now and forever! Their line of defense can be summed up like this: 'We didn't know that PCBs were dangerous before the late 1960s, but as soon as we found out, we acted quickly to rectify the problem with government agencies.' "

The arrogance revealed by some company representatives in the trial transcript is truly chilling, and they do anything but make amends

The arrogance revealed by some company representatives in the trial transcript is truly chilling, and they do anything but make amends. An example is this excerpt from the testimony of William Papageorge, the "PCB czar," given on March 31, 1998, in the Calhoun County court. "To your knowledge, sir, did Monsanto ever disclose to the residents of Anniston in 1968 or 1969 that twenty-seven pounds of organics and acid waste from the Aroclor and HCl departments were being lost from the plant?" asked the attorney.

"There was no reason to talk those numbers. They were meaningless," answered Papageorge.

"But the answer is no?"

"That is correct."

"Thank you. Did anyone ever tell the

residents of Anniston at that time that Monsanto was visually checking Snow Creek and Choccolocco Creek to determine the effects of the PCBs in the plant effluent water?"

"Sir, this is no different than a service station man telling his neighbors he has got motor oil on the curb by his service station. Those things are just nonproductive comments that one can make to others."

"I'm going to move to strike. But the answer, though, is no? Is that right?"

"Yeah."

"Did Monsanto ever provide the residents of Anniston with any data concerning the health hazards of PCBs in humans?"

"Why would they?"

On February 23, 2002, after deliberating for five hours, the jury delivered its verdict: it unanimously found Monsanto and Solutia liable for having polluted "the Anniston area and people's blood with PCBs." The legal grounds for the verdict were "negligence, wantonness, fraud, trespass, nuisance, and outrage," and it included a harsh judgment of Monsanto's conduct, which was "so outrageous in character and extreme in degree as to go beyond all possible bounds of decency, so as to be regarded as atrocious and utterly intolerable in civilized society." The firm soon filed an appeal with the Alabama Supreme Court, asking that Judge Joel Laird be removed from the case, but the appeal was rejected. The jury then undertook the difficult task of evaluating the damages that each victim would recover on the basis of the PCB blood level measured and the cost of a program for decontaminating the site. Fifteen percent of the 3,516 plaintiffs had a PCB blood level higher than 20 ppm (the acceptable level was 2 ppm), with spikes as high as 60 or even 100 ppm. David Baker had a level of 341 ppm and was awarded damages of $33,000. The highest award was $500,000.

Finally, the polluter offered $700 million: $600 million divided into two equal funds to indemnify victims, and $100 million to decontaminate the site and finance a specialized clinic.

A month after the verdict, the EPA, which had been conspicuously inactive on the issue for more than twenty years, announced that it had signed an agreement with Solutia to decontaminate the site. This decision, very favorable to the polluter and nullifying the jury's work, provoked the anger of Alabama senator Richard Shelby, who brought the matter before a Senate subcommittee, which pointed out that Linda Fisher, the number two staffer at the EPA, was a former Monsanto executive.

At the same time, the federal district court in Birmingham announced that the case of *Tolbert v. Monsanto*, a class action filed by Johnnie Cochran, would open in October 2002. Solutia's share price on the New York Stock Exchange collapsed. Judge U.W. Clemon, who wanted to avoid a costly trial, then undertook the tedious task of persuading the parties to negotiate an overall settlement covering the two cases. The company had until then rejected that solution, probably hoping to financially exhaust the plaintiffs by multiplying technical legal motions and delaying tactics. "In fact," Baker explained to me, "the prospect of a highly publicized trial, with Johnnie Cochran in court, made Monsanto give up and negotiate to reduce publicity." Finally, the polluter offered $700 million: $600 million divided into two equal funds to indemnify victims, and $100 million to decontaminate the site and finance a specialized clinic.

"Who will pay?" wondered the *St. Louis Post-Dispatch* on February 7, 2004. The problem was indeed intricate: Monsanto had gotten rid of its chemical division in 1997 by selling it to Solutia. And in December 1999, the company, which then had a pharmaceutical branch and an agricultural branch (transgenic seeds and Roundup),

announced its merger with Pharmacia and Upjohn under the name Pharmacia. In the summer of 2002, Monsanto recovered its independence, retaining only its agricultural division, and Pharmacia was purchased by the pharmaceutical giant Pfizer. As a result, the $700 million would finally be paid by Solutia ($50 million), Monsanto ($390 million), and Pfizer ($75 million), with the remainder covered by insurance.

The lawyers pocketed 40 percent of the damage award, which provoked some complaints. "That's how the American system works," Baker explained to me. "In this kind of case, the lawyers are paid only if they win, and Johnnie Cochran, for example, had spent $7 million preparing the trial. That means if you don't find a Johnnie Cochran, you can't do anything against a company like Monsanto. The thing I regret is that none of the company executives was sentenced to prison."

The status of corporations as "persons" in United States law generally shelters company officials from individual liability. "In the American legal system," said Cook, "it is very rare for executives or managers of companies to be found criminally liable. On the other hand, companies can be sued in civil court, and they are made to pay. But in fact, the damages they pay decades later are only a fraction of their profits. So it pays to keep secrets. I wonder what secrets Monsanto is keeping now. You can never trust a big company like Monsanto to tell us the truth about a product or a pollution problem. Never."

PCBs Are Everywhere

According to accepted estimates, 1.5 million tons of PCBs were produced from 1929 to 1989, a significant portion of which ended up in the environment. How much exactly? It is hard to know. The fact remains that PCBs are everywhere and they are a nightmare for us as citizens, but they are also a nightmare for Monsanto (and the subsidiary it used, Solutia, which declared bankruptcy in 2003 largely because of the litigation it had inherited).

In 2007, as France was discovering that the Rhône was polluted by PCBs, Wales was shaken by a scandal that had been suppressed for more than forty years

Here is a brief, not exhaustive, summary: In January 2003, the Environment Department of Oslo fined Bayer, Kaneka, and Solutia g7 million for contaminating the fjord on which the harbor is located with PCBs used in ship paints. (It should be noted in passing that many experts, including David Carpenter, strongly advise against consuming salmon raised in Norway and Scotland.) In January 2006, 590 workers in a General Electric factory in New York sued Monsanto for PCB contamination.

In 2007, as France was discovering that the Rhône was polluted by PCBs, Wales was shaken by a scandal that had been suppressed for more than forty years. Monsanto had a subsidiary in Newport that until 1978 produced 12 percent of the PCBs manufactured in the world. From 1965 to 1971, the factory dumped into the Brofiscin quarry, an extremely porous former limestone quarry, some 800,000 tons of waste contaminated with PCBs. The activity had been denounced at the time by farmers who had noticed that their cattle were dying mysteriously. The decontamination of the site could cost more than g200 million. For now, Monsanto and Solutia are blaming the company that the Newport factory contracted with to transport and dump the wastes.

At a time when concern for the environment is in the headlines, it is likely that the ghost of PCBs will haunt Monsanto for a long time to come, just like dioxin, of which it was an experienced producer.

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