

CAROLYN MERCHANT

My Life 1936 to 2022

Early Years:

I was born Carolyn Merchant in Rochester, New York on July 12, 1936, to my mother Elizabeth Barnes Merchant and father George Eugene Merchant. I soon had a younger sister, Ann Merchant Boesgaard, born on March 21, 1939. I came home from the hospital to a white colonial house on a little hill, up a few steps called Cobbs Hill Drive. My mother had been born in Rochester, and my father moved to Rochester with his family at a young age. My father was the head of a coal company while my mother stayed at home and raised us. We lived on Cobbs Hill Drive for a few years and then moved to Antlers Drive in Brighton, on the southern edge of Rochester, after which we moved to 23 Roosevelt Drive. We moved several times when I was young.

My father unfortunately was not able to get enough coal to supply his clients during the Depression and he began drinking. My mother split up with him when I was in third grade and then we moved to 83 Canterbury Road, which was our home for many, many years until I was in tenth grade. After my mother and father were divorced, we moved in with my grandmother, Estelle Barnes Davis, and my Aunt Aurelia Huntington. After the divorce my mother had to come up with her own income. At first, she worked at Sibley's Better Dresses, a department store in downtown Rochester. After a year she took a test, and she absolutely aced it, after which she got a job at Eastman Kodak Company in the accounting department. So now she had a slightly different commute to downtown.

In the back of our house at 83 Canterbury Road, there was a subway. It was above ground when it passed our house, but it went underground when it got to downtown Rochester. It was in the bed of the old Erie Canal, and our house looked over its banks. The canal had first been built in the nineteenth century, and after they moved it south and became the Barge Canal, the city built subway tracks in its bed. When it got further down into Rochester, it went underground. My mother would take that subway and get off downtown and walk to work at Eastman Kodak Office Building on State Street, and after work, she would take it home.

My sister and I would go a few doors down the street to the top of the bank where the concrete wall came up the side, and she would walk across the tracks and up the concrete slab, where we would be waiting at the top. We were not allowed to go down onto the tracks. And then we would walk home with her, holding her hands. My Aunt Ollo would have cooked the dinner for all five of us.

We had a beautiful old two-story house, with four bedrooms. My Aunt Ollo lived at the very top in an apartment in the attic, so she was two flights up. My grandmother lived in the main bedroom on the second floor that looked out over the street, and my sister and I shared a room until we got older and then we each had our own separate rooms.

Living in a house with five women taught me a lot. I knew that women could do anything, and that was a great lesson. They were all great role models. So, the fact that I didn't have a man in the house who took care of everything, but women were in charge taught me a lot. That gave me a role model unconsciously to know that I could do anything I wanted to. It was definitely a subtle message because there were only women. My mother had an outside job and worked, while my grandmother and aunt took care of us. Women were in charge, and that was what we unconsciously absorbed.

Growing up, my sister became interested in astronomy and ultimately astrophysics. When we were little, we had books that our aunt always read to us, and one book was called *The Star People*. It was a series of stories about the constellations of the stars. I still had that book until recently, but I sent it to her because that was in her childhood memory and made her interested in astronomy in later life.

My Great Aunt Ollo was like another mother figure to us. She was always there for us. She helped us cook, and if one of us would get in an argument with the other, she'd say, "Come on, Annie, let's go bake a cake," or "Carrie, let's go bake some brownies." She was very helpful in teaching us the kind of skills that one needed in order to be in charge of a household. And she had been a wonderful kindergarten teacher and therefore was able to help us with our reading. She had cards on which she had written words that helped us learn the words and how to spell them. She was like having an in-home teacher, and was really helpful to us in getting a leg up on the others in school.

My mother had gone to Vassar College, and she dropped out after two years to get married, but she was very good at mathematics. She was a brilliant mathematician, and she had taken two years of math there. And so, although she first worked in the Better Dresses at Sibley's Department Store, then she got an interview at Kodak, and she absolutely aced the exam and the interview. So, they gave her a job in the accounting department, and she learned accounting through the department. At one time, they were about to put out the annual report. In the annual report, my mother discovered an error the day before they were going to publish it, and so they had to hold it back for two days and reprint it and then publish it. She got a lot of praise and a raise, but she should have been the head of the department. In those days, women weren't assigned to those executive positions. But she should have been, and she would have been wonderful at it.

I remember particularly in 1945 at the end of World War II, that we were sitting on the front porch at 83 Canterbury Road in Rochester, NY, and we heard many sirens and signals go off, announcing that the war had ended. And I particularly remember a young man riding down the street on his bicycle dragging a sergeant's cap upside down at the back of his bicycle.

I was very interested in carpentry, and I had wanted to be a boy, but I was a tomboy, and I was very interested in building things. And my Aunt Ollo who was home with us, was very good at that too, and she taught us how to use hammers and nails and saws. She helped us build a treehouse in the backyard, where there was an elm tree. Now, most elm trees have branches that go up at angles, but the elm tree in the back of our house one branch that first went to the side

and then up and then another that went straight out, so it was perfect to build the base for a treehouse. And we built slats across the tree that we could climb up on. My Aunt Ollo helped us do this, and I learned carpentry from her. When we built the treehouse, we built sides on it, and benches in it on which we could lie down. It was right at the back fence, and it overlooked the subway. So, we could be up in the treehouse and record the times that the subway cars went by on a piece of paper. It was a lot of fun. The treehouse had a trapdoor that was on hinges, so I could lock the trap door, and lock my sister out.

I loved to read and up the street from us was the Monroe Public Library, a branch of the Rochester Main Library. First with my Aunt Ollo, we would go up, and check out books from the children's room and then later the upper level when I was older and able to go myself. We had to cross Monroe Avenue, where there was a traffic light and a lot of traffic. It was four lanes wide, so we had to be very careful. But the library was right across the street. When we went into the library, we could check out books and bring them home to read. I loved to curl up on the living room couch with a book and read.

In third grade, I became a Brownie Scout, which was a wonderful experience. Then, in Girl Scouts, we could go further and earn badges from doing activities in the Girl Scout Handbook and sew them onto badge sashes. Every time we received a new badge, we would sew it on the sash. The Girl Scout handbook had pictures of the badges and the activities that you had to do to get the badge. After school was out, we went to Girl Scout meetings held in the rooms associated with St. Paul's Church. Miss Harris was the Girl Scout leader who lived nearby on Vick Park B. She was the wonderful head of the Girl Scouts; she was very kind to everyone and very knowledgeable. She would give us ideas and then we would follow through on them. She had a weekly quiz in her office, and you filled out the answers and put them in a drop box for her to correct and comment on. She would also ask you questions that you had to think about. All these things made her a great leader.

We went to St. Paul's Episcopal Church and after church, we went to Sunday School. Later, when I was in High School, I was confirmed in the Episcopal Church. In order to be confirmed, we had to study the Bible and the Old and New Testaments. In High School, I became an agnostic. The reason was that we had a wonderful teacher in the eleventh grade named Carl Lang, who taught us philosophy in a course called "American Life." We read Socrates's *Symposium*, Machiavelli's *The Prince*, and Karl Marx's *Communist Manifesto*. We also read parts of the Bible, and other books right up through the twentieth century. He inspired us to read philosophical accounts about the world. We had to write our "Philosophy of life" for him in the eleventh grade. To do so, he taught us many different things about religion and God. So, when I wrote my philosophy of life, due to his teaching, I stated that I was an Agnostic. Through his "American Life" course, I came to understand and love philosophy and to start questioning things I had been taught. When I got to Vassar college, I took a philosophy class from Professor Philip Noehlin. In it, we read Anselm's proof of the existence of God, and we realized that there were logical flaws in it. It was then that I became an atheist.

Some of my early engagements with the natural world occurred when I was a young child and lived in Rochester, New York on Landing Road South. We had some neighboring kids whose father helped us to make butterfly nets. We would take a pole and then put a hanger around it in a circle and bind it to the pole. Then we would make a net and sew it onto the rim and run out into the backyard and catch butterflies. When you caught a butterfly, you would then have to pinch its thorax so that it died and then—but before it got hardened—we would mount it in a box on a pin with the wings spread apart. We caught lots of butterflies and moths and mounted them in several cigar boxes on pins. It was a great way to learn the different species. We would then put labels on the pins to identify what they were. It was collecting insects and having butterfly and bug books that how I became interested in nature and identifying the creatures of the world.

In the summers we would go to Canandaigua Lake (which was one of the five New York State “finger lakes”) to visit friends who had cottages there. We didn't have camping equipment and my mother was working, so we didn't do family camping. But there was a Girl Scout Camp that I went to where learned how to camp. It was called Camp Beechwood and was on Lake Ontario. We could go for two weeks at a time in the summers. We had to have sleeping bags, and the first sleeping bag I got was from a neighbor, a friend of my grandmother's just across the road from Canterbury Road on Barrington Street. He had one from World War I that was a down sleeping bag, and it became my first sleeping bag. Many years later, after I had grown up and moved to Berkeley, California, we had some land up in Sonoma County, and were able to go camping up there. We built a tent platform on it with the help of friends. And we also went camping in the Sierras and in campgrounds around the Bay Area.

Growing up in Rochester, I loved hiking on my own. When I was old enough, I was able to go up Canterbury Road, and then turn right up Culver Road, and across to a little park. It had a Wide Waters Pond there from the old Erie Canal which was used for skating in the winter and row boating in the summers. When I was in high school, I was able to take empty canning jars, and get water from the pond and bring them back home, where I would let the water vegetate, and look at the little organisms that would develop in them. A friend of my grandmother's from across the street had an old 1870s microscope, which she gave to me. I fixed it up and learned how to make slides of different organisms and draw figures of them.

I was a pretty good artist and had gone to the Rochester Art Gallery from seventh grade on. I was particularly interested in making sculptures in clay. My two best friends, who were also artists, and I got out of school early at two o'clock on Thursdays and would walk to the Rochester Memorial Art Gallery. Both their mothers taught at the Art Gallery. My friends' names were Patricia de Gogorza and Barbara Jenks, and they lived several blocks away. After I met them and I learned to ride a bicycle, I was able to ride to their houses to play with them. We played baseball together, read books together, and were in a Girl Scout Troop together. Patricia's mother taught sculpture, and Barbara's mother taught painting at the Art Gallery. I loved sculpture, so I took the sculpture and pottery classes. I loved making animals and made one of a

guy sitting with a dog by his side, which I still have. And we were then able to glaze them with colors and fire them in a kiln. I still have some of those sculptures today.

With the microscope, I made the drawings of what I saw through the lens. My artistic ability enabled me to make drawings on beautiful paper with nice pencils. I then put them together for a study of "The Microscopic Animal Life of a Freshwater Pond," which I submitted to the Westinghouse Science Talent Search. Then I also had to take an examination. I started working on the drawings in Mr. Bloom's class in tenth grade, when I took the exam, and I, apparently, aced it because I had always loved to read science books. And as a result, I became one of the forty finalists in the 1954 Westinghouse Science Talent Search. I then got to go to Washington, DC for the finals. I took the New York Central Railroad, along with another guy from Rochester who was also a finalist. When we got to Washington, they interviewed us, and then chose ten finalists. There was a first prize, second prize, and I was one of the eight honorable mentions, so I was one of the top ten in the nation. I was good at drawing, as well as modelling clay, and that helped me to do the drawings through the microscope of the animal life, which was one of the best parts of my project. I wrote up a page about each one and took the slides and drawings I had made to a Biology Professor the University of Rochester. He helped me identify the actual scientific names—the genus and species, on each slide, so when I submitted my project to the contest, I had the names, descriptions, and drawings of each microscopic animal.

High School

I attended Monroe High School in Rochester, New York, from 1950 to 1954. In high school, I had a friend who became a boyfriend named Nicholas Van Deusen, whose father was a professor at the University of Rochester. Nicky was very interested in music, and together we would listen to records of classical music. These were the old 78 records, and we would listen to them on the phonograph. Nicky would walk down the room conducting, and that was how I learned to appreciate classical music. We then went together to the Rochester Symphony Orchestra concerts, and I learned to love live classical music. I loved Mozart, Mendelssohn, and Bach, especially Bach, which was much more rigorous. It was incredibly marvelous to listen to.

The Rochester Red Wings baseball team was a farm team of the St. Louis Cardinals, and in High School, Nicky and I used to go to the ball games together. We weren't allowed to be out at night, but we would go on the bus to the afternoon games in the Red Wings ballpark. We would get seats, early on, usually in the bleachers, but later as we were able to, we would get seats on the first base side if possible. Baseball was a way to coordinate your eyes with your arms to be able to hit a ball. We, of course, had to play softball because we were girls, but we had a softball team in our grammar school, Number 23 School, and I loved to play. Later in college, I played softball at Vassar, and we played other teams in the area. There was a woman who lived down the hall in my dormitory, whose name was Helen Gillotti. She had been a semiprofessional softball pitcher. I was the only one with the courage to catch the fast underhand

balls she threw, so I was the catcher on the team. I had my catcher's mask, chest protector, and a catcher's mitt. She threw incredibly fast balls, and I would catch them and throw them back. In all the four years we played at Vassar, only one person hit the ball, and that was a home run, because the ball she hit had been pitched so fast.

The Cold War of the 1950s was taught in our high school and college American history and American life classes. The Cold War was something that we could read about, along with books on World War I and World War II. Because there was no actual war going on most of the time I was growing up, it helped to shape my life because I didn't have to worry. But during World War II, we saved tin cans, and took the lids off, and crushed them. We collected them in boxes, and then took them to the store up the street, turned them in, and received change for them. I have memories of the duck-and-cover drills on school days. We all had desks—with a chair that pulled into the desk with a slot under the desk for our books and the top of the desk to write on. When the sirens would go off, we all had to get down on the floor under our desks and be very, very quiet.

I always assumed I would go to college, because my mother had gone to Vassar College for two years, but then left to get married. When I was ready in my junior year to think about college, she joined the Vassar Club. That enabled me to get a scholarship from the Rochester Vassar Club along with my Westinghouse Science Talent Search scholarship. But my mother still had to take on extra work to earn enough money so that both my younger sister, Ann, and I could go to college. To do so, she got a job in the Accounting Department at Eastman Kodak Company in downtown Rochester on State Street.

I took the train from Rochester to Poughkeepsie where we would get off and take a large limo that would hold six or seven of us to the campus. In my first three years, I lived in Josselyn Hall, one of Vassar's great dormitories. There was a quadrangle that had four facing each other across a lawn with Jewett was on the edge and then next to it was Josselyn. I lived in Josselyn for my first three years and made very good friends there. For my first three years, I had roommates, Melinda Morrison, from Newburyport, Massachusetts, and Catherine Allison from Chicago whose father had been a physicist. And I had a younger friend, a year younger named Judith Oppenheimer Loth, whose father was Monroe Oppenheimer. He had been a New Deal lawyer in Washington and was extremely smart. And he would come up to Vassar from Washington to visit us, It was very special seeing him drive up. Everyone would be looking out the windows to get a glimpse of this New Deal lawyer.

From 1954 through 1958 was the first time I'd really been away from home, except for two-week summer camps on Lake Ontario. My mother drove me to Vassar and helped get me settled in. I had some furniture we took from home to have in my room in Josselyn Hall. Josselyn had a dining room where we would go for breakfast, lunch, and dinner and sit at tables with other students in the dormitory where we got to know them and hear about their lives. It broadened my world and my experience to hear about the places where they had lived and the experiences they had when growing up.

Vassar was also very powerful, because at that time it was a woman's college, and so the classes I took had only women. We learned that as women, we could do anything. I had some favorite classes and professors there. I was a chemistry major, and one of my knowledgeable and powerful chemistry teachers was Ms. Plunkett. But I also fell in love with physics and philosophy because to graduate, you had to take courses in other departments to get a broad education. My Physics professor was Margaret Waggoner who had gotten her degree from Stanford. In philosophy, I studied with Philip Nochlin, and he taught me how to read philosophy from the Greeks right on up through Wittgenstein in the twentieth century. He was extremely interesting as a professor to talk to after class about philosophy. I also audited a philosophy class taught by Vernon Venable, who taught the class from a historical point of view. Through him, I learned to love the history of philosophy. My friend, Judith Oppenheimer Loth, had been a student in his class, and she and I were friends in Josselyn Hall. She was a year behind me, and we would read Kant together and other philosophers and analyze them. I also went to listen to Vernon Venable's lectures because she was in his class.

I really wanted to do biology because I had done biology experiments in High School and I was fascinated with microscopic animal life. At Vassar, they wanted you to be able to take classes that would make it would be possible to get a job. The Chemistry Department provided the kind of background so that when you graduated, you could work for a chemical company. I worked at Eastman Kodak Company in Rochester in the Kodak Park chemical laboratory in the summers, where I learned how to test the acetate base of film to make sure that it was chemically correct. That experience helped me and showed me that my chemistry major was very helpful.

I had to take several other science classes for my major. I took a physics class with Margaret Waggoner, who taught it from the point of view of history. When we studied Newton's laws of motion, we read Newton. And when we studied Galileo's laws of falling bodies, we read Galileo. And we read nineteenth-century electricity and magnetism when studying those subjects. She had gotten her PhD at Stanford, where she learned how to do history of science. From her, I learned there was a field called History of Science which was very exciting and interesting. I also took a philosophy class with Philip Nochlin, in which I learned how to read history of philosophy and logic. So, I asked the two of them, "What should I do when I graduate from college?" they said, "Well, one thing you could do is to work for a science magazine and write scientific articles and publish them in the science magazines," but that didn't appeal to me too much.

And then they said, "Or you could go to graduate school." Philip Nochlin said that he had had a former friend named Joan Bromberg and that he would write to her and ask her about history of science because she had studied that field. She wrote back and said that there was a great program at the University of Wisconsin at Madison and that Erwin Hiebert was a wonderful professor there. But both Ms. Waggoner and Professor Nochlin said that I should first study more physics so that I could do the history of physics from a more knowledgeable perspective. So, I took classes in electricity and magnetism, thermodynamics, and math physics. And in the meantime, I had applied to Wisconsin and had been admitted. And at that time, there

were only four universities in the country that taught history of science at the graduate school level. Wisconsin, to which I went, was a very exciting place.

My sister Ann, who had graduated from Mount Holyoke College, was driving across the country with her friends to visit the national parks. She went through Madison and found an apartment for me just above Lake Mendota.

The University of Wisconsin had a large campus up on a hill. The History of Science building was at the bottom of the hill in a little courtyard. That's where that the office of the History of Science was, and where my professors Erwin Hiebert, William Stahlman, and Robert Stauffer all had their offices. You were required to have a broad background, so I took Philosophy classes as well as History of Science classes. I loved the History of Mechanics and the class on Conservation of Energy and Momentum. I had learned to love History of Science from Margaret Waggoner and now I was going to Graduate School to learn more about it.

Erwin Hiebert became my major professor at Wisconsin. He specialized in Nineteenth-Century Thermodynamics, and he mostly sponsored graduate students in the nineteenth century. But he agreed to sponsor me because I was doing History of Physics, especially at the end of the seventeenth century with Newton and Leibniz.

I loved the History of Physics, as I had learned it from Margaret Waggoner at Vassar. So, at Wisconsin, I began to take History of Science and Philosophy classes. I took a class with Erwin Hiebert on the History of Thermodynamics in the nineteenth century. I also took a class from Robert Stauffer on the History of Biology, that went back several centuries. And I took History of Philosophy classes for my minor.

The University of Wisconsin Library had a many books in their rare book room as well as in the library relevant to my interests. My dissertation was going to include the Middle Ages, up to the seventeenth-century with Galileo and Descartes, and Boyle and Newton. I would go to the library and check out books, and then to the Rare Book Room if I needed something there. In the Rare Book Room, they made sure you were not going to touch or hurt any of the books that they brought to you. You had to sign in, check all your gear at the Front Desk, and they would give you just a pencil and paper so that you wouldn't get any markings in the books. You would sit at an large table and they would bring the books you requested from the stacks or from the Rare Book Room to you. You could have only one book at a time to read and to take notes.

Eventually when we got laptop computers, we could take notes on the laptops, but initially, it was all on note cards. You had to have the note card, and on each of which, there was the topic of the note card on the top and then on the side, you would put the reference and the page numbers. You would write in the note cards so that you could then take the cards and rearrange them in the order that you wanted to use to write your chapter. In Wisconsin, there were other graduate students in the program. We all had a small shared office in our department so that we could get together and talk about ideas there.

Hugh Iltis

Hugh Iltis became my first husband in 1961. He was a botanist at the University of Wisconsin. I met him through a friend, Historian of Science Joan Bromberg. On my first date with Hugh, we went out and burned a prairie! He took me to a small prairie north of the campus that the University of Wisconsin owned. We got out of the car, and he told me all about the native prairie plants that grew there. Then he took a book of matches out of his pocket and lit a match and threw it into the prairie.

After that, we went back up to the road and got in our car and drove around and watched the prairie burn! He told me that you had to burn the native prairies so that the roots of the plants, which were located six inches below the soil, could generate new plants. If the invasive plants (such as hawkweeds) weren't burned off, you wouldn't get the revitalization of the native plants. After lighting the match, we drove along the road at the top of the prairie and then down along the bottom road. The people who lived across the road saw the burning prairie and called the fire department. They came and put it out, but by then, it had burned most of the whole area of the prairie.

We went back the following spring around April or May—the burning had been in the fall in late October. The prairie flowers were beginning to come up, and there was a gorgeous array of native prairie plants. Because what the fire had done was to burn out the hawkweed and the other non-native plants and allow the native prairie plants to grow back, just as the native Indians had done when they lived there. They had allowed the prairie fires to burn and so that they would be better able to harvest the fruits or seeds that they needed for nourishment.

It was an amazing experience. After that, during our marriage, we burned other prairies in order to conserve them. Hugh and a couple of colleagues had started the Nature Conservancy Association in Wisconsin. And he and two or three others were interested in purchasing native prairies and native forests for the Nature Conservancy. During our marriage, we burned a number of forests and prairies. While Hugh talked to the farmer and got permission, I would talk to the farmer's wife, and we would chat about our children. Hugh would talk to the farmer and explain why it was important to burn the prairies and forests and ask if he could do it. After he got permission, we and another visiting scholar would set fire to the prairie.

Hugh was a wonderfully interesting, engaging person, and he was a great lecturer. I would go to his lectures on the campus, where I learned about the History of Botany and Biology and about his work in plant taxonomy. He was head of the Herbarium in Wisconsin. When he first took the job, the herbarium was quite small. But it was in Birge Hall on top of a large lecture hall. There were staircases up each side and a little balcony from which you went into the herbarium. And while he was head of the herbarium, he collected and mounted many, many plants. He filled the balcony up with more cabinets and then put cabinets down the hallways to further expand the herbarium.

Each of the plants stored in the herbarium, had to be collected from the native forests or prairies and then pressed. To do so, you used a plant press. The plant press has a wooden lattice

on each side with straps that could be tightened. It was composed of cardboard sheets with little ventilation holes in them, then on each side a blotter. To press the living plants that had been collected in a large plastic bag, you put each plant in a folded over newspaper. To do so, you opened the newspaper, put the plant in it, and then folded the newspaper over the plant. Then you put another blotter and then another cardboard over it and then do the same thing to the next plant. A plant press could have fifty plants, each in a folded over newspaper. Each plant was separated by blotters and cardboards on each side and then fastened together with belts that could be constantly tightened as the moisture came out of the plants and into the blotters.

The plant press had to be left to dry out or put in front of a heater that would help speed up the process of removing the moisture. Then the dried plants would be mounted on large sheets of 11x17 inch paper with a label on the lower right edge.

When we went out plant collecting, Hugh would take a big plastic bag and collect every plant that he saw that the herbarium didn't have—he knew every plant in the Herbarium because he was the Curator. He would put all the plants in a large plastic bag, and he would end up dragging the plastic bag along the pathway until we got back to the car. Then in the car, the bags would either be in the trunk, or if there were the two of us, we'd be in the front seat and they would be in the back seat. If there was one of his students who was with us, the student would be in the front seat out by the window side, I would be in the back seat behind Hugh who was driving, and on the seat beside me would be a plant press. Every time we would go around a curve, I would have to hold the plant press up so that it didn't fall on me. It was quite an adventure. Our trips were all over the country and every place we went, Hugh would collect plants. He was in the process of building a flora of the state of Wisconsin and so his particular work was to go all over Wisconsin to wherever there were places where native plants could be found and where he could collect them. He knew which ones were rare, and if he found a rare one that hadn't been collected, he was just in heaven.

Hugh and I married in 1961. I then took my PhD orals when I was eight months pregnant in December of 1961. My first son, David was born on January 17 of 1962. Motherhood was a wonderful experience. I had read books about raising children, and I had a baby book where I recorded everything that my son, David did. At that time we were living in our house on Maple Terrace in Madison. After David was born, I nursed him, until he was nine months old. It was a wonderful experience, and I think it was a great experience for him as well. When he was able to sit up, he would sit in his high-chair and eat. He started talking when he was eight months old, and he would call out names of things. He was an absolutely brilliant young kid.

At the end of 1962, around November, Hugh and I went on a research trip to Peru. I went him, along with his student Donald Ugent and his wife Vivian. With the grant they received from the National Science Foundation (NSF), they bought a Willys Jeep, which they shipped to Lima. Miraculously, Donald and Vivian were there at the harbor when the jeep was being unloaded from the ship. They had the paperwork and were able to claim it right away instead of having it go into customs for three weeks. When Hugh and I got to Lima, Donald and Vivian had the jeep. They had shipped plant presses to Lima, and Hugh also brought plant presses with us.

We went all over the country and into the mountains and then over to the other side of the mountains. We spent time in Lima, and we also visited Peru's lakes. The main rationale for the excursion was that the student was collecting wild plants that might have developed into the wild potato. Wild potatoes in Peru were developed into cultivated potatoes through breeding by the Incas. But Hugh, of course, was not only going to look at the origins of the potato; he could not resist collecting everything we saw. We had a wonderful time collecting the plants and then drying them in plant presses. Hugh would then bind them up and ship them back to Wisconsin to the herbarium. We spent two and half months in Peru driving all over the country. It was a great trip and we saw almost the entire country of Peru, including the Andes and the rivers and the mountains.

At the time of our trip to Peru, David was about eight months old. We took him to my mother who lived just outside of Rochester, New York (in Pittsford, NY) for her to care for and enjoy. David was there through his first birthday, and he learned to walk and talk while with his Grand Mother. He always had a very special relationship with her, and the two of them remained friends as long as my mother lived.

My second son, John Paul Iltis, was born on October 30, 1964. Being a graduate student and mother of two young children was challenging, but I was also very fortunate to get a special fellowship, an E.B. Fred Fellowship, created especially for mothers with children who were trying to finish their PhDs. I heard about it one day while listening to the Wisconsin Public Radio. I said to Hugh, "Should I apply?" and he said, "Sure." I was one of the very first women to get the fellowship. It paid for a babysitter to come and take care of David and to prepare meals, so I could go to campus. The babysitter would make the food and clean the house. It was a brilliant fellowship conceptualized by Catherine Clarenbach, a Dean at the University of Wisconsin. It enabled me to write my dissertation in the library of the Madison campus.

My Doctoral Dissertation

My doctoral dissertation was on the history of the conservation of momentum and conservation of kinetic energy movement in the seventeenth and early eighteenth centuries. Momentum, or mass time velocity was symbolized by mv , and Kinetic Energy by mv squared (mv^2)—the one-half being added later in the eighteenth century. Both momentum and energy were forms of trying to understand motion—the motion of colliding bodies, that like billiard balls would hit each other and then bounce apart. They were also exemplified by falling bodies and by the motions of any objects that were thrown or just fell off something. The question was: How do we understand the motion of objects on the planet.

There was a big controversy over the answer—was it mv or was it mv squared (mv^2)? Descartes said it was mv , and for him, the v , was absolute, neither plus nor minus—it was just mv . But for Leibniz it was mv squared (mv^2)—there was no one-half at that point. The followers of Descartes took up the idea of mv and insisted that that was the symbol of motion. They made

a major point out of it, while the followers of Leibniz made a major point that it was mv^2 . There were major controversies between the followers of Descartes and Leibniz. The controversy was later resolved by D'Alembert in the middle of the eighteenth century (1743) by saying that both were correct. My dissertation was the story of that controversy and the subsequent reconciliation.

My husband, Hugh Iltis was very absorbed with his own work and trying hard to get promoted to tenure; he was mainly on campus doing research. Because we didn't have a relationship that was working well, I told him that I was going to have to leave. So, one day, when he went to Missouri, to a three-day conference at the Missouri Botanical Garden, I moved out. I hired a moving van to come to the house and to take my own furniture that I had brought with me and inherited from my Aunt Ollo and grandmother Davis, along with the things that I had bought myself. I had a friend, Louisa Stark, who came over and helped me pack up my books and all my papers. I did not take anything of Hugh's or anything that we had purchased together. We put everything in a moving van and took it to a storage locker.

In the meantime, I had consulted a lawyer because I knew that I would not be able to leave the state with my two young children unless I had legal permission to go. Otherwise, it would have been considered kidnapping. I therefore moved to a motel with a kitchenette across the highway and up on a hill. It had a little cottage where I could cook and park my car next to a large tree. Both my sons were in school. David was in second grade and John was in kindergarten, so I could take them to school each day. I would then be able to do some research and writing and then pick them up when school was over.

Hugh came back after his three-day meeting and saw that I wasn't there. He went through all the trash up by the side of the road to see if he could find any information about where I was. He asked the neighbors, who had agreed not to tell him. But then he drove around for two or three hours until he finally found my car up a little road that led to the motel. When he found it, he was satisfied and went back home. But I still had to get permission to leave the state. Each of us got a lawyer and met together in conference here we decided on what the circumstances would be, and he agreed to let me go.

I had decided in advance that I would move to Berkeley, California. My sister Ann had gone to UC Berkeley for her PhD in Astronomy and suggested that would be a good place to go, where I might be able to get a job in one of the many small colleges in the area. I also had a very good friend, Wendy Dunn, whom I had known in Madison. She had moved back to Berkeley where her home had originally been. She had a son named Max, and my son David and Max were three months apart. They had met each other when they were both eighteen months old, in Madison, but by the time I moved to Berkeley, they were older. David was in third grade and my younger son, John, was in kindergarten.

I had applied for and received an E.B. Fred Fellowship, which I had heard about on the radio. It was specifically for women trying to complete their doctoral degrees. It enabled me to hire babysitters and house cleaners so I could go to the campus and focus totally on my dissertation. I could do the research and writing and not have to think about anything else during that time-period. And then when I got home, I could take care of my sons and enjoy them.

When I left Hugh in March of 1967, I went to Hawaii where my sister Ann and her husband Hans were living. She helped me get a little room just off the beach in Waikiki. I went there and stayed, and my kids and I spent the time on the beach recovering. But when the school year was out, Hugh decided that he was going to come and bring me home. He came to Hawaii and stayed with me. We did some traveling together with the kids around the island, and he collected plants. By then I had decided that it was not going to work for me to try to live in Hawaii without a good job. I had applied for jobs, but the main tjob I was able to get was as a laboratory assistant in large classes, and that was not going to be enough to support me. So, I decided that I would go back with him and try to get official permission to leave. Hugh and I met together with lawyers for each of us. Hugh agreed to let me leave the state.

I went to Berkeley, California with my two sons, and stayed for a week with Wendy Dunn and her daughter Caitlin and son Max, who was a friend of David's. After that I looked for a better, more permanent place to stay. I was about to move into the Shattuck Hotel in downtown Berkeley, which had kitchenettes, and stay there until I found something else. But the very day that I was going to move, I found the house at 2208 Rose Street in Berkeley, four blocks north of the Berkeley campus. I talked to the landlord, and he rented it to me. The following year, he wanted to sell it, and fortunately, my grandmother and my aunt had left me money and I was able to make an offer and put a down payment down on the house. I bought the house for \$23,250. They didn't sell houses to women very often in those days because women usually didn't have permanent jobs, but I had the stocks and the academic background to get a job.

I also had lined up a permanent job at the University of San Francisco, but my first temporary job was up at Oregon State University in Corvallis, Oregon. I went there for six months, from January through July, to take a job teaching courses for my former graduate student friend Brookes Spencer. He had a job at Oregon State University in Corvallis, Oregon. But he and his family were going back to Madison for six months to take the place of our major professor, Erwin Hiebert who was going on sabbatical at the Center for Advanced Study at Princeton. So, I therefore drove up to Oregon with my sons, and lived on the Spencer's seven-acre farm, just outside Corvallis, on Oak Creek Drive.

The farm had a barn, and a couple of dogs. The Spencers had helped me find a house sitter named Virginia Nelke to take care of my children. Virginia had been the runner-up Dairy Queen of the State of Oregon, and she knew all about raising animals, and loved horses. So, over the period that I lived there, which was about six months, we purchased and housed seven horses along with a goat named Gilda who had been bred. My boys loved the goat and watched her give birth to two kids. I then built a goat-milking stand. (I was pretty good at carpentry because I had built the treehouse in Rochester when I was younger). There were two vertical boards in front so that when the goat got up on the stand, you could put the boards close to her neck so she would stay on the stand. I then sat on a stool and learned to milk the goat. We did this a couple of times a day and then had goat's milk and made goat cheese from the milk.

Teaching at Oregon State was wonderful, because I could present my own lectures on the history of science. I was not a teaching assistant for someone else, but I myself was teaching the

course. The course had a description, but I could decide what and how I wanted to teach, so long as I followed the general course description. It was liberating to be able to do my own teaching, and also to get the experience of how to do it. so that when I then went back to Berkeley, and began teaching at USF, I could bring the experience of lecturing, grading papers, and working with students in sections.

Research for my book

The reading and research, which I did in the 1960s, helped to shape what became my book *The Death of Nature*. My dissertation for the University of Wisconsin-Madison that I did under Professor Erwin Hiebert was on the late seventeenth century, with a focus on the philosopher Gottfried Wilhelm Leibniz (1646-1716). He devised a concept called *vis viva*, which means living force, mv^2 . He had a big argument with Newton whose idea was that the main force in the universe was momentum, mv . The two of them had a disagreement, and they each had followers who joined the debate as to whether it was mv or mv^2 . Then, finally, in the middle of the eighteenth century, Jean Le Rond d'Alembert in the *Traité de dynamique* (1743), argued that they were both right—that both mv and mv^2 were conserved.

That was how the ideas of the conservation of momentum (mv) (which later, had a plus or minus sign on the velocity, and kinetic energy (mv squared— mv^2) (which later added the one-half to become $1/2 mv^2$) were formed. The result was that both the conservation of momentum and the conservation of energy (living force) were valid concepts. Because of the concept of living force, the universe, for Leibniz, was thought to be alive. Newton, however, thought the opposite, that matter and motion were dead, and (as particles) they were moved like billiard balls. Motion, for Newton, was put in the universe at the beginning by God, and then it was transferred among the particles as momentum.

Another influence on my book, *The Death of Nature* was the women's movement. We had a home in Madison, Wisconsin, on Maple Terrace, and my husband, Hugh Iltis had a position in the Department of Botany at the University of Wisconsin. I was in the home all day because I'd had my first child, David Iltis. While, I was listening to the public radio (WHA), at home, I heard about a fellowship. It was actually a fellowship for women with children who were going back to the university to finish their PhDs, which was exactly my situation. And I said to myself, "I can do that." When he came home, I asked Hugh, "Should I apply for it?" And he said, "Sure," but he didn't think I would get it. But I was, actually, one of the very first women to get the fellowship. It was called an E. B. Fred Fellowship. It was funded by an entrepreneur named E. B. Fred who gave money specifically for women with children who were going back to school to finish their doctoral degrees. It was administered by Kathryn Clarenbach (1920-1994) at the University of Wisconsin, Madison.

I used that funding to pay for babysitters and housekeepers so I could go to campus and work on my dissertation. It was a brilliant idea and was exactly what I needed. I was able to hire a couple of young women who did housekeeping and babysitting combined. They would come to my house on Tuesday, Wednesday, and Thursday in the middle of the day, and cook lunch, and

take care of the boys. And I would go off to the University of Wisconsin and get books from the Rare Book Room that would be saved for me behind the front desk. I could then sit and read them and take notes. Some of them were in Latin, so I either had to translate them or at least read and understand them. Others were in German or French and those two languages were also part of my doctoral training. I was able to craft the chapters of my doctoral dissertation on *vis viva*—on the question of whether energy or momentum was conserved. The title was “The Controversy over Living Force: Leibniz to D’Alembert,” filed in 1967 in the History of Science, under my married name, Carolyn Iltis.

After completing my PhD, I moved to Oregon for six months with my two children David and John. We lived on a farm, which was owned by a former grad student colleague of mine at the University of Wisconsin-Madison. His name was Brookes Spencer, and his wife was Nancy Spencer, and they had three children. Brookes had received an appointment as a professor of History of Science at Oregon State University in Corvallis, Oregon. They had bought a small six-acre farm, with a barn and poultry sheds on it, just outside of Corvallis.

Brookes left his position at Oregon State to go back to Madison, Wisconsin to take our major professor, Erwin Hiebert's, place for six months at the University of Wisconsin, while Erwin Hiebert, had gone to Princeton NJ to do research at the Center for Advanced Study. When I went to visit Brookes and Nancy after I moved out to California, I took my boys and drove up to visit them. And as I entered the driveway, he came out of the house and said, "How would you like a job?" I said, "That would be great." Because he was going to Madison for six months, I got to teach his courses. One was a course on the history of science, and the other was a course on ecology for non-science students at Oregon State.

Because of my experience on the Spencer's farm, I understood how important it was to go back to the land, and to conserve the land and not exploit it. In *The Death of Nature*, I wrote about science and capitalism, not only as natural resources, but how capitalist society begin to use them up, so that they become scarcer. It therefore became extremely important to try to conserve natural resources and to understand the importance of preserving the environment. Because matter and energy were both exploited in the seventeenth and eighteenth centuries without conservation, the environment began to decline. But in the late nineteenth century the conservation and preservation movements initiated new efforts to conserve natural resources and the environment.

In Berkeley, California, we moved into a house at 2208 Rose Street. Two doors up, there was a woman named Grace Maxwell and her husband, Neil Maxwell. They had two kids, and they were both my sons ages. Neil was David's age and Claire was John's age. We went up and knocked on the door and said, "We'd like to see if your kids would like to come and play with us." I was looking for a job at the time, and she advised me, "You should go and talk to a man named Art Furst." He was in the chemistry department at the University of San Francisco. She knew him through a folk dancing group. I was happy to hear that because I was interested in learning to do folk dancing too. She advised me to go to USF and talk to Art Furst, so I drove over there and met with him. He said, “There is a new program that's being developed here by a

man named Robert Thornton." Dr. Thornton had been a Dean at San Francisco State University and had retired. And now, they were hiring him at USF to start a new program that would be related to conservation and the environment. Art Furst said, "You should go and talk to him."

I turned in my resume to Robert Thornton's office at USF and then made an appointment to go in to talk to him. He was a black man who had gotten his undergraduate degree at Howard University. He had also done some work under Einstein. He earned a master's degree at Ohio State University, and a PhD in physics at the University of Minnesota. He had now retired from San Francisco State and come over to USF to start a new program. When I met him, he said to me, "The minute I saw your resume, I knew you were exactly who I wanted."

That was a wonderful opportunity because I could combine history of science with the historical and philosophical background that I had in physics and on which I had done my dissertation at the University of Wisconsin. I had been a chemistry major at Vassar, and then I had studied the history of physics with Margaret Waggoner who had gone to Stanford and taught us physics from an historical point of view. And my philosophy professor Philip Nochlin at Vassar was very interested in the history of ideas. When I met with them, they told me about a field called the History of Science. Philip Nochlin said, "I have a friend who went to a History of Science graduate program in Madison, Wisconsin and I'll write to her." Her name was Joan Bromberg, and she had studied physics and was just finishing her degree at Wisconsin. And she said, "I will tell my professor Erwin Hiebert about you." I met with Professor Hiebert, and he said, "Well, I mainly advise nineteenth-century students, but when I saw that you wanted to work on energy and momentum in the seventeenth century, I decided I would take you on." So that's how I got to have him as my major professor. He was absolutely wonderful and very interested in the history of ideas.

I talked to him and sent him my resume. I then went to see him, and he said, "When I saw your resume, I knew you were exactly what I wanted." What he wanted was someone who could not only teach physics and general science to non-science students, but somebody who could teach it from the perspective of philosophy and history of science. There was a small program called the History of Interdisciplinary Science that was created within the physics department, and there were three people teaching in it. I was accepted and was able to teach the history of science and physical science for non-science majors.

My home in Berkeley at that time was a single story, MacGregor bungalow. There were quite a few of these designed by the architect MacGregor around Berkeley. It was a one story home (I later built a second story on it, but not till 1989). We had a table in the kitchen, which we used for breakfast and lunch and a one in the dining room for the evening meals. Off the kitchen was a small breakfast room. Instead of using it for breakfast, we created a science room because I wanted my sons to learn biological science. We had a small bench on which we had a terrarium, and we also had a birdcage with zebra finches in it. And we also had an aquarium that held (non-poisonous) snakes, and also lizards and other small organisms. My children learned to take care of small animals and to study and understand them. That's why we called it the science room.

When I taught at USF, I tried to bring the laboratory experience into the lecture room. To teach about circulation of the blood, for example, I used a cow's heart, which I got at a slaughterhouse on the edge of Berkeley. I got a heart so that I could show the students the auricles and ventricles (which all hearts have). They could all come up and view the different parts of the heart and see how the motion of the blood could be carried through the veins and arteries. That demonstration became well known among the students at USF.

The 1970s were especially important because the ecology and women's movements of the sixties came together and merged. The seventies were years in which there were demonstrations and challenges to the capitalist structure of society. The Bay Area was especially important because several of the movements started in San Francisco. My neighbors across the street on Rose Street were Chinese Americans, and they engaged in marches and demonstrations in San Francisco and Berkeley. I and my two sons went with them and joined the marches in San Francisco. I became radicalized by those contacts and by what was going on in the sixties and seventies.

My neighbors two doors up—the ones who had told me about Art Furst—were folk dancers, and I had always wanted to learn folk dancing. And they were part of a folk dancing group that performed under Madelynne Greene; they had costumes and performed on stage. And so when I told them I wanted to learn folk dancing, they said, "You should go and take lessons from Madelynne Greene. We will introduce you to her." They gave me a letter, and I when I went to see Madelynne Greene in San Francisco, and she said, "I will be delighted to take you on." Since she was teaching her classes in San Francisco, and I would get a babysitter for the boys, and take folk dancing lessons a couple of nights a week from her. I really loved it; it was wonderful. The dances were circular dances. There might be inner and outer circles, so people would move jointly with each other. So that was very exciting to me, and it was a way to develop coordination and do exercise. And it turned out that a folk dancing group had been started in Berkeley at Live Oak Park, so I could go to the dance groups there.

In the summer of 1972, when my sons were visiting their father in Wisconsin, I was able to travel to Italy and participate in a course in the Enrico Fermi Institute. It was called the History of Twentieth-Century Physics. I had heard about it at the History of Science meetings, from a physicist named Robert Cohen. I applied and was accepted. My sons were spending summers and Christmases with my husband, Hugh, so I had the summers free. I also had some money that my Aunt Ollo had left to me and which I had invested. I used some of that to travel to Italy to take the History of Physics course.

It was a wonderful course, taught in part by Professor Robert Cohen from MIT. I learned a great deal about the history of physics from him. It made me realize that the science that I had learned as an abstract mechanistic system had important social consequences. And that those social consequences included things that destroyed the earth and were also part of the Vietnam War and that destroyed areas that were important to ecology and to Vietnam. As a result, I began to see that there were much wider and more important consequences that came out of mechanistic science and that we should indeed take more social responsibility toward it.

At the conference in Italy, I spent quite a bit of time during the social hours talking to Professor Cohen and being introduced to how Marxism and social ideas could influence science. He turned me on to reading Karl Marx and Edgar Zilsel and other people who tried to bring out the social context of science.

I first heard about the History of Science Society through my colleague Joan Bromberg, and I decided that I would go to a meeting. I became a member and then eventually served on several committees of the Society. I had a role in forming a women's committee that would promote the role of women in the history of science. And I also worked to establish a West Coast History of Science Society, jointly with a colleague. We began having meetings of the West Coast Society. We had meetings on the West Coast at universities in San Francisco, Los Angeles, and Santa Barbara. I helped to create those meetings that focused on local issues.

My position at the University of California had an affiliation with the Agricultural Experiment Station project, which was a component of the job itself. I taught two courses a year, but also had an experiment station project, which was approved by the California Agricultural Society. To do projects that would fulfill the California requirements, I wrote a book on California's ecological history. It was called *Green Versus Gold: Sources in California's Environmental History*, with green standing for ecology and gold for money and capitalism. I used the same approach as my book on *American Environmental History: An Introduction*, which had looked at the whole country. Each chapter in *Green Versus Gold* had six primary sources, followed by three essays that might have conflicting points of view. It had thirteen chapters so that it could be used over the course of a semester in a teaching program.

One of the important intellectual and political influences on my writing and perspectives was a person named Daniel Greenberg, whom I met at a conference. I was talking with him about the history of science, and he told me about Theodore Roszak who was at Hayward State University, now called California State East Bay. Professor Roszak had written a book called *The Making of a Counter Culture*, which I purchased and read. I asked Daniel Greenberg if he might be willing to give Roszak the three essays that I had written at the time, which he did. After Professor Roszak read the essays, he called me up and we got together. He told me about HarperCollins and editor John Shopp and suggested that I write a book based on the three essays. I then met with John Shopp and gave him the book for HarperCollins to consider. That book became *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: HarperCollins, 1980). It included a chapter on science and utopias, which was influenced by the farm I lived on in Oregon and by my assistant, Virginia Nelke, who had been the runner-up Dairy Queen of the State of Oregon. Another chapter was on mechanism in society and the issues relating to mechanistic science, such as the conservation of momentum, mv , and the conservation of energy, mv^2 squared, which later became $1/2 mv^2$.

I became attuned to ecology through my first husband, Hugh Iltis. On our first date we went out and burned a prairie. He took me out to a prairie just north of Madison, Wisconsin. He told me that prairies needed to be burned so that the native prairie plants would grow back and the invasive hawkweeds would be destroyed. He then took a match out of his pocket and lit it

and threw it into the prairie. We then rode around in a car and watched the prairie burn. The neighbors above the road called the fire department and they came and put it out. But the next spring, we went back and it was a beautiful carpet of prairie flowers. During our marriage we burned several Wisconsin prairies. He would talk to the farmer and show him why it was important ecologically to burn prairies. I would take my baby David and talk to the farmer's wife. Then when Hugh got permission from the farmer, he would light a match and burn the prairie. We burned several native prairies during our marriage along with one or two of his students and they were all beautifully rejuvenated.

And when we were married, Hugh was a leader of the chapter of the Nature Conservation Society in Madison along with a couple of other people. They would have meetings once a month and would organize field trips through native forests such as Abraham's Woods and through native Wisconsin prairies. Because of him, I became attuned to where the prairies were overgrown with invasive plants that didn't belong there and were destroying the native plants. Over the course of our lifetime, we became prairie burners. The prairies were an example of what had been called the organic universe during the Renaissance of the fifteenth and sixteenth centuries in Europe.

During the Renaissance, society and nature were both organic, constructed of components that fitted together like a living organism. In the world of the Renaissance, of the fifteenth and sixteenth centuries, the universe was basically a large organism. It had a body, soul, and spirit. The body was the earth, the soul was the realm of the planets above the moon, and the spirit was just below the fixed stars. The world itself was a living organism and was considered as such by people in the fifteenth and sixteenth centuries. My book, *The Death of Nature*, was about how that organic concept changed to become a machine. The machine was driven by the conservation of momentum and energy and made up of atoms and molecules that moved around like billiard balls.

After meeting with me and having read my manuscript, Professor Roszak said, "I want to introduce you to my editor, John Shopp, from Harper San Francisco." After reading them, John Shopp said, "These are three great essays, but you should make them into a book." Acting on his advice, I was able to get grants and fellowships to do so. I received a fellowship to go to the Center for Advanced Study at Stanford for a year, and I also received an ACLS grant to help fund my work there. That was a period in 1976 when there was economic instability, and so my job at USF, where I was as a lecturer at the time, was being threatened and influenced my decision to apply for grants and fellowships. I received an ACLS grant and then I also was admitted to the Institute for Advanced Study at Stanford. The fact that I was able to go there for a fellowship, was due to the assistance of Robert Merton and Harriet Zuckerman. Harriet Zuckerman had been a colleague of mine at Vassar College, after which she entered into a relationship with Robert Merton who was in the history of economics and society. After I met with the two of them, they wrote me a letter of recommendation—they were both on the board of the Stanford Center for Advanced Study. I received enough funding to go there for a year. And part way through that year, I was interviewed at the University of California at Berkeley. They

wanted me to teach the courses in American Environmental History and in Environmental Philosophy and Ethics that had been taught respectively by lecturers, Joseph Petulla and Alan Miller. I agreed to accept the position by requested that I finish my fellowship at the CASBS during the fall 1978 so that I could complete the writing of *The Death of Nature*. They agreed to let me start on July 1, 1978, but they gave me a leave of absence until January 1, 1979. That was perfect because I complete the book in December of 1978, sent it off to Harper San Francisco, and then moved back to my house in Berkeley, California on January 1, 1979. I began teaching my Environmental History course during the winter quarter of 1980 and then taught my Environmental Philosophy and Ethics course in the spring quarter. It was the perfect transition.

One of the primary influences on my work for *The Death of Nature* was Historian of Science, David Kubrin. I met David through a school called the Liberation School in San Francisco, which he had founded with a couple of other people. It was an alternative school, in that it didn't give degrees or course credits, but only offered courses that people interested in social change could register to take. David had founded the Liberation School with a couple of colleagues. I had heard about David and the school, because after I moved to Berkeley, I had become an activist and was interested in changing the world. David Kubrin had done his PhD at Cornell with historian of seventeenth century science Henry Guerlac. where he had worked on the history of conservation of momentum in the seventeenth century, whereas I had worked on conservation of energy. Both Henry Guerlac and Erwin Hiebert were prominent historians of science. I became acquainted with David, because he was teaching a course in the San Francisco Liberation School, which was a critique of the ways that the ideas of conservation of momentum and energy were supporting mechanistic technologies that helped to destroy nature. I became an ardent follower of David Kubrin and the Liberation School and he was a major influence on my book, *The Death of Nature* and how to bring the social context of science into my own thinking and teaching.

I became involved with Charles Sellers—whom I ultimately married—through a program at the University of California at Berkeley, called Strawberry Creek College. Charlie had created the program with Professors Charles Muscatine and Peter Dale Scott who were both in the English Department. They wanted to have an alternative program in which students could take a single course that was twelve units, instead of taking three or four courses, each of 3-4 units per semester. Strawberry Creek College met in one of the World War II temporary buildings along the edge of Strawberry Creek that flowed through the middle of the UC Berkeley campus. It was funded by the National Endowment for the Humanities, and there were six courses in the program. In addition to Peter Dale Scott, Charles Muscatine, and Charlie Sellers, and there were Bert and Stuart Dreyfus who were brothers, one of which was a philosopher and the other a scientist. But they also wanted some women in the program. One day, I went to have lunch with Charlie who had a meeting with Charles Muscatine. Charlie said, "I've got this luncheon date with you, but Charles Muscatine wants to talk to me. Would you like to join us?" So I did, and while they were discussing the seminar program, Charles Muscatine said, "Well, we are going to need some more lecturers in this program." And I turned to him, and said, "What about me?"

And he said, "Well, maybe if you were in a science department." And I said, "Well, actually, I'm at USF in the physics department, but I teach physical science." Afterwards, he met with Charlie, and said to him, "Maybe we're going to have to go outside the Berkeley campus." And so, they hired two women, me and Karen Hermassi, both as lecturers, to form the first faculty members of Strawberry Creek College.

The program was housed in one of the T (Temporary) Buildings on the Berkeley campus just between the library and Hearst Street. They were wooden, temporary buildings put up during World War II. These T Buildings have since all been taken down, but at the time T9 was the building that they were able to get access to for Strawberry Creek College. The program had the entire building to ourselves. They were basically wooden shacks, but the building had room for each of our six courses and a lounge. And there were also offices for the faculty in the building.

Everyone who taught one of the courses in the program taught one course for the whole semester for nine units within Strawberry Creek College and one course outside the College in their own department in the larger university. Likewise, the students who were selected for their interests and high grades met for several hours a week together, in Strawberry Creek College for one large course, and also took one course outside the College in the larger University. At that time the campus was on the quarter (rather than semester) system and there were three quarters per year plus a summer quarter. In Strawberry Creek College each of the six courses offered had three quarters. One was on the past, the second on the present, and the third on the future. Each of the courses therefore had an historical perspective. The course I taught was on the history of science. It started on Greco-Roman, and Renaissance history of science, followed by one on seventeenth- and eighteenth-century history of science, and then in the third quarter, a course on science and utopias.

In Berkeley, California, Charlie Sellers and I had met each other through Berkeley politics. I had moved out to Berkeley in 1966 during the time of the liberation movements and the political movements that were questioning the Vietnam War and were organizing people. I heard about a group meeting that turned out to be at Charlie Sellers's and his wife Nancy's house on Virginia Street. I went to the meeting, and I started attending subsequent meetings. At the meetings people criticized and analyzed the ecological and political problems that the war was creating for the world during the 1970s. And that's where I met Charlie. I first met Charlie one day when he was having lunch with Charles Muscatine about a new program at UC Berkeley called Strawberry Creek College and they were discussing who else to hire. I listened and then I asked, "How about me?" Charles said, "Well, maybe if you were in the sciences." I answered that I had received degree in Chemistry and taken course in physics and then received a PhD in History of Science. They talked about it the next day and decided they should go outside of Berkeley and hire other people. So, they invited me to teach a course in the new program.

What was Strawberry Creek College? It was an experimental program that they, along with Peter Dale Scott and Hubert and Stuart Dreyfus were starting at UC Berkeley. It was funded for six years by NEH, and it was given a home in the T Buildings. And then after the six years, it was to be evaluated by the campus as to whether it should be made a permanent program. But

after the six years were over, the campus decided not to continue it, so the faculty returned to their original departments.

At the time I taught in the program I was a lecturer was at USF. But I soon received a permanent position as an Associate Professor. At that time, I learned about a position being advertised at UC Berkeley. I saw a lecturer, who was in my program in Harney Science Center at USF, walking down the hall, peering into a catalog. And I said, "Dale, what are you looking at?" He said, "There's a job at Cal, and I'm applying for it." I asked him what it was, he said, "Well, it's in this new program. And there are courses that have been all been taught by lecturers. But now, they're hiring permanent faculty." And he said, "I want to teach that course," and the course he pointed to was environmental history and philosophy. I looked at it and said to myself, "I can do that." So the next day, I drove down Euclid Avenue, and parked my car at the intersection of Euclid and Hearst, and then walked over the hill to Giannini Hall. I went into the Office of the Department of Conservation and Resource Studies, and said to the person at the desk, "I understand you have a job for someone to teach these courses in the catalog?" They replied, "Well, that job is for an ecologist. But we're going to have one for a historian, and I will send you the announcement in December."

So, in December, after the job had been approved by the Budget Committee, they sent me an announcement. I turned in my application at the end of December, and then I went to Stanford where I had been appointed as a year-long fellow at the Center for Advanced Study in the Behavioral Sciences. At Stanford, I was working on my book, *The Death of Nature*. And when I got invited to interview in Berkeley in March, I came back, and stayed in Berkeley for three days, while I was interviewed. And I was able to give a great lecture because I had prepared the lecture and given it to my colleagues at Stanford in advance. I didn't have to use notes. I just looked at people's eyes in the audience and gave the lecture. And they said, "We want to hire you." The job was slated to begin July 1, 1978, but I request that I be able to finish my leave at Stanford and finish my book on *The Death of Nature*. They agreed to allow me to take an initial leave of absence in the fall of 1978 and to begin the job in January of 1979.

I had published my doctoral dissertation as six peer-reviewed articles, that had equations and diagrams in them, and those appealed to the UC Budget Committee. The papers had to do with the history of the conservation of momentum and energy and other scientific matters. And by then my book, *The Death of Nature* had been completed in was in page proofs. When I was interviewed, I put the book on the table along with the six articles for all the faculty—including the committee, which was composed of both faculty and students—to look at while I was being interviewed. The book was in page proofs and was about to be published by Harper San Francisco, so everyone was able to look at it. The following spring, in 1980, the book was published as *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco: Harper and Row, 1980).

The hiring committee at Berkeley was a mixture of faculty and students for this new program that was in the process of being created. The faculty especially wanted to involve students. It occurred during a period when students were activists and wanted to be included in

consideration for any jobs being offered to the faculty that would be teaching them. And that worked in my favor because I was also an activist, and the students liked that. The job was in the College of Natural Resources, in a new department called Conservation and Resource Studies, a program that emphasized both the environment and conservation. It had an office in Giannini Hall. When I got the job, I received an office in Giannini that was only four blocks away from my house, so I no longer had to commute to USF.

In 1976, my sons, David and John Iltis, had gone to live with their father Hugh Iltis in Madison, Wisconsin. They had visited him in the summers and at Christmas, but they always had a chaperone on the airplanes. But now, they were old enough so that they could go to school there and then come back to their home in Madison by themselves. Their father Hugh would often be working late at the herbarium, and David would sometimes say, "We would make the dinner, and then it would just sit there." However, they both learned to take care of the house and to cook food, and, also, to take care of the yard. Those years became a very important period for them.

David and John lived in Madison during the school year with Hugh and then came to visit me in the summers and at Christmas. It was a good experience for them to be with their father full time. And it also allowed me more time for writing and teaching.

The 1970s were a period of activism, with many things happening in Berkeley. Berkeley was on the forefront of the changes that were happening in society. There were many people and organizations that I became involved with, that were promoting social change. I began to understand the importance of the social context of science—not just the history of momentum and energy on which I'd done my dissertation, but the idea that people who lived at a particular time were socialized into a worldview and a way of relating to nature that was integrated into nature, rather than apart from it and trying to transform it. The idea of utopias became very important as a vision. The farm I lived on in Oregon helped to influence and strengthen my understanding of the integration of humans with nature.

Much of what I had written about in my early papers were histories of mechanism and mechanistic ways of controlling nature. The papers had equations in them, which were important because the UC Budget Committee liked that. But I also tried to fit the mechanical equations into the social context which had influenced them. Many people did not think that society could influence the creation of equations or laws. I was interested in the idea that science and its laws emerged from an organic world in which people lived and how ways of relating to nature may have subtly or even consciously influenced their ideas and might have helped lead to scientific laws.

The Death of Nature was about the earth's integration into the medieval and Renaissance organic worldviews, and then how in the seventeenth century the worldview became more mathematical, and the mechanistic worldview emerged. *The Death of Nature* was the death of that organic world. Then in the Enlightenment of the eighteenth century, people began to ask about the larger intellectual context. People's minds became enlightened through understanding and reading books that had a larger influence on them. The Enlightenment began to reveal a

wider social and intellectual context and people began to question the mechanistic worldview as the sole way to look at nature. The Enlightenment worldview emerged in the eighteenth century but continued through the nineteenth century. The ideas of kinetic energy and momentum, and the conservation of energy developed in a larger context, that showed that the whole world was really formed of energy.

Then in the twentieth century, with the emergence of chaos and complexity theories, the world becomes much more complicated. People began to argue that some of these ideas were not as permanent as one might think, and that there were much more complex relationships. And chaos theory began to question the permanence of some of these laws.

When *The Death of Nature* came out, it was displayed in Berkeley bookstores all down Telegraph Avenue. One of my colleagues, Londa Schiebinger, who was visiting, said, "Let's go for a little walk down Telegraph Avenue." We went down, and there was *The Death of Nature* in every bookstore window, and it was especially featured in Cody's Books store. I gave a talk here that week in the upstairs lecture room—and was just filled with people. It had been advertised and was featured in the *Daily Cal* and several other magazines. It was very gratifying to think that people were taking the ideas seriously. But, of course, there were also critics who didn't want to include the social background and who believed the equations were independent of social influences. I had both support and some legitimate criticisms based on the kind of assumptions that were being made.

The Death of Nature was also given a column in *Newsweek*, and was even brought up at a congressional hearing. The book was a criticism of what mechanistic science could do to the environment if it wasn't accompanied by an ethic and an understanding of what the consequences could be. It was very gratifying to see that reception.

My sons, David and John had visitation periods with their father Hugh Iltis in Madison, Wisconsin. They stayed with him during the summer months and over the Christmas holiday. That left me free to travel to places on my own. In the early 1970s, I was able to go on an African safari while they were visiting him. I discovered that there was one being led by the Sierra Club of which I was a member and so I signed up. I had enough money because of what my grandmother Davis and my aunt Ollo had left me. I invested the funds with a stockbroker so that the funds could grow and I also had a tax accountant.

On the trip to Africa, we went to Kenya and then Tanzania. In Kenya, we drove around on little travelled roads would stop to see herds of the African animals. I bought a little movie camera and was able to take several small movies. They were tiny little reels that I then later converted into discs.

On the safari to Africa, I was very used to looking at animals, and the leaders would pick up large snakes. They weren't poisonous, and we could touch them. Also, I had lived on the farm in Oregon where we had collected reptiles and snakes and had small terrariums. So I assumed that snakes were something you could pick up, which turned out to be not the case. When we got to Greece and I saw a small python which was quite small and I was used to picking up snakes. On a walk, I leaned down, and picked it up with my right hand. I then remember seeing fangs

going into my forefinger. I shook it off and threw it away, and then ran back to the person who had brought us to the shore in a rowboat from the larger ship. I said to the guy, "I've been bitten by a snake," and he said, "No *morte*, no death." But he took me back to the ship's doctor, and the doctor looked at it and said, "You are really stupid." Fortunately, the snake wasn't poisonous, and I wasn't going to die. But the doctor gave me a bandage and cleaned up the wound. When I got back to the mainland, the ship's doctor said I should go to the doctor there. Everything was okay fortunately. But, yes, it was really stupid.

Greece had been a country with a fascinating history that I loved going back to my work on the history of the pre-Socratics, Plato, and Aristotle, and on up through Plotinus, and so on. I loved Greek philosophy, and I had learned about it at Vassar College from my] philosophy teachers, Philip Nochlin and Vernon Venable. When they taught Greek history and philosophy, they made it come alive. I learned about it and loved it there. So, I got a chance to go when my sons were their father in Madison. I went on a safari to Africa and then went to Greece.

The title, *The Death of Nature*, for my book, came to me during of a camping trip in Utah. My sons and I were visiting the Canyonlands of Utah, and one of the places we went was to Bryce Canyon. We arrived at the campground in the evening. We had just arrived and set up our campsite, and before the sun went down, we went out and walked along a narrow trail on the edge of the canyon. It was filled with beautiful colors, all red and yellow, and especially in the late sunlight, it seemed alive. My sons and I went walked along the canyon edge and then came back to the campsite, where we made dinner. The boys fell into an exhausted slumber. But I lay awake, and I kept on thinking about how alive it really seemed, even though the rocks were supposedly dead and inert. But for most of history, people thought that rocks and mountains and grasslands were all alive and grew in the womb of the Earth Mother. I was reexperiencing something that was once alive but was now called a myth. On that trip it all came alive for me.

When I moved to Berkeley in 1969, after living in Madison, Wisconsin, and finishing my graduate degree, I became really interested in Berkeley politics. When my boys visited their father in Wisconsin, during the summers, I had some free time to see and follow what was going on there. *The Berkeley Barb* and other radical magazines would list where political meetings were going to be held. And I saw that there was a meeting on Virginia Street about Berkeley politics, and so I went. There were a lot of people there who were interested in changing the world, among them Loni Hancock and Joe Hancock, and other radical Berkeleyites. It was held at Charlie Sellers's and his wife Nancy's house. Following the meetings, in which they had these discussions about how to change Berkeley and contemporary society, they played music to which we could dance. Charlie Sellers came and asked me to dance, and as we danced with each other, that was it. After a few weeks, Charlie's wife Nancy decided to leave him, because she had found another man. And Charlie came by my house, and said, "The lady has left." So then he and I were able to get together, and we became partners.

Charlie and I didn't get married, however, until September 1993, on his seventieth birthday. He was born in 1923. We decided that because his family and my family were all coming to Berkeley to visit, in order to celebrate his birthday, that this might be the time to tie

the knot. So we asked his sister's husband, Bill Boyce, who was a minister back in Virginia and who was coming to Berkeley for the celebration, if he would be willing to marry us. He said he would be delighted!

We didn't tell anybody ahead of time. We told my sister because she had had an illness and wasn't sure if she was coming, but she was able to come. My mother, Elizabeth Holcomb, and her husband Nelson also came. All the guests stayed at the Marriott Hotel down by the bay. That morning we had a brunch on the motel terrace where people had doughnuts and coffee and orange juice.

Then Bill Boyce said, "We're all going to take a little walk out to the point." He then led us all out there. We all gathered out on the edge of the San Francisco Bay on a grassy plot just beyond the Berkeley Marina.

We asked people to make a circle, and then Charlie and I faced each other. He had worn a jacket that he had bought for the occasion, which was a shade of dark pink. My mother whispered to my sister, "Charlie looks like a blushing bride groom." And Ann whispered back to her, "It hasn't happened yet." And then Bill Boyce said, "In case you haven't already guessed, this is going to be a wedding," and everybody gasped. We had each picked out a poem that we read to each other. Reverend Boyce then said, "Thank you to the state of California, which has allowed me to marry you, Carolyn Merchant, and you, Charles Sellers." Bill then joined us in marriage, and we put a ring on each other's fingers.

Charlie and I had many good times traveling in a camper we had bought near the Berkeley Marina. We were walking along the road down near the Bay one day and there was a RV show going on. We walked along the little pathway where the RVs were and looked at the various campers. Then we saw one we liked, and we said to each other, "Let's buy it." We made an offer, which was accepted, and we both bought it jointly, and drove it home.

We were then able to go on many camping trips together all over the country. Over the course of the years, we had two or three different RVs. The most recent one was a Tiger, which was an all-wheel-drive and was the width of a truck. The first one we had was wider and just fitted within a lane on the freeway. But the one we bought that we loved best was narrower, and if you needed four-wheel drive on a little rocky road, it would automatically do that.

We had bought computers that we could take in the camper. We each started out with an Osborne 1 computer. The Osborne Ones were the first portable computers, and they looked like a suitcase. That could be set on a table or a desktop. They had a cover that came off, and became a large, wide keyboard. They had a small screen about the size of a three-by-five note card, and they had actual floppy disks. The original discs were about four inches in diameter and could be bent. The later discs were still called floppy disks, but they were small and square and you just inserted them in the disk drive.

But Charlie and I both had Osborne 1s. When I first heard about it, I went down to a computer store and bought one. I then set it up in my dining room and plugged it in and opened it up. Charlie came over, and when I showed it to him, he sat down and started writing. You could

write a whole paragraph on one screen. He just started writing his new book on The Market Revolution. So, he also went down and bought one.

The original Osborne Ones became relics and were eventually displayed in the Computer Museum in San Jose, California. We later sold them for Macintoshes with bigger screens. It was not very foresighted of us not to imagine they wouldn't become famous. We were, however, among the first to use them. Donald Worster, who was a colleague of mine from Kansas, came to Berkeley to give a lecture, and I showed him the Osborne. He sat down and typed on it, and then he went out and ordered one. So, we were among the very first to own and use them. Then, of course, they improved the models, and a lot of people began getting them.

We had a camper that was outfitted with a small dining table. On the seat that went lengthwise, one person could sit with their Osborne (or later their Macintosh). And at the back of the camper with the light coming in the back, the other person could sit at the end of the table. I sat on the side and Charlie sat on the end. And we could each type on our book projects.

We would go to a campground, and at that time, you had to have the electrical connection for the computer to work, but the later models had batteries in them, so you could go for two or three days before having to swap the batteries out. Initially, we went to campgrounds that had electricity. We would decide where we wanted to go, and Charlie would plan the routes. I had a membership in AAA, and we would go into the AAA office and get the maps of the places to which we wished to travel. AAA had fabulous detailed local maps at the time. Now because of computers and cellphones, they don't make those anymore. They would also create routes on separate maps for you, so that you would have the small versions as well as the larger map. We had a lot of fun doing that and going to the places we chose.

Charlie chose the places we went to so that we could see particular birds that we could not see in the Bay Area. We had several bird manuals produced by the Audubon Club that listed which birds would come to certain places in each season. We could then find those places on our maps. We both had binoculars, and as the binoculars developed, we got some that were more powerful but smaller. Charlie had been a birdwatcher since he was an early teenager, and so had I. Both of us still had our bird lists from childhood, but we began expanding on them as we went to new locations. Charlie would choose the places based on the birds that we hoped to see in a particular place and season. We had a wonderful life traveling together.

Charlie had retired in 1991, and I had a fabulous job at Cal where I taught both my courses in the fall semester. I was in the College of Natural Resources, where everyone was required to teach two courses a year, and then the rest of our appointments were research appointments. I had to have a California experiment station project that had to do with the ecology and the resources of California, but it could be comparative. So, I would choose not only a California project, which I could write up and edit for a journal dealing with the environmental history of California, but also, it could be comparative. So, I chose New England, which I loved and grew up next to, in New York State, and I had many friends there. We would drive our camper and would look for birds along the way. We would stop in a camping place and go out birding early every morning. Then during the day, I would do my writing. And Charlie would

load all the pictures he took into his computer. He would take around 500 pictures at a time and then spend the rest of the morning going delete, delete, delete until he got down to maybe the four or five best pictures. Over the weeks, he would accumulate an amazing collection of bird photos. So, I wrote—first on the Osborne 1, but then on the Macintosh when they had larger screens. We had portable computers with batteries in them, so we could hook them up and have a battery supply under the seat that we could plug it into that would last for about three days. That way we could be off the beaten track, plug in our computers, and turn the camper lights on with the camper batteries as the source of electricity.

Environmental Science, Policy, and Management Department
University of California, Berkeley

Back at UC Berkeley, I once again focused on my research as a member of the Department of Environmental Science, Policy, and Management (ESPM). That department had several divisions. My division was initially called Conservation and Resource Studies, but then became Society and Environment. It was integrated along with Forestry and Resource Management, Entomology, and Nutritional Sciences, all of which became part of ESPM, Environmental Science, Policy, and Management. That was because the Provost and others higher in the administration, didn't want to see several disparate departments, but rather something more integrated. The administration did a review of the department and a review of the different divisions, and at one point, they were going to abolish everything. However, another woman, Doris Calloway, who was in the upper administration as the Provost, said,

No, we are going to keep the department. But we are going to cut it down from 400 students—where there are so many students who are taking classes from all over the campus and are being guided by this disparate group of faculty members—to 120 students, and those students must each have a professor who guides them. Before they start out in the major as a junior, they must each have a plan that must be written out.

Each student's plan must state what courses she or he is going to take. Moreover, most of them must be from within the College of Natural Resources, but there can be a small number from outside the college across the campus.

And those courses had to have a theme—an area of interest that had to be approved by a committee, so that each student would know what they were going to take and why they were taking it. But they could choose their own theme, but it had to have something to do with the environment and with conservation, which was the purpose of the department. Each faculty member could have approximately ten students to advise, and they had to approve each student's plan. Then the plan had to be approved by a larger committee to make sure that it fitted into the themes of the larger department. The themes had to be environmental, and they had to show how society and the environmental sciences or history could fit into the larger society. They also had to show why each course was important for the student's future employment goals. The major had become quite large and when it was reviewed, they were going to abolish the major. But

then Doris Calloway, who was Provost at the time, stepped in and said, "No, we are going to cut the major down from 400 students to 120 students, and each student must have a particular plan and must work with a particular professor as their advisor."

When I taught at USF, I was in the physics department, and I taught introductory physics. I didn't teach upper division physics, but I introduced a course on History of Science. I worked with Robert Thornton who had retired from San Francisco State, and he was now helping to head up a new program at USF. Together we found a third person who worked on the set of courses and theories that the students needed to have. I had that kind of background and that way of integrating science and society together.

One day, I saw a job that was being offered at Berkeley. Professor Dave Mullen was walking down the hall in the Harney Science Center at USF and peering into a catalog. I said, "Dave what are you looking at?" He answered, "There's a job at Cal, and I'm applying for it." And I said, "What is it?" And he answered, "Well, it's in a new department, Conservation and Resource Studies (CRS)," which later became Environmental Science, Policy, and Management (ESPM). I said, "What is the job about?" And he replied, "Well, there are all these courses listed in the Catalog that were devised and taught by lecturers, and now, they want to hire full-time faculty to teach them." So, the next day, I went down to Giannini Hall on the Berkeley campus and into the CRS Department Office. They said, "This particular job is in Environmental Policy, but we are going to have one for an Historian. I will send it to you in December when the job is officially posted."

I received the description in mid-December for a Professor of Environmental History, Philosophy, and Ethics. I had received a PhD in History of Science as a graduate student at the University of Wisconsin and minored in Philosophy, along with the background I had learned in ecology and the environment while at Wisconsin. So, I wrote a letter detailing my qualifications for the position and turned it in to the CRS Department in December. On January 1, I went to Stanford to take up a fellowship at the Center for Advanced Study in the Behavioral Sciences (CASBS). In March, I received an invitation for an interview. I was interviewed along with four other people. Two were the lecturers who had devised and taught the courses in Environmental One dropped out because she had received another job offer. The fifth was a male historian who had published a book on the history of ecological ideas. The selection committee was composed of five male faculty and five female undergraduates (there was no graduate program at the time). The women undergraduates strongly wanted a woman and supported my candidacy.

In March, I was offered the position. They wanted me to start in July which was the start date for the position. I said that I had the fellowship at CASBS at Stanford through December, where I was finishing my book on *The Death of Nature*, and could I start in January 1979? They agreed and gave me the position as of July 1, with a leave of absence until January 1, 1979. So, in December, I finished the book and turned it in to John Shopp, editor at Harper San Francisco. And on January 1, I moved back to Berkeley and began my wonderful new job at UC Berkeley, located in Giannini Hall, four blocks from my home.

It turned out that the first three faculty members that the new CRS Department hired were all women. There were a lot of women in the major and they all wanted women because the faculty of the College of Natural Resources were mostly men (except for nutritional sciences, where they were mainly women).

The new CRS women faculty were Sally Fairfax who had taught at Duke and worked on the history and policy of forestry which was broadened at UC Berkeley to include the larger environment. The second was Claudia Carr, who had worked on the pastoral economy and deserts in Kenya and brought that background to the new department. And then I, who was the third woman hired, had worked in the history of science and had brought my experience that focused on environmental history and science in Europe. But the position at Cal focused primarily on the United States. I was able to use my background from the science and environmental history of Europe that had gone into my book, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (1979) to think through and interpret what happened in the United States. The migrants from Europe to the east coast of America brought ideas about European philosophy and ecology with them when they began to use the American environment and natural resources.

The new immigrants wanted to settle, and build societies and towns, and wanted to utilize the natural resources through technologies that they introduced. They began to settle small towns all over the East Coast, especially towns that had access to transportation. Initially, those were on rivers that didn't have many rapids or waterfalls but were wide and flowing. They had canal boats with mules pulling tugboats that could carry produce and resources, including wood, rocks, gravel, and other items required to build towns. They also used them to ship resources and products back to Europe to earn money.

My new job at the University of California at Berkeley was partly teaching and partly research. It had a paid component through the Agricultural Experiment Station. Every person in the College of Natural Resources had to have an Agricultural Experiment Station project that had to relate to the state of California. All the experiment stations in the country had to focus on the state in which they were located, and how they could help that state move forward to utilize its natural resources. A portion of my job, therefore, had to do with California and it was necessary for me to have an Agricultural Experiment Station project that focused on the California environment and its resources, but it could also be comparative. My Experiment Station project compared California with New England. I loved New England because I grew up in New York State. I was fascinated with New England, and many of my close friends and roommates in college had been from New England. My ancestors had come from New England and had migrated across New York State and settled in Rochester. So, I was very interested in the history of New England and in trying to understand how that might have spearheaded some of the developments that then moved westward as people migrated westward.

At UC Berkeley, I taught a course on environmental history. That course had been originated by a lecturer named Joseph Petulla. He wrote the first book titled *American Environmental History*. The other course I taught had been developed by Alan Miller who had

also been a lecturer and taught environmental ethics. When they created the job, they combined environmental history, philosophy, and ethics into one position. I had studied environmental history and had minored in philosophy, so I was able to apply for that job. They wanted to hire people who had published peer-reviewed articles in peer-reviewed journals. Both Alan Miller and Joseph Petulla were great lecturers, and they had written wonderful books that they used in their classes, but they had not published peer-reviewed journal articles, but they weren't really contenders. There was a fifth person who dropped out because she had taken another position. The fourth person interviewed for the job was Donald Worster from the University of Kansas who was excellent. Nevertheless, the members of the department were all men and the student members of the committee who were all women wanted to hire a woman, so I was the person who was offered the position. The Department had already just hired Claudia Carr and Sally Fairfax for two other positions, so there were now three women.

At Cal, in order to achieve tenure, you had to have published peer-reviewed journal articles or books published by university presses and that had been peer-reviewed. The scientists in the department had mostly published articles, based on experiments done in their laboratories, but those of us who were social scientists published in social science journals and in peer-reviewed books that were published by university presses. The Budget Committee at Cal received your case after the department assembled it, got outside letters of recommendation, and put together your articles, books, and letters of recommendation. They then sent your case forward to the Budget Committee. The Budget Committee was made up of tenured faculty from around the campus. Some were scientists, some were humanists, and some were social scientists. The Budget Committee evidently liked my books and articles because I used equations and had developed the history of the laws of conservation of momentum and energy and why those were important for the environment.

I used tables with topics and sidebars, that included examples and also included diagrams. The main diagram that I made was circular. I liked using circles because ecology itself was circular. Likewise, the whole earth and the universe and the planets were originally thought to be circular. There was a set of interlocking circles that depicted the environment and its resources. The environment included the deserts and forests from which people extracted resources to make farms and ultimately factories. They brought together the resources and then created products that they could sell and ship on the transportation networks, which were being built all over the country. Originally there were wagons with oxen pulling them, and then horses and buggies, and canal boats pulled by mules that walked along the paths on the shore and pulled the boats filled with products. The rivers had to be navigable rivers, without rapids and waterfalls. The rivers chosen were those that flowed through flat lands across the entire country. When people had to go through the Appalachian and later the Rocky Mountains, they had to find ways to construct tunnels or roads along the sides of the mountains. Also, they had to find ways of going between river systems, such canals. The whole canal system, including the Erie Canal, was being built at the time.

I initially served as the Chair of the Department of Conservation and Resource Studies (CRS), which later was absorbed into what became Environmental Science, Policy, and Management (ESPM). Conservation and Resource Studies at the time was a large department made of students who formed their own individual majors. The students could take courses from all over the campus and then declare their own individualized major. They would write up a program of eight courses, with an Area of Interest (AOI) Statement that had a name they chose themselves and in which each course was justified. After taking these courses and the total number of courses required by the University, they would receive a degree. There were about 400 or 500 students in this early department. The program was reviewed by the Budget Committee, which decided that it was not acceptable for Berkeley. That was when Provost Doris Calloway stepped in and worked with the professors in the department to develop an acceptable program.

After they each graduated from high school, David and John returned to Berkeley. David applied to Cal in math and computer science and was admitted. He was very good at math and was extremely smart. He did a double major in mathematics and computer science and received degrees in each. He then got a master's degree at the University of Utah and started his own business, editing and publishing a monthly newspaper called Cycling Utah/Cycling West. It contains articles on bicycles and bicycle races as well as advertisements and is distributed in all the bicycling stores throughout the West. John received his bachelor's degree in Conservation and Resource Studies at Cal and then went on to work in the bicycle department at REI (Recreational Equipment Inc.). I am very proud of them and I am so pleased that they both work in areas related to bicycles. I believe that bicycling is an ethical act because it does not use petroleum fuels and does not pollute the environment.

My first husband and David and John's father was Hugh Iltis. And my divorce from Hugh I took back my maiden name, which is Merchant. When I moved from USF to Cal, I took back the name Carolyn Merchant and used it to publish my book *The Death of Nature* and all subsequent publications. I also published a book of all my articles and used the name Carolyn Merchant.

During my entire career at Cal and until the present, I have used Carolyn Merchant. When David and John Iltis were students at Cal, they both used Iltis as their surname and neither of them took any of my classes. No one knew they were related to me until after they graduated. But when my son John Paul Iltis, graduated in Conservation and Resource Studies, in which I taught, I announced it at his graduation.

When John was in high school in Madison, I brought him back to Berkeley and he finished high school here. I picked him up in Madison, and he then went for a year to the Independent Learning School. At the Independent Learning School, they took each student and what they knew and where they were in each subject, and they let them proceed at their own pace. Teachers worked closely with them, so that they eventually took all the courses that they needed to pass and get a degree. They then went on to junior college and then transferred to an upper division college or university. After graduating from the Independent Learning School,

John went to Santa Rosa Junior College where he spent two years and got a junior college degree. After he had done that, he applied to Berkeley, but his name was Iltis, and mine was Merchant so no one knew we were related. He applied in Conservation and Resource Studies and was admitted with the help of my colleague Claudia Carr, who had known his father Hugh Iltis, and she helped guide him through CAL. When he graduated in CRS, I asked if I could read the names of the graduating students. As each student came up in their cap and gown to the podium, I read the names of the Conservation and Resource Studies students. And when John came up, I said, "My son, John Paul Iltis," and the whole audience gasped, because they knew me as Carolyn Merchant, and then they all clapped and cheered. That was a big occasion for John and for me. I had purposefully never had him in my classes. He took one of the classes that I taught, Environmental Philosophy and Ethics, but I was not teaching it that semester. At the time, I had research leave, and my colleague whom I had met in Australia, Professor Patsy Hallen, was teaching the course. And so, John took it that semester. It was my course, but it was taught from Patsy's perspective. But it was still Environmental Philosophy and Ethics.

I loved teaching at CAL, and I was thrilled to be hired there. I began teaching things that I had not taught before. I had received a PhD in History of Science, and I had also studied mathematics and chemistry in college and physics in graduate school. By then, I had become very interested in the environment, and how the environment was affected by human technologies, and how it was beginning to deteriorate. As a result, I began to rethink my own history, and the part that I myself had played by studying chemistry and physics, and how the environment could be saved. How could we save nature, and how could we conserve natural resources? The idea of conservation became especially important, along with how the environment itself could be saved. The environment had natural resources, along with free-flowing rivers and waterfalls and resources that we wanted to save, not only for aesthetic reasons, but because it housed animals, and birds, and salamanders, and many kinds of organisms had evolved together within those systems. I became much more interested in ecology and ecological systems, and the interactions among living organisms and natural resources in a particular place. And how that place, such as a desert, may have differed from another place not too far from it such as a forest.

People's relationship in ancient times, in the Middle Ages, and up to the Renaissance, had been that humans were an integral part of nature. They were not above it, and could not control and dominate it, but they were part of it. And they had to give back the things that they took. They had to have respect for nature, and they had to give something back to nature. Often those objects, those things they would be giving back—such as planting and nurturing plants or helping animals breed or reproduce—helped nature itself to maintain and reproduce itself. And nature was viewed as a female, as a nurturing mother, and humans were a part of that system. They had to nurture the mother and replenish her womb. And so, it's particularly important to think that in early modern science, as metaphors about the world change from being a living organism and a nurturing mother, to that of a machine, that what's really critical about that change is that nature as a machine is now dead. The machine is made up of inert parts of matter,

that are now conceptualized as matter in motion. There are no repercussions in terms of wounding the Earth, or wounding a mother, or wounding nature as a living being. The Earth and all its objects are now made up of atoms. They are not yet the atoms that later became protons, neutrons, and electrons, but are like billiard balls. And those billiard balls could be pushed around like balls on a billiard table, so that if you hit one, it would transfer its momentum and energy to another, and then to another, and so on. The world became a billiard ball universe, with balls were not living, and therefore, people could manipulate them and could do things to them, such as build new structures and technologies that were nonliving. And because the Earth and the things people were manipulating within it were nonliving, there were no consequences to the Earth as a living being, in which the Earth itself would not come back. We could extract resources from the earth and discard the materials we did not use, without consequences to the Earth Mother or ourselves as her children.

My job at Cal was as a professor of environmental history, philosophy, and ethics. Environmental history was what I had developed and explored in my books, *The Death of Nature* (1980), *Ecological Revolutions* (1989), and other books. But environmental philosophy and ethics was another important part of the position I accepted. As I began teaching environmental ethics, I developed my own view while teaching different ethical positions about humans and nature. I began by talking about liberal environmental ethics, which was part of the world in which humans lived and in which men were usually dominant over women. We live in a capitalist society, and liberal environmental ethics comes out of that society, and is consistent with it. We ask of ourselves: how do you practice ethics in a liberal society? And how would an ethic develop that would support a patriarchy and roles in which men would be the ones who instigated, proposed, and discussed ethics, and then environmental ethics.

And then we would go on to explore radical environmentalism, and ultimately radical feminism and ecofeminism in which women played increasingly important roles. Women began to think of themselves as leaders, and to think about how they could change patriarchal relationships so that women attained more power, or some cases, even dominant over men. And out of these ideas, we would develop a more radical environmental ethic, in which women were equal to or perhaps even superior to men.

As I developed ideas about the history and intersection of nature and humans, I developed what I call a partnership ethic. I began to think about the interactions and integration of nature and humans: Nature as an interacting system of ecological parts that included people and animals, plants, and minerals, all in interaction with human society, and a society in which all humans are equal. It would challenge a society in which whites are more dominant, and in which Westerners are more dominant over other peoples and cultures, and it would explore one in which people all over the globe are equal to one other. I began thinking about forming an ethic in which all people are equal and in dynamic interaction with a nature that is also powerful and has a major role to play. I pondered the existence of a society in which humans would have respect for nature and accept what nature does, and one in which we as humans would accept the things that nature does that are uncontrollable. For example, we can't stop or control volcanoes,

tsunamis, and major hurricanes, or many of the things that nature produces. Nature has power, nature is its own self, and is itself an actor. We have to respect that and accept it, and yet—try not to control and dominate it, because ultimately, we cannot do so. The ethic that results is an interactive ethic in which humans have power, and humans have power to do things, but also to stop themselves and withdraw from doing things that could do. We also give nature respect because nature can do things that we can't control. The resulting ethic is an ethic that is interactive and dynamic.

I was very influenced by my original work on the problem of the domination of nature, and how mechanistic science was able to create laws, such as the laws of the conservation of momentum and energy. There was a major controversy between Leibniz and Newton and their followers, over whether momentum or energy was conserved. Each side had numerous followers and published many papers. The controversy wasn't resolved until the middle of the eighteenth century by Jean D'Alembert (1717-1783) who said, "Both sides are correct." But the result that both momentum and energy were conserved was not fully accepted until the nineteenth century.

Nevertheless, in the mechanistic world that emerged from the seventeenth century, scientists were trying to understand how science can understand the forces and structures of nature. As science itself evolved, the science of ecology emerged during the twentieth century and became increasingly complex. And then complexity theory itself began to develop as a way to understand more deeply particular aspects of the natural world.

In 1984, I became a Fulbright Senior Scholar in Sweden. I wanted to go to Europe, and I applied for a fellowship. I had met a wonderful woman named Abby Peterson at a conference. She was at Umeå University in northern Sweden at the time, and in 1984, I received a Fulbright fellowship to teach at Umeå University in northern Sweden. Umeå is the northernmost university in Sweden and is located just under the Arctic Circle. It was an incredible experience being there. I was not there in the deep winter, but from March through July, when things were brightening and warming up. Trees were budding and flowers beginning to come up.

Abby Peterson was a wonderful person in the department at Umeå University, where I taught two classes, one in the Department of History of Ideas and one in Women's Studies. I taught one course on Nature and Culture and one on Science and Nature. One was in the morning and the other in the afternoon, and I had different groups of students. I taught both large lecture classes and also taught seminar-style classes. I enjoyed getting to know the Swedish students. When I taught seminars, I always made sure to go around the table, learn everyone's name, and learn their stories and what they had done. I would always be sure to ask each person to speak about the things we were reading. Among other things, I taught my book, *The Death of Nature*. It had been translated into several different languages, among which were Swedish, Italian, and German, and it also came out in Japanese, Chinese, and Korean. The book itself became quite well known.

In Sweden, I had a Fulbright fellowship. I gave lectures at different universities, but I had a home-base in Umeå. I went to several different universities around Sweden and Norway to give lectures. Most of them had to do with *The Death of Nature* and the implications of nature and its

use by human technologies. They included the implications for the environment and what was happening around the world. I also talked about the ethics that we need as a human species if we are going to survive and how to create an environmental ethic. My ethic was one of partnership with nature. If we can partner with nature and have an ethic of partnership, we can have a give and take relationship with nature. It's an ethic in which we use the things that we need and then recycle them as much as possible and give them back to the environment, so that the environment can then sustain itself.

In June of 1986, I became a visiting professor in Paris, France at the Ecole Normale Supérieure at the invitation of Professor Evry Schatzman. He was an astronomer who I had met when I was in Hawaii. He was giving lectures to my sister Ann Boesgaard's Department of astronomy at the University of Hawaii. Professor Schatzman invited me to come to France and he helped to get an appointment for me and arranged a couple of classes for me to teach. And I was able to have a very nice apartment across from the park and then go to the Ecole Normale to teach. I was able to go and stay for a month. After I finished my teaching, I travelled around not only in Paris, but I to southern France as well. It was a very rewarding experience.

In 1991, I became a visiting fellow in Perth, Western Australia. I had met a scholar named Patsy Hallen, and she and her husband Peter Summers lived in Western Australia. She invited me to come to Murdoch University in Fremantle, near Perth. I agreed to give two courses there. Charlie and I had a small VW camper which fitted perfectly into a container that could be put it on a ship, and so we shipped it from Oakland to Sydney Australia. Then we flew over. After we arrived, we had to get the camper out of customs, and then put a sign on the back of it that said, "left-hand drive." And we had to be sure to drive, not on the right side of the road as we do here, but on the opposite, or left side of the road. And as we drove, we had to keep thinking where we were, and what side of the road we were supposed to be on.

Charlie had retired from his professorship at Cal and so he got to come with me to Australia. We had both been bird watchers from childhood and had done a lot of bird watching together in our camper in the U.S., all over the West Coast and across the country. We had a VW bus that we shipped in a container to Sydney, and we picked it up there. We had to have a sign on the back that said, "Left Hand Drive," so that people would not think that no-one was driving the van. We visited a friend that I had met through international meetings, Val Plumwood, who lived just south of Sydney. And she had renamed herself after the Plumwood trees that were native to her place. There she had built a cabin for herself out of wood, and she grew all her own fruits and vegetables and was totally independent. We visited her there and got to meet her pet wombat. She would invite the wombat into her kitchen every day and give him some food to eat, and then she would boot him outside. He would come back the next day and ask for more.

It was a lot of fun to see the birds and animals that were native to Australia. We drove the camper, first south along the east coast, where we saw Val, and then we drove it across southern Australia through to Western Australia, and on to the west coast where we met with Patsy Hallen and her partner Peter Summers. I had been invited to teach a couple of courses in Fremantle. While I was teaching and doing research at Murdoch, Charlie would take the camper and go off

during the day and find a place to bird-watch and to see the sights of Australia. We had a wonderful time. After my teaching was completed, we went up the west coast of Australia to the north, and then across the top of Australia. Then we came back down through central Australia, and back to the east coast. That was a long trip in the camper. And we always had to drive, for us, on the wrong side of the road, and remember where we were, and which side to drive on. And had to have a sign on the back that said "left-hand drive," so that people would not look at us in astonishment and think that there was nobody in the driver's seat.

Bird watching was the way we moved from place to place not only across Australia, but across the United States, Canada, and Mexico. WE chose places where there were birds we particularly wanted to see. I had been interested in the environmental history of New England and so I wanted to look at the natural resources of a particular place and why it was settled. Originally, the towns were settled because there was something important there, or perhaps a river or a navigation place that would make it possible to have commerce and therefore to make money. We looked through our American Automobile Association (AAA) maps and our AAA guides, and they would often tell a little history about a town, and why it was important, and then list the campsites.

Charlie would plan where we were going to go so that he could expand his bird list. He had been a bird watcher since childhood and so had I, and so this was an opportunity for us both to build on our life lists, especially our U.S. lists. We would go into a camping place, based on its environmental history or what birds would be likely to be found there. We would both go out in the morning together and bird-watch and Charlie would take photographs with his special birding lens. Then we would come back to the camper with our bird lists for that morning. And if we were hooked up to the electric sites, we could plug in our computers.

Charlie would take photos of the birds we saw, often up to 500 birds a morning, and then download them to the computer. And then he would delete, delete, delete until he got down to maybe the best five photographs. And I would set up my computer on the camper table next to him and start working on another chapter of my book in progress, especially focusing on the resources of New England place we were camping in. My book on *The Death of Nature* focused mainly on Europe, but the books I worked on afterward dealt with what happened to those resources, and to the colonists who brought those ideas and technologies to New England, and then across America. New England was one of the first places in which Europeans settled, and we looked at many of the early places in which they lived. Often, I would go to the community library there and look up resources and archives. And Charlie would take the camper and drive around the area and do more bird watching.

In the late afternoon, we would meet up, and go to a local restaurant, or to the campground and cook our dinner in the camper. We had a wonderful time doing all that. And that was how I gathered the resources and materials to write my book that became *Ecological Revolutions: Nature, Gender, and Science in New England*. The book took many of the themes I had developed in *The Death of Nature*, but looked at them more particularly in terms of the geography, topography, and resources of the different areas of New England. Those were quite

different, of course, from what I had been looking at in Europe for my book *The Death of Nature*. That book, of course, provides the framework for understanding how environmental change happens in Europe and then in New England. In terms of environmental historiography, my book, *Ecological Revolutions* is often paired with Bill Cronon's book, *Changes in the Land*, but it goes beyond colonial times to the market revolution and to late nineteenth century industrial capitalism.

On our camping trips in California, I was writing *The Death of Nature*, and Charlie was working on his book, *The Market Revolution*. We did a lot of camping together and we would drive our camper down Highway Five to Southern California and find hiking and camping places. These places were mostly influenced by what kind of birds we would be able to see there. As we were driving down Highway Five, I had written a chapter or two of my first book, *The Death of Nature* and read him the beginning of the first chapter. He listened for a while, and then said, "There are a lot of ideas, but there needs to be an argument." He helped me to think about how to make an argument, to say what you're going to say, then to put forward the ideas and develop them, and then to write a conclusion. He helped me to write paragraphs with a first line that introduced the idea and a concluding line for each paragraph and a transition to the next paragraph. And to conclude each chapter with a paragraph that summarizes the argument and provides a transition to the next chapter. He helped me to think about how to structure the book. The opening line, to *The Death of Nature*, "The world we have lost was organic" was Charlie's contribution to the book.

In Berkeley, in the 1960s, and 1970s, I became interested in radical environmental organizations, such as Earth First! and the Earth Liberation Front and other organizations which were gaining ground in the nineteen-seventies when my book was being completed. I participated in some of the marches and some of the meetings that were taking place. I had a good friend, David Kubrin, who had worked on liberation ecology, and I met with him. He taught a class in the Liberation School that questioned the background of capitalism and what it was doing to the environment and society. He had written an article, titled, "How Sir Isaac Newton Helped Restore Law 'n Order to the West" about how Newton's laws and ideas turned around what was disruptive and rather chaotic in social culture after the work of Copernicus, Kepler, and Descartes. David Kubrin showed how Newton with his laws of motion and law of gravitation helped to create a new social order, i.e, how Newton helped to restore law and order to the West.

David Kubrin had a major influence on me. He taught a course in the Liberation School over in San Francisco. The Liberation School had several courses taught by some politically radical people. I took a couple of those courses, along with David's. The courses helped to broaden my thinking, and to think about how as a society we should move beyond capitalism and think about new social ideas. But how to do this in a way that's not totally disruptive, but rather to use the ideas of people and movements to think about new structures and social change. Capitalism was the way the American economy was structured so it was hard to challenge. Those challenges did not, of course, ultimately succeed. But the radical movements of the seventies and

eighties, and especially the women's movement, challenged social structures and offered new ways of thinking.

The women's movement began challenging the structures of patriarchy and the work that men had done and began to show how women's liberation could give women the confidence and the power to make changes. The radicalism of the sixties, and then the seventies, and going on through the eighties, ultimately led to radical ecology.

Charlie and I were both participants in Berkeley radicalism. Some of the meetings were held at his house on Virginia Street with his then partner Nancy Sellers. The Berkeley City Council members were Democrats, but they were relatively conservative Democrats. The radical movement tried to get more radical people elected to positions on the council, but in the north of Berkeley, the more conservative Democrats were pretty solid, so it was difficult to do. I nominated Charlie to be on the council, and I was his campaign manager. I printed brochures for distribution in the neighborhood, and we worked together, along with several people who worked with us. And took the flyers around to people, knocked on their doors, and talked to them about it. It worked much better in our district in western and southern Berkeley, but not as well in north Berkeley.

One of the books I published was in a series called *Major Problems in American History*. I had gone to American History Society meetings and seen them there. I talked to the editor about possibly adding one on *Major Problems in American Environmental History*. I put together an outline and submitted it. These books used seven or eight short primary source documents and three related essays with different perspectives for every chapter. Each volume had fifteen chapters, because there were fifteen weeks in a semester. The first chapter started out proposing several different theoretical approaches to the field. Each chapter would cover a specific period. In each chapter, there would be primary sources that were written by the people living in that historical period. They were reasonably short, perhaps a page, or a page and a half long. The six or seven brief primary sources would be followed by three longer essays that would summarize and compare the approaches for that time frame. The essays would be taken from articles or books that had previously been published, but they would have contrasting perspectives so that students would realize there were several ways of interpreting the materials of a given period. Each essay would show how a historian goes about making an argument, and what kind of evidence they bring to support it, and how they would write an introduction and a conclusion. Moreover, each of the three essays would be comparative. I had seen several of the books in this series, so I proposed to the editors that I might try to put something together on environmental history. I spent a fair amount of time—several weeks—looking at sources and putting together a table of contents, which I then sent to them. They were very positive in accepting it and I then put the book together. I had been taught at Vassar College to go to the sources, and that that's what you should depend on, and interpret them for yourself. And that each historian would have a different point of view. Also as the decades change and go forward in time, different perspectives and interpretations come up on that same material. I therefore

looked for people who had different perspectives on a particular period where specific natural resources were being used.

When I taught American Environmental History at Berkeley, I used the book I had edited because it had several different perspectives on each topic and period. Before the book came out, I put together course readers that I had duplicated at Cody's or some other copy center. I wanted to teach my students to always read from and interpret the sources, especially primary sources. I would also sometimes put books on reserve that would have different points of view about a particular topic and period. I told them to read the sources and interpret them for yourselves.

Another book along these lines that I edited to help students understand a particular topic was my edited book *Key Concepts in Critical Theory: Ecology*. It was in a series called *Key Concepts in Critical Theory*, about different topics. I had seen them at a meeting and talked to the editor of the series. They hadn't done one on ecology, and so I talked about putting something together. My book *Key Concepts in Critical Theory: Ecology* contained different perspectives on environmentalism and on ecology, with different points of view about the themes. I believe that it's important for students to have different sources to read and to make their own interpretations. That was the overriding theme that I had learned at Vassar College: "Go to the sources." As a result, I always taught my students to look at the sources and interpret them for themselves. But, also, to realize that historians can be wrong, that times can change, and that different perspectives can come up. You yourself should make the determination of what the sources and historians mean based on historical evidence

In June 1992, I went to Brazil to attend the United Nations International Conference on Environment and Development? I was able to go to the conference because my children were then visiting their father, Hugh Iltis, in Madison, Wisconsin for the summer months, so I was free to go. I was able to get the money to go because my aunt and grandmother had left me some resources. There was a group that was going to attend, with which I came in contact the California Bay Area, and I went with them. I was involved with the Women's Tent. There were various tents at the conference, and one of them was the Women's Tent which involved women from many countries around the world. The conference had tables and tents with people from different countries all over the world who were displaying books, articles, and pamphlets. Talking to other women in the rest of the world about what they were doing to try to save the environment was very enlightening. The whole experience was an extremely enriching and wonderful, especially to meet women from around the world who were trying to save the planet.

In the United States, I became a member of the American Society for Environmental History (ASEH). That organization helped to develop the field of environmental history itself. I was a member since it started in the 1970s. And I served in a number of different capacities—as an associate editor of the journal, which was first named *Environmental Review* and then *Environment History*. I was a consulting editor on book projects, on different committees, and in 1999–2001, I served as vice president. And then from 2001 to 2003, I served as ASEH.

I started out teaching courses in American Environmental History and in Environmental Philosophy and Ethics at UC Berkeley. Those courses were due to the foresight of people like

Joseph Petulla who had devised and taught the course on American Environmental History at Cal in 1972 and had the foresight to write an amazing book titled *American Environmental History* in 1977, and to my colleague Alan Miller who had written a book on environmental ethics in 2003 called *Gaia Connections*. They had both been forerunners in the development of those fields. They taught the courses at Cal that they devised, and which drew large numbers of students. The environment was becoming an important force in society during the 1970s and there was a lot of consciousness about saving resources and the environment, and especially public lands. There were marches, like the peace marches, to save nature and its resources. It was also a period when there were many social movements: women's movements, nature movements, environmental movements, and peace movements. There was a great deal of social activism at that time, and environmental history and the environmental movement came in on that wave.

I became involved in environmental history when I first heard about the field and about Joseph Petulla's book on *American Environmental History*. I was teaching at USF, and I heard through my colleague, Dave Mullen, who was looking at a catalog from UC Berkeley, that there was going to be a job in environmental history. I looked at the catalog, and then I went down to Giannini Hall and said, "I understand you're going to have a job for someone to teach these courses?" And they said, "Well, that course is for an ecologist. But we are going to have one for an environmental historian and I will send you the announcement."

They sent me the announcement at the end of December 1977, and I applied for the position. In January 1978, I went to Stanford to take up a fellowship at the Center for Advanced Study in the Behavioral Sciences (CASBS). So, when I was interviewed for the Berkeley position, I was from Stanford, not just four blocks down the road in a house in Berkeley. I was offered the position and they wanted me to start in July, but I asked if I could finish my fellowship at the CASBS. They appointed me as of July 1, but they gave me a leave of absence until January 1979.

In 2003, at the end of my term as president of the ASEH, I gave a presidential address on the topic of environmental justice. That address was published in July of 2003, as "Shades of Darkness: Race and Environmental History" in the journal, *Environmental History*. Environmental justice was the important theme because increasingly there was an awareness that the field of environmental history was mainly for white Americans and Europeans, and that we needed to recognize that people of color were not only interested in environmental conservation, but that we ourselves needed to promote environmental justice in order to bring People of Color into the conservation and ecology movements. Therefore, my presidential address tried to recognize the need for environmental justice, the need for sharing and equality, and to recognize the roles that white Americans, European Americans, Asian Americans, and People of Color could all play together.

In 2003, I published the book *Reinventing Eden: The Fate of Nature in Western Culture* that discusses the controlling power of the biblical myth of Eden, and how that helped to shape environmental practices from then up through the present day. That was an important book for me to write because while I had focused initially on seventeenth-century Europe and then

America, I wanted to see where the roots of these ideas came from. In college, I had been in love with Greek philosophy, and the pre-Socratics, Plato, and Aristotle, and in graduate school, I had taken a history of Greece and the Greek islands. I had been to Greece and traveled all over the Greek islands, as part of a trip to Africa. I wanted to try to bring in that early history, and how the early ideas developed in Greece became so important for American history, and to make that early history more central for everybody studying the environment.

In 2016, I published a book titled *Autonomous Nature: Problems of Prediction and Control from Ancient Times to the Scientific Revolution*. It goes back to my interests in history of science and to the overarching theme in much of my work about controlling nature. But here, I am talking about nature as a rebellious, recalcitrant, unruly actor.

Much of environmental history, and history in general, has been about humans controlling, settling, and transforming the Earth, but we must also realize that the environment itself has aspects that we cannot control and should not try to control. And also aspects that may make it unruly and recalcitrant. There are tsunamis, earthquakes, hurricanes, and huge tidal waves, that are aspects of nature that we can't control and shouldn't try to control but need to recognize as important forces. We should try to work with nature, as a partner, to work with these forces of nature, but also to just allow them to be, and not try to dominate and control them.

In 2016, I published a book called *Spare the Birds!: George Bird Grinnell and the First Audubon Society*. I was fascinated by birds and the history of the study of birds and of the history of the Audubon Society. Charlie and I did much of our trips around our birding interests. One of the outcomes was to write the book, *Spare The Birds!* It came about because not only was I a birdwatcher, but because I was very interested in Grinnell, and how he came to write the book pamphlets that he did. I also recognized that the existing, remaining copies of the pamphlets were very sparse. There were only a few sets left in the libraries that I could see in online catalogs. And I realized that as people, became more conscious of bird life and as birdwatchers we might want to look at the history of birdwatching, it wasn't going to be easy to find all the pamphlets. And not only that, but, because they're pamphlets, if people checked those out of libraries, maybe some of them would never get returned to the libraries where they had been found. So, I decided to write a book about birds and the problems of the loss of bird life, that included copies of the pamphlets. I titled it *Spare the Birds! George Bird Grinnell and the First Audubon Society* (Yale University Press, 2016) to try to bring recognition to the fact that that not only we were losing the birds, but we were also losing a lot of our original information about them. And the beautiful, colored pictures of bird life, that were in the original pamphlets, were also very sparse in the libraries. So, I wanted to put out the book *Spare the Birds!* That included the original pamphlets and colored photographs. And, fortunately, Yale was willing to publish the book and the colored photographs as a centerpiece of the book.

In 2008, I published a collection of some of the early articles that I wrote, in a collection called *Science and Nature: Past, Present, and Future* (New York: Routledge, 2008). I had written a lot of articles that were published in *Environmental History*, or *Environmental Ethics*, or other journals that were available mainly in university libraries. And although some of them

were available online, it might be a good idea to collect the ones that I had written together in a single book. It was especially important to me because many of the articles were on women, women in environmental history, and women in the history of science. I was always interested in promoting issues of gender and especially the contributions of women. So, this collection of articles was also trying to present that aspect of environmental history.

In 2020, I returned to Stanford as a Fellow, where I had written much of the *Death of Nature*. I used that time to write the book I published in 2020 called *The Anthropocene and the Humanities: From Climate Change to a New Age of Sustainability*. The Anthropocene is an term that defines the period of human history that comes about with James Watts's invention of the steam engine in 1776. The steam engine and steam power were subsequently used to power canal boats, trains, mines, and factories. But those engines were not only using resources to run the engines, but also polluting the atmosphere from burning coal, oil, and ultimately from diesel-engines. What we really need to be aware of is not only why we need this transportation to bring together the peoples of the world, but how we need to engage everyone in saving natural resources so that we, as humanity, can continue to exist on the planet.

Another book that I helped to publish is a book titled *Race, Genetics, and Science: Resisting Racism in 1930* (Brno, Czech Republic: Masaryk University Press, 2017), by Hugo Iltis, my ex-husband's father. The book contains three essays that Hugo had written in the 1930s, that I had translated from the German into English, published by Masaryk University Press in Brno, in the Czech Republic. It contains a letter from Einstein to the anthropologist Franz Boas in New York urging him to help save Hugo who had written letters against the Nazis. The Nazis had written to Hugo that as soon as they took over Brno, they intended to hang him in the public square. Hugo Iltis had written an important book on Gregor Mendel [(German edition, Berlin: Springer, 1924; English translation *The Life of Mendel* (London: Allen & Unwin, 1932)]. I was interested in what he had written after that. He had completed a book that he was ready to publish, and had brought together an immense amount of material, but passed away before he was able to publish it, titled "Gregor Mendel and the Emergence of Genetics." I wrote an epilogue, and my name is on it as an editor. And my son, David Iltis, will also write something. It is an advancement of the work that Hugo Iltis had started but was unable to complete before his death. It will be published in Brno.

When I first started teaching at Cal in Conservation of Natural Resources [CNR], later Conservation and Resource Studies [CRS], we didn't have a graduate program. They had hired three women faculty, Sally Fairfax, Claudia Carr, and me, to teach the courses that had been developed by Joseph Petulla, and Alan Miller that were attracting large numbers of students. But it wasn't easy for us to cover all the materials and the large numbers of students. There were around 400 or 500 students who wanted to major in CNR, and the students at that time were able to take courses from all over the campus. They put together the list of ten courses from the entire campus that constituted their own individual majors. But many of them were taking courses that didn't fit together very well and were taking many courses from the rest of the campus, but still getting a degree in the College of Natural Resources. The campus Budget Committee decided

they were going to review the major and decided that it could not continue and that the major should be abolished.

But then Doris Calloway, who was a woman and provost at the time, recognizing that there were three women who were about to lose their positions, decided that the major should be continued, but should be cut down from 400 or 500 students to 120. Each of the students had to have a faculty advisor, and each had to develop their own individualized major in conjunction with that faculty member. They had to take a certain number of courses within the College of Natural Resources but could also take courses from other departments outside. The idea was that if they were getting a degree in the College of Natural Resources, they had to take most of their courses in CNR. That plan worked very well. Provost Calloway saved the major and she saved our jobs. We were able to work closely with other departments, but to mentor our own students. We had to be sure that the number of students we advised was small enough for us to handle. So, we each had 10 students and other faculty in the College also became advisors. The total number of students in the major was reduced to 120.

At first, we didn't have graduate students in the major. All of us had to find ways to work with the other departments such as Geography, or Landscape Architecture, or in my case History, to work with graduate students. I was able to get a below-the-line appointment in History. I could mentor some students from the Department of History who were history majors, but who were interested in environmental history.

It wasn't until we joined with the five departments that became Environmental Science, Policy, and Management in 1993 that we had graduate students. Each faculty member could have a limited number of graduate students so that they could advise them, spend time with them, and make sure that they all got the guidance that they deserved. It was great to have graduate students that we could advise, and to have the first students to come across the stage at graduation and get their degrees in Environmental Science, Policy, and Management.

My son, John Paul Iltis was a major in Conservation and Resource Studies. But his name was different from mine, and I never taught him in any of my courses. But he was able to be in the major, with Claudia Carr as his advisor, and he took a lot of great classes. And when it was time for graduation, I asked if I could read the names of the Conservation and Resource Studies students. I stood at the podium, and when he came up to get his degree, I said, "My son, John Paul Iltis." Everybody gasped, and then they cheered, and they realized that he had a different name, but he was my son. It was a thrilling moment.

Among the things that I am most proud of accomplishing in my lifetime, are writing *The Death of Nature* as the number one thing in my academic work. And having my two sons, David and John Iltis on the biological side was the most important. And then having those come together. As my sons got older, they began to read my books and appreciate what I had done. David got his degree from Cal with a double major in Mathematics and Computer Science and John majored in Conservation and Resource Studies in the College of Natural Resources, so that was particularly wonderful. Also, I had been a Professor at UC Berkeley, my sister Ann Merchant Boesgaard had received her PhD in Astronomy from UC Berkeley, my husband

Charles Sellers had been a Professor of History at UCB, his son Grier Sellers had received his degree from UC Santa Cruz, and his daughter Janet received her degree from UC Davis. We were truly a University of California family.

My hopes for the future of the world include resolving the environmental problems that we now have, especially the depletion of wildlife and the organisms of the oceans and reducing the pollution of the lakes and rivers. There is hope in the sense that there are laws being passed, and people working continuously to solve the problems, and that there are new societies and organizations being formed. We are at a tipping point. Hopefully, we will go in the direction of conservation, environmental justice, environmental reform, and of saving the Earth.