Porter
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My father was the only child of a widowed mother, who was always simply "grandmother" to us children. We never called (or referred to her) by more endearing terms, probably because on the death of her husband she assumed life-long mourning, dressing always in long, full black shirts and shirtwaists that buttoned closely around her neck. A costume of such formality, together with an inherent reserve, inhibited spontaneous expressions and demonstrations of affection by her grandchildren. Father, however, always called her affectionately "marmie."

Grandmother's maiden name was Julia Foster. She had two sisters, clara and Adele, and their father was John Foster, a doctor. He had a brother, who was an officer in the army at Fort Dearborn on the southern tip of Lake Michigan. John Foster visited his brother at Fort Dearborn, and together they purchased land near the fort in the first government land sale. The brother was transferred to another military outpost farther north on Lake Michigan, where he was killed by an enlisted man he had reprimanded for being drunk on duty. John Foster inherited his brother's share of the land they had purchased together.

Because of its strategic location, Fort Dearborn, established originally as a defensive outpost against the Indians, grew rapidly following the end of the Indian wars to become an an important agricultural and industrial center. Early during its

growth it was given the Indian name "Chicago," a name not intended to characterize industrial development but meant as a disparaging epithet for the swampy environment surrounding the site; the term is reputed to be the Indian word for skunk cabbage.

John Foster married Nancy Smith of Peterborough, New Hampshire and brought her as his bride to Fort Dearborn, where he practiced medicine and was a member of the school board. They lived on Madison and Franklin Streets in what became Chicago, and Foster Avenue still bears his name. With the building of the railroads, Chicago grew from a small farming town into a major transportation and shipping center for the entire Midwest. Not foreseeing the enormous appreciation in value (concurrent with the growth of Chicago) of the land they inherited from their father, Clara and Adele, preferring more civilized society, sold their shares to Julia and returned to Peterborough, the home of their mother. They became residents of New Hampshire and settled on Elm Hill Farm, Clara marrying a Bass and Adele an Adams.

Julia Foster married Maurice Porter, an Episcopal minister. They went to Europe on their honeymoon before settling in Racine, Wisconsin, where he had his parish. In Racine two sons were born--Maurice Junior, who died in childhood at the age of 12 or 14, and James Foster, my father. My grandfather died of appendicitis when my father was five years old, and following that tragic event grandmother moved back to Chicago to devote herself to the upbringing of her son and to various charitable enterprises.

Motivated by her religious beliefs to help alleviate the sufferings of others and to make her own sorrow more bearable, she established with the aid of women friends a hospital for children of the poor. At first a simple project in a rented

house, where the sick would receive constant care, it soon expanded, with male financial and administrative assistance, to a professional institution. Dedicated to the memory of my grandmother's eldest son, it was named the Maurice Memorial Childrens Hospital.

My father received his early schooling in Chicago and was a young man at the time of Darwin's revolutionary theories on biological succession. With a group of contemporaries--young men and women of Chicago who were similarly influenced--he helped found the Agassiz Association, a discussion group which met frequently to exchange ideas on current scientific theories in biology, geology and evolution. My father became a dedicated protagonist of the scientific interpretation of natural phenomena, with an unshakeable belief in causality and a fierce rejection of purpose as a driving force in the universe. Under the influence of Darwin's writings, my father professed agnosticism; in later years he disclaimed such qualified skepticism and pronounced his disbelief in a god or the need for a supernatural explanation of existance as inconsistent with a purposeless world. But perhaps because he was the only surviving child of a widowed mother, who was the wife of an Episcopal minister, and had been brought up under the strict guidance of the Episcopalian faith, he retained, if not the religion, certainly its moral precepts. He held to very high standards of conduct. Truth, honesty and fulfillment of all promises were his guiding principles. He did not lecture us on these ethical matters; it was by example that we learned to honor and live by them.

Although he seldom talked about his anti-religious beliefs, it is not surprising that I absorbed my father's point of view. Years later, it was dramatically demonstrated to me how beliefs are unknowingly passed on to one's children, when, quite out of the blue, my son asked me, "Daddy, do you believe in God?" I was taken aback and tried to evade the question by saying there

were differences of opinion on the matter, but I was interrupted by him saying, "I know you don't believe in God, Daddy."

My father's other influences were much more positive. He took us camping and on Sunday walks, and talked to us at length about geology, paleontology, astronomy and marine biology during our summers in Maine. My father, at heart a naturalist, instilled in his children, perhaps most profoundly in me, a fascination with the natural world.

It was through my mother's influence that I learned racial and religious tolerance, or more correctly, was not exposed to social prejudices. Not until I was sixteen and away at boarding school did I learn about ethnic distinctions and how they subvert personal and social judgments. I did not know the distinction between Jews and non-Jews, because it was a difference to which I had not been exposed. The term "Christian" being uncommon in my family, I did not place myself in any particular religious category. Very few Negroes lived in the suburban community in which I grew up and went to school; because of tradition and my grandfather's Civil War experience, they were thought of as the "freed people."

Although we were exposed to a variety of political views, we also learned political tolerance. My father was Republican throughout his life, whereas Mother, when women attained the franchise, voted Democratic or for third-party candidates, which encouraged in her children a tolerance for unorthodox political views. An example of political intolerance that had a lasting effect on me occurred during my first year in

boarding school. World War I was drawing to a close and the Russian Revolution had deposed the Czar. A young teacher of history and government described to his class the workings of the Kerenski government. Word got around that he was subverting his students by promoting Bolshevism, and he was summarily dismissed. The chairman of the school board, an old man in his dotage, was called upon to address a school assembly to explain what had happened to the popular teacher. The teacher was fired, he told us, because our minds were being poisoned by the "dragon of Bolshevism."

And so I grew up in the liberal tradition, now considered politically obsolete, to which, in the absence of convincing arguments to the contrary, I still subscribe. That a government, any government, but particularly a democratic government dependent on popular sanction for its existence, should be responsible for the general welfare of the governed is a foregone conclusion that does not seem to be universally accepted today. Social and economic welfare is currently sacrificed for military security to assure the survival of the society, which has been diminished in the course of its own protection. Excessive militarism defeats its intended purpose in a constitutional democracy when the rights, liberties and economic welfare of the people are made secondary to their defense.

Father went to Harvard, where his principal studies were in biology, and he graduated in 1896. Soon after graduation he married my mother, also a Chicagoan, who had graduated from Bryn Mawr College in 1895. Mother was brought up as a Unitarian, the daughter of William Eliot Furness (for whom I was named)

and Lucy Wadsworth, whom I remember as a sweet and affectionate granny who died when I was still very young. Motivated perhaps by a spirit of adventure spurred by the westward drive of civilization in America, they settled in Chicago after the Civil War, in which my grandfather had served as a major in a Negro battalion that never saw action. Mother had two sisters and a brother. Her older sister, Grace, died of tuberculosis in California; her younger brother Jim enlisted in the Spanish-American War and died of typhoid in Cuba; a younger sister, Margaret (Aunt Peggy) was very devoted to my mother, never married and survived her. She lived all her life in Chicago, where she became a librarian at the Querre Library.

Following a wedding trip to Europe, father and mother took up residence in New York City so that father could attend the Columbia Architectural School. Architecture was my father's second major interest after biology, which he gave up because he felt his eyesight was too poor for work with a microscope. In order to manage his mother's real estate interests, he and mother moved back to Chicago after the death of _____. Father then immediately began to plan houses for our family and for his mother in Lakeside, a northern suburb of Chicago on Lake Michigan. For our family he planned a large brick Greek revival house with Ionic pilasters at its corners, an entrance portico and facade featuring Corinthian columns, and Doric-Columned porches on each side of the house that faced south. The east-side porch overlooking the lake was screened as a sitting room for summer use. The west-side porch was glassed

in to serve as a conservatory and greenhouse, where father raised flowers and exotic plants. His admiration of classical architecture was based on its purity of function and design expressed by the mathematical precision of Greek temple construction, which he meticulously maintained in the features he incorporated in his house. The house he designed for his mother was half-timbered in English style. The two houses were sited about two hundred feet apart on a bluff overlooking Lake Michigan. Construction was started before the turn of the century and before completion my sister, Nancy Foster, was born in Chicago. I, however, was born in the new house in December 1901 soon after my parents and my two-year-old sister moved in.

Before my grandmother moved into her new home in suburban Chicago, she adopted two little girls, Charlotte and Frances, our youngest aunts whom we grew up adoring--a relationship made more intimate by their closeness(proximity) to our age. Frances endeared herself to us by her gift for story telling, which she did when importuned after Sunday dinner at Grandmother's. She frequently told stories from Kipling's Just So Stories, Stevenson's Rewards and Fairies and The Adventures of Sherlock Holmes, but the stories we liked best were those about ghosts which she spontaneously improvised.

I lived in the house where I was born overlooking Lake Michigan the year around before I began school, and after that intermittently in summer until, at the age of eleven, the whole family went to Maine each year for the summer. I was the second child in a growing family. My three brothers were

all born at home, Edward two years before me, Fairfield three years after Edward, and John in 1910. In her years at Bryn Mawr mother developed cultivated literary tastes, became an omnivorous reader, and made several life-long friends who became associated with Jane Addams' Hull House in Chicago. I suspect that it was not only family tradition but also these friendships that encouraged an emotional bias for a liberal feminist and racial point of view. She supported women's rights, the suffragist movement, racial equality, and progressive political movements.

She was also a devoted mother and read tirelessly to all her children. The first stories I can remember were the classics of Beatrice Potter: Peter Rabbit and squirrel Nutkin, which was my favorite, and the frightening one about rats that captured Tom Kitten and were about to make him into a dumpling, when he was rescued by the Scotch terrior John the Joiner. She also read the King Arthur stories, Treasure Island and others by Stevens and Mark Twain. Later during our summers in Maine, mother would read to the whole family gathered of an evening in the high-ceilinged living room around the fireplace in which four-foot logs burned.

With the exception of Halley's comet in 1910, my most vivid memory of these early years--I was five years old at the time--was June 10, 1907--the day Fairfield was born. An unseasonal storm had dumped a lot of snow during the night, which was the first thing I saw from the nursery window in the morning, covering the green bushes with a soft white blanket, changing spring to winter.

In 1911 father bought an island on the coast of Maine

in Penobscot Bay as a summer home for his family. The large two-story shingle house he had built had separate rooms for each of the children and for guests as well. Our summers in Maine began in 1913 and have continued, with the next generation, to the present time, except for those few years when various family members pursued their own adventures or traveled abroad.

Father became an enthusiastic camper during his college years, when he went camping twice with friends in the Canadian Rockies. Of all father's attractions to natural science, astronomical and geological phenomena engaged his interest most intensely. His fascination with the latter, stimulated by the western scenery of the Grand Canyon, Yellowstone, and the dramatic mountain ranges of the Canadian Rockies, drew him repeatedly westward; it was to the Canadian Rockies that he returned most often. In the first decade of this century father and mother went on many camping trips in the west with friends and relatives, and a few times with their eldest children. Together on a sightseeing trip they visited Yellowstone National Park in September 1904. On a visit to grandmother's sisters in July 1905, they took their three children to Peterboro, New Hampshire. In February, 1906, they camped with a party of six in the Grand Canyon and in August of that year with a party of nine in the Canadian Rockies. After a second trip with four friends to the Grand Canyon in March, 1908, father and mother went alone to the Canadian Rockies in August of that year. The next year, 1909, was a particularly peregrinatious one for the whole family. In March, father and mother took me to Florida. I never understood why I was singled

out for this excursion, unless it was to speed my recovery from appendicitis. I remember we first visited St. Augustine, where I had my first experience with sea sickness in a power boat cruise, and in my misery I lay down on a bench with wet green paint. Farther south in the Keys (on Long Key) I learned by sad experience about the trailing filamentous nettles that arm the Portuguese Men' o War and fiercely sting the unwary. That summer in June father took the whole family (Fairfield was the youngest, John had not yet been born) on a second visit to grandmother's sisters, our great aunts, in Peterboro, New Hampshire. While there father shaved off his mustache and, when Edward went into father's and mother's room following this transformation, he asked mother in alarm, "Who is that man?" Then in August father and mother went once again to the Canadian Rockies on a month-long camping trip with a large party of their friends which father had organized.

It was probably early in 1911 that the three of us-- Nanc Edward and I (Fairfield, only four, was left at home)—were taken on a short camping trip to the Grand Canyon and then on to Santa Barbara. One day in the Grand Canyon our parents went off on a walk by themselves leaving us in the care of the guide. While playing in a shallow cave near camp, we found a cash of dynamite left by a prospector which, in our innocence, we thought to be candles. Father was horrified when we showed him later what we had found. Of Santa Barbara I remember little more than the wooden sidewalks, red with squashed mulberries, finding a moonstone on the beach, which father admired so much I gave it to him for his mineral collection, and being driven at fifty

miles per hour in a Pierce Arrow by Mr. Walling, one of our Winnetka neighbors. In the last summer before we began going regularly to Maine in 1913, while the house on the island was being built, father and mother took us out west again; this time we camped in Yoho Valley, where we were introduced to his favorite mountains--the Canadian Rockies.

When we are children, our interests are directed by the influences of adult relations and the circumstances of our early lives. Our parents in particular, as well as our playmates, often have a determining influence on the course we take, but exterior events outside the family circle can also have an effect that may not be recognized until much later in life. Most children, almost as soon as they learn to talk, if provided with the means, express their visual impressions of the world around them by drawing. This world at first encompasses mother and father, sisters and brothers, the dog or cat, and the house they live in; later it includes the books they read or are read to them, and today what they see on television. The subject that especially obsesses boys is space age warfare. But manual dexterity, of which drawing is one expression, is manifest early in playing with toys, building with blocks, and as skill develops, assembling mechanical models. With some children and perhaps with all, if fundamental, inherent attributes are fostered by parental interest and example, using simple materials to make their own toys and other objects provides a basic creative satisfaction.

I have observed these influences and consequent developments in my own children and grandchildren, but I am unable to point to any that could have determined the course of my life before the age of six. I am sure that the parental influences of a humanist mother and a scientifically-oriented father were strong. I have no recollection of having spent any time drawing imaginary pictures, but very early I did get real pleasure from making things out of wood with my first tool, a pocket knife. I was also, while still quite young, attracted to the natural world--to the first growing things of spring, and to birds, a fascination which in my adult life became a passionate preoccupation for many years. All these interests were treated with sympathy and encouragement by my parents, especially by father, who would take us for Sunday walks on Lake Michigan's shore and tell us about the geological history of the Great Lakes, about the significance of fossil crinoids that could occasionally be found in the gravels of the beaches, and about how it all was tied together by evolutionary change.

My precocious interest in making things out of wood received strong support one Christmas when I was given a work bench with a vice and a chest of tools. It was a day I can still vividly remember: my surprise and overwhelming excitement when, after Christmas dinner, the doors to the parlor were opened, the lighted Christmas tree in all its glittering splendor was revealed and the gift that was to have such a profound and lasting effect in broadening my childhood activities was presented.

Christmas was always a day of intense excitement, as I am sure it is for most middle class children. It started early in the morning when we went downstairs in our pajamas before breakfast to empty our stockings, which Santa Claus was supposed to have filled while we slept. We had hung them the night before from the fireplace mantelpiece in the living room we called "the library," because it was lined with book cases. The Christmas tree had been set up and decorated by our parents during the night in the room across the hall from the "library" called the parlor, a more formal room with a grand piano and an aeolian pipe organ which my father played. The floor in the parlor was covered with several oriental rugs--Kazak, Tabriz and Bokhara--of moderate size, leaving much polished wood in between, enhancing the formality of the room. The floor in the library, on the other hand, was almost completely covered by a thick red Chinese rug, figureless except for a blue and black decorated border. The sliding doors to the parlor were kept closed all Christmas morning--a challenge to us children, who would peek through the cracks--because it was here that we would receive most of our presents after Christmas dinner. The one exception to this custom was the year I was given an electric train. It had been set up in the library and the tracks could be seen from the stairs into the front hall as we came down to open our stockings. The electric train was not a great success. Mechanical toys, with their limited possibilities for operation and holding attention, often appeal more to

fathers than to sons. A child soon tires of an electric train on its circle of track; it offers no possibility for variation as a model railroad does for an older boy or an adult with its challenge for improvement and enlargement.

Somehow Christmas morning, the time before we opened presents, had to be gotten through, so to ease the strain we were sent out to go coasting in the snow or to take a walk on the beach. The distribution of presents was delayed until Christmas afternoon because granny and grandfather, mother's parents, and Aunt Peggy, her sister, came out on the Northwestern Railroad late in the morning for Christmas dinner. Although we loved them and they helped reduce the tension, nevertheless our excitement and impatience continued to grow throughout the interminable meal, which began with a cream soup as first course, followed by roast turkey with chestnut stuffing, mashed sweet potatoes baked with brown sugar, turnips, and cranberry jelly, and ended with mince and pumpkin pies topped with ice cream. After this leisurely meal, around two o'clock in the afternoon, the most important event of the day began when father opened the parlor doors.

The carpenter's bench was installed in my bedroom, where it soon became the source of much litter and shavings, seldom, however, causing complaints from higher up. Eventually the hand tools were supplemented by an electric scroll saw and, from bass wood purchased at the local lumber yard, I made nest boxes for house wrens and toy boats, some with propellers driven by rubber bands. In this impressionable period of my

life new experiences and knowledge cannot, in retrospect, be placed in strictly chronological order. They flash into consciousness in kaleidoscopic disarray; one thought supersedes another in no logical sequence, mysteriously recalled from hidden recesses of the mind. Visions of my tool bench tucked in a corner of my bedroom, disorder all about, is suddenly veiled by thoughts of Halloween pranks--of the time my friends planned to raid my father's fruit cellar, which I had to circumvent--or by a vision of the first aeroplane I saw, a red biplane flying low over Lake Michigan. No doubt physiological processes connect these random memories, but the vast network of routes defies understanding. When one gives in to uncontrolled thinking it is called daydreaming, and when one tries to direct one's thoughts, they often become channeled into recent events and contact with the past is lost.

A series of events that had implications for the future occurred in my second year of high school. I chose the chemistry course taught by Mr. Boyle, an inspiring teacher who opened doors to a whole new world of science. As supplemental reading to satisfy my eagerness for more information, he recommended Slossen's Creative Chemistry, a popular new book which I read repeatedly from cover to cover. That year as a birthday(Christmas, anniversary) present, I was given a chemistry set with which I could perform simple demonstrations of elementary chemical phenomena. To supplement the chemicals in the set, I purchased more effective reagents at a chemical supply store in Chicago: concentrated nitric and sulphuric acids, along with

other chemicals which react energetically. Stimulated by Fourth of July fireworks, to which all boys are compulsively attracted, I made a variety of gunpowder-like explosives from potassium nitrate, carbon and sulphur but failed, fortunately, to make nitroglycerine. One explosive device that I made with my friends from simple materials consisted of a hollow stem key and a nail, which fit snugly into the hollow joined by a loop of string and the heads of common kitchen matches. Scrapings from the match heads are packed into the hollow key and the nail is wedged in against them. When the assembly is swung by the string to strike the nail against a hard surface, the blow will cause the match heads to explode with a loud bang. The device can also be made into a miniature bomb by attaching a ribbon to the head of the key so that when it is thrown up in the air it will land on the nail and detonate. Below my window a flight of stairs led to an exterior entrance to the basement. The laundry window opened onto the stairway and the laundry tubs inside were directly under the window. When I dropped my key bomb onto the cellar stairs, it exploded in front of the laundry window, frightening the Swedish laundress, who protested with inarticulate expletives. Later she reproved me more gently, "You such a nice boy; why you so awfully?"

Experiments with chemicals, to discover what would happen if two substances were mixed together, to see if what was supposed to happen actually did, to satisfy such curiosity, became a compelling impulse for me. Reactions of the most vigorous kind were, of course, the most challenging and

irresistable to try. I experimented with potassium perchlorate, permanganate and with metalic sodium, which violently reacts with water to produce hydrogen. I discovered that perchlorates mixed with sugar are explosive. Fortunately, I never had a mishap.

One of the phenomena I played with was the differential affinity for oxygen of metals: thus aluminum can capture the oxygen from iron oxide or rust under proper conditions. The phenomenon was used in the thermit process for welding railroad rails. A mixture of powdered aluminum and iron oxide in a graphite crucible can be ignited with magnesium ribbon and the reaction will proceed rapidly (at several thousand degrees Fahrenheit with a fountain of incandescent sparks) to completion, when the aluminum has combined with the oxygen of the iron oxide, leaving a puddle of molten iron in the bottom of the crucible. The display in my room was spectacular; it burned holes in my rug and charred spots on the painted floor, but I never actually set anything on fire and I am sure my parents knew nothing about these pyrotechnics.

My activities were not devoted solely to solitary pursuits in my room; I did have friends who participated in some of the more spectacular experiments and/with whom I played outdoors. The community of Hubbard Woods, originally called Lakeside (renamed for Gordon Saltonstall Hubbard, an early Chicago settler) was the northern part of the village of Winnetka; although not politically independent, it did rate its own station on the Northwestern Railroad, on which my father commuted to Chicago. The part of Hubbard Woods where my

moves is almost irresistible. Fairbank owned a beebe gun; almost the first day after it was given to him(I believe it was a birthday present) we went hunting to try it out. It proved miraculously and shockingly efficient when Fairbank shot a sapsucker in his front yard. There we were with a dead bird, still warm, proof of callous wantonness that we could not haphazardly discard, so we decided to ask my father to skin it, telling him we had found it. During the skinning he found the lead pellet and, not suspecting us of being the killers, said that the bird had been shot. I remember my uncomfortable feeling of guilt, not only for killing the bird, but for the deception we had practiced. That experience did not, however, end our hunting exploits until we were shamed permanently into giving them up some days later. I had found a blue jay's nest in a bush at the foot of our drive on Sheridan Road. The female bird incubating her eggs was so fearless one could almost touch her. For some inexplicable reason, Fairbank and I had the macabre urge to shoot her on her nest at close range. While we were taking aim, a car came by and the driver, seeing what we were up to, stopped and gave us a terrific bawling out, saying that shooting birds was wrong and to shoot a bird on her nest utterly disgraceful, that we should be reported to our parents. That episode was the ray of truth that struck home; it shamed us and, much to our unacknowledged relief, saved the bird's life. From then on shooting ceased to be an attractive sport except for sporadic target practice.

Before my father bought Great Spruce Head Island on the coast of Maine, our summers were spent in a variety of places:

one summer with cousins of father's in Peterboro, New Hampshire and another camping in the Canadian Rockies. Ever since his college days, father had gone camping and exploring in the Rockies, at first with college friends and later with mother and their married friends, during the time when my sister, brothers and I were not old enough to accompany them. When my father was a young man, the Canadian Rockies were still a wild and unmapped wilderness and the Canadian Pacific Railroad had not long been in operation. Father used to tell of the time he and his companions, bearded and carrying rifles on their return to civilization, flagged down a Canadian Pacific passenger train. The terrified passengers were convinced that they were being held up by train robbers.

The first summer we were taken camping in the Canadian Rockies was at the beginning of my friendship with Fairbank. He was being sent to a boys camp in Wisconsin and wanted me to go with him, and I was torn between spending a month with him or with my family in the Rockies. I was permitted to make the choice myself, but was urged to choose the Canadian west, which fortunately I was wise enough to do. Fairbank was very upset and our friendship came close to perishing on that reef of dispute, but when we both returned at summer's end, all differences were forgotten. Due to Fairbank's diplomatic and non-aggressive nature, we never had another serious dispute.

In 1913, when we began to spend summers on our Maine island, the Carpenters had a summer place at Northeast Harbor on Mt. Desert Island. I was the oldest boy in my family with three

younger brothers, with whom I had less in common than with boys my own age; this resulted in my brothers developing a rapport in their play that excluded me. In recognition of this situation and of my need for a summer companion, my parents encouraged me to invite Fairbank to the Island for a month. After that first year, he was invited every summer and became very much a member of the family.

Fairbank and I did everything and went everywhere together. One activity which we pursued seriously and enthusiastically for several years was collecting butterflies and moths. From an amateurish beginning we became more and more professional in our judgements and methods, and with adult advice and support gradually acquired the best equipment, including nets, cyanide bottles, drying and preserving paraphenalia as well as the standard books on lepidoptera identification and life histories. We each had Brownie cameras with which we photographed the most approachable birds--gulls and terns on grass-covered islets, where they nested in dense species-segregated colonies. At first we were taken to these places on expeditions organized by adults and our subjects were nests of speckled eggs or the mottled gray downey young wedged in crevices for concealment and safety. Gradually we acquired more sophisticated equipment, first Kodaks, which had faster shutter speeds and ultimately, as we became more proficient, Graflex cameras--the sine qua non for the naturalist. With these we spent hours at a time crowded into a tiny canvas blind that I had designed

and mother had sewed together, photographing gulls in their crowded colonies as well as the most appealing and exciting of all avian subjects, ospreys or fish hawks.

In those years of our youth ospreys were very abundant along the coast of Maine. They built bulky stick nests, sometimes in trees, but mostly on the ground on rocky ledges and treeless headlands. On Great Spruce Head Island only one of seven osprey nests was built in a tree; all the others were located around the periphery of the island on tidal islets or barren points of rock. At these places we would set up our blind ten feet from the nest after the eggs had hatched and crawl in with camera, sandwiches and a thermos of water. We never had to wait long for the birds to accept the blind as an inanimate addition to the environment and to return to brood and feed their young. One adult would keep watch at the nest, staring at the blind with its camera eye, while its mate was off fishing. Its return with a fish was always an exciting moment, both for us in the blind and for the birds outside, and was always accompanied by enthusiastic piercing whistles by the mate on the nest.

During those first years on the Island, Fairbank and I were not attracted by the paserines, the song birds of the Maine Coast. They were a mysterious and difficult group to identify, unlike the birds of the woodlands and prairies of the Midwest with which we were more familiar. We knew a few songs, those of the hermit thrush, the song sparrow and the whitethroat, but the wood warblers were a confusing group

whose songs and plumages were too difficult for us to distinguish without prolonged observation--something we did not have the patience to do. We found a few nests of these species and marveled at the complexity and delicacy of their construction and the beauty of the tiny speckled eggs nestled within them. With our bulky equipment it was impossible to photograph the eggs, and least of all their creators. Not until years later, following an abortive period of research in science, when I had equipment especially adapted to the purpose, did I return to photograph the paserines, and then it was to the wood warblers in particular that I devoted all my time in the spring of the year.

My public school years up through eighth grade were not a very stimulating time for me; not until I took Mr. Boyle's chemistry course in high school did I enjoy formal education. No doubt this had something to do with the quality of teaching in Winnetka schools, before the educational system was made more progressive. It must have been because of an awareness by my parents of this deficiency that I was sent to the private College School in the next suburb, from which I was rescued by an attack of appendicitis. The eighth grade athletic director, Mr. Clark, failed in his attempt to make an athlete of me. I remember him only as a big man who wore a red knit pull-over. Although I can't remember all the details, I do remember that a conference with my mother and me about my athletic deficiencies ended with his comments on Charlie Chaplin, and that he couldn't help laughing, although he kicked himself afterwards. The

eight grade music teacher also despaired at my lack of musical talent and kept me after school because I couldn't sing in tune. I was punished for being what she called tone deaf, unable to sing the notes she struck on the piano. On this occasion my mother, who was also tone deaf, intervened on my behalf.

In New Trier High School the only courses I liked were chemistry and geometry. Latin was my bete noire, and I failed English because I couldn't spell, an inability that threatened my education until I was admitted to Harvard. After two years in high school my friend Fairbank was being sent to an eastern boarding school, Morristown School in New Jersey, for more intensive preparation for the college entrance exams than was provided at New Trier, and of course I wanted to go there too, and begged my father to send me. I had already passed my college exams in chemistry and mathematics, but because of my difficulty with English and a foreign language--German was the language I was most familiar with because my youngest brothers had a German governess--my parents finally agreed to enroll me in Morristown. They probably realized that my chances for passing the other exams would be enhanced by the special training provided by a boarding school, the principal function of which was to prepare its students for college. The English teacher at Morristown, an elderly bearded gentleman always dressed in a dark suit, and nicknamed "the whistling deacon" in mockery of his sibilant manner of speech, dourly predicted I would never pass the English exam unless I learned to spell. But

I did pass.

The first year I lived in the upper school dormitory, but the second year, as a prerogative of our senior status, I shared a room with Fairbank and another boy, Piran Edgerton, in a faculty house across the road from the school. Chapel was compulsory but bowing our heads during prayer was not, a demonstration of religious independence adopted by a group of the students. Fairbank and I were able to pursue our photographic hobby at athletic events, for which we were granted special privileges during inter-scholastic games.

World War I was drawing to a close in the autumn of 1918, my first year at Morristown, and at the same time a pandemic of influenza took more lives than the war, but had little effect on the school, which was isolated from the outside world by restricting students to the school grounds, cancellation of athletic events, and by sending us to the infirmary at the first signs of indisposition. Nevertheless, early in November on the first announcement of peace in Europe, the upper classmen were allowed to go into New York to participate in the celebration. As it turned out, the rumor of peace was premature; the armistic was not signed until a week later on November 11, the true Armistic Day, when a less spontaneous celebration took place, which we were not permitted to witness. Times Square was so jammed with civilians, and soldiers and sailors on leave, aimlessly milling about, that motor traffic was completely immobilized. My wallet was stolen. We had been instructed to be back in school early and returned by ferry to

Hoboken, taking the Lakawana Railroad to Morristown.

I was admitted to Harvard in the fall of 1920 with a condition in English for bad spelling and the requirement to take Freshman English. Since I was registered in the Engineering School, all my other courses were in sciences and mathematics. Elementary facility in a foreign language was required for graduation, which I fulfilled by passing the German reading knowledge exam. As elective courses I took history and astronomy, the latter a great disappointment, since I expected to learn about the latest discoveries regarding spiral nebulae and the formation of the moon--subjects on which father had talked at length. Instead, the course was devoted entirely to a description of the planetary orbits of our solar system. From photographs of the moon and from what was known about asteroids, father proposed and wrote about what he called "the boloid theory" of the formation of the moon. The craters on the moon, he maintained, were not of volcanic origin, as generally assumed at that time, but were caused by the impact of meteors and asteroids, which were gradually swept up by the planets and satellites during the formation of the solar system. According to father's theory, all the planets should show evidence of this accretion process if only they could be seen at close range, as has now become possible through unmanned space probes that support his conjecture. He sought confirmation from geography but failed, with the exception of a few recent meteor craters, because the evidence would have been obliterated by dynamic processes of weathering to which the surface

of the earth has been subjected for millions of years, and also by the now recognized mobility of the earth's crust.

By the end of my junior year I realized that chemical engineering was not the field of science for which I had originally held such high hopes: that it was the chemistry of living organisms, biochemistry, not sterile industrial processes, that attracted me. In order to continue my education in that broader area of chemical science, I decided I would have to go to medical school, and for admission to the Harvard Medical School, a one-year course in biology was required, which I added as an extra subject in my senior year.

During my entire undergraduate and medical school years, photography was a very minor interest, but after I had seriously begun to pursue scientific research, photography again became an important avocation. I had been appointed to a minor teaching position in the Bacteriology Department under Dr. Hans Zinsser. A contemporary in the department, Victor Seastone, who had also recently obtained his M.D., was an amateur musician and photographer. He used the Leica camera, the 35mm German invention that revolutionized photo-journalism and many other fields of photography. I was so intrigued by his ingenuity in adapting the camera to innumerable purposes which were impossible with more bulky equipment, that I bought one and immediately began experimenting with it. Because of the Leica's top shutter speed of 1/1000 second, one of the first things I tried was to photograph the splash pattern produced by dripping water. The pictures were remarkably successful in so far as they dramatically recorded the sequence of invisible

events in a common phenomenon, but otherwise were no more than curiosities. I soon began to photograph more conventional structural subjects--bridges and buildings around Boston and details of trees, flowering plants and barnacled rock on the coast of Maine during my short vacations. One of the subjects I was especially proud of was a close-up of blueberries enlarged to the size of tennis balls.

My return to photography as a hobby became known to friends of the family, one of whom, Curtis Nelson's older sister Lois Wheelwright, who lived in Cohasset, Massachusetts, invited me to dinner and suggested that I bring some of my photographs because another photographer would be there. The other photographer turned out to be Ansel Adams, of whom I had never heard, an acquaintance of her husband's. After dinner I was asked to show my pictures, which I did with a certain amount of self-satisfaction. Ansel Adams looked at them but said nothing, and then showed his. That was a traumatic and embarrassing experience; I saw immediately how vastly superior his photographs were to mine, and how little I knew about photography technically, or what its potentials were for creative expression. His photograph which made the greatest impression on me and which I still remember from that day--I can recall none of the others-- was his famous photograph of a frozen lake in the Sierra Nevadas. Sensing my embarrassment, Ansel Adams tried to encourage me, suggesting that my photography could be improved by using a larger format camera and recommended a much publicized new Eastman product that used 2¼ x 3¼ film.

Soon after that revelation I purchased a 9 x 12 centimeter Linhof.

Shortly after this experience I was introduced to Alfred Stieglitz by my brother Fairfield, who had settled in New York to pursue a career in painting. Stieglitz had introduced America to the works of several modern French artists and was first to exhibit painting by Americans now recognized as pre-eminent in his gallery An American Place. Among those who influenced Fairfield most profoundly were
whose paintings he saw for the first time at An American Place. Stieglitz also exhibited his own photographs and those of a select group of photographers; the probable motive behind Fairfield's introduction was his hope that Stieglitz would be willing to look at and constructively criticize my photographs.

Soon after that Stieglitz agreed to look at a group of my photographs. He treated me kindly, contrary to what I had been led to expect, but his comments were far from encouraging. He said they were all "woolly," but that it was not a matter of sharpness--a description I never understood, as woollyness implied only one thing to me, and that was lack of sharpness. Photography, he added, requires a lot of hard work. I had the audacity to return a year later with more photographs, when his remarks were again noncommital and his advice again was to work harder. In the meantime I bought the small Linhof view camera and photographed with it in Maine for several summers.

At Harvard, where I had an appointment as a tutor in biochemistry, I met Wolfgang Stolper, a Jewish Austrian graduate student in economics. We became friends, and he proposed that during the summer of 1935 we spend several weeks in the Austrian

Tyrol with members of his Viennese family. This was before the "Anschlus." Wolfgang went first to see his fiance in Zürich, where I stopped briefly enroute to Munich as part of a photographic journey through Switzerland and Austria. While in Zürich I met a German friend of Wolfgang's, Peter Press, an SA Storm Trooper but a vehement anti-Nazi. We went together to Munich where he lived, and I met his parents, who pleaded with us not to talk critically about the Nazis in their apartment for fear that someone would overhear; instead we went out in a paddle boat on the lake in order to talk more freely, and he told me how dangerous and despicable the Nazis were. Later I learned that Peter Press had escaped from Germany and joined the Foreign Legion.

Also while in Munich I was accosted by a seedy S.A. Trooper on coming out of the famous Deutsch Museum, who asked in sputtery German for a light, and when I offered him a match, he asked for a cigarette, which I was also able to provide. Recognizing me as an American, he started questioning me about my visit to Germany and invited me home, where we sat briefly in the kitchen with an ample, silent and suspicious woman, who offered us nothing in the way of refreshment. After leaving he asked if I would like to meet Der Führer. On noting my surprised, incredulous reply, he assured me that Hitler always liked to meet Americans, and so with some trepidation off we went to Hitler's headquarters, where we were met by a black uniformed guard, who politely informed us that unfortunately Der Führer was away attending the Wagner Festival. My feelings were a mixture of

disappointment and relief.

By train I went to Innsbruck and from there to the little village of Berwang, where I rejoined Wolfgang, his fiance and his relatives from Vienna. During two weeks in the Tyrol I photographed Tyrolian houses, churches, graveyards and the gentle landscape. It was some of these pictures, among others, which I showed Stieglitz in the fall of 1938.

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He (Stieglitz) looked at all the prints I had brought to An American Place, one by one, slowly replacing them in the box, and then went through them a second time, closing the box. After a pause he said to me, "You have arrived, I want to show these." These few words completely changed the course of my life.

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I entered the Harvard Medical School in the fall of 1924. The first year began with a course in anatomy involving the dissection of human cadavers. This introduction to the human body was a traumatic experience for the uninitiated, disguised by a spirit of levity and worldly pretense. In the second year the major courses were physiology and bacteriology. Dr. Hans Zinsser, head of the bacteriology department, was by far the most charismatic teacher in the medical school at this time, and his lectures were always the best attended. Through his humor and enthusiasm, his elucidation of the body's defenses against infection, and his dramatization of the search for the cause and cure of disease, he endowed the science of bacteriology with an aura of romance and adventure that captivated his audience. I was not immune to this influence. As the second year in

medical school drew to a close, I began to realize that I was not obtaining the quality of instruction in biochemistry that I had anticipated, and that medical school was, after all, primarily concerned with clinical education. To help resolve this predicament and move towards the attainment of my aspiration in science, I sought the advice of Dr. Zinsser. With sympathy and understanding he gave me his whole-hearted support and suggested that I take a year off to study under the direction of a biochemist friend of his in Cambridge, England. He would give me a letter of introduction and recommendation. That summer I went to England to register for the fall term at Cambridge and then to Vienna for a six-week refresher course in German. The Cambridge experience was not a success; it was too much like what I had already experienced, not the kind of more advanced instruction I had been looking for, and so in January after the first term I returned to American and reentered Harvard Medical School. I concluded that, in order to realize my aspiration of becoming a research bacteriologist, the most logical course would be to complete my medical education.

After graduating from medical school I was appointed to a minor teaching position in the bacteriology department, with opportunity for research. The subject that interested me most at the time was the phenomenon of bacterophage, a process by which a virus-like factor organism destroys bacteria. The mechanism of the action was not well understood at that time and has only been superficially elucidated since then, as techniques for genetic manipulation have become possible.

The Department of Bacteriology consisted of a small congenial group of permanent appointees led by Dr. Hans Zinsser. Under him were Howard Muller, Mike Grinnell, Hugh Ward, an Australian, and several graduate students holding temporary positions. One of these, a protege of Ward's, whose career became more distinguished than any other member of the department, including Dr. Zinsser himself, was John Enders, who shared a Nobel prize with Salk for discovery of the polio myelitis virus. Enders came to Harvard as a graduate student in English literature, became dissatisfied with his prospects in literature, met Hugh Ward, who persuaded him to change his field to medical sciences, and was admitted to the bacteriology department, where he began his distinguished research on virology. We would meet for lunch in the small department library and frequently become engaged in lively discussions on a variety of subjects from science to politics.

Medicine was a science that I came into indirectly from a primary interest in another field. I did not choose to study medicine, as many students did, out of a professed dedication to humanitarian ideals. I took it up as a logical consequence of an interest in chemistry--an interest which was inspired by a high school teacher who introduced me to Slossen's Creative Chemistry at a time when the boundaries between the sciences were beginning to be blurred due to over-lapping areas of activity. The most exciting advances in chemistry during my undergraduate years were, it seemed, being made, not in pure organic chemistry as suggested by Slossen, but in the chemistry of biological

functions. To enter this burgeoning field, a knowledge of biology and physiology was essential, and so I decided that I must go to medical school--not to alleviate human suffering, but in order to better pursue truth through science. None the less I was conditioned enough by idealism to be shocked during my first year by some of my classmates' frank admissions that their reason for choosing medicine was to make money. It was,of course, consistent with the temper of those post-First World War boom days that medical students, along with almost everyone else, should be preoccupied with money making.

About this time I developed a capacity for observation that has lasted all my life: a capacity operative in the natural world, but not in other areas, such as in regard to people and cities or the interiors of houses. Thus my wife could change the decoration in our living room and I might not notice it for weeks. But outdoors I saw a great deal and, without effort, became engrossed with nature. Very soon my attention was drawn to birds, a common enough enterest, but in my case one which has been sharpened through the years, becoming directed away from youthful collecting to more sophisticated knowledge and photography of them. Butterflies were also a preoccupation, which at first took the form of collecting and later became channeled into photography. But I never considered making a career in natural history; these interests remained only in the background until years later when they became the focus of my attention.

Entering medical school is an exciting experience. Suddenly you are confronted with an entirely new point of view

towards biological phenomena. Biology deals with life and living processes towards which the student is expected to be objective. Thereby he escapes personal involvement and, in proportion to his avoidance of identification, becomes a reliable observer of his environment. A plant, a protozoan, an insect, an amphibian, and even a mammal is a creature towards which there is little difficulty in assuming a completely detached attitude. But as soon as he begins to study the human body, whether grossly or histologically, he finds himself no longer looking through an opened window onto a newly discovered world outside but, instead, into a mirror where he sees himself. A high degree of objectivity towards oneself is certainly attainable, though on a much different level from that towards the world beyond ourselves. To arrive at the point of self-objectivity requires for most of us-- if it is ever possible--life-long effort. The traditionally hard-boiled first-year medical student is only protecting himself with a not-too-impervious shell constructed precisely of his vulnerability. But not only is he suddenly confronted face to face with his physical self, he is subjected to a view of all its malfunctions and to the disease processes which may wholly corrupt it. This can be quite a shock, but is also high adventure, which carries him along like a cresting wave over many submerged reefs of apprehension.

Soon after entering medical school I met Dr. Hans Zinsser, the man whose influence on my life was even more profound than my high school chemistry teacher's, in fact more profound than anyone except my father and mother; and it lasted for a decade. Everyone of my generation in Harvard Medical

School knows who Dr. Zinsser was, knows the significance of his professional life as a bacteriologist, and perhaps as a writer and poet, and has experienced the impact of his brilliant teaching; but no one knows what he did for me except myself. I was subjected to all the same influences he exerted on other students through his dynamic personality, but much more besides. Painful as the process eventually became, Dr. Zinsser brought to focus within my mind a self-appraisal that gave me a glimpse of my potentialities and aspirations. This was a by-product of his hopes for me, and because it led me in another direction, it was difficult for him to accept; but it was a gift for me, for which I shall forever be grateful. I am grateful to him also for the greatly expanded outlook he made possible for me, for the advice which I did not always follow, for his understanding, and for his friendship.

In two years I got to know Dr. Zinsser very well. I was persona grata in his house on Beacon Hill and at his farm in Dover. I was welcome at any time of the day or night as one of his family, and in fact he later told me that he loved me like a son. I could go to him for advice on any problem that beset me--emotional or intellectual--and he would give unstintingly of his attention and time. I returned his love with great affection and the greatest admiration, but nevertheless it was a responsibility that weighed heavily on me at times.

In many ways we were alike; he knew it and it was a source of his affection for me. He was a romantic idealist in his personal and professional lives, which I welcomed as a con-

firmation of my own feelings. Thespark of romance that can light human relations at the start has a way of losing its intensity but, if one is lucky, it does not die but warms them by its persistent glow. Dr. Zinsser recognized and accepted the inevitability of this kind of change, but possessing an incorrigible ego, a sublimation of his personal nostalgias into the limitless intellectual romanticizing of science was inevitable and necessary. Our relationship suffered this evolutionary change, too, loosing its fire but not our basic mutual respect.

Moreover, his drive for scientific fulfullment was an obsession manifest in his constant talk about breakthroughs in his research and in that of his associates. Research is commonly motivated either by a desire for detailed information from which a construct of a situation or phenomenon can be built, or by inspirational insight which initiates experimentation. The two approaches, of course, complement one another, but Dr. Zinsser, because of his romanticism, attached great value to the latter as inseparable from the creative process by which great discoveries are made.

Having gone to medical school as a step along a path dedicated to science, it is appropriate that Hans Zinsser's influence should have diverted me from biochemistry to bacteriology. In both sciences chemistry was fundamental and, with developments in immunology, chemistry was assuming ever greater importance for an understanding of disease and the resistance to disease. There was an atmosphere of imminent discovery during the twenties that, together with the encouragement and

inspiration of a man like Zinsser, fostered a fever of excitement. I was fortunate in being allowed to join the department in a minor capacity in my last year in medical school, and to take up research on bacteriological problems.

I think I can say truthfully that I worked diligently on various projects, none of which however developed into any promise of significant discovery. Inspirational insight continued to elude me, in spite of much encouragement from Dr. Zinsser, and so I plodded along with humdrum manipulations called "experiments" that never seemed to lead anywhere. A facet of Dr. Zinsser's romanticism was a belief that a dedicated researcher could loose himself in his work to such an extent that he could sooner or later have to be rescued by his colleagues from starvation or nervous collapse. I never attained that state of immersion, for which I felt the guilt that comes from failing to live up to the expectation of another; and although I did often work at night, it was largely because I felt guilty not doing so. And when I took long weekends or summer vacations off, I always sensed his disapproval. But it seemed worse to me to spend long hours and days in a laboratory getting nowhere. I had started with the conviction, which became a hope, but finally became a despair, that I would make discoveries. I did not clearly understand that research mostly involved a slow painstaking gathering of information and so my unrealistic views on scientific research at last resulted in disillusionment about my inherent capacity. I I was unable to starve myself into success or suffer nervous

collapse to attain it, but I did discover that perhaps I was not cut out for this kind of a career. And the truth began to dawn on me--that one cannot succeed solely because of the pressure or hopes for you of one you admire.

Probably partly as solace for my failure at research I began, after a lapse of several years, to take photographs and observe nature again; and although in a last attempt I transferred to another laboratory, where I worked conscienciously on a biophysical problem under another man, the seeds of my interest in nature and photography had by now taken root too deeply and were beginning to put forth their own fruit.

From time to time during this period I had shown my photographic work to Alfred Steiglitz, who had given me encouragement, but never once had suggested that I contemplate giving up science. Finally, on seeing my most recent photographs in 1938, he offered to exhibit them. His was the most sought-after art gallery in New York--indeed in the whole western hemisphere--for he was the first to bring the great modern French painters to this country. To have work exhibited at An American Place was an honor and a distinction that overwhelmed me. Under the stimulous of this recognition I at last realized that I must make the break with science. Dr. Zinsser did not approve; he was convinced that I was wasting my abilities, but it was my life that was at stake and only I could make the ultimate decision about its direction.

I do not want to leave the impression that I regard the years spent in a laboratory as wasted. Without them I might never have discovered my talents in photography and art; and

without Zinsser's influence I might well have gone into medical practice, in which I might have prospered well enough. However, I do feel that whatever creative potential I have--though one can never know the end of the untried road-- would not have found the fertile ground it needed in medicine. Moreover, who could renounce an association that encouraged self-examination during the impressionable years of youthful enthusiasm and idealism. Hans Zinsser opened my eyes to my own inner capabilities through his inspiration, by his expectations of me, and through his personal dedication, honesty and zest for life.