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Body An TOXIC

Environmental Memoir

Susanne Antonetta

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for B. and J.,
for whom the world must be wonderful:
to match them



Chapter One

First Words

In nineteen question-mark my silent grandfather came to the United States.

He left the hot chatty island of Barbados and because he existed in silence no one knows when he came. He came for shade. To drink tea-colored liquor we poured out, that scoured the tin sink. To watch every Saturday, as he did until he died, American cartoons like *Rocky & Bullwinkle*. He came to father my silent mother and find an America that seemed less like a place than an anti-place, a not-Barbados, not-Europe, not Asia or Africa, not meals of boiled monkey and *coocoo* or potatoes rotted bitter and Argus-eyed in the ground. Not this, not that.

My grandfather succeeded because silence succeeds. It can't be argued against. It is the last word.

My grandfather, Louis Cassill, came from an Anglophone island to an English-speaking country, where people were like radios that couldn't be turned off. I think he would have preferred a place that babbled nonsense in his ears. He sat alone and kept his pale amphibian eyes averted. He slammed the door in the faces of solicitors and Jehovah's Witnesses and Latter-Day Saints. He avoided even hellos and goodbyes, first cousins of speech.

On the other side of my family, the Antonettas, my greatgrandparents came with no English and an Italian dialect only people from the same group of villages could understand. They floated in the bubbles of their own thought, leaving behind tenant farming, earthquakes and cholera. They came because people in that part of Italy had begun coming to the U.S. to work, sending money home, planning to return to Italy, as the U.S. began pocking its face with factories and blowing into its air the hard breath of day labor.

My grandfather on this side put the television on when he woke up in the morning and didn't turn it off till he went to sleep. He didn't change channels much and when I saw him the TV always followed a natural and inevitable evolutionary path, daytime soaps to news to sitcoms and talk shows. My grandfather, whose name was Rafael and who everyone called Ralph, floated against a backdrop of daylight people dramatically fighting and cheating and falling into each other's arms again, and then bland, real murder and exploding Vietnamese villages at twilight, and nervous taped bizarrely repetitive laughter at night. Rafael called Ralph moved in front of that like a character in an old movie pretending to drive in front of a flat unrolling landscape. He only read papers like the *Weekly World News* and the *Star* and never understood much about what was going on in the world.

My aunt Philomena told me once that when my greatgrandfather came here he'd heard of the streets paved with gold and had no idea of the metaphor involved; he took a boat, steered on a steamer, and emerged from the underdecks, from the Ellis Island ferry, to stare horrified? disgruntled? unsurprised really? at the disappointing asphalt of New York. He went, an older man, to Brooklyn, where my West Indian grandfather would soon arrive. My Cassill grandfather came with a mother who fled debt and a bad reputation. He talked about this country, when he did, as open space.

"New Jersey was a cow pasture then," he'd say irritably. "There was nothing at Holly Park. Nothing."

He had little feeling for nature—I never knew him to go outside without a reason, like fixing the well—but he resented the arrival to any place of human beings other than himself. In spite of that he had children.

Neither man could pass up the chance to breed American children, American progeny.

(Memoranda): I am Susanne Louise Antonetta. Right about now I am about 4'11" and weigh between 85–90 lbs. I live in the United States, at 345 East Washington Street. . . I have brown hair, brown eyes, and wear a size 8 shoe. (3/11/68, age 11)

I started keeping a diary when I was eleven. Someone had given me the diary of Anne Frank, with its foreword by Eleanor Roosevelt, and the book infected me with audience. I had always written for myself, plays and poems and stories: a weakness bred into me by my soft life in America. Now I pictured girls propped up with my book in their lap. Presidents' wives, bored, crusading. This audience changed my voice. I move from entries like

And white lipstick is a *must*

to what must have seemed the closest I could come to literary English, the strained diction of my English grandmother, the woman who married my West Indian grandfather.

I think I shall write memoirs about life in America, and my philosophy and opinions about it. Then I will wrap it in mud or clay, and someday I shall bury it for people far in the future to find.

My aunt Philomena, my father's sister, tells a story about running up to her grandmother's apartment, on the top floor of the brownstone where three generations of the family lived in Brooklyn, to borrow an onion. She asked for it in English.

"*SHE-pole, SHE-pole*," my greatgrandmother screamed furiously—"onion" in their dialect—and flapped her hands to indicate she didn't understand my aunt, didn't speak a word of English.

"Oh, you're a stupid old woman," my aunt said, in English, whereon my greatgrandmother yelled downstairs in Italian that Philomena had just called her a stupid old woman.

My Cassill grandfather would have done the same thing, if he could possibly have pretended that Barbados was a non-English-speaking island. As it was, he had a field around him that bounced off conversation.

I've been thinking of writing a story about a girl a lot like me, one that didn't have a happy ending. I want to write reality, not myth. The ending will be sad, but it will contain philosophy. (2/13/68, age 11)

I'm making up a list of the 10 most appealing words I know. Here are some candidates: photograph, phone, cents, choice, crystal, fish (believe it or not!), love, hope, list, sweet, charm, paw, rose, beauty, breasts, and soft. (7/12/68, age 11)

A photographed fish: crystal. A choice phone. A fish made of crystal listing with love. Beauty breasted. Hopeful.

O rose thou are sweet, charmed, soft.

O rose thou art pawed.

My earliest diary, from the year I turned eleven, has a cover of plastic faux leopard skin, very 1960s. I must have had a strong sense of my words as type, because I wrote for a while in the closest writing I could manage to a plain typeface like Univers—the uncoordinated eleven-year-old version—even slanting some words very far to the right, one letter at a time, to indicate I wanted them to be italic.

My leopard diary had a key. I remember it: tiny and delicate and lovely slipping the little tumblers of its lock. I kept it in a place so secret I can't remember, and when I found the diary a quarter century later (stuffed in some old boxes) I had to cut the strap binding it shut with scissors. I'd kept it locked against my parents—who would have read it and seen no irony in punishing me for invasions of their privacy—and my brother and my friends. Nervous of the Word. So I carefully turned the little lock every night and hid both key and diary though I clearly saw the diary as in some ways a public thing. I wrote from both angles: the fiction that I wrote for myself only

For the past few days I've been thinking of giving you a name. Maybe Cindy. Or maybe Sue, since you really are a division of myself.

(4/1/68, age 11)

and a chronic parenthetical note of nudging a reader along

(In case you don't remember who "the kids in the back" are, see Jan. 7)

(If that sounds like a rather dramatic opening, I tend to be rather dramatic sometimes—I enjoy it) (1/6/68, age 11)

It may have been the fantasy that I had a friend desperate to understand me. Or maybe I'd already learned to split myself off into the self and the critic—the one who acts and the one who watches, giving no quarter, too indifferent even to remember.

Both sides of my family had elaborate silences, mantras of unspoken: *You don't talk about it. You didn't talk about it then. Disease. Death. Wrongdoing.* The Four Horsemen of the Apocalypse could hoof us under without our protest. My uncle Vito, an ex-prizefighter with a sixth-grade education, bought an old garbage truck and arranged a route on Long Island where garbage collection was a Mob business.

"First comes the phone calls," my aunt remembers. "This voice: 'They'll find you face down in the East River.'

"Then they started to talk about the kids. Then comes this big black car, parked in front of the house, just sittin' there, every morning."

My uncle sold the truck. I heard the story thirty years later, my aunt Phil (my beloved aunt) susurrating in my ear. *You don't talk about it, not those things.* My father's uncle Manfredo with the Shylocks and the both-somethings broken. My English grandmother with her dilly-dallying, her cabbage patches and her people no better than they ought to be who'd been born under the rose. Her husband who never told anyone how many siblings he'd had, where they were or how the dead had died. Barbados, which we never talked about except to say: it was British.

Both families, asked direct questions, often respond with ludicrous invention.

"We're kin to the Lord Carrington of the House of Lords," my grandmother would say.

"I'm in with the Rackets," my uncle Tony said. "What do you want? I can get you anything you want."

You see, sometimes I get so involved in my daydreams that I have to give myself a mental slap in the face. (3/6/68, age 11)

I've been daydreaming much too much lately. I make up these stories in which I'm always the heroine. And all day long, I add to them, mentally.

This is very bad. It makes me lose contact with reality, I don't know what's going on. (5/21/69, age 12)

I know my father's family came through Ellis Island, maybe my mother's father too, though not my socially pretentious English grandmother, who came in as war bride to a then-naturalized citizen. I remember my relatives talking about Ellis Island, the torpid, raw, bored officials with shirt buttons open in the heat, who sat with half-eaten sandwiches and wanted you to answer their questions fast and easy, no matter what you said. I think it set a tone: the first they saw of the rules and opportunities of their new home. Along with sidewalks that could tarnish into asphalt from squares of pure value—the mutability, the alchemy, the lie of the place.

I asked my father why our people moved here and he said, "It's the land of opportunity."

Where it's clear that anything you don't want to say doesn't need to be said.

To my mother and father and their mothers and fathers the wonder of this country stayed a given. An anxious thing, to live within the object of desire. It became a national passion in the fifties: how we were coveted from the outside. We poured money into an air defense network, developing missiles and planes (secretly), arming many of them with nuclear weapons. Our intelligence reported a "missile gap"—Russian missiles, more missiles than we had, pointed at key targets in the United States. No more Washington Monument, Bloom-

ingdale's, Times Square and the ball that plummets to make each new year. So we rushed to catch up. One promising nuclear missile designed by Boeing and Michigan Aerospace Research Center, called BOMARC, looked like a well-licked paintbrush with dorsal fins. Concrete bunkers flexed out of the ground in a remote part of New Jersey called New Egypt (in the middle of a sandy pine forest, where no one could see) in southern Ocean County, where the BOMARCs could stand launch-ready to intercept Soviet bombers. Secret bunkers for secret bombs: not many people knew we put nuclear warheads on anti-aircraft missiles. Though it turned out Russia didn't have many missiles after all. Still, the BOMARCs had been built, at a cost of \$1 million apiece. They were hauled in caravan to New Egypt and frozen in their attitudes of contemplation.

World War I had just guns and cannons and tear gas and mustard gas. My Cassill grandfather fought in it under two different flags and met my grandmother when he got wounded, in the neck and in the fingers, and shipped to London, where she nursed him. She never loved him, she told me, or liked him (she hinted) but she loved the idea of America. Their marriage was a long affair of politesse, diplomacy and avoidance. They had four children. In 1932, when his children were young, my grandfather decided to buy some land in a part of the New Jersey Pine Barrens, on the coast, and build them a cabin.

He arrived as he tended to do on the heels of disaster. The Barrens had always been poor, a million acres of unproductive land both boggy and sandy: a place for people hiding out. It had a brief boom, though, in the start of the twentieth century. Something about belief in the healing powers of pinesmell and seabrine. In the twenties slappedup buildings held balls and the Astors came, in fox fur (those rich enough to wear eternity around their necks, uroboros, head eating tail) and

their own beautiful rich skin. In 1926 a developer built a subdivision of small cottages on a peduncle of coast land, a subdivision designed to be summer homes for up-and-coming New Yorkers. He named it Holly Park. In 1929 the stock market crashed and those New Yorkers ceased to exist (as the developer knew them) and the property reverted to its pre-boom values of \$20 or \$30 a lot.

Nearby this subdivision, a symbol of enduring poverty brushed up against, transformed by and then dropped from the coattails of greatness, my Cassill grandfather chose our land. When he finished jury-rigging up our cottages (there were two) my grandmother took the children and rewarded him by spending summers there, leaving him in the north, to make it down on weekends when he could.

(Every morning first thing my grandmother crossed the gravel road. As she crossed the road her spirit rose and kited out of her life. She threw off her cotton shift and the hydraulic system that was 1930s women's underwear, and skinnydipped for a long time in Barnegat Bay. Still her children weren't allowed to use the words "pregnant" or "God.")

Separation and separation and separation.

Ocean County eats into the hourglass of New Jersey in a triangular bite, smooth on the land sides and rough on the third that fronts the water. Down the Atlantic side runs a long peninsula, akimbo like an arm but too skinny: a humerus and radial of peninsula. This peninsula cuts off the Atlantic and forms our bay, Barnegat. Because of its position Island Beach holds the county's valuable property—good surf, sand beaches, boardwalks—though it makes up a tiny percentage of the land. Our bay tends to stagnate and grow what look like floating molds and mildews. Rather than sand beaches we have marshes and weeds spreading up to the water. Swimming's lackluster

as is fishing; crabbing's good. We always had the things that needed cover and barrier to grow: crabs, cranberries, blackberries, the secret pleasures. Most people in New Jersey considered the Barrens ugly, with its monotonous landscape of sparsely needled pitch and scrub pines, cattails and bogs.

When my grandfather came to this area, Holly Park in Berkeley Township in south Ocean County, only a few thousand people lived there. Island Beach hadn't been developed much. There were very few jobs and people often lived in ways inconceivable in the rest of the state, catching and picking their food, making charcoal and gathering cranberries, slapping together their shelter. As my grandfather did.

The bungalows my grandfather built faced a small inlet of Barnegat Bay and backed onto a large lagoon that kept the plain rooms awash with mosquitoes.

My family and my aunts and uncles and cousins spent most of our summers there. We still go, now and then. I feel that place in my ear, in a spot where it cannot be slapped.

By the time I existed and had memory, someone had taken the unpromising curve of land along our side of the inlet and built a wooden bulkhead along it, with a few piers for crabbing. A piece of land the size of a housing lot in a subdivision tolerated the dumping of much clayey sand and served as a beach. It had steps leading into the water. Ostensibly this was a private beach—nearby families gave a few dollars a year and got badges my mother and my aunts fussed about but nobody remembered to wear. An old wooden building had been thrown up by the gate, where someone had the job of beach-keeper, always somebody old and sagging and bristly in a bathing suit: tensed to run my cousins and my brother and me off. We were bad children, and flooded the beach by damming the baby pool drain with carefully packed layers of clay and rocks.

We loved things that soaked and flooded, or seared and burned and wizened. Firecrackers. Matchbombs. And the bleached remarkably infertile soil of the Barrens, like sand but close enough to clay to clump in your hands; we could (and did) sit at the beach and construct elaborate cities. Next to our house was a field of cattails, with maybe a red-winged blackbird or two bobbing on a tassel. Smallish and spindly needled pines, white cedars here and there, ash; a sparse tree line and brackish water, so weedy it looked like a cauldron of wigs.

I've been down the shore a week now. I just love it down here. Especially the lagoon in the back. It is beautiful. The grass is long there, and its bent to the side, so that from far away it looks like velvet.

I loved to be there, loved the greens and blues and the sense of open space, even as it all filled me with a desire to tear apart.

There is also snake-grass, which is multi-colored green & gold. When the wind blows, it looks like gold is rippling through it. I love the snake-grass, but it makes me very sad. I remember the first time I ever went there. I was young & wearing shorts. Now the snake-grass has a very sharp tip, which will cut you if you don't wear pants. I went through a patch of snake-grass, and came out with legs covered with innumerable tiny cuts. It was almost like it was saying, "go home—you don't belong here."

My grandfather built the larger house on concrete blocks like stilts, with a three feet high space under the house, damp and dark and stinking: mud, brine, septic system. We kids played there. It always seemed to be housing the feral: a wild cat we called Mama Cat because she had kittens there every year, a muskrat I fed that dragged back one day with a bullet in its gut.

I don't like the word "lagoon." It sounds like something ugly.
(6/27/70, age 13)

Lots of local people hunted muskrat for pelts and meat.

We call the houses the Big Bungalow and the Little Bungalow, or the Little Cottage and Big Cottage. They have no heat and had no hot water until I was out of childhood, when we put hot water and a shower into the Little Bungalow. Before then we took cold showers at the beach, along the side of the beachhouse, or sponged off from the sink. We boiled teakettles of water for dishwashing. The Little Bungalow, basically two tiny bedrooms and a toilet, has a flat roof that always had a wooden ladder leaning against it and made a favorite play area, especially at night, when you could see stars and stay slightly above the densest layer of mosquitoes.

The Big Bungalow has a galley kitchen, a living room/dining room space: big table covered with oilcloth, a woodframe sofa with mildewy whiskeycolored cushions. Two bedrooms lie in the back, one with two sets of bunkbeds and the blue table that is possessed. In the forties or fifties my grandfather added a porch in front to provide extra sleeping space.

The houses stand one behind the other, painted the green of pea soup or old khaki.

Here are sounds: the thrush of wind in the cattails, the shredding American flag snapping on the beach, sounding like a solemn flagellation. There might be swings instead of empty chains on the decrepit swing set and if so, they skreek by themselves.

Odors: two notes of bay and lagoon. Around the inlet in the half-circle the bulkhead doesn't reach cattails grow to the ruff of washedup seaweed at the edge of the water, several feet of it knit with dead and dying fish and shellfish, moss bunkers, blueclaws, horseshoe crabs in the old days, maybe flipped over and straining their ladders of little claws. The lagoon's black stagnant mosquito trenches and greasy gun-metal soil. Marshgas, brine, dead things, too much breeding.

In 1960 (June), a tank in a BOMARC bunker caught fire, in New Egypt, fifteen miles or so from our houses. The fire fed on the TNT in the missile detonators and burned out of control and the nuclear warhead dropped into the molten mass of the rest, which flamed for nearly an hour. Radioactive particles spread over the ground and the groundwater. Firefighters' hoses rained pools of plutonium-laced water. About a pound of plutonium was left there, too radioactive to move. In 1972 the government, answering cries for protection, installed a chainlink fence to protect civilians.

Psycho had been released that summer—my parents and aunts and uncles went to see it. The movie posters featured Janet Leigh and Alfred Hitchcock and, especially, Alfred Hitchcock's finger, pointing upward to the title, or held in a silencing gesture to his lips. Nobody was supposed to talk about *Psycho*. My parents came home unable to sleep. Hitchcock had decided to make the cheapest movie he could make, black-and-white, no special props, and my elders came home terrified, possessed by visions of Janet Leigh pretending to die in a puddle of chocolate syrup.

I ask my parents if they remember the BOMARC fire and they don't. I ask them if they remember *Psycho* and they do.

"That bastard movie," says my dad, who loves to swear.

I almost never wrote diary entries at the shore—I have just three or four, so my summer days ruffle on, blank, as if they never happened. I brought a diary with me everywhere else but sleeping in my place—the bottom lefthand bunk in the back bedroom of the Big House—I probably had nowhere to hide it. My cousins would have taken it, or my brother, or my parents and uncles and aunts.

By my twelfth year my diary changes a lot, losing the fantasy of

audience. No print, just furious rolling little girl script, and no internal references. No Cindy, just "Dear Diary," though I included the salutation and signed my name no matter how little I had to say.

Dear Diary,
Oh God!

Susanne (5/2/69, age 12)

No matter how moody—I feel awful. Today has totally confirmed yesterday's lamentations. Right now I feel as if I'm leading such a happy life!—my entries still maintain that formality, always on the page under the right date, abruptly cut off if I ran out of room. I felt a responsibility. A sense of purpose. I apologized on and on for my silences, as if someone would be hurt by the blankness of August 6, 1969. I wrote detailed descriptions of practically nothing, grass or cattails or

a sand "city" & a reservoir system for it: It was pretty clever. First, there was a main stream of water coming down from the baby pool, which ended in a deep water hole. Against this water hole was a large dam. From this main stream of water branched three deep water holes, to drain water from the stream & keep too much pressure off the dam. Behind the dam was a deep, unfilled lake, so that if the dam broke, the water would go into it. All of the walls were high, sturdy; of mud, but the dam was the strongest of all. It had a base of driftwood, plastered with mud, and strengthened with stones & seaweed. Beyond that lay the city, with a drive-in, a department store, school, & lots of pretty little houses, all of sand. Sincerely, Susanne

—someone chokeholding her existence, finding it improbable, vital in its parts and slipping.

When I asked my mother how long the DDT trucks had driven past our cottages she said since she was a girl, which shows the obsessiveness of memory mingled with repetition; after a certain number of

times seeing a thing the image reproduces in your head, wildly, like cells in a cancer. My mother was twelve in 1932 when her father built the cottages. DDT arrived commercially in 1942, making my mother at least twenty-two. I don't blame her usually dry and precise memory. I feel like those trucks powdered me in the womb.

They came once a week or so, supplemented by planes: a spume, a round gray meteorological event of pesticide. The trucks stopped only when the United States banned DDT in the seventies. A local man, an environmentalist named Willie DeCamp, remembers a lamewinged robin touched down on his front steps in Mantoloking when the truck went by, the bird twittering, dead after.

In 1952, four years before the year at the end of which I squeezed into the world, the Ciba-Geigy Chemical Corporation bought 1,400 acres along Toms River, a nearby river feeding into Barnegat Bay. Ciba-Geigy chose this land, marshy, scrubbily woody with longtailed grass, for an operations site, as distinct from its corporate headquarters in New York. Cheap, eager labor, lots of useless land for landfill. The low buildings churned out commercial dyes and epoxy resins and plastics, and chemical waste byproducts. These last were disposed of in various ways: in 14,000 drums buried and stored in nonhazardous waste landfills lined with plastic wrap; in a pipeline that a former employee said led from one building straight into the woods, dumping cyanide in the ground; in liquid waste pumped in an underground pipeline built beneath Barnegat Bay into the Atlantic Ocean, a mile from a public beach.

In 1984, armed with search warrants, the New Jersey Division of Criminal Justice raided the Ciba-Geigy plant and spent two days collecting samples and searching.

A long investigation concluded that Ciba-Geigy left a plume of

contamination in the aquifer, the natural underground water system that provided drinking water: a poison plume a mile square and dozens of feet deep, containing ninety-five different chemicals. A migratory plume. A strange new life like a huge amoeba. The Environmental Protection Agency is trying to pump it out but estimates it will be there another thirty to fifty years.

Ciba-Geigy also used its pipeline to transport military waste, including nuclear waste, for a base in nearby Lakehurst. The pipeline ruptured in April 1984 at the intersection of residential Bay and Vaughn Avenues in Toms River, spewing out a puddle of toxins.

Two and a half decades later that spot on the map is the center of a cluster of childhood cancers of the brain and nervous system. Dozens of children are dying, some of rare cancers that may cause them to stay four feet tall into their teens, or distend their skulls, eggplantlike, with tumors. The Centers for Disease Control are there. The Agency for Toxic Substances and the Environmental Protection Agency are there. A half-dozen federal agencies are studying the cluster, with money specially allocated by Congress.

"Some mistakes were made in the past," confessed C-G spokesman Glenn Ruskin.

The EPA list of Ciba-Geigy toxins goes on for four single-spaced near-marginless pages, alphabetical, from acetone to zinc, a list including heavy metals and pesticides.

We lived something like four miles from Ciba-Geigy, though I don't recall knowing it was there. We knew Toms River, of course, the next town and nearest big one, a place to row and to swim.

A mile or so north of us, a company called Denzer & Schafer X-Ray operated a site that made money by reclaiming the silver found in old negatives, painstakingly dissolving strips of images. Chemical stripping solutions leached the metal out. The company used its septic sys-

tem, illegally, to dispose of the stripping solutions. Denzer & Schafer did this for seven years, filling our aquifer with lead. Also arsenic, chromium and mercury; D&S left a total of forty-four EPA-chronicled chemicals.

The D&S plant was close to Potter's Creek, where we crabbed and fished, on the Bayville Road, where we walked to pick berries and saffras roots, and just to walk.

We walked for 2 miles thru desolate land, with no houses around, just cat-tails and bushes. We walked til we came to an old dirt road where Mark told us that old men came with their whores. 2 girls were raped & murdered a while back. Helen & I were getting pretty scared.

In the same way that I collected words I collected experiences, or bits of experiences, as much as I could get.

We both took a stone from it.

Mine is a cream-colored, small stone, pinched at the center, & not very pretty.

Those roads were unbelievably dark at night: a collection of rattling whooping noises in a black bowl. I can see this stone glowing a little there, disappointing when I got home.

But we got in shits of trouble for being out so late. (7/19/70, age 13)

Here's another story, of a man who grew wealthy. His name is Nicholas Agricola, and because of his name I assume someone in his family came from elsewhere to find the brilliant sidewalks of the United States. Maybe not. Anyway, Agricola started his own hauling business.

In the 1960s (the go-go sixties, economists call them) Agricola got a contract from Union Carbide to dispose of drums of hazardous waste for \$3.50 a drum. The waste came from plants elsewhere in the state,

and it consisted of chemical byproducts from the making of plastic for, among other things, Bic pens. Agricola hauled away some 7,000 drums of waste, dutifully, coming back empty, earning a small fortune in sixties money.

Then on an old farm called Reich Farm (a few miles from us, off the road) the absentee owner decided to look over his property and found his fallow land blooming: with some 5,000 drums stamped with the name Union Carbide. He had leased his land, it turned out, to Nicholas Agricola. Drums leaked. Trenches, dug like our mosquito site too feeds into our aquifer and has made its own plume, with an EPA list of toxins that goes on for pages, from acetone to trichloroethylene. Two municipal wells draw water from this plume.

Much later, several thousand more Union Carbide drums were found in the Dover Township Landfill to the south, same stuff from the same period, also leaching into the groundwater.

The northern chemical companies had run out of room, room where no one would notice corroding drums and oozing sludge pits. They didn't seem to think anyone would mind.

"Oh yeah," my mother says philosophically. "Everyone dumped their stuff back there, on the old chicken farms."

"They did? How do you know?"

She answers guardedly, "We used to take walks." She won't tell me any more.

Nicholas Agricola admitted to dumping at both sites and was fined, according to the head of a Toms River organization for parents of children with cancer, \$100. He kept his money and his story has a simple ending.

Being Americans, we don't just dump toxins into our soils but catalogue them, create hierarchies. We have for that the Environmental Protection Agency, which creates lists: lists of sites to watch and investigate, to ignore, to give up on, lists of the worst sites in the United States, the ones that pose an immediate danger. The last would be the National Priorities List, and to deal with these and lesser but also bad sites Congress created a special project called the Superfund.

In 1982 wells in Berkeley Township and Beachwood Borough were placed on the National Priorities List. Testing had found lead in many of them, and the EPA report also lists high quantities of chloride, copper, manganese, nitrate and sulfate. Supposedly all wells were tested and many houses required to tap into the municipal water lines, though our well was never tested. Our bungalows never seemed to exist in any consciousness outside the family's; we also had no street address (rumors ran that our street was named Main Street, but there'd never been a street sign) and did not get mail. It made me wonder if my grandfather had built them illegally, or if he'd put some Bajan spell on us, and made us invisible.

In the fifty United States, Puerto Rico, Guam, the U.S. Virgin Islands and other protectorates like the Mariana Islands lie about 1,100 National Priorities List sites, the worst of the Superfund. One hundred and eleven of these live and leach in New Jersey, making the state, as the *Asbury Park Press* once boasted in a very East Coast way (what won't we brag about?), maybe the most toxic known spot in the world. Though anyone who's driven along the New Jersey Turnpike would find this unlikely, most NPLs lie in the south, in poor rural areas like southern Ocean County, where dumping has been profitable and easy. They also happen to be places where drinking water comes from an underground, easily reached aquifer rather than a reservoir.

Three adjoining counties—Ocean, Monmouth and Burlington—had by the nineties the most National Priorities List sites, twelve, twelve and thirteen, respectively. Lots of these sites have postcard country names: Bog Creek Farm, Reich Farm, Burnt Fly Bog, Burlington County's one site up on Ocean but is much larger, making Ocean and Monmouth Counties rivals for the prize of most documented contaminants. Not to mention the sites like the Dover Township Landfill that should be on the National Priorities List but aren't because their investigations drag on, year and year after year.

The numbers work out elegantly: we have more than 10% of New Jersey's 10% of the swills scattered over tens and tens of thousands of American places.

I spent a lot of my eleventh and twelfth years pining for my menstruation to begin. I can't remember why.

(Oh, if only I can have my menstruation. Jr. High will be perfect)

My women friends tell me they remember feeling that way, but I don't. I remember the time after, which I also recorded: my life ordered by the demands of the Kotex, the only permissible thing for half-Catholic girls in New Jersey to use. The flowery little cases for your purse. The garter belt that held napkins in place, a garish sexual sign that cradled its small white chastity belt.

I went straight to girl's room and Alice saved my seat. I carried the napkin in a paper bag, so it looked like my lunch. But I bought my lunch. We have disposers in my school but they don't work. (2/7/69, age 12)

I write on and on about each menstruating schoolday, like there's nothing more public than blood: I could barely contain it.

Ocean County has a nuclear power plant that's not a simple story. Built in 1969, the Oyster Creek reactor is the oldest nuclear power plant still operating and the only Mark I boiling water reactor design left in service. It has released the most or the second most (depending on who you talk to) nuclear fission materials of any plant in the country into the atmosphere—venting, for instance, 77 curies of iodine-131 and particulates during the seventies and eighties, when the industry average was one or two.

In 1976 three nuclear engineers who worked for General Electric, the plant's designer and operator, quit the company in protest over safety problems. They wrote a seventy-page report detailing their concerns and asked to speak to Congress's Joint Committee on Atomic Energy. The group included the man responsible for performance evaluation of GE's Mark I boiling water reactors, Dale Bridenbaugh.

"I was not assessing the safety of plants—I was doing whatever I could to make sure they kept operating," he testified at the congressional hearing.

The men—Richard Hubbard, Gregory Minor and Bridenbaugh—also testified about a design flaw that causes a shock wave to spread through the reactors' coolant water during loss of coolant accidents—leading the torus, which holds up the reactor core, to jump and drop back down. The men recommended that Mark I's be reevaluated and stressed the "severe hazard" of nuclear plants to the public.

Along with the General Electric engineers a project manager for the Nuclear Regulatory Commission, Robert Pollard, resigned and testified with them. He talked about the way, at the agency regulating nuclear power, keeping reactors open and on schedule "frequently prevailed over reactor safety."

Pollard went on to say of nuclear power, "I believe the American people are being misled."

Boiling water reactors use water to cool down the reactor core, and some of that water becomes radioactive steam. In the Mark I design the steam's held in a holdup tank for a short while to allow the worst radionuclides to decay, then vented into the atmosphere.

The Oyster Creek reactor—under the ownership of General Public Utilities, which also owned Three Mile Island—logged one of the largest releases of radioactive gas on record in 1979, when pipes broke and coolant water levels dropped. By the mid-1980s our county ranked fourth in the nation for radioactive emissions in the air.

Dale Bridenbaugh later talked to journalists about the way plants operated. Not neat as they'd been sold to the public, but alive and oozing. He recalled plants shipping radioactive liquids in crates lined with Kotex. ("We bought Kotex by the truck-load, almost by the railroad-car-full. What keeps a nuclear plant running is lots of Kotex, lots of masking tape, and lots of plastic bags.")

Oyster Creek's still there, five miles upwind of our cottages, on my grandmother's favorite gooseberry patch. We continued to pick there. The plant sucks cooling water in from Forked River, which it's built along, and ejects it—warmed and now holding small amounts of radioactivity—back out into Oyster Creek. The filters at the intake and output pipes act like strainers on a vacuum cleaner, sucking up billions of fish eggs and larva, whole fish, crabs, whatever, and reducing them to a chum of dead sealife. Fish, especially a local fish called moss bunker, swarm around the plant, happy if they don't get vacuumed, stagnant in the water with their mouths open feeding on the pablum the plant spits out. Bunkers love the warm water temperatures. They should be a migratory fish but stay all year. They think we're Florida. In each scam or shutdown the water temperature

drops suddenly and thousands of dead bunkers float, squat and silver, in the river and the bay.

A local highway bridge crosses the river and on any given day it's packed with fishermen, with oldstyle tight jeans and t-shirts over shelved bellies and coolers of beer (Schlitz in south Jersey, or Rolling Rock), whose poles reach into the power plant waters, reeling in the warm, stupid fish.

Scientists from a group called The Radiation and Public Health Project are collecting old baby teeth now, in Ocean County: dug out of the keeping of sentimental moms, cleaned and dropped into little envelopes. They're shoving the teeth under scintillating counters to measure levels of radioisotopes like strontium-90. They're doing this to measure the effects of Oyster Creek, a reactor they consider one of the world's worst.

Already, says Jay Gould, a nuclear scientist who's running the project, "we have results you can't explain with fallout from atmospheric testing."

Each tooth takes seven hours to gauge completely. The counters twitch and twitch, like stranded crabs wrapped in kelp on the shoreline.

The Tooth Fairy Project drew funding from the Rockefeller Foundation and got the support of Alec Baldwin, an actor/environmentalist, a handsome man from a handsome family, of men with dazzling teeth. When families got their letters asking them to dig through jewelry boxes and part with baby teeth the letters came under the signature of Alec Baldwin, a man whose smile doctors hoped would get mothers to part with the molars and canines and bicuspid they'd carefully saved, in jeweler's velvet or plastic wrap or cotton wool.

While I grew up the quartersized frogs I spent my early childhood catching, housing in shoeboxes and letting go disappeared, along with the horseshoe crabs, the snapping turtles, clams, most of the valuable fish like fluke. They left while my puberty came, as if my womb itself released them. The monarch butterflies disappeared, with their orange and black stripes, like the covers of a book. Everything left, just about, but the mosquitoes, which thrived. Chemicals like DDT and chlordane are endocrine disruptors, which cause things like defeminization of females and demasculinization of males, hermaphroditism, blurring of sex characteristics; loss of species through loss of reproduction.

The Catholic Church has a theme of the grief of souls divided from bodies by abortion or contraception: the soul as two parts separated by a wall, a latex wall or a flesh one, the ovum tricked into staying in the ovary. Nobody has taken up the theme of the souls not getting that far, housed in shapeless eggs or weak sperm, swimmily and lost, diverted by chemicals.

Environmentalists talk about "sacrifice communities"—what the Citizens Awareness Network calls areas "generally poor and rural" chosen to house our toxic waste and nuclear power. Our area had pineys and immigrants, and to the latter the place just looked like America: uncrowded, unclaimed, able to glow in the right light. Until recently you could buy a decent piece of land in Berkeley Township for a few thousand dollars. The median household income in 1990 was \$23,000. We were chosen, in a way that sounds almost like a religious calling.

My brother and my cousin Mark and I formed a terrorist group: the Environmental Liberation Army, or the ELA. We were sincere terrorists and very much in the sixties mode of talking about our terrorism and creating manifestos, though we were something like ten,

twelve and fourteen at the time. When *For Sale* signs went up in the pinewoods we spraypainted them with "We Will Stop You! ELA" or "ELA Will Avenge." Sometimes we wrote out Environmental Liberation Army, aping the Symbionese Liberation Army and the Students for a Democratic Society. We thought if we could convince people there were hundreds of us, armed and dangerous, they might stop.

We noticed the shipworms breeding in the warmed water, the docks that collapsed, the missing butterflies and dying fish. Our parents went on, forbidding us to swim after lunch, freshly poured tonic water popping in their hands. It felt to us like our parents did not notice, rapt in the significations of class and leisure, following Hitchcock's finger.

"My wife's family's got a place at the shore," my father liked to say.

When he could find the beds he dragged his side of the family down. We drove my grandfather Ralph to the Atlantic because he insisted—he hated Barnegat Bay—and then he'd stand in the thrashing surf and scream at it, stop! stop! with his hand up.

In the seventies, eighties and nineties the Toms River/Beachwood area has been wracked by childhood cancers—particularly of the brain and nervous system—leukemias, breast cancers, many times higher than normal. My family was not. We've been wracked by infertility, tumors, organs malformed at birth and manic-depression.

As a diarist I learned patience and frustration. Maybe I started the job with frustration, because my diary tends to have an underlying hint of frenetic whine. I choked facts but they choked me back; they stuck, like Legos—clingly but hard to build into anything real. I can know what hung in the water, nested in the soft tissues of the fish. I can't look into the novel of my body and go to the end, where it tells what happened. I have or have had one spectacular multiple preg-

nancy, a miscarriage, a radiation-induced tumor, a double uterus, asthma, endometriosis, growths on the liver, other medical conditions like allergies.

Here are tales of cause and effect:

After low-level radioactive releases in Hanford, Washington, exposed women developed double the rate of thyroid disease and spontaneous abortion (miscarriage).

In a medical study of workers exposed to low-level radiation the majority of the workers developed thyroid tumors.

After exposing female laboratory monkeys to dioxins and PCBs, those monkeys more often than not develop endometriosis.

Liver tumors like mine can be induced by too many industrial chemicals to list.

Low-level exposure to many pesticides causes kindling in the brains of laboratory mice—electrical misfiring, spikes and bursts of activity, like the firing you'd see in the brain of a manic-depressive.

Women in Taiwan, exposed to PCBs in their cooking oil, saw a sharp rise in birth defects.

Female mammals exposed to endocrine disruptors give birth to offspring with deformed sex organs.

Gerry Nicholls of the state Department of Environmental Protection admitted at a press conference that Ocean County well water contains manmade radiological particles, which once consumed begin degrading your body's cells, greedy for fresh electrons.

I have blood drawn all the time to monitor various things. I like to daydream while the vials rush and color about what's in there. Salt-water, red cells, ancestors braided and escaping. A bony geography.

Recently I learned from a researcher at the state Department of Environmental Protection that Berkeley Township along with another

township in Ocean County is being investigated for a cluster of autistic children. "Where we should be seeing one or two we're seeing forty," he said. I keep speaking to researchers, at the EPA, the DEP, the Health Department. All say it's too early to tell anything but admit that pesticides can screw up a neurotransmitter called GABA, which regulates kindling and is implicated in autism. GABA is also implicated in manic-depression (GABA problems can be mapped in manic-depressive genes). In neurological terms the diseases function in similar ways.

No one's ever looked for patterns of manic-depression there, they tell me. It's too hard. Mark and I have the disorder. Maybe my grandfather, whose mind remains one of the most foreign places I've known.

I'm going to avoid Mark like the plague in the future. He's a bad influence. Something's wrong with him. I won't go into it now, I don't want to talk about it. I'll just avoid him, that's all. (7/19/68, age 11)

When I first found my journals, ten years or so ago, the girl I found shocked me: her foreignness and her familiarity. I had believed that as a girl I felt normal.

Today, I don't want to say much. I'm all confused & I don't know—I just don't know. I keep terrifying myself by imagining that I got my ESP from the Devil & he's going to claim my soul for it when I die. And something way down inside me keeps kicking up & being rebellious & demanding something & I don't know what it wants. That program went good & I didn't mess up or anything but that little Something inside me isn't satisfied. (6/17/68, age 11)

Sometimes I think that maybe Earth is an experiment created by scientists on some other world. Or Mom, Dad, Chris and everyone else is in some hideous conspiracy against me. (6/22/69, age 12)

So many things have been disappearing lately. I'm so afraid I'm mentally ill. There are times when I just seem to blank out. God, I'm so scared.
(6/17/70, age 13)

Written in a quick desperate scrawl, no neatness, no handy references to other times I blanked out. My grammar reverting to something closer to the way I talked.

I would love to be able to cast our minds into that landscape, if not the poisons then the spirit that lives there. I want reason. It took a lot out of us to learn to live without being able to think right, at least not all the time, though one of us (why lie now? it was me) found narcotics could still the tooth. For a while.

In the second month I kept a diary, I wrote

You know, what I write down is so uninteresting. I suppose I was thinking of a book, "The Diary of Anne Frank." The book is about a Jewish girl in World War II (or was it I?). Actually, it's a copy of her diary. It's not made up, either, it's true. Sometimes I hope that someone will find my diary when I'm dead, and publish it.

Of course the girl who wrote this did die, done in by a multitude of killers: time, puberty, modern pharmaceuticals.

Getting back to the uninteresting point of view. I've never been in a tornado or hurricane. I've never hidden myself from Nazis or Russians or Red Chinese, or anything like that.

Here I'm in that mode of preciously neat, Univers printing. A lot of diarists say they don't trust themselves. I tell my stories and I do trust myself but I know my mind has been declared legally untrustworthy, like a well on Reich Farm with a sign hung around it.

If there were blood tests for place all I can see is a brackish test tube with a kelp strand, moss bunkers like fat minnows on their sides, and frogs with ova and testes, both useless.

I'm just a normal, every-day, commonplace New Jersey-ian.
(2/27/68, age 11).

This, I feel certain, is a truth.
Perhaps I'll tell.

Postscript: 1974

It's my brother's Spider summer. Not dog days but spider days. It's 1974 and things have been crashing. Nixon's resigned or is going to and a few years ago Apollo 13 crash-landed when an oxygen tank blew (astronauts in there like Spam in a can, Chuck Yeager said). Karen Silkwood's about to crash. My brother has a blue Fiat (Fix It Again Tony) Spider. It has no backseat but I ride in the back anyway, rolled up in the ten inches or so under the rear window. Spiders aren't much more than humanized tins so this is risky but it doesn't matter. I am a lost person. Let me be a bottle rocket.

I ride to the shore with my brother and his college roommate Charly, barreling down the Garden State Parkway with my face smeared into the window like a child's, staring at the stars out of necessity and not sentiment. They're scattered but stuck, like something fine's holding them. I'm the no-backseat backseat person because my body's gaunt from years of narcotics.

Once I had a brilliant hallucination, realer than real life. Like dreamreal and real-real glued together. In it I rotated in a clear bubble through empty space, waving at people who rotated by in their clear bubbles waving at me. I felt like Buzz Aldrin, my favorite astronaut because he came from New Jersey and his mother's name was Marion Moon.

My brother bought his Spider to drive to Trenton, where he has a

summer job with the state Department of Environmental Protection. He was hired to replace somebody whose job was running tests on samples of possibly contaminated water. The first day somebody bored showed him around, his lab, his desk, his samples. It turned out the man he replaced quit working four or five years ago though he kept coming in and getting paid. The lab hung with spiderwebs, dust like moon dust (moon dust smells "just like gunpowder," Buzz Aldrin said). Chris wondered what the guy'd been doing with himself and opened cabinets and desk drawers to discover years of pornography: *Hustlers*, *Playboys*, *Penthouses*, sliding heaps of the stuff. Books with stories about women who had perfect melons and steaming love ovens. He spent a few days cleaning out the porn and spiders and started on the four or five years' worth of water samples. (Some he thinks were contaminated—lead, mercury—most were not. Most, according to a toxicologist I know, would have degraded after five years and become untestable anyway.)

Chris and I find his job hilarious and create a history for the lost guy, who spent the past five years in a state of bored sexual arousal. We don't make up a history for the water sample people, who still drink their water, arcing it over ground coffee or mixing it with tubes of frozen juice. They do it however I make them do it but the fact is, they drink. At the shore Denzer & Schafer starts dumping into our ground and groundwater leftover arsenic, chromium, lead, mercury, chloroform, and it begins its underearth pilgrimage to wherever.

What was it Buzz Aldrin said? Earth looks beautiful from here, I think. Neil Armstrong said, Like a big blue eyeball staring right at me.

Chapter TWO

Little Squalicum

My grandfather told us about the drowned men and he laughed.

They were not his drowned, his greatuncle the smuggler had drowned them, but still he felt proprietary toward them, as though he might have drowned them, and so he laughed. We laughed too, we children, because he seemed to be passing them on. I think of these sinking minstrels as I walk along the licked freezing shore of the Puget Sound. In Barbados people will tell you the casuarina trees moan with the voices of the drowned, or even with the voices of women mourning their drowned. And the trees do moan, and I have no reason to

Chapter Eleven

Radium Girls

I have an 1860s phrenologist's chart. It faces me and my computer, a feud between the smug knowing of two centuries. It maps the brain, or its bulges, with categories like "time" and "sublimity." Phrenologists read character by charting particular spots on the head. I don't know the technique—whether having a large region of sublimity tells if you aspire to become sublime, recognize and love the sublime or simply are sublime. And time? How much you have. Or how far it will seem to go.

When the X-ray was invented, in 1896, doctors tried to find the soul with it, scanning the cranium, the chest cavity, even the hands and feet.

Finding just bone after all, white staff of the soft tissue. And because science found the X-ray—radiation used to penetrate flesh—they found, eventually, atomic splitting and fission and the radioactive heat of nuclear power plants, and the bombs exploded in Hiroshima and Nagasaki. And maybe in the final analysis the rays did what they tried to do at the beginning—exposed the soul by melting the rest away. Here's a fable.

It happened in Orange, New Jersey, during the first world war: a group of women, their hair, faces, arms, necks luminescent (the back of one, beautifully undraped like a Renaissance woman, glowing to the waist). Patches of light on the thighs, on the swell of the calf. Bits of the head, where the hair fell out—at sublimity? time? the node of benevolence?—lighted as the moon. Like stained glass.

The newspapers called them the Radium Girls.

They sat in the courtroom, toothless balding women.

Shortly after the discovery of the X-ray Marie and Pierre Curie isolated radium from pitchblende and watched it glow in the dark. Then came uses for it: the Radium Girls worked in a factory in Orange, New Jersey, near Elizabeth, where they painted watch and clock dials with radium paint, to make them glow in the dark with an uncanny greenish phosphorescence. They used brushes made of hair and mixed their paint from water, radium powder and some kind of glue. Every few minutes the brush ends played out and the women were told to point the ends with their lips. (*It didn't have any taste, and I didn't know it was harmful.*) The Radium Girls painted their nails sometimes with radium paint, playfully, and their teeth, to surprise their boyfriends with a lucid smile in the dark.

The most famous Radium Girl—Grace—blew her nose after working in the factory a while and found the handkerchief alive in the night, lit, spectral.

They became a trinity, the Radium Girls: their souls, their bodies, and the ghosts their bodies gave off.

Grace's last name was *Fryer*.

In another room of the factory U.S. Radium scientists (male) handled radium with lead screens, gloves and tongs. U.S. Radium had files of information on the poisonous effects of radium. The Radium Girls function like girls in Greek myth, set up for a metamorphosis involving beauty, death and light. A true story but a fable because it involves a brilliant transformation.

I live with the Radium Girls. I watch them in the courtroom, dying, glowing. I talk to them. I see their endless physicals, the reports of luminous patches here and here and here: I want to tell them about my endless physicals, the dark spots that turn up that are never supposed to exist. Maybe with their ethereal knowledge they could point to the jar of radium paint in my life, the brush smeared on my lips. I want my cousins and me to line up and be the Radium Girls, glowing lightly in the womb, the neck and in the brain.

"If we could hook you up to a PET scan, off meds, you'd light up. Your brain would," my doctor says. I love her. She looks a little like my Midway House roommate Suzanne, with long straight dark hair, seventies hair.

She says this with deep satisfaction, like she's Tom Edison and hopes to work into the night by the light of my brain. I've seen PET scans: mine would show deep blues and greens and a greenish-whitish glowing patch in the center, in the amygdala (Latin, the *almond*), the center of excitation. The amygdala lies near the frontal lobe, somewhere between the self-perfecting parts and the animal parts on my neurologist's chart. Maybe closest to what he calls *ideality*.

This doctor first put me on depakote: like Lourdes after years of ineffective drugs. Depakote was experimental for manic-depressives then. I had lived with this condition much of my life, and for a long time the only drug widely prescribed for it was lithium. Lithium didn't work for me. It made me fat, gave me scarring acne, and I cycled anyway. The doctor who'd put me on lithium—a stooped gangly man with a scruffy horseshoe of hair—kept prescribing supplements until I took five or six different drugs—sleeping pills, antinausea drugs, tranquilizers and other stuff—with drugs to counteract the side effects of other drugs.

My lithium doctor killed himself with a gun. I found out when I went to get a prescription refilled.

The pharmacist, a woman with a nasal voice, blurted out, "I can't refill this. The doctor has expired."

I thought she meant *prescription*.

"No, doctor," she said, then, "Look, call his office."

Bruce called. The nurse used the same verb—*expired*—in a flat voice. An expired doctor. No one could step out from behind that huge irony. My doctor's wife, I found out later, killed herself too, with pills. I mourned them. He had been a kind man.

I noticed my doctors always had a drug of choice, something they believed in absolutely (proving they too have their gods). I had a haldol doctor, a pudgy man, suave and chilly.

"I have this drug I've found is very useful with my patients. It's called haldol. Sometimes it's not useful right away but when I give them more I find that it is useful."

Haldol creates a blank mind and a body stung with involuntary motor responses: instead of thinking, I kicked my legs and twitched my fingers. I told these doctors their regimens were not working. I hated being the visionary bearing the burden of their faiths.

Depakote and a similar drug, carbamazepine, are newer treatments for manic-depression or, to use the current term, bipolar disorder. Both are anticonvulsants; seizure drugs used to treat epilepsy that doctors noticed also worked on rapid-cycling manic-depressives—those who swing, like me, between depression and mania more than two or three times a year. Rapid cyclers show epileptiform activity on brain wave tests, the spikes and rapid firing that indicate overexcitement of the electrical circuits. Mania is like a little seizure, expressed somehow in mental thrashing.

One day I arrive for an appointment with my good doctor. I come to speak to her, to her long hair, and find her unpacking a box, lifting out something that looks like a Strawberry Shortcake cookie jar.

"Former patient," she says wryly. "They stay in touch and send stuff. They start to think of me as Mom."

I feel sheepish. I think of her as Mom, though she's my age. She's bipolar like me, a fact she tells some patients and not others. Her brain like mine would catch fire and glow in the magnetic resonance chamber, with a moonish glow in the center. Her name is even Mary like my mother's: Mary of the Moon.

When I was a child I was diagnosed with petit mal, a mild seizure disorder that's generally not treated. It consisted of trance or fugue states lasting a few minutes. Almost out-of-body time. Because the disorder consists of nothingness I can only remember the fugues if they happened in a memorable frame. Once I stepped before a cat, that yanked to a halt in front of me. Once I sat in front of the grocery store in Bayville with a Coke can in my hands. I snapped to as a middle-aged

woman tried to stuff dollar bills in it. When my eyes flicked up to her she flinched and stepped backward to her car.

"I thought she was blind," she mumbled to her daughter. "I thought she was blind."

A lot of the Radium Girls licked and dabbed and luminesced for the war effort. They painted watch and control dials for the soldiers, so they'd be able to see. We went back to the world of chemicals in the second world war, when our chemists bent masked and gloved over beakers and microscopes creating biological weapons. The science of organic chemistry took off then, in the course of learning to attack the human body—to kill its cells, rewire its brain, jelly its limbs and muscles. Its basis was the restructuring of the carbon atom, the building block of life, into new and insidious molecules that could penetrate and alter the basic functioning of the body. Many biological weapons were tested on insects. After the war, with stores of chemicals left over, it seemed reasonable to use them, somewhat diluted, to kill the bugs they'd killed with twitching efficiency in the labs.

The power of organic chemicals to alter basic substances made them ideal for industrial use—as solvents, catalysts, coolants, the bases for more industrial chemicals. We began to use classes of chemicals like the organophosphates—little changed from their original form as World War II's nerve gases—on our food crops and grazing grasses and in our factories, where they mixed into the sludges we sluiced out onto the land. Organophosphates work industrially and as pesticides, and they do kill people pretty frequently, mostly factory workers and farmers who spill or inhale them. Finnish suicides like to eat parathion. Americans put them on their lawns and gardens, under names like malathion, diazinon, fenthion.

Because we had planes left over from World War II and its bombing campaigns we began to use them to dust and drop pesticides from the air, at times spraying whole quadrants of the United States to bombard bugs like gypsy moths (in New York and New England) and fire ants (in the South), in a drive for what the government called *final eradication*.

Many chemicals attack the nervous system and the brain. They cause seizures, sometimes lasting epilepsy, wild emotional changes. Organophosphates do this, even in bees: poisoned bees fight and frantically clean themselves, like humans with obsessive-compulsive disorder, in the twenty minutes or so before they die. Radiation can have the same effect, by attacking the structure and functioning of the neurons. Chemicals and radiation, and chemicals and chemicals, potentiate or enhance each other; the human liver, for example, has an enzyme that helps protect it from malathion, but this enzyme is deactivated by other organic chemicals.

The children of Woburn, Massachusetts, where two wells had been tainted with trichloroethylene (also in the ground at Ocean County, at Denzer & Schafer, Ciba-Geigy and Reich Farms), developed high rates of seizure disorders. So have the children of the Ukraine and other parts of Russia after Chernobyl, the Russian nuclear power plant that melted down in 1986. The children of Chernobyl have also begun showing high levels of schizophrenia. Poisoning with lead, which shut down some of the Beachwood/Berkeley Wells, creates epileptic disorders too.

Manic-depression is a sophisticated seizure disorder, one that, like the response of the bees, makes the mind thrash in a frenzy of physical emotion. Mine probably began life as the petit mal, a sign that the circuits couldn't speak to one another the way they should.

The brain works on a complicated system of neurotransmitters—

chemicals—that tell the neurons to give off electrical impulses. Too many, you're overstimulated or manic: too few, understimulated or depressed. Once your brain cells learn to misfire they'll keep doing it; this is *kindling*, which is why a dose or two of a neurotoxin can leave brain function altered forever. Something walks into your mind and throws the lights on, and then they throw themselves on, over and over again.

Neurons look like a cross between regular cells and spider webs: spreading their wet nets out.

Once I went to the opera and heard a singer sing the top note of "*Mi chiamano Mimi*" in such a limpid glassy tone that my brain lit up. There's no other way to say it: my skull starved, a supernova. I was out of myself.

I wrote in my diary about a seizure, maybe drug induced, I had at fifteen:

I went into some kind of fit earlier tonight. I was in my bedroom on the bed when all of a sudden all my muscles went all tense & tight & I was paralyzed, couldn't even move my mouth to scream. It lasted a few minutes. (8/19/72)

The neurotransmitter GABA, which is the traffic cop of neurotransmitters, directing and regulating them, is stimulated by depakote and similar seizure-inhibiting drugs, and so can stabilize a brain system that has been disrupted.

Autism, which has no satisfactory medical explanation, can be treated with depakote.

Ocean County has a history of disease clusters of the brain and central nervous system: first the childhood cancers, then autism. Widespread contamination with toxic chemicals, especially organophos-

phate chemicals, is the theory now for the cluster of autistic children in the county.

The dump sites in Ocean County—Reich Farms, Dover Township Landfill, Ciba-Geigy—are pools of toxic chemicals, including pesticides: DDT; chlordane, like DDT but deadlier (2.5 parts per million of chlordane in the body will cause death to liver cells); organophosphates like aldrin (which even in small quantities leaves birds, rats and dogs infertile) and dieldrin. These lie alongside industrial chemicals like toluene and benzene, carcinogens, many of these chemicals potentiating one another. They block oxidation, inhibit the function of vital organs like the brain and adrenal system, cause cell death and attack the genome within the cell.

The Human Genome Project, run by the Department of Energy and the National Institutes of Health, has mapped the chromosomal site that holds the gene for manic-depression. It's on chromosome eight, even, midpoint, at the waist of the pronged chromosomal hourglass. Chromosomes hold our individual map—a map that gets smudged with use—coded in the amino acids of DNA. My mother and father, my grandparents, my greatgreatuncle the wrecker of ships: all reduced to information. In dominant and recessive genes, explaining both who you could have been and who you are.

Somewhere there's a chromosome holding a need—unvoiced—to make shipwrecks and drownings.

Radiation breaks chromosomes, like a woodchopper flailing at logs; broken chromosomes may reattach in disordered sequences, or pieces may be lost. These losses create damaged genes, and also allow defective recessive genes to become expressed, as their healthy dominants fly off.

My grandfather was a depressive man. His mother sounds like she had manic fits—hypersexual, impulsive, narcissistic—though not the rapid-cycling epileptiform fits I have and I think Mark has. Two other of the cousins suffer from severe depression.

My doctors loved my family history. They felt they wrestled with my genes, like characters in the Old Testament wrestling spirits. They knew me as someone born with seven demons inside. Though there's a lot written about the neurological and physical effects of chemicals and radiation I've never met a doctor who liked to talk about that.

A Department of Environmental Protection researcher named Judith, a woman assigned to Ocean County, told me, "It's heart-breaking. Everyone wants me to explain what's wrong with them."

I don't expect anyone to explain what's wrong with me. No one can explain what's wrong with anybody, I don't think. Though I don't believe in coincidences of this magnitude either: clusters of children with brain disorders, toxic plumes and clouds, radiation spewing in the air. Every vital system of my body disrupted: an arrhythmic heart, a seizing brain, severe allergies, useless reproductive organs. Either it's Sodom and this is the wrath of God or it's the wrath of man, which is thoughtless, foolish and much more lasting.

Their corsets glowed. Heavy enough to stand on their own, torsos like marble Aphrodites, spirit women. The hourglass, the womanness.

The five Radium Girls who'd irradiated their own clothes did something no one like them had done before: in 1927 they took U.S. Radium to court. Thousands of women had performed the same job but a lawsuit seemed farfetched—at the time no body of law said an employer owed employees workplace safety—so only these five tried

to litigate. Everything about them got examined many times: hair, clothes, bodies. They died throughout the trial. They had nothing as subtle as cancer but radium sickness, not cell mutation but cell death. First their teeth fell out, their hair. Their jaws abscessed and their bones decayed, killed from the inside. Doctors supplied by U.S. Radium diagnosed syphilis and other things, like phosphorus poisoning.

Marie Curie, the pioneer of radium science, read about the case. She was appalled at conditions in the factory; in France, she said, radium workers used protection. She recommended the Girls eat raw liver to strengthen their blood and shook her head. (*There's no means for destroying the substance once it enters the human body*) In the courtroom the five were too weak to raise their hands to take the oath.

A few interested doctors exhumed the bodies of other dead dial painters. One dug up the body of a young Italian immigrant, whose death certificate had said "syphilis," and wrapped her cankered jaw in unexposed film. In a week it carried the print of her radioactivity.

The Girls won \$10,000 each and an annuity, money that went to their survivors, and helped create the concepts of safe workplaces and environmental medicine. A decade later Marie Curie died of radiation-induced leukemia.

World War II broke out soon after the death of Madame Curie: the mother war, spawning such a tough-lived generation of little wars: the Cold War, the war on bugs and weeds, the war waged by industry on any substance that couldn't be altered by things found in nature.

The small war of nuclear power plants, born of the bomb and the promise of control of all that power.

When my good doctor first prescribed depakote, my husband brought me in. I was still a new patient of hers, and she'd been casting

around for what to do, unhappily renewing prescriptions for a drug called verapamil—a holdover from my last doctor. I'd called Bruce in his office at graduate school, sobbing and babbling, telling him our house had filled with poison gas and my brain was on fire. He found me on the front doorstep and got an emergency appointment.

After a week or two on depakote something—some thrashing thing—snapped off.

I go several days without sleeping & the something huge is growing
(7/5/87, age 30)

It has everything to do with light. And sleep. With the brain kindling like the sea at night, a huge swell of phosphorescence. Or turning off, a nothing, an undertow.

Periods of normalcy and then.

I know to worry if I quit sleeping. Two nights without sleep and I need to play with meds (that teenager still, rearranging her own consciousness). My record: one month of no sleep whatsoever. I lolled through the night with a wild party going on in my head: voices, lights, movement. My thoughts fragmented. I don't remember it well; I don't remember the poison gas episode at all. Like a drug stupor.

I just remember my house at night, learning the low almost sexual cry Bruce gave out when sleep came on him. What announces itself with the sun gone and the lightbulbs out—the glowing red digital clock, the watch flaring up at a button push, cats' eyes, blue X-ray glow of television in the dark.

Mania is about memory. It crowds your head because there's too much there to begin with and in mania you remember all of it at once. One night I recalled, looming intact in front of me, page after page of a book I read in fifth grade called *Cheaper by the Dozen*.

The mother in the book, I read, called rude things "eskimo."

"Don't say that. That's eskimo," she snapped at her children if they said "God."

I didn't want to know that detail. I had to spend the rest of the night wondering why *eskimo*.

Mania starts out exhilarating and ends in panic. First a smoldering horror—like the gas—then depression. The bubble collapses; it has to collapse. Once after a long high period I smashed my dishes. I've torn page after page from my journals, feeling like I could erase myself from the world they represented. Depressed, I become to myself an intolerable idea.

At eighteen I became a human being again. I'd quit street drugs at seventeen, and began facing the drugs I could not control. My brain chemicals, and the chemicals given by legal prescription. Before I had swallowed a mind, a place to be and a way to be: *goofy pills*, *silly-cybin*, *ups*, *downs*. I missed that—the absoluteness of the claim, of the following through. Pharmaceutical names have the same lushness, the same emotional hope, maybe a faint thrill of Greek tragedy—*thorazine*, *depakote*. Two warriors that ring the walls of Troy. Sometimes a cynical implication of relief: *soma*, *halcyon*, *elavil*. Less truth in advertising.

When I tell my doctor about my adolescence she dismisses it with a rake of her hair. "That's easy," she says. "You were self-medicating."

Depakote, which I've taken for nine years now, is a small pink oval, sweetish-smelling, not like candy but like dusting powder. Like something that, at the age of nine or ten, I'd have brought my grandmother in a pale canister. I'm told the sweet coating masks a nauseating flavor.

Depakote treatment's been the kind of success that makes other

people call you a *different person*. Which I am, a blend of me and its chemical underpinning, valproate: a depakote person. Which worries me in some ways: when I say "myself" I lie by simplification. My thoughts are medicated thoughts. Of course, in mania I was not myself. In depression, people say, I am not *myself*. What exists, in the hum of that word? Depakote, little pink eucharist. The real eucharist, a chip of divinity. Hourglass chromosomes and threads of DNA; subdividing more, the adenine, guanine, thymine and cytosine—the four bases of the genes, swinging in their nineteenth-century blousy white cottons, their square suits, Bermuda shorts, in their peplums and Capri pants and pillbox hats.

There are the viruses I've had and my ancestors have had; viruses enter your DNA and resequence it. There's the pit lined with plastic and sludge, the slow clouds of DDT, the water my uncle had to take home because it had become part of his family.

The alpha rays, the beta rays, the gamma rays. The free radicals radiation and toxins make in the body, like hydroxyl—unstable oxygen molecules minus an electron. Hydroxyl will enter the molecular structure of DNA and take what it needs and leave another you.

I am, said the Buddha, is a vain thought. *I am not*, said the Buddha, is a vain thought.

Catherine of Siena said to God, "I am she who is not, and you are he who is." I've always admired her, having lived in her city for a while—Siena, a walled city on a hill, a medieval city in Italy. A country many poor people left so they could go to another place and eat radium. Where Catherine, like Mary, has become a stained glass window, a woman who cut off her hair so she'd never have to marry, now glowing white and blue and emerald, mouth open, so the light goes through her, and also she swallows it.