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My Life in Biology: Paul A. Johnsgard

Early Years 1931-1949

I was born in 1931 in the very small town of Christine, North Dakota, on the Red River about 20 miles south of Fargo. My granddad owned a general store there, and my father worked in that store for as long as we lived in Christine, which was until 1939. These were the Depression years, and my major memories of that time are of hot dusty streets in the summer and bitterly cold winters, when I had to walk across town to school. I recently determined that it was slightly over a half a mile from our house near the Lutheran church at the western edge of town to school, which was beyond the eastern edge of town.

We lived a few blocks from the railroad tracks. Christine was one of those little whistle-stop towns, and my earliest memories of nature are of walking out along the railroad tracks gathering wildflowers for my mother. She encouraged my bringing back wildflowers and watching local birds like Red-winged Blackbirds. In fact, when I started school, my first-grade teacher, Hazel Bilstead, had a mounted male Red-winged Blackbird in a glass Victorian bell jar, which allowed me to examine that beautiful bird up close. I can remember that as if it were yesterday, and I think that my need to see live birds in detail began at that time. I later dedicated one of my books to Miss Bilstead's memory.

The land around Christine is in the bed of glacial Lake Agassiz and is as flat as a tabletop. There was little natural habitat except along the wooded river itself. The railroad right-of-way had prairie grasses and other prairie plants, and also native prairie birds such as Dickcissels and Western Meadowlarks. I had no field identification guides and there was no library in town, so even though I now know that Roger Tory Peterson's first field guide was published in 1934, I had no knowledge of it then. Mother did have some pocket-sized, illustrated bird books, with covers of different colors and titles like Birds of Towns, Birds of the Country, Birds of the Woods, etc.

In 1940 we moved to Wahpeton, on the Red River about 20 miles south of Christine, where Dad took a job in the county courthouse. He initially worked as an assistant registrar of deeds and later as a state sanitarian. The move to Wahpeton was a very important event for me. Wahpeton is the county seat of Richland County, and it had a population of about 3000 and an excellent public school.

Wahpeton's public library was critically important to me. I can visualize to this day exactly where the bird books were and what was there. In fact, a couple of years ago I went back and saw with pleasure that they still had the copy of T. S. Roberts' two-volume *The Birds of Minnesota* that I used to delight in. The first time I stopped to check on it, I was heartsick when I couldn't find it and assumed it had been disposed of, but then I found it in the reference section. By then the library had some of my own titles, too.

I was very shy as a child. My idea of having fun was going off into the woods and looking for wildflowers or watching birds. I drew almost constantly, mostly

birds. I've had people who knew me back in grade school tell me that the one thing they remember about me was that I was always drawing. My older brother was probably better than I; he reminded me recently that he won quite a number of drawing awards at state fairs.

Another important thing happened shortly after we moved to Wahpeton. In 1943 my mother, who had taken a job in a department store, spent \$750 of her hard-earned money to buy a cottage on Lake Lida near Pelican Rapids. It is about 40 miles from Wahpeton, or almost as far as it was possible to go, given wartime gas rationing. The cottage gave us a wonderful place to go during summer.

Behind the cottage was a square mile of basically undisturbed maple-basswood forest, filled with everything imaginable, including showy lady's slipper, yellow lady's slipper, showy orchid, and all of the other woodland wildflowers one can imagine. The wildflower garden that I moved down out of the woods into a shady site behind our cottage was still thriving when I sold the cottage in about 2005. I was quite content just being by myself and wandering through the woods with my dog.

I was very poor at athletics. I hated baseball and was always the last person to be chosen. I didn't grow tall until late in high school, so I wasn't any good at basketball, either. I was a good student, but I wasn't compulsive about grades. I had only an adequate grade-point average, but it was good enough to get me into the National Honor Society. I saw one of my old teachers from Science School when I was home for my mother's funeral in 2000. He said, "You know, you were my favorite student of all time." I was surprised to hear that, as he must have had thousands of students in his classes.

I read a lot of natural history, especially books about animals, as well as all kinds of popular stories. I was also interested in building model airplanes and collecting rocks and wild plants. Mother encouraged all of my reading and collecting. I also had the good fortune to have what I suppose one would call a rich aunt, my mother's sister Beatrice who lived in Detroit. After she realized I was so interested in birds, she would send me wonderful bird books for Christmas. My copy of Audubon's *Birds of America* came from her in 1939. I still treasure it. In 1940 we took a family trip to Detroit to visit her. It was my first long road trip. She and her husband had a very large, old house and a big backyard and garden. While exploring there I got excited because I saw a tulip tree for the first time. I went running in to tell Mother I'd seen a tulip tree, which of course don't grow in North Dakota. She said, "How in the world did you know that?" I told her it was pictured in Audubon's *Birds of America*; where one of the plates showed some Baltimore Orioles in a tulip tree (*Liriodendron*).

Waterfowl became increasingly important to me because of my mother's cousin "Bud" Morgan, who at that time was a game warden. By the time I was 11 he had started taking me out on his spring duck counts, where he taught me how to identify waterfowl. That, I think, was especially important in directing me toward studying waterfowl. By the time I was 13, I was given a copy of F.H. Kortright's *Ducks, Geese, and Swans of North America*, which I practically memorized.

Both of my parents knew the value of education. Following high school, Dad enrolled at the State School of Science (now the North Dakota State College of Science) in Wahpeton, but soon had to go to work with his father for economic reasons. Mother received a teaching diploma from a normal school at Fargo. She taught for a few years in a one-room schoolhouse in the country before she was married. In the end, my brothers, Keith and Larry, and I each earned a Ph.D. or an M.D. Dad told each of us that if we would go to college, he would pay our basic enrollment expenses until we graduated. I thought I would go to college to get a degree in wildlife management. I thought that was a way I could be out in the field and enjoy nature.

Undergraduate years and Frank Cassel 1949-1953

I attended the North Dakota State School of Science in Wahpeton from 1949 to 1951. It is a two-year college with a trade school and a liberal arts program, so I got a junior college diploma in liberal arts. There were only two choices for me at that point. One was North Dakota Agricultural College (now North Dakota State University) in Fargo, and the other was the University of North Dakota at Grand Forks. Fargo had a program in zoology, so I could get a bachelor's degree in biology, with a major in zoology.

When I transferred to Fargo I was still thinking of a career in wildlife. My advisor was Frank Cassel and during registration I told him that I already had a detailed plan for graduation, with every course listed that I wanted to take in the next two years. He said, "Well, I've never seen a student show up prepared like that before, knowing exactly what he wanted and needed to take over the next six quarters." I think that impressed him, and he soon started pointing me toward pure ornithology, which I hadn't known to be a possible profession. That's how I fell under Cassel's tutelage. I also completed majors in zoology and in botany, and became quite interested in plant ecology, mostly because of a great teacher named Loren Potter.

At about that time I became more concerned about doing well academically, at least in science, and maintained a straight A average in both zoology and botany. In fact, I think the faculty was afraid to give me anything other than an A because they knew it would destroy my four-point average.

While a junior at North Dakota State, I was encouraged by Dr. Cassel to apply for a small scholarship that was given every year to a student who wanted to do a special research project over the summer between his or her junior and senior year. Dr. Cassel encouraged me to do a bibliographic survey of the published and unpublished sources of information on the distribution of North Dakota waterfowl.

I received the scholarship and soon decided that as long as I was assembling the waterfowl data, I might as well include all the other North Dakota birds, too. North Dakota didn't then (and still doesn't) have a state bird book, or even a complete modern list of its avifauna. I drove to most of the state's national wildlife refuges, went through their files, and extracted massive amounts of information about North Dakota birds.

I received \$25 (and a bonus copy of A.C. Bent's *Life Histories of North American Gallinaceous Birds*) for that work. More importantly, Dr. Cassel suggested that I use the data to do a booklet on the waterfowl of North Dakota, which he said he could probably arrange to have published. After I wrote the text, he wanted me also to do drawings for it. I made four sheets of pen-and-ink drawings, showing all of North Dakota's waterfowl plus some other similar water birds such as grebes. I made the drawings in a manner similar to those in the early Peterson field guides and wrote to Roger Tory Peterson to ask if I could use his idea of arrows to point out important field marks. Recently I learned from the curator at the Peterson Institute that they still have correspondence from me dating back to the 1950s, filed under "Correspondence with famous people"! That 16-page booklet was published through a consortium of three local colleges called the Institute of Regional Studies.

That project gave me some confidence that I could write and draw well enough for publication. I'd never had any training in writing or art, and never had any English courses beyond freshman English. The experience probably gave me more confidence about writing than was warranted.

Washington State College and Charles Yocom 1953-1956

When asked for advice on graduate schools, Dr. Cassel suggested that I become an ornithologist rather than work for a game commission, so that I could teach ornithology or work for an environmental group. I applied to Washington State, Oregon State and Utah State, all of which had strong programs in waterfowl biology. I was admitted to all of them, so I was able to have my choice. I chose Washington State College (now Washington State University) in Pullman for two reasons. My older brother was there as a graduate student, and more importantly, Professor Charles Yocom was there. He had recently written a book called *Waterfowl and Their Food Plants in Washington*, and he strongly encouraged me to come and study waterfowl ecology. Regrettably, Dr. Yocom took a job at Humboldt State about a week after I arrived at Pullman, so I was left without an advisor for waterfowl research. Furthermore, Dr. Yocom had agreed that I could do a master's in waterfowl ecology, but get my degree in zoology, not wildlife management. That was an oral commitment on his part, which the university later reneged on. The department chair, Herbert Eastlick, insisted that my degree had to be in wildlife management because of its research funding, so that is how my M.S. in Wildlife Management came about.

Professor Donald Farner was at Washington State then, and I worked as an assistant for him one summer, caring for sparrows and recording Zugunruhe activity data. James West was still a student of Farner's at that time. Jared Verner, Alan Wilson and Frank Golley were also student friends. Prof. Rexford Daubenmire had a small cadre of grad students and was the most inspiring of all the teachers I encountered there. I took all of his courses, and he served with George Hudson and I. O. Buss on my graduate committee, with Professor Buss as chairman.

For my master's research I did an ecological study on an area in central Washington called the Potholes, which is an area much like Nebraska's Sandhills, with a high water table and many marshes and wet meadows at the bases of sand dunes. A large dam (O'Sullivan's) was inundating many of those sandy wetlands,

and I was to determine how the changes in water levels were affecting biological populations, especially waterfowl. I did a general study of the ecology of plants and birds relative to the water fluctuations.

While doing fieldwork I also worked on many minor projects. For example, I obtained data on duck sex ratios, which I later published in the *Journal of Wildlife Management*. I was also interested in waterfowl courtship activity, and this was the first time in my life I spent hours watching ducks court, and making field sketches. As far as I could tell, some of my observations were new, so I submitted them for publication in the *Condor*. I thought the *Condor* paper was pretty good, but I later had a letter from Professor Charles Sibley, of Cornell University. He basically said, "Well, it was an interesting paper, but you obviously are not aware of the work of Konrad Lorenz, who has published a very extensive paper on courtship behavior in the dabbling ducks. You didn't cite that, and it's a major oversight, because it would allow you to rethink what you saw in a different way." That paper was in an obscure German journal, so I had to get a copy and translate it.

This news was embarrassing, but Dr. Sibley softened it by asking if I was interested in coming to Cornell. I had thought about Cornell ever since Dr. Cassel had recommended that I go there. In fact, I had almost applied to Cornell for graduate school, but I didn't think I would be accepted, and it cost \$25 just to apply.

I finished my master's degree at Washington State in 1955 and stayed a second year, partly so I could marry Lois Lampe, who finished her master's in plant ecology under Rexford Daubenmire in 1956. At that time I decided to go to Cornell and become an ornithologist. With Dr. Sibley now wanting me, I not only was accepted, but was awarded the best graduate fellowship that Cornell had. I had also been accepted to work under Alden Miller at the University of California on a graduate assistantship, so I had to choose between the two.

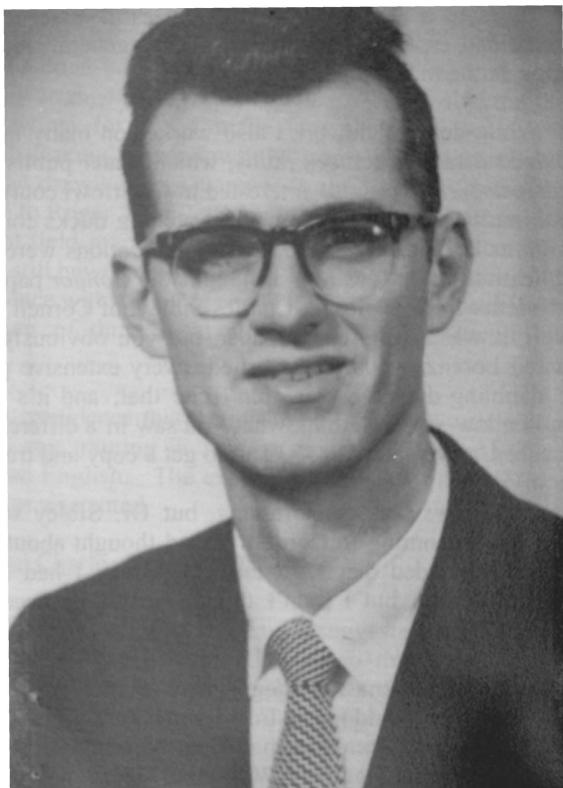
At some point while I was at Washington State I also became aware of the Wildfowl Trust in England. Peter Scott (later Sir Peter Scott), a famous artist, had developed the Trust after World War II as a place for breeding and conserving as many species of the world's waterfowl as possible. I wrote to Scott, expressing an interest in visiting the Wildfowl Trust to study waterfowl. That was a dream that I would keep in mind for the better part of six years.

Cornell University and Charles Sibley 1956-1969

Choosing Cornell was a decision that affected the rest of my life. I was thinking by that time that I would become a teacher or researcher, rather than a wildlife biologist, and Dr. Sibley encouraged me to work on waterfowl behavior. He was then interested in waterfowl as examples of the results of selection against hybridization, and in their associated behavioral isolating mechanisms. I spent three years at Cornell (1956-1959) working on the North American mallard-like ducks, including Mallards, American Black Ducks, Mexican Ducks, Mottled Ducks, and Florida Ducks (a south Florida subspecies of Mottled Duck). I studied their comparative pair-forming behavior and morphology, as well as some protein electrophoresis of blood serum, trying to estimate their relationships and evolutionary history.

Dr. Sibley proved to be the most intellectually stimulating teacher I've ever known, and also one of the most demanding and, at times, tyrannical. His famous temper made all of his students quake in his presence and regard him as a godlike figure to be disobeyed only at one's utter peril. Yet he could also be charmingly funny, and also endlessly interesting. He attracted overflow crowds to his introductory ornithology classes, captivating them with his great lecturing ability and complete command of his subject.

My three years at Cornell were spent on full fellowship, so I never had to act as one of Dr. Sibley's often-suffering graduate assistants; however, I did work for him as a lab technician during the summer of 1958. That summer was a critical one in Dr. Sibley's transformation from species-level taxonomy using whole specimen data to a much more molecular taxonomic approach. He had obtained a one-year National Science Foundation (NSF) grant for a pilot study on the feasibility of evaluating avian blood proteins as a taxonomic tool, using paper electrophoresis. He assigned me the job of running the electrophoretic separations, as well as obtaining a variety of domestic birds from the poultry department and various game birds from the state-operated game farm near Ithaca. I shuttled these birds back and forth, obtaining blood samples and running their serum analyses. These efforts, however, produced extremely disheartening results, owing to great individual variability in the serum profiles. Nevertheless, Dr. Sibley and I co-authored two papers on our blood studies.



While reviewing the waterfowl literature, I encountered a paper written by Robert McCabe and H. F. Deutsch and published in the *Wilson Bulletin* about a decade previously. The study indicated that significant interspecies differences exist in the electrophoretic profiles of egg white proteins from various game birds, and I decided to confirm and extend their findings, using eggs that the birds happened to lay while in our aviary, or that I otherwise could obtain. I had to do this experiment surreptitiously, because I would be dealt with harshly should Dr. Sibley discover my departure from his strict protocol. Near summer's end, Dr. Sibley proclaimed our efforts on blood protein to be a failure and announced that he would not ask for more

NSF money to continue the study. Gathering my courage, I then showed him the results of the egg white samples I had done. Within minutes he grasped their potential, and immediately laid plans for a new grant to undertake a massive survey of North American birds.

Soon after that I began to feel like the sorcerer's apprentice, for the event marked the start of his wholesale egg collecting activities, first in the U.S., and eventually worldwide. He was quite relentless in this, and eventually had serious legal trouble for using egg whites from some endangered species, such as the Peregrine Falcon. However, his work was the first to exploit molecular biology for higher level taxonomy of the world's birds. This led directly to his later studies on DNA-DNA hybridization, which shook the avian taxonomic tree to its very roots.

By going to Cornell, I was fully exposed to Dr. Sibley's interests in evolution, taxonomy, comparative behavior and pure ornithology. Lamont Cole, a famous animal population ecologist, Ari van Tienhoven, a poultry science professor, and Bill Dilger, an ethologist working on thrushes and parrots, rounded out my committee and were all important to me. I also met Ernst Mayr while I was there. He was already a biological icon, but I evidently impressed him enough so that when the first volume of the 2nd edition of Peters' *Check-list of the Birds of the World* was being prepared, he asked me to revise the families Anatidae and Anhimidae (*Anseriformes*, in *Check-list of the Birds of the World*, 1979).

During my last year at Cornell I approached Dr. Sibley and said, "What I want to do now, rather than find a job, is to try to get a post-doctoral grant and spend a year in England at the Wildfowl Trust." Dr. Sibley said, "Well, why don't you let me apply for it as principal investigator, and you can go over as my assistant." I replied, "No, if I can't do it myself, I don't want to do it." So I applied for two post-doctoral fellowships, one from the National Science Foundation, and one from the U.S. Public Health Department, thinking that with great luck I might get one. To my surprise, I got both of them and was thus able to spend two years at the Trust, one after the other, which was absolutely the single most important event of my professional life.

The Wildfowl Trust and Peter Scott 1959-1961

The Wildfowl Trust (now the Wildfowl and Wetlands Trust) is in part a zoo, getting much of its income visitors, but it is also a major research organization. At the time I was there it was at the peak of its development, having the largest collection, both in species and numbers, of waterfowl that had ever been assembled. Peter Scott was internationally famous and was actively bringing back rare birds from everywhere in the world. They then had about 120 of the 145 living species of ducks, geese and swans, or more than 80 percent of the entire family Anatidae. So I was lucky to get there just when the Trust was at its very best.

The Trust had a resident staff that was mostly concerned with avicultural problems, such as nutrition and disease. Most of the staff were doing applied research, relative to either the waterfowl collection or to the conservation of waterfowl in Great Britain. However, G.V.T. Mathews was there as science director, Hugh Boyd was their waterfowl expert, and Janet Kear arrived my second year, as assistant director of research.

Only a few weeks after I arrived at the Trust in 1959, there was an Ethological Congress held at Oxford University. I went over on the first day by bus, arriving late in the afternoon. After registering, I was directed to the hall where everybody was already gathered for dinner. The hall was quite crowded, but at its far end I could see Dr. Sibley, sitting at a large table slightly elevated from the rest. With him were Konrad Lorenz, Niko Tinbergen, and a few other people I didn't recognize. There was an empty seat right beside Dr. Sibley, so I walked up and sat down beside him. He stared at me incredulously, and said, "Don't you know this is High Table, and you have to be invited to sit here?" I was greatly embarrassed and quickly got up to leave, but the others laughed and motioned for me to sit. As a result of my ignorance I was able to become acquainted with Lorenz, the author of the duck behavior paper I had overlooked, and Tinbergen, already famous for his work on gull and fish behavior. Both later shared the Nobel Prize, and Lorenz wrote a letter endorsing me for a Guggenheim Fellowship.

I was able to study pure comparative behavioral research and its taxonomic implications full time while at the Trust. Within a year I had about six papers in press, was well into the writing of one book, and had started a second. The first book was an attempt to summarize all the observations I made on the behavior of the birds there, aimed toward developing a world survey of comparative waterfowl behavior. That effort became the *Handbook of Waterfowl Behavior* and was the first comparative behavioral survey of any family of birds. I also began to write a book that was directed to the general public, trying to describe what I thought was most interesting about waterfowl.

By then Lois and I had one child, Jay, and another, Scott, was born during our first year there. Scott was named after Peter Scott, who was not only a great painter but also a national hero for his exploits in World War II. He also is a great hero to me, because of the way he facilitated my life's work. If it had not been for him and the Wildfowl Trust, I'd probably have ended up teaching biology in some obscure school.

Nebraska and the University of Nebraska 1961 - present

From the autumn of 1959 until the summer of 1961 I was busily engaged in postdoctoral fellowship research at the Wildfowl Trust. The Trust was a grand place for doing research, but very a poor one from which to look for jobs in America. One day in the spring of 1961 I received a letter from Dr. Sibley saying, "I just learned through my Nebraska contacts that there is a job opening at the University of Nebraska for an ornithologist." He had spent several summers in the Platte Valley during the 1950s collecting hundreds of birds, mainly hybridizing species-pairs such as flickers, buntings, orioles and grosbeaks. Dr. Sibley also noted, "Nebraska is not a bad place to look for another job from."

I didn't know anything about the University of Nebraska or very much about the state. However, I remembered that Al Hochbaum, who was the Director of Delta Research Station at Delta Marsh, Manitoba, had told me that in his opinion Nebraska was second only to North Dakota as a duck production area and as prime waterfowl habitat. I decided that Nebraska might be a good place to study waterfowl ecology.

I was offered the job sight-unseen. They didn't bring me over to interview, so I came without ever having seen the campus, Lincoln or the state. I was to teach general zoology as my major responsibility, and to develop a course in ornithology, plus any other courses I might want to develop. So in 1961 I came to UN-L as an instructor. Dr. Harold Manter, the Zoology Department chair, once told me, "Well, we figured we could probably get you on the cheap, so we thought we might just as well offer you an instructorship rather than an assistant professorship." However, I not only was promoted to assistant professor at the end of my first year, but more importantly received tenure at that time. To my knowledge I am the only person at the University of Nebraska ever to advance from instructor to assistant professor with tenure by the second year.



Photographing a Lesser Golden-Plover at Churchill, Manitoba, 1980.
Photo by Ed and Jean Schulenberg.

Our department was called the Zoology Department at that time. It was small but growing, and Dr. Manter was a national figure for his parasitology work. Besides Dr. Manter, the department then consisted of about seven people. The physiology department was separate, with two people. We soon merged with physiology. The Botany Department shared Bessey Hall and had a long tradition of excellence with John Weaver, Charles Bessey, and others, but it was by then beyond its prime and also quite small. Eventually we also merged with botany to form a Department of Life Sciences, and later became a separate School of Biological Sciences.

During the first fall I was at UN-L, a student by the name of Roger Sharpe arrived who wanted to work on a master's degree. He was an avid birder and knew many good birding places in Nebraska. It was he who first told me about the Sandhill Cranes of the Platte Valley, so I went out with my ornithology class the

following March. At that time there weren't many cranes near Grand Island, so we drove to Elm Creek before turning off the highway and crossing the bridge over the Platte River. I was astounded by the sight of so many cranes in the adjacent meadows. After that trip I became intensely interested in Sandhill Cranes and the Platte Valley. My first book on cranes was published in 1981 (*Those of the Gray Wind*), and in 1983 *Cranes of the World* appeared. *Crane Music* was published in 1991. My book on the Platte Valley (*Channels in Time*) appeared in 1984.

Roger Sharpe also knew about a Greater Prairie-Chicken lek at Burchard Lake Wildlife Management Area in southeastern Nebraska about 80 miles from Lincoln, and I took my classes there, too. Galliform species soon became very important to me: my first book on grouse appeared in 1973 (*Grouse and Quails of North America*). The second, *Grouse of the World*, followed in 1981, and *Grassland Grouse and their Conservation* appeared in 2001.

I fell in love with Nebraska from the very beginning. I very soon decided I wanted to stay at the University of Nebraska as long as they would have me. With the help of NSF grants I went Alaska in 1963 and studied Spectacled Eider behavior. I went to Australia in 1964 to observe some aberrant Australian ducks such as the Musk Duck and Freckled Duck. Some of those observations were included in my *Handbook of Waterfowl Behavior*. I went to South America in 1965, studying as many populations of the Andean Torrent Duck as possible, to try to establish just how many species exist. When I started working on grouse and quails in the 1970s I went to Mexico on another NSF grant to study some of the rare New World quails relative to my *Grouse and Quails of North America*. I also later observed Rock Ptarmigan in Newfoundland, and both Black Grouse and Capercaillies in Scotland, while preparing my *Grouse of the World*.

A long series of world or continental monographs on bird groups followed, such as on shorebirds, pheasants, quails, raptors, hummingbirds, trogons, pelecaniform birds, and others. There were also books on subjects such as diving birds (*Diving Birds of North America*), desert-adapted birds (*Birds of Dry Places*), the avian social parasites (*Deception at the Nest*) and lek-forming birds and associated aspects of sexual selection (*Arena Birds*).

Over the years, I began studies that led to books on the biodiversity of the state (*The Nature of Nebraska*), the Sandhills (*This Fragile Land*), the Platte River (*Channels in Time*) and the Niobrara River (*A River Running Through Time*). The Great Plains also served as a subject for several books (*Birds of the Great Plains*, *Great Wildlife of the Great Plains*, *Faces of the Great Plains*), as did Plains history (*Lewis & Clark on the Great Plains*, *Wind Through the Buffalo Grass*). Interests in the grassland ecosystems of the Great Plains lead me to write both *Prairie Birds* and *Prairie Dog Empire*.

Popular Writing

During the 1960s we had a small faculty club in an old converted sorority house. I often ate there, and one of the many people with whom I enjoyed sitting was Bruce Nicoll, who was then director of University of Nebraska Press. He would regale us with all kinds of stories about the University, and I would just sit there and listen, never contributing much to the conversation.

One day in late 1965 after the *Handbook of Waterfowl Behavior* had been published, I was eating there quietly. Then Bruce Nicoll stormed in, waving a copy of the Sunday edition of the *New York Times* which contained a very favorable review of my book, and said, "Damn it, Johnsgard! What's the big idea? What's the idea of publishing a book with Cornell Press, when we've got a perfectly good university press here?" He then added, "What book are you writing now?" I replied that I had a book manuscript in my office files but doubted that it was publishable. Nevertheless, he followed me back to my office, and I dug out the manuscript. He took it with him, and only a day later called back and said, "This is great! We've got to publish this!" He let me include two 16-page signatures of color plates, and it was published in 1968 (*Waterfowl: Their Biology and Natural History*). Almost immediately it won an award from the Chicago Book Clinic. It was chosen by the Association of the English Speaking Peoples to be placed in libraries around the world. It was also named one of the hundred best science books of the year. After that book appeared, I began to think it would be fun to see if could write a bird book that was popular, but that included a good deal of information on natural history.

Another of the unexpected circumstances that affected my life soon occurred. One day, while signing some copies of *Waterfowl: the Biology and Natural History* at a local bookstore, I learned that John Neihardt had recently signed some copies of *Black Elk Speaks*. I bought a copy and read it that afternoon. I think of all the books that I have read, I was never as mesmerized by any other as I was by it. I stayed awake for hours that night, wondering how I could respond in some real way to that book, in which Snow Geese appeared in several of Black Elk's visions.

I had already been thinking about doing a book on the Snow Goose, and wondered if I could somehow counterpoint what I know about the biology of Snow Geese with the Native American view of Snow Geese. Finally, when it was about 2:30 a.m., I decided that I couldn't sleep, so I might just as well get up and start writing. I wrote more or less secretly for about five weeks, at which time the writing was nearly finished, except for a section dealing with the arctic breeding grounds, which I hadn't previously visited.

With the manuscript essentially finished, I thought I ought to have someone read it critically. I gave it to Vicki Peterson, one of our departmental secretaries, who had done some technical retyping for me, and asked her if she would read it. She brought it back the next day, and said, "This is by far the best writing you've ever done; you've got to publish it." I then decided I would send it to three publishers. Two of them rejected it fairly rapidly, but Doubleday indicated an interest. I replied that I would need a few more months to write the remaining part and would have it done by fall.

In early June of 1973 I went to Churchill, Manitoba, with the aid of a small American Philosophical Society grant. From Churchill I was able to fly to a large Snow Goose nesting colony, which I visited for a few days. While at Churchill, Robert Montgomerie, a biologist whom I met there, showed me some of his friend Paul Geraghty's drawings. I thought that they were the kind of images that I wanted to use to somehow capture the mysticism of the geese in Neihardt's book. So I wrote to Geraghty, sent him a copy of the manuscript, and asked him if he would be interested in illustrating it. He replied that it was exactly the sort of thing he would love to illustrate. It was amazing to see Paul Geraghty sketch; he drew the pen-and-

ink illustrations for *Song of the North Wind*. He could look through binoculars for three or four hours, and then go back to camp and draw for two or three hours, just like he had a videotape playing back images. I could never do anything like that. I think that his illustrations were a critically important part of that book.

My early papers probably helped me get my first NSF research grants during the 1960s. A Guggenheim Fellowship in 1972 gave me most of a year off for writing. After my Snow Goose book appeared in 1974, I decided that I could write popular, but accurate, books and that not only increased my annual income, but also increased my confidence and personal pleasure in writing.

With the appearance of *Song of the North Wind*, my writing life shifted to a somewhat new direction. I decided to write technical books intended for a fairly restricted ornithological audience, but also to write for a much broader audience on general, environmental, and conservation topics. The ultimate in my popular writing was the dragon and unicorn book (*Dragons & Unicorns: A Natural History*), which I wrote with our daughter Karin when she was in high school. I thought that if I was ever going to be fired for writing something frivolous, it probably would be for that, which was mostly a whimsical metaphor on conservation ethics, with some political and religious satire thrown in.

Writing Influences

I have often been asked why I am such a prolific writer. Annie Dillard wrote in *The Writing Life* that there are maybe 20 people on the planet who can average writing a book each year. During the 44 years between my first book in 1965 and 2009, I published 51 books. I have at least put myself in rare company.

I would confess that my writing is a total compulsion, but there is another rationalization for my writing, and I've thought about it often. There are few people who can write, draw and photograph well enough to put together a book on some major subject by themselves. When growing up I thought it would be a wonderful thing to have a book about loons, for example, or a book about pheasants. By and large, they weren't available, but now I'm in a position to write those books. It may be that the world as a whole isn't waiting for them, but there might be somebody out there who is.

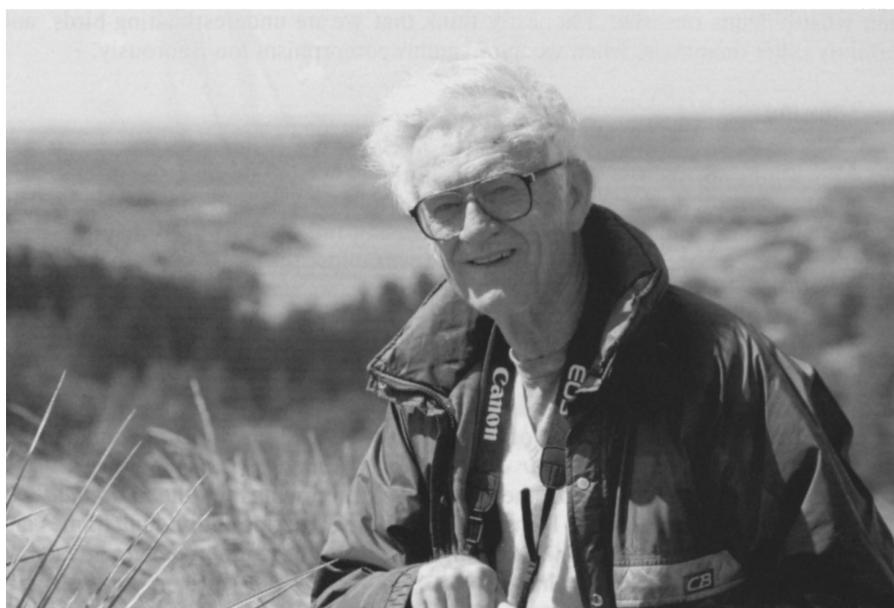
I write three kinds of books: the first is about birds, which represents most of the titles, and the second is about places, such as the Platte, the Tetons, the Sandhills or the Niobrara. The third type is about ideas, like *Dragons and Unicorns: A Natural History*. Most of my books are in the first category, which is

very straightforward writing, just putting the facts together as clearly and as accurately as I can. Almost always I kept at least three book projects going simultaneously because, when working on two or three, they are almost always at different stages.

When writing a reference book on birds, or any of my geographically oriented books, I feel I can write in short blocks of time with a fair number of disturbances without affecting the flow of writing. When I'm trying to write a chapter in something like *Song of the North Wind*, then I'm bothered greatly by interference.

On a Saturday or Sunday, there is usually no disturbance on campus and I can count on having many hours without even having the phone ring. I used to come to campus every Saturday to write, and one year I got over \$120 in fines for parking on campus on football Saturdays. I finally decided that was too expensive, especially after my car was towed away one day. I sometimes came to campus on Sundays, too, and that didn't leave much time for anything else. I didn't make a lot of time to play when our kids were growing up; however, I spent enough time with each of them to encourage their interest in nature.

I always thought that one secret of good speaking was to be able to compose in your mind about as rapidly as you can talk, and I think the secret of good writing is to be able to compose in your mind about as rapidly as you can type. My writing is probably better than it was in my early years of writing simply because it is much easier to modify text on a computer and I work it over more now, but I'm not embarrassed about my early writing.



In the Niobrara River Valley, 2004. Photo by Linda Brown.

Reading and Literary Models

When I was 18 my parents gave me a copy of Aldo Leopold's *A Sand County Almanac* for Christmas, and it became a kind of bible to me, exemplifying clean, poetic writing about nature. I identified with Leopold because of his background as a wildlife biologist, and I wanted to emulate his writing style. I admire his use of wild creatures and wild events as parables and his ability to see greater lessons in small events, the total being greater than the sum of its parts. He was able to tell a simple story, like cutting down an oak tree, for example, and to describe the history of Wisconsin as represented by the rings of the oak.

Generating large stories from simple events is the same thing that appeals to me so much about Annie Dillard's writing. She will see a frog in a pond, or a shed snakeskin, and somehow make that into a cosmic event, something far greater than just simple observations. I'm just still in awe over her capacity for description. I corresponded with her for a time after two of our books (*Song of the North Wind* and *Pilgrim at Tinker Creek*) were reviewed in the same column of a New York newspaper. She even let me critique a story she was writing for *Harpers* on a trip to the Galápagos Islands.

There were times when I purposefully was anthropomorphic in my writing, even though in my animal behavior class I would rail against anthropomorphism. I don't use it in writing reference books, but I do use it fairly often in popular writing. Aldo Leopold was rather anthropomorphic in some of his writing, and I felt that if he could do it, so could I. I must confess that the longer I live and the more I watch birds, the more I believe that maybe a little bit of anthropomorphism is warranted. I'm absolutely convinced that there is a lot more to what they know and perceive than what humans observe. I honestly think that we are underestimating birds, and certainly other mammals, when we avoid anthropomorphism too rigorously.

Drawing and Wood Sculpture

Essentially all my artwork for publication has been done by pen-and-ink. By the time I got to graduate school, we were told we had to do everything for publication with Rapidograph technical pens, using India ink. I used that technique for quite a number of years, simply because I was under the assumption that that was what was needed for reproduction.

Then, maybe by chance, I realized I could start using non-India ink and nylon-tipped pens with very fine points as they became available. I could get fairly dark, if not black, colors that were acceptable to publishers, it was less messy, and I could get graded widths and intensities of line. I also learned how to use scratchboard. The drawings in *Waterfowl, Their Biology and Natural History* were nearly all scratchboard drawings. Most of the hundreds of drawings in the *Handbook of Waterfowl Behavior* came from 16 mm movie film, by taking individual frames and enlarging them. I then made ink drawings based on those frame enlargements, so they weren't based on field sketching.

My woodcarving goes back to Boy Scout days, when I decided to make a neckerchief slide and carved a flying duck. I was probably about 13 years old. I continued to do carvings right up through high school, but then abandoned it in college. My carving didn't start again until the later 1960s and early 1970s when I encountered other carvers and joined with them to form the Central Flyway Decoy Carvers and Collectors Club.

From then until the early 1980s I continued to do decoy and decorative carving, until I had done about 60 and basically filled all the available spaces at home and at my office. My carving was a wintertime activity, almost entirely done when I couldn't get down to the campus to write and felt I needed something physical to do. I also rationalized that I was learning a little about bird anatomy as a result of carving them.

In 1975 the club put on a major exhibit of classic antique decoys at the Sheldon Art Gallery of UN-L, and I produced the catalog of the exhibit that was published in 1976 by the University of Nebraska Press (*The Bird Decoy: an American Art Form*). As the result of a later folk-art exhibit, a large preening trumpeter swan carving of mine was purchased for the gallery's permanent collection.



In a frigatebird and Blue-footed Booby colony, Galápagos Islands, 2005.
Photo by Josef Kren.

Some of the other art exhibits that I have curated include three at the Great Plains Art Museum in Lincoln. The first was an exhibit that I did in 2002 with Mike Forsberg, using his photos and my drawings and carvings. It was called "Migrations of the Imagination." In 2004 I did a major show of drawings and photos (and wrote an associated book, *Lewis and Clark on the Great Plains: a Natural History*) celebrating the bicentennial of the Lewis and Clark expedition. In 2009 I assembled (with three other photographers) an exhibit celebrating Charles Darwin's 200th birthday and the 150th anniversary of his *Origin of Species* (*Celebrating Darwin's Legacy: Evolution in the Galápagos Islands and the Great Plains*).

Teaching

For the first 10 or 15 years I enjoyed teaching enormously, even though I taught large class sessions of general zoology, year after year, and two sessions per semester. That was time consuming, but it was still rewarding; I thought I was influencing at least some students and it was important to me to be a good teacher.

I think eventually that attitude did wear down, as I began to get more enjoyment out of my writing. Over the years, I began to realize that I wasn't influencing that many out of the vast numbers who went through my classes. I was more involved in writing, and so the responsibility of teaching became intrusive.

I've had 12 people finish Ph.D.s, and 13 finished master's degrees. Roger Sharpe, my first graduate student, taught biology at University of Nebraska-Omaha. Mary Bomberger Brown went on from a master's degree with me in 1982 to marry and work with Charles R. Brown on Cliff Swallows. In 2009 she shared the A.O.U.'s Coues Award with him for that work. My last graduate student, Josef Kren, was probably the best of all my teaching assistants. He is now the Chairman of the Biology Department of Bryan Hospital's teaching program. James Tate wrote for *American Birds* for many years, and later was Science Advisor to the Secretary of the Interior during the George W. Bush administration.

Although he never finished a master's degree, the appearance of Tom Mangelsen in 1969 was eventful. He had just graduated from Doane College, and in spite of his having only an average undergraduate record, I accepted him as a graduate student, mostly because he said his dad had a hunting cabin on the Platte River near Wood River. When he enrolled in my ornithology course in 1970 we began spending time in duck blinds on the Platte, photographing any waterfowl or cranes that strayed within range of our cameras. Tom later went with me on trips to the Pacific Northwest and New Mexico, and eventually became one of the foremost wildlife photographers in the world.



Caricature by former Johnsgard student Bob Hall, 2010.

Cedar Point Biological Station 1958-1993; 2008

Cedar Point Biological Station in Keith County, Nebraska, has been one of the best educational opportunities that ever happened to the School of Biological Sciences, and also to me personally. At the time we established the station in 1976 I was deeply involved in several books and didn't want to devote even part of a summer to teaching classes at Lake McConaughy, which I had never seen. Brent Nickol, our first director there, kept after me about it, and by 1978 he convinced me that I should go out and teach ornithology there.

Thus, quite reluctantly, I packed my car and drove out. While driving through Ogallala I was depressed about what a miserable summer this was going to be. Then I drove down the long hill leading to Kingsley Dam and at the bottom of the hill I was suddenly in a deep canyon of junipers and cottonwoods and could hear singing Rock Wrens and screaming Black-billed Magpies. A Great Horned Owl took off from a rocky promontory. It was much like Dorothy landing in Oz. I thought I had suddenly been transported to a magical place. I fell in love with the area that instant and went back every summer for 16 of the 17 next summers. I returned to teach there in the summer of 2008, to see how the bird life and general environment had changed.

Cedar Point became, from the late 1970s to the early 1990s, an integral part of my summer activities. I did as much as writing as I could in that environment and I spent more time looking at birds during those few weeks than I did at any other time of the year.

Hunting and Photography

I started hunting when I was about 12 years old and was a duck hunter until I was about 16. I eventually decided I would much rather try to photograph birds than shoot them, and it increasingly bothered me to kill things that I spent hours watching. So I sold my shotgun to obtain a camera. At first I had an Argus C-3, but my mother borrowed it and it was stolen from her. She offered to replace it, and that allowed me to buy my first camera with interchangeable lenses.

My "new" camera was a used Exakta 1 single-lens reflex from the late 1930s in which I had to look down from above to focus (the image was reversed and upside-down). I was lucky just to find something in the frame when trying to photograph birds in flight. As soon as I found the subject I snapped the shutter. My average success rate was about one or two frames out of a 36-exposure roll of black-and-white film that were not simply sky.

If it weren't for hunting, I wouldn't have spent nearly so much time in marshes and wouldn't have become nearly so close to either my older brother or my father. But it's a continuing problem for me to rationalize the social values of hunting against the pain that hunting causes, for no real reason other than entertainment. For some species hunting clearly doesn't affect the populations, but I have real problems with hunting cranes and hunting swans, which are long-lived species that have long pair bonds and limited capacities for reproduction.

Conservation

I don't want to depress my readers by writing about environmental crises, so much of what I have to say about the environment is done on a positive note. Biodiversity is important, and species of any kind are valuable and worth saving. That's a fairly easy message to give.

The passage of the Endangered Species Act in the early 1970s was a decisive stage in the development of the conservation movement. It meant the government was finally moving, and that was encouraging. But it's been pretty much downhill since 1980, and I don't know if there's going to be any turnaround in the near term.

Religious Beliefs

I still get chills up and down my spine in situations such as watching flocks of geese or cranes at sunset. It still affects me just as much as it ever did. I think watching birds is the most spiritually rewarding thing I do. I'm attracted to the mystical, the unknown. I don't like to give the unknown a name, but I like the sense of mystery. Embracing mystery is counter to science, in fact it's absolutely counter to science, and I guess that's an anomaly in my thinking. Perhaps it goes back to the Native American concept of an overall natural spirit, even though one may not give that spirit a name.

I think science can be an adequate substitute for religion, in that it can satisfy a pervasive human need for some sort of belief system. Science is fallible, we know that, and so I'm sure that science will never provide us with all the answers. Yet, I would strongly recommend it over religion.

Although now officially retired for a decade, I am still writing. My newest book, *The Sandhill and Whooping Cranes: Ancient Voices over America's Wetlands*, should appear by March, 2011, and two other book manuscripts are under consideration by a publisher. One is a natural history of the Greater Yellowstone Ecosystem (to be photographically illustrated by Tom Mangelsen), and the other reviews the birds of, and birding opportunities in, the northern Rocky Mountains. I am also in early phases of writing a book on the wetlands of Nebraska, and I intend to collaborate with Dr. Jackie Canterbury on a review of the birds of Wyoming's Bighorn Mountains. And there are always more things to learn and write about cranes...

The Comprehensive Vita and Bibliography for Dr. Johnsgard may be found at the Digital Commons University of Nebraska - Lincoln website:

<http://digitalcommons.unl.edu/biosciornithology/25/>