

THE IMPORTANCE OF CONTRIBUTIONS BY AMATEURS TO AMERICAN ORNITHOLOGY: A SHORT HISTORY

by Mary H. Clench

In a short paper, the contributions of amateurs to American ornithology must necessarily be treated briefly. Until comparatively recently, virtually all of American ornithology was the product of amateurs. That is a lot of territory to cover in a few pages.

Amateur or avocational ornithologists can be defined as individuals whose salary and career are essentially independent of their ornithological activities (King and Bock 1978). In my research on amateurs in ornithology, I have had to rely heavily on the financial aspect to distinguish between amateurs and professionals. Many people made their livings as physicians, explorers, surveyors, dentists, or schoolteachers, or had other financial support. Yet, these people may now be known almost entirely for their contributions to avian biology, particularly during the time before there was an ornithological profession.

Christopher Columbus may be the first amateur who made a contribution to knowledge of North American birds. One of Queen Isabella's orders to Columbus was to bring back birds from the new lands he found. In 1493 Columbus arrived back in the Spanish court with several live parrots and a few skins. Columbus' predecessors in the New World, various Scandinavian explorers and Portuguese fishermen, made no reports of the wildlife they saw on the North American coast or made only brief notations of seabird colonies (none of which can be identified today). Of course their voyages were not intended to be natural history surveys, and the early explorers' sheer struggle to survive precluded any scholarly pursuits.

A few of the later Spanish, French, and English explorers were interested in natural history, although we know little of their discoveries of New World wildlife. For instance, the French navigator, Jacques Cartier, cruised in what are now Canadian and American coastal waters three times in the early 1500s and mapped and named features of much of the coast. Yet all we know about the bird life he encountered is an "Island of Birds" off Newfoundland, where in thirty minutes he loaded a huge number of large white birds, probably Great Auks, into his boats for food.

Samuel de Champlain, another French explorer and soldier, had wider interests, including hunting and fishing. He left us with much more detailed descriptions of some of the wildlife he encountered, such as turkeys, introduced into Europe by Spanish explorers in the early 1500s and apparently abundant on the Massachusetts coast when the Pilgrims first landed (Champlain sailed into Plymouth Harbor in 1605, nine years before Captain John Smith and fifteen years before the Pilgrims). Champlain wrote:

We saw also a sea-bird with a black beak, the upper part slightly aquiline, four inches long in the form of a lancet; namely, the lower part representing the handle and the upper the blade, which is thin, sharp on both sides, and shorter by a third than the other, which circumstance is a matter of astonishment to many persons who cannot comprehend how it is possible for this bird to eat with such a beak. It is of the size of a pigeon, the wings being very long in proportion to the body, the tail short, as also the legs, which are red; the feet being small and flat. The plumage on the upper part is gray-brown, and on the under part pure white. They go always in flocks along the sea-shore, like the pigeons with us (Allen 1951, p. 431).

Not a bad description of Black Skimmers.

The early explorers, soldiers, and missionaries usually wrote only fragmentary reports on wildlife they saw during the centuries of exploration. One possible exception to this pattern was Gonzalo Fernandez de Oviedo y Valdez who could be called the first real natural historian of the New World. Oviedo lived in Santo Domingo, on the island of Hispaniola, from 1514 to 1522. He was a gentleman and a writer on many topics. He wrote romances as well as a *Summary of the Natural History of the Indies*, which included the first descriptions of many New World species. Unfortunately, because the book also included a good deal of hearsay material that Oviedo reported as factual (such as the "monstrous bird with one webbed foot and the other foot armed with talons" [Allen 1951, p. 427]), his work is largely discredited.

The tendency to include sensational tidbits in early writings from the New World can be found in other works as well. Nicolas Denys, a French naturalist in the fish, fur, and lumber business in Acadia (French Canada), published his *Description and Natural History of the Coasts of North America* in 1672. This book was unknown until 1908 when it was translated into English. While the book contained some accurate descriptions, it also included folklore and hearsay which were not distinguished from factual material. For example, he described Barred Owls as "harbouring and caring for live mice" (Allen 1951, p. 436).

It was not uncommon during this period to write to please readers, or not to admit that everything reported in a book was known through personal experience to be true. Even John James Audubon committed this sin several times in his *Ornithological Biographies* (Todd 1963). In Europe a great deal of interest in the "curiosities" being reported from the New World existed, interest capitalized on by explorers and writers who had to build financial support for their travels and books. So perhaps we cannot blame the English sailor David Ingram, a member of Sir John Hawkins' expedition who, in 1568, walked about 2000 miles over Indian trails from the Gulf of Mexico to Cape Breton (in northeastern Nova Scotia). His description of the trip was a mixture of fact and fiction as illustrated by the following notes on birds:

Ther ys great plenty of Gynney hennes which are tame birds and prog to the inhabitants as bigg as geese very black of Colour having fethers like downe. (Prairie Chickens? Grouse?) . . .

There is also a bird called a flamingo whose feathers are verie red and is bigger than a goose billed like a Shovelle and is very good meate. (probably Roseate Spoonbill) . . .

There is also a verie straunge byrde ther as bigge as an Eagle verie bewtiful to beholde his feathers are more orient than a peacocks feather, his eyes as glistening as any hawks eyes but as great as a mans eyes his heade and thighe as bigg as a mans heade and thighe. It hath a crest or tuft of feathers of sondrie Colours on the tope of the heade like a lapwing hanging backwards his beake and talents in proportion like an Eagle but verie huge and large. (beyond identification or even conjecture) (Allen 1951, pp. 443-444).

I do not want to leave the impression that none of the early ornithological reports from the New World were accurate. John White, an English painter and former tutor of Sir Walter Raleigh, was the geographer of Raleigh's second expedition to Virginia and produced the first known drawings of American birds. His eighty-six accurate drawings are now in the British Museum and include one of a flicker done 150 years before the species was described! John White eventually became Governor of Raleigh's Second Roanoke Colony in 1587 and was the grandfather of Virginia Dare, the first English child born in the New World.

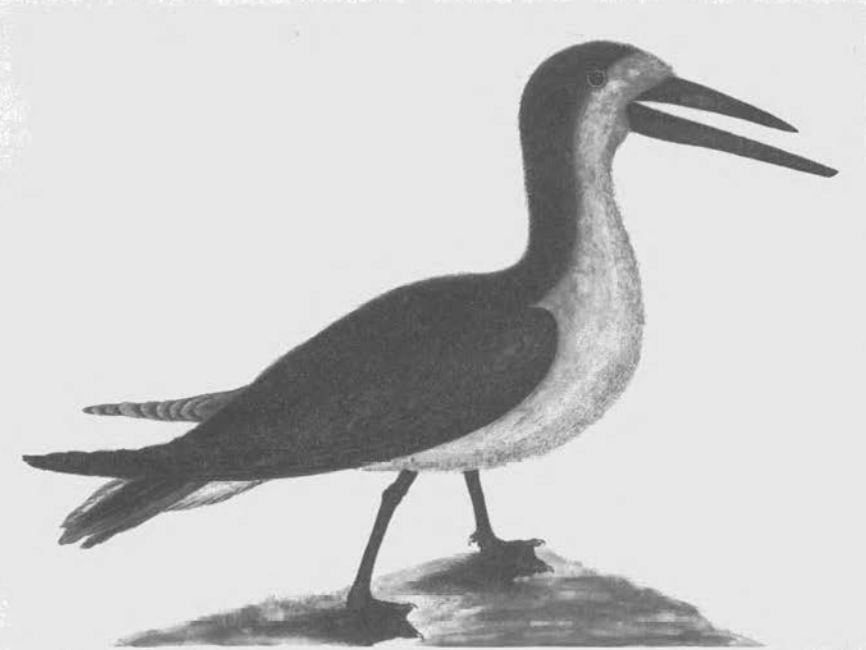
The abundance of game was especially noted by the early colonists in North America because food availability was so important. Captain John Smith's report in 1612 from the Jamestown Colony was typical:

Of birds, the Eagle is the greatest devourer. Hawkes there be of diverse sorts as our Falconers call them, Sparrowhawkes, Lanarets, Goshawkes, Falcons and Osperays; but they all pray most upon fish. Partridges there are little bigger than our Quails, Wild Turkeys are as bigge as our tame. There are woosels or blackbirds with red shoulders, thrushes and diverse sorts of small birds, some red, some blew, scarce so bigge as a wrenne, but few in sommer. In winter there are great plenty of Swans, Craynes, grey and white with black wings, Herons, Geese, Brants, Ducks, Wigeon, Dotterell, Oxeies, Parrots and Pigeons. Of all those sorts great abundance and some other strange kinds to us unknown by name. (Allen 1951, p. 450).

Among the later colonists, references to birds appear in religious treatises, poetry, and hunting accounts, but there was no interest in birds per se until the New World became more settled and the fundamentals of living were not so all-consuming. At the end of the seventeenth century, Mark Catesby became the first American naturalist and ornithologist. Catesby was an English gentleman, a man of leisure but no great wealth, who traveled to the New World as a naturalist sponsored by a group of wealthy men. At the time, botany was becoming a true science, but zoology was still undeveloped and was engaged in by only a few botanical collectors. Catesby was a collector who, because of the demands of his sponsors, studied birds only when he had time while searching for new and interesting plants. Nevertheless, he studied and drew a wealth of animals, including birds and fish. His *Natural History of Carolina, Florida, and the Bahama Islands*, published from 1731 to 1743, is the first major milestone in

American ornithology. It contains 118 colored plates of birds, seventy-four of which were later used by Linnaeus as the basis for the formal descriptions of those species. For the time, the plates are remarkable in their beauty, accuracy, and detail, perhaps all the more so because Catesby was a self-taught artist and naturalist who also taught himself engraving in order to produce his book. If you want to give yourself a treat, search out an original copy of his book, several of which are in major libraries in the United States, and look at his magnificent plates, now more than 250 years old. Catesby also contributed significantly to the field of botany introducing the catalpa, acacia, horse chestnut, and other plants into England and Europe.

After Catesby, there was a hiatus in American ornithology except for naturalist travelers such as Johann Forster (father and son, who accompanied Captain Cook on his voyage up the west coast of North America), and "gentleman naturalists," such as Thomas Jefferson, who included a list of seventy-seven species of birds in his *Notes on the State of Virginia* (1781), and Benjamin Smith Barton. Barton was a botanist, physician, and professor of *materia medica* at the University of Pennsylvania. He is primarily known for his



Cut Water by Mark Catesby.

From M. Catesby. 1731. Natural History of Carolina, Florida, and the Bahama Islands. Reprinted with permission from the Department of Rare Books and Manuscripts, Boston Public Library, Boston, MA. Photo by David Smith.

botanical writings, but he also published *Fragments of the Natural History of Pennsylvania* (1799), the first paper devoted entirely to American birds. It includes careful observations on bird migration—how birds appear and leave in relation to seasonal vegetational changes. Barton also had a strong influence through his teachings at the University of Pennsylvania, especially on one of his students in natural history, Thomas Nuttall.

The American "school" of ornithology began with America's first resident naturalist, William Bartram of Philadelphia. Bartram's landmark book, *Travels through North and South Carolina*, was published in 1791. His father, John Bartram, was a farmer and self-taught botanist. John traveled widely in the eastern states, collecting plants, seeds, and roots, and shipping them to wealthy Englishmen to supply the burgeoning English gardens being established at that time. John Bartram also included animal material, such as bird nests and eggs, in his shipments because of the interest in "curiosities" from the New World.

William's travels with his father on the botanical collecting trips and then alone to the Carolinas, Georgia, and Florida, formed the basis of *Travels Through North and South Carolina*. His income, however, was always based on his work in botany despite the fact that his primary interest lay with drawing and birds. William Bartram's most significant ornithological publication was the *Catalogue of Birds of North America*, listing 215 species, including migratory species and permanent residents, with detailed observations on song, nesting, and migration. William Bartram was a pioneer in that he was a student of living birds. He transcended collecting specimens and naming species, which would soon become the focus of the early professional ornithologists in America. Instead, he observed living birds and their habits and behavior, setting the precedent for later ornithological contributions by amateurs. Bartram's importance also lay in the combination of scientific knowledge and aesthetic appreciation expressed in his writing: literary prose with true scientific substance.

Bartram had a strong influence on the next generation of young naturalists in the United States, especially Alexander Wilson. Wilson represented a new type of ornithologist, a person who began as an amateur, but through self-education and independent study, gradually evolved into a professional. Wilson began life as a weaver, became a schoolmaster (he hated both occupations), and later took miscellaneous other jobs, such as peddler, surveyor, and editor, to make a living until he could devote himself entirely to poetry and natural history studies. He also taught himself to draw and later to engrave, enabling him to prepare the plates for his landmark book, *American Ornithology*, published in nine volumes beginning in 1808.

With Alexander Wilson's work and that of John James Audubon, American ornithology reached its first climax. Subsequently, American ornithology began to change its character as the first American museums were founded, bird

collections became important, and a person could find employment (however poorly paid) in ornithology. The beginning of professional ornithology in America can perhaps be linked to the founding of the Academy of Natural Sciences by Philadelphia naturalists in 1812, the United States National Museum, started through James Smithson's grant in 1846, and the Museum of Comparative Zoology at Harvard University in 1859.

Most of the early curators of those institutions, however, were men of means and were not paid by the museums. They also had no formal university training in zoology but learned their trade through apprenticeships, a practice that remained for many years. Later giants in the profession, such as Frank Chapman at the American Museum of Natural History, Robert Ridgway at the Smithsonian, and W. E. Clyde Todd at Carnegie Museum, all learned their skills through museum apprenticeships. It was not until the twentieth century that universities began to give courses in ornithology, thereby laying a formal foundation to the science and establishing another source of employment for the graduates. In 1915 Cornell University became the first university to appoint a professor of ornithology, Arthur Allen. Today, some fifty United States universities have Ph.D. programs dealing with birds.

But to return to the influence of the early museums, each institution conducted research by its own staff and enlisted field collectors who were often amateurs. Classic examples of amateur field collectors were army physicians enlisted by Spencer Fullerton Baird of the Smithsonian Institution and sent on western United States exploration expeditions or to staff far-flung army posts. The physicians sent back a wealth of material to the Smithsonian. Their ranks included no fewer than thirty-six names, including Charles Bendire, James G. Cooper, Elliott Coues, A. L. Heerman, Edgar Mearns, Robert Shufeldt, Casey Wood, Leonard Wood, and John Xantus.

Elliot Coues was commissioned an assistant surgeon in the United States Army in 1864. He served for nineteen years in the military, stationed in eastern and western forts, from which he collected and observed birds and wrote reports on his findings. During his army career, Coues wrote and illustrated *Key to North American Birds* (published in five editions from 1872 to 1903), *Checklist of North American Birds* (1873), *Birds of the Northwest* (1874), and *Birds of the Colorado Valley* (1878). His importance to American ornithology is almost incalculable. Nor was he alone. Charles Bendire, a United States Army major and later a founder of the American Ornithologists' Union, had a long career in the West. His two-volume *Life Histories of North American Birds* was later taken up, expanded, and largely completed by another "amateur," Arthur C. Bent. James G. Cooper (for whom the Cooper Ornithological Society was named) was an Army surgeon attached to the northern division of the Pacific Railroad Survey. He collected birds between the forty-seventh and forty-ninth parallels and wrote the first *Ornithology of California*. A. L. Heerman (the gull

was named for him by Cassin) was also a member of the Pacific Railroad Survey, but in its southern division. Heerman was killed near San Antonio, Texas, in 1865 at the age of thirty-eight when he stumbled and fell while collecting birds and his gun accidentally discharged.

In addition to the influence of their collections, museums have had, and continue to have, a stimulating effect on area amateurs, often through independent societies formed by amateurs and nurtured by museums. Examples include the Nuttall Ornithological Club begun in 1873 in Boston, the Linnaean Society established in 1878 in New York, and the Delaware Valley Ornithological Club founded in 1890 in Philadelphia. From these societies, young people interested in birds found stimulation and encouragement. Some became professionals, like Roger Tory Peterson and Joseph Hickey who began in the Linnaean Society. Others have made important contributions to the science as amateurs: William Brewster, J. E. Thayer, C. F. Batchelder, Outram Bangs, John C. Phillips, and Arthur C. Bent were all alumni of the Nuttall Ornithological Club. Some became integral members of museum staffs, such as Rudolph Meyer de Schauensee and James Bond at the Philadelphia Academy, and Eugene Eisenmann (a lawyer) and Charles Vaurie (a dentist) at the American Museum.

Amateur ornithologists have made vital contributions to the field through more independent work. Crawford Greenewalt studied hummingbirds, bird flight, and vocalizations. Laurence Walkinshaw studied cranes; Albert Brand, bird song; William Schorger, the Passenger Pigeon; Harold Mayfield, Kirtland's Warbler; and Robert Yunick, many banding studies.

I did not list Margaret Morse Nice here, although she is often heralded as the consummate amateur who made a landmark study of Song Sparrows, published by the Linnaean Society of New York in 1937 and 1943. Mrs. Nice once told me that she did not regard herself as an amateur. She was university trained and it was beside the point that she was a housewife during the period in her life that she conducted the sparrow studies. Another woman who certainly did consider herself an amateur was Erma J. Fisk. "Jonnie" Fisk did not begin a serious interest in birds until she found herself a widow with grown children. After seeking the advice of what she always called "the experts," she established a well-focused banding program and produced several highly regarded banding studies, a pioneer investigation of rooftop nesting in birds, and a series of delightful books about banding and the serious and not-so-serious study of birds.

It is impossible to name all the people who have contributed in important ways to ornithology without financial rewards. I hope I have not offended any readers by omitting a favorite name or subject. I have concentrated on the early history in order not to overlap with the other papers in this symposium. I also omitted mention of many other kinds of contributions by amateurs, such as the enormous body of knowledge amassed by banders and the founding of societies.

After all, the Wilson Ornithological Society was begun in 1888 by a group of very young, very amateur boys drawn together by their interest in birds. Amateur members of many other younger societies, bird clubs, and Audubon chapters continue to add significantly to our science. But I think my point has been made. Ornithology is almost uniquely blessed by the truly vital contributions made by its amateurs. I say "almost uniquely" because lepidopterology has a similar history—birds, butterflies, and moths seem to have an intrinsic appeal that leads people to study them. And we are fortunate in that.

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