

carotenoid pigments have a definite effect on sex and reproduction of animals.

So, even in the waters of the sea, we are brought back to the fundamental truth that nothing lives to itself. The water is altered, in its chemical nature and in its capacity for inducing metabolic change, by the fact that certain organisms have lived within it and by so doing have transmitted to it new properties with powerful and far-reaching effects. This is a field for imaginative and creative studies of the highest order, for in it we are brought face to face with one of the great mysteries of the sea.

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[1954]

The Real World Around Us

THE SORORITY OF WOMEN JOURNALISTS, *Theta Sigma Phi*, invited Carson to speak about her experiences as a woman writer at its annual dinner in Columbus, Ohio, in the spring of 1954. With an audience of nearly a thousand women, Carson barely touched on the subject of her new book, *The Edge of the Sea*. Instead she spoke more autobiographically than she had ever dared before.

In the first part of her talk, Carson reflects on how she came to write about the sea, and her experiences sailing on it as a member of the crew of a U.S. Fish and Wildlife research vessel. The heart of her remarks, however, are devoted to her ideas about the meaning of life, particularly the crucial role natural beauty plays in the spiritual development of an individual or a society.

The audience, moved by the depth of Carson's concern and obvious passion, gave her an enthusiastic ovation, many women reaching out to press her hand as she left the hall. Although Carson never gave another speech of quite the same warmth and candor, its reception encouraged her to adopt a more personal style.

☪ [...] I CAN REMEMBER NO TIME, even in earliest childhood, when I didn't assume I was going to be a writer. I have no idea why. There were no writers in the family. I read a great deal almost from infancy, and I suppose I must have realized someone wrote the books, and thought it would be fun to make up stories, too.

Also, I can remember no time when I wasn't interested in the out-of-doors and the whole world of nature. Those interests, I know, I inherited from my mother and have always shared with her. I was rather a solitary child and spent a great deal of time in woods and beside streams, learning the birds and the insects and flowers.

There is another thing about my childhood that is interesting now, in the light of later happenings. I might have said, with Emily Dickinson:

*I never saw a moor,
I never saw the sea;
Yet know I how the heather looks,
And what a wave must be.*

For I never saw the ocean until I went from college to the marine laboratories at Woods Hole, on Cape Cod. Yet as a child I was fascinated by the thought of it. I dreamed about it and wondered what it would look like. I loved Swinburne and Masefield and all the other great sea poets.

I had my first prolonged contact with the sea at Woods Hole. I never tired of watching the tidal currents pouring through the Hole—that wonderful place of whirlpools and eddies and swiftly racing water. I loved to watch the waves breaking at Nobska Point after a storm. At Woods Hole, too, as a young biologist, I first discovered the rich scientific literature of the sea.

But it is fair to say that my first impressions of the ocean were sensory and emotional, and that the intellectual response came later.

Before that meeting with the sea had been accomplished, however, I had a great decision to make. At least, I thought I had. I told you that I had always planned to be a writer; when I went to college, I thought the way to accomplish that was to major in English composition. Up to that time, despite my love for the world of nature, I'd had no training in biology. As a college sophomore, I was exposed to a fine introductory course in biology, and my allegiance began to waver. Perhaps I wanted to be a scientist. A year later the decision for science was made; the writing courses were abandoned. I had given up writing forever, I thought. It never occurred to me that I was merely getting something to write about. What surprises me now is that apparently it didn't occur to any of my advisors, either.

The merging of the two careers didn't begin until several years after I had left Johns Hopkins, where I had gone to do graduate work in zoology. Those were depression and post-depression years, and after a period of part-time teaching jobs, I supplemented them with another part-time assignment. The Bureau of Fisheries in Washington had undertaken to do a series of radio broadcasts. They were looking for someone to take over writing the scripts—someone who knew marine biology and who also could write. I happened in one morning when the chief of the biology division was feeling rather desperate—I think at that point he was having to write the scripts himself. He talked to me a few minutes and then said: "I've never seen a written word of yours, but I'm going to take a sporting chance."

That little job, which eventually led to a permanent appointment as a biologist, was in its way a turning point. One week I was told to produce something of a general sort about the sea. I

set to work, but somehow the material rather took charge of the situation and turned into something that was, perhaps, unusual as a broadcast for the Commissioner of Fisheries. My chief read it and handed it back with a twinkle in his eye. "I don't think it will do," he said. "Better try again. But send this one to the *Atlantic*." Eventually I did, and the *Atlantic* accepted it. Since then I have told my chief of those days that he was really my first literary agent.

From those four *Atlantic* pages, titled "Undersea," everything else followed. Quincy Howe, then editor for Simon and Schuster, wrote to ask why I didn't do a book. So did Hendrik Willem van Loon. My mail had never contained anything so exciting as his first letter. It arrived in an envelope splashed with the green waves of a sea through which van Loon sharks and whales were poking inquiring snouts.

That was only the beginning of a wonderful correspondence, for it seemed Hendrik van Loon had always wanted to know what lay undersea, and he was determined I should tell the world in a book or books. His typing was amazing but his handwritten letters were almost illegible. Often he substituted a picture for a word, and that helped. After a few weeks of such correspondence, I spent a few days with the van Loons in their Connecticut home, during which I was properly introduced to my future publisher.

To a young and very tentative writer, it was a stimulating and wonderful thing to have the interest of this great man, so overwhelming in his person and his personality, but whose heart was pure gold. Through him, I had glimpses of a world that seemed exciting and fabulous, and I am sure his encouragement had a great deal to do with the fact that my first book, *Under the Sea-Wind*, was eventually published.

When that happened, however, on the eve of Pearl Harbor, the world received the event with superb indifference. The re-

viewers were kind, but that rush to the book store that is the author's dream never materialized. There was a Braille edition, a German translation, and use of various chapters in anthologies. That was all. I was busy with war work, and when I thought at all about writing, it was in terms of magazine pieces; I doubted that I would ever write another book. But I did, and ten years after *Under the Sea-Wind*, *The Sea Around Us* was published.

The fifteen years that I spent in fishery and wildlife conservation work with the Government have taken me into certain places where few other women have been. Perhaps you would like to hear about some of those.

While I was doing information work for Fish and Wildlife, the Service acquired a research vessel for work at sea, specifically on the famous fishing ground known as Georges Bank, that lies some 200 miles east of Boston and south of Nova Scotia. Some of the valuable commercial fishes are becoming scarce on the Bank, and the Service is trying to find the reason. The *Albatross III*, as this converted fishing trawler was called, operated out of Woods Hole, making repeated trips to Georges. She was making a census of the fish population; this was done by fishing according to a systematic plan over a selected series of stations. Of course, various scientific data on water temperatures and other matters were collected, too.

It was decided finally – and I might have had something to do with originating the idea – that perhaps I could do a better job of handling publications about the *Albatross* if I had been out on her. But there was one great obstacle. No woman had ever been on the *Albatross*. Tradition is important in the Government, but fortunately I had conspirators who were willing to help me shatter precedent. But among my male colleagues who had to sign the papers, the thought of one woman on a ship with some fifty men was unthinkable. After much soul searching, it was decided that maybe *two* women would be all right, so I ar-

ranged with a friend, who was also a writer, to go with me. Marie [Rodell] thought she would write a piece about her experiences, and declared that her title would be: "I Was a Chaperone on a Fishing Boat."

And so one July day we sailed from Woods Hole into ten days of unusual adventure. This is not the place to tell about the scientific work that was done—but there was a lighter side, especially for us who were mere observers, and there were unforgettable impressions of fishing scenes; of fog on Georges, where the cold water and the warm air from the Gulf Stream are perpetually at war at that season of the year; and of the unutterable loneliness of the sea at night as seen from a small vessel.

As to the lighter side—a fishing trawler is not exactly a luxury liner, and both of us were on our mettle to prove that a woman could take it without complaining. Hardly had the coast of Massachusetts disappeared astern when some of the ship's officers began to give us a vivid picture of life aboard. The *Albatross*, they told us, was a very long and narrow ship and rolled like a canoe in a sea, so that everyone got violently seasick. They described some of the unpleasant accidents that sometimes occur in handling the heavy gear. They told us about the bad food. They made sure we understood that the fishing process went on night and day, and that it was very noisy.

Well—not all the things those Job's comforters predicted came true, but a great many of them did. However, we learned in those ten days that one gets used to almost anything.

We learned about the fishing the very first night. After steaming out through Nantucket Channel late in the afternoon, we were to reach our first fishing station about midnight. Marie and I had gone to bed and were sound asleep when we heard a crash, presumably against the very wall of our cabin, that brought us both upright in our bunks. Surely we had been rammed by another vessel. Then a series of the most appalling

bangs, clunks, and rumbles began directly over our heads, a rhythmic thundering of machinery that would put any boiler factory to shame. Finally it dawned upon us that this was fishing! It also dawned on us that this was what we had to endure for the next ten nights. If there had been any way to get off the *Albatross* then I'm sure we would have taken it.

At breakfast the next morning there were grins on the faces of the men. "Hear anything last night?" they asked. Both of us wore our most demure expressions. "Well," said Marie, "once we thought we heard a mouse, but we were too sleepy to bother." They never asked us again. And after a night or two we really did sleep through the night.

One of the most vivid impressions I carried away from the *Albatross* was the sight of the net coming up with its load of fish. The big fishing trawlers such as this one drag a cone-shaped net on the floor of the ocean, scraping up anything lying on the bottom or swimming just above it. This means not only fish but also crabs, sponges, starfish and other life of the sea floor. Much of the fishing was done in depths of about 100 fathoms, or 600 feet. After a half hour of trawling the big winches would begin to haul in the cables, winding them on steel drums as they came aboard. There is a marker on every hundred fathoms of cable, so one can tell when to expect the big net to come into view, still far down in the green depths.

I think that first glimpse of the net, a shapeless form, ghostly white, gave me a sense of sea depths that I never had before. As the net rises, coming into sharper focus, there is a stir of excitement even among the experienced fishermen. What has it brought up?

No two hauls are quite alike. The most interesting ones came from the deeper slopes. Georges Bank is like a small mountain resting on the floor of a surrounding deeper sea—most of the fishing is done on its flat plateaus, but sometimes the net is

dragged down on the slopes near the mountain's base. Then it brings up larger fish from these depths. There is a strange effect, caused by the sudden change of pressure. Some of the fish become enormously distended and float helplessly on their backs. They drift out of the net as it nears the surface but they are quite unable to swim down.

Then one sees the slender shapes of sharks moving in to the kill. There was something very beautiful about those sharks to me—and when some of the men got out rifles and killed them for “sport” it really hurt me.

In those deep net hauls, too, there were often the large and grotesque goosefish or angler fish. The angler has a triangular shape, and its enormous mouth occupies most of the base of the triangle. It lives on the floor of the sea, preying on other fish. The anglers always seemed to have been doing a little fishing of their own as the net came up, and sometimes the tails of two or three large cod would be protruding from their mouths.

Sometimes at night we would go up on the deck to watch the fishing. Then the white splash of electric light on the lower deck was the only illumination in a world of darkness and water. It was a colorful sight, with the men in their yellow oilskins and their bright flannel shirts, all intensified and made somehow dramatic by the blackness that surrounded them.

There is something deeply impressive about the night sea as one experiences it from a small vessel far from land. When I stood on the afterdeck on those dark nights, on a tiny man-made island of wood and steel, dimly seeing the great shapes of waves that rolled about us, I think I was conscious as never before that ours is a water world, dominated by the immensity of the sea.

However, it is a curious thing that one sometimes experiences a sense of the sea on land. A few years ago I had a wonderful opportunity to go far into the interior of the Everglades in

Florida. Many people have crossed this great wilderness by way of the Tamiami Trail. That is better than not seeing it at all, but until one has penetrated far into the interior, into the trackless, roadless areas of the great swamp, one does not know the Everglades.

The difficulties of travel there are great, and no ordinary means of transportation will do. But a few pioneering individuals have developed wonderful vehicles called “glades buggies.” They were first used, I believe, to prospect for oil in the interior of the Everglades. They are completely independent of roads; they can go through water, they can navigate the seas of “sawgrass” or even push through low-growing thickets of trees and shrubs; they can make their way—painfully but surely—over ground pitted with holes and strewn with jagged boulders.

I learned about the glades buggies when I was on a trip for my office to the area that is now the Everglades National Park. At that time the Fish and Wildlife Service had responsibility for protecting the wildlife of the area. Two of us were staying at a hotel in Miami Beach, visiting various wildlife areas in the vicinity. When we heard about Mr. Don Poppenhager and his wonderful glades buggy, we decided to try to arrange a trip.

Mr. Poppenhager had never taken a woman into the swamp and at first he was hesitant. He warned us that it was a very uncomfortable experience; we assured him we could take it and really wanted to go. So he agreed to meet us at a little store on the Tamiami Trail kept by a character known as Ma Szady.

I think our elegant Miami Beach hotel had been a little suspicious of our comings and goings on strange errands and in strange costumes, but the morning we left for the Everglades trip was almost too much for them. One of the Fish and Wildlife men was to pick us up at 5 A.M. and take us over the trail. This was in the summer, and a tropical darkness still hung over Miami at that hour. Not wanting to arouse the hotel, Shirley

[Briggs] and I crept down the stairs laden with all our strange gear. As we tiptoed through the lobby, the head of a very sleepy but thoroughly suspicious clerk rose above the desk. "Are you ladies checking out?" he asked. I don't think his estimate of us rose when a very noisy, two-ton Government truck roared down the street and stopped at the hotel for its passengers.

The glades buggy that was waiting for us was a wonderful conveyance. It was built something like a tractor, with six pairs of very large wheels. Its engine was completely naked and exposed, and during the trip blasted its heat on the three of us perched on the buggy's single seat. There were various tools—pliers, screwdrivers, etc.—in a little rack against the motor block, and from time to time Mr. Poppenhager leaned out as we jogged along and turned something or jabbed at the motor. It seemed to be in a perpetual state of boiling over; and now and then Mr. P. would stop and get out with a tin can and dip up some water—there was water everywhere—and pour it into the radiator. Usually he would drink a little—"the best water in the world" he would say.

But as I said a while ago, there was a curious sense of the sea there in the heart of the Everglades. At first I couldn't analyze it but I felt it strongly. There is first of all a sense of immense space from the utter flatness of the land and the great expanse of sky. The feeling of space is almost the same as at sea. The cloud effects were beautiful and always changing, and rain came over the grass, making a beautiful soft play of changing color—all grey and soft green. And again I found myself remembering rain at sea, dimpling the soft grey sheet of water. And in the Everglades the coral rock is always cropping out—underlying the water and raised in jagged boulders among the grass. Once that rock was formed by coral animals, living in a shallow sea that covered this very place. There is today the feeling that the land has formed only the thinnest veneer over this underlying plat-

form of the ancient sea—that at any time the relations of sea and land might again be reversed.

And as we traveled from one to another of the "hammocks" of palmetto and other trees that rise here and there in the great sea of grass, we thought irresistibly of islands in the ocean. Except for scattered cypresses, all the trees of this part of the Everglades are concentrated in the hammocks, which form where depressions in the rock accumulate a little soil. Everywhere else there is only rock, water, and grass. The hammocks are famous for their tree snails, which live on certain locust-like trees, feeding on mossy growths on the bark. The shells of the tree snails are brightly colored, with an amazing variety of patterns. They are so much sought by collectors that the more accessible hammocks have been stripped bare. On our steaming iron monster, we rode along through the hammocks, passing under the trees and picking off tree snails, as in childhood we used to snatch the iron rings on a merry-go-round.

During the day we went calling on several alligators known by Mr. Poppenhager to inhabit certain "holes." The first one was not at home; the second was. He was apparently out in his front yard, but at our approach he went crashing through the willows and into his pond. In the Everglades, a "gator hole" is typically a water-filled depression in the middle of a small hammock. Usually there is a rocky cave in the floor of this pond to which the alligator can retreat.

The Everglades is, of course, the land of the Seminole Indians. Far in the interior of the Glades we visited the sites of two ancient Indian villages. Some of these are being studied by archeologists who have found evidence of early tribes who antedated the Seminoles by several hundred years. Near one of the modern settlements, Mr. Poppenhager took us to visit an Indian grave. Because of the solid limestone floor of this whole region, there is no burial in the ordinary sense; the coffin is placed

on the ground and the man is given his gun and other equipment he will need for his life in the next world.

To us the whole area seemed as trackless and as lacking in landmarks as the sea, but our guide knew exactly where he was going. Our only bad moments came late in the afternoon, when there began to be some question whether we had enough gas to get us back to the Trail. Mosquitoes had been with us all day, settling in clouds every time we stopped moving. So the thought of a night in the swamp wasn't pleasant. However, we made it about dusk, just as the Game Warden and the Fish and Wildlife patrolman were beginning to line up cars along the Trail to guide us back by their headlights.

That Fish and Wildlife patrolman was such an unforgettable character that I must tell you a little about him before we leave the Everglades. As Service patrolman for the area, it was his job to protect the birds and alligators and other wildlife from being molested. That meant he had to live far out in a wild part of the Everglades, where days went by without his seeing another person. The Service had had trouble filling the job. There were few men that would have taken it; and perhaps no one else as beautifully fitted for it as Mr. Finneran. He was tired of the northern cities where he had spent most of his life, and for about ten years he had known this wilderness of southern Florida. He had somehow gained the confidence of the Seminoles, who ordinarily have no love for the white man. But they admired and trusted Mr. Finneran—so much that they had given him a name and practically adopted him into their tribe. When the Service offered Mr. Finneran this lonely job, he took it gladly, and moved into the little shack that was to serve as home and headquarters. There he lived with a little dog, a few chickens, and a blue indigo snake named Chloe. He had five tree snails on a tree beside the house. He was very proud of them, and when we returned from our glades buggy trip, we brought him a few snails

as a gift. He couldn't have been more pleased if they had been pure gold. I remember how feelingly he spoke to me of the beauty of the Everglades in the early morning, with dew on the grass and thousands of spider webs glistening. He spoke of the birds coming in such numbers they were like dark clouds in the sky. He told of the eerie silver light of the moon, and the red, glowing hordes of alligators in the ponds. His paradise had its flaws, as he acknowledged. He couldn't have a light in his shack at night because of the terrible Glades mosquito. Sometimes, on rainy nights, fire ants invaded the house and even swarmed into his bed. The Indians said ghosts haunted the place because it was built on an old Indian mound; but Mr. Finneran had heard no ghosts he couldn't explain. When city dwellers asked him how he stood the loneliness out there, he always asked how they endured sitting around in night clubs. "I wouldn't trade my life for anything," he told us.

From what I have told you, you will know that a large part of my life has been concerned with some of the beauties and mysteries of this earth about us, and with the even greater mysteries of the life that inhabits it. No one can dwell long among such subjects without thinking rather deep thoughts, without asking himself searching and often unanswerable questions, and without achieving a certain philosophy.

There is one quality that characterizes all of us who deal with the sciences of the earth and its life—we are never bored. We can't be. There is always something new to be investigated. Every mystery solved brings us to the threshold of a greater one.

I like to remember the wonderful old Swedish oceanographer, Otto Petterson. He died a few years ago at the age of 93, in full possession of his keen mental powers. His son, also a distinguished oceanographer, tells us in a recent book how intensely his father enjoyed every new experience, every new discovery

concerning the world about him. "He was an incurable romantic," the son wrote, "intensely in love with life and with the mysteries of the Cosmos which, he was firmly convinced, he had been born to unravel." When, past 90, Otto Petterson realized he had not much longer to enjoy the earthly scene, he said to his son: "What will sustain me in my last moments is an infinite curiosity as to what is to follow."

The pleasures, the values of contact with the natural world, are not reserved for the scientists. They are available to anyone who will place himself under the influence of a lonely mountain top—or the sea—or the stillness of a forest; or who will stop to think about so small a thing as the mystery of a growing seed.

I am not afraid of being thought a sentimentalist when I stand here tonight and tell you that I believe natural beauty has a necessary place in the spiritual development of any individual or any society. I believe that whenever we destroy beauty, or whenever we substitute something man-made and artificial for a natural feature of the earth, we have retarded some part of man's spiritual growth.

I believe this affinity of the human spirit for the earth and its beauties is deeply and logically rooted. As human beings, we are part of the whole stream of life. We have been human beings for perhaps a million years. But life itself—passes on something of itself to other life—that mysterious entity that moves and is aware of itself and its surroundings, and so is distinguished from rocks or senseless clay—[from which] life arose many hundreds of millions of years ago. Since then it has developed, struggled, adapted itself to its surroundings, evolved an infinite number of forms. But its living protoplasm is built of the same elements as air, water, and rock. To these the mysterious spark of life was added. Our origins are of the earth. And so there is in us a deeply seated response to the natural universe, which is part of our humanity.

Now why do I introduce such a subject tonight—a serious subject for a night when we are supposed to be having fun? First, because you have asked me to tell you something of myself—and I can't do that without telling you some of the things I believe in so intensely.

Also, I mention it because it is not often I have a chance to talk to a thousand women. I believe it is important for women to realize that the world of today threatens to destroy much of that beauty that has immense power to bring us a healing release from tension. Women have a greater intuitive understanding of such things. They want for their children not only physical health but mental and spiritual health as well. I bring these things to your attention tonight because I think your awareness of them will help, whether you are practicing journalists, or teachers, or librarians, or housewives and mothers.

What are these threats of which I speak? What is this destruction of beauty—this substitution of man-made ugliness—this trend toward a perilously artificial world? Unfortunately, that is a subject that could require a whole conference, extending over many days. So in the few minutes that I have to devote to it, I can only suggest the trend.

We see it in small ways in our own communities, and in larger ways in the community of the state of the nation. We see the destruction of beauty and the suppression of human individuality in hundreds of suburban real estate developments where the first act is to cut down all the trees and the next is to build an infinitude of little houses, each like its neighbor.

We see it in distressing form in the nation's capital, where I live. There in the heart of the city we have a small but beautiful woodland area—Rock Creek Park. It is a place where one can go, away from the noise of traffic and of man-made confusions, for a little interval of refreshing and restoring quiet—where one can hear the soft water sounds of a stream on its way to river and

sea, where the wind flows through the trees, and a veery sings in the green twilight. Now they propose to run a six-lane arterial highway through the heart of that narrow woodland valley – destroying forever its true and immeasurable value to the city and the nation.

Those who place so great a value on a highway apparently do not think the thoughts of an editorial writer for the *New York Times* who said: “But a little lonesome space, where nature has her own way, where it is quiet enough at night to hear the patter of small paws on leaves and the murmuring of birds, can still be afforded. The gift of tranquillity, wherever found, is beyond price.”

We see the destructive trend on a national scale in proposals to invade the national parks with commercial schemes such as the building of power dams. The parks were placed in trust for all the people, to preserve for them just such recreational and spiritual values as I have mentioned. Is it the right of this, our generation, in its selfish materialism, to destroy these things because we are blinded by the dollar sign? Beauty – and all the values that derive from beauty – are not measured and evaluated in terms of the dollar.

Years ago I discovered in the writings of the British naturalist Richard Jefferies a few lines that so impressed themselves upon my mind that I have never forgotten them. May I quote them for you now?

The exceeding beauty of the earth, in her splendor of life, yields a new thought with every petal. The hours when the mind is absorbed by beauty are the only hours when we really live. All else is illusion, or mere endurance.

Those lines are, in a way, a statement of the creed I have lived by, for, as perhaps you have seen tonight, a preoccupation with

the wonder and beauty of the earth has strongly influenced the course of my life.

Since *The Sea Around Us* was published, I have had the privilege of receiving many letters from people who, like myself, have been steadied and reassured by contemplating the long history of the earth and sea, and the deeper meanings of the world of nature. These letters have come from all sorts of people. There have been hairdressers and fishermen and musicians; there have been classical scholars and scientists. So many of them have said, in one phrasing or another: “We have been troubled about the world, and had almost lost faith in man; it helps to think about the long history of the earth, and of how life came to be. And when we think in terms of millions of years, we are not so impatient that our own problems be solved tomorrow.”

In contemplating “the exceeding beauty of the earth” these people have found calmness and courage. For there is symbolic as well as actual beauty in the migration of birds; in the ebb and flow of the tides; in the folded bud ready for the spring. There is something infinitely healing in these repeated refrains of nature – the assurance that dawn comes after night, and spring after winter.

Mankind has gone very far into an artificial world of his own creation. He has sought to insulate himself, with steel and concrete, from the realities of earth and water. Perhaps he is intoxicated with his own power, as he goes farther and farther into experiments for the destruction of himself and his world. For this unhappy trend there is no single remedy – no panacea. But I believe that the more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction.