The 19th century was an exciting time for bird illustration. The vast number of expeditions within the United States and around the world enabled ornithologists, naturalists and artists to identify, study, draw and research species across Continents. This article will provide a brief overview of artists who spearheaded bird illustration in the United States and those who contributed to making London the center of the finely illustrated bird book publishing industry in the 19th century.

Illustrators of US Birds

Alexander Wilson

Scottish born poet and naturalist, Alexander Wilson (1766-1833) became a teacher in Pennsylvania in 1794 and met famous naturalist William Bartram who encouraged Wilson’s interest in ornithology and painting. Bartram’s encouragement assisted Wilson from 1803 through 1813 to create a nine-volume series entitled American Ornithology. This series was not only the first major scientific publication focusing on American birds in the United States but also the first to provide hand-colored engravings. As a result, Alexander Wilson is widely known as the Father of American Ornithology.

To observe birds and also obtain subscriptions for his planned work, Publisher Samuel Bradford of Philadelphia provided Wilson with the first printed volume to show prospective buyers with a goal of 200 subscribers at $120 for the series. Wilson returned with 250 subscribers among them were Thomas Jefferson and James Madison. He also returned with specimens to be used in later volumes. By 1811 Wilson had nearly doubled the number of subscribers. As another way to reduce cost, Wilson frequently included multiple species on one plate.

For 10 years Wilson traveled more than 12,000 miles in 15 of the 18 states as well as the Tennessee, Mississippi and Louisiana territories. He described 264 species and added 48 species using the Linnaean species classification system. During that time he also hired and supervised colorists, familiarized himself with the scientific literature of each species, produced pictures of each bird and composed descriptions.

He died of dysentery at the age of 47 and his final volume was completed after his death and published by George Ord, an American naturalist, ornithologist and writer. Wilson later had several species of birds and ornithological societies named in his honor.
Haitian born Jean-Jacques Audubon (1785-1851) lived in France from the age of 3 to 18 then he moved to America to manage a Pennsylvania farm owned by his father. It was in United States that he Americanized his name to John James Audubon.

Since childhood Audubon enjoyed spending time in nature as well as observing birds. For his first five years in Pennsylvania, Audubon continued to spend much of his time hunting, fishing and exploring as well as collecting and sketching birds. After a number of failed business ventures, including the farm, Audubon decided to work full-time on his ambitious project of producing the finest book on all birds found in the United States.

He failed to interest Alexander Wilson’s former supporters in Philadelphia and eventually met up with an engraver in London, Robert Havell, who agreed to work with him to publish Birds of America. Like Wilson, Audubon traveled extensively in the United States to observe, sketch and collect birds. In fact Audubon was called the ‘American Woodsman’ by his British supporters because he frequently dressed in a fringed buckskin jacket and entertained them by describing his adventures in the American wilderness searching for birds amidst Indians and even an earthquake.

Subscriptions to Birds of America, which eventually became four volumes, were sold for $1,000. This figure is far higher than the average annual income at the time. When subscribers became impatient, Audubon did include several species on one plate to accelerate publication. Birds of America contained 435 pages featuring more than 1,000 individual paintings of birds and took 12 years to publish (1824-1837). Audubon chose to use the “double elephant folio” so he could paint the largest species at life size. In some cases the largest birds were depicted with bent necks to ensure they could fit on one plate. To produce Audubon’s illustrations, Havell used an aquatint process on copperplates to produce a tone or shading that creates depth in the printed image. Havell also supervised 50 artists to hand paint the resulting images. After the lavish double elephant folio edition was finished which was approximately 3 feet tall, Audubon produced a smaller (octavo edition)—approximately 10 inches tall.

Audubon was the first illustrator of birds to include a background showing the bird’s typical habitat and treating the background with the same care as he does the subject. Audubon also was known for painting birds in scenes of typical behavior including all manners of “feeding”. Editions of Birds of America remain in print to this day and original copies of the double elephant folio fetch high prices on the art market.
William MacGillivray (1796-1852) born in Aberdeen, Scotland was an intelligent young man who attended Aberdeen University at the age of 12. He always enjoyed observing nature and would walk 180 miles to and from the University to the Highlands for long vacations. After gaining his general MA in 1814, MacGillivray spent 5 years studying medicine until he chose natural history as his profession. In 1820 he moved to Edinburgh to become an assistant to Robert Jamison, Professor of Natural History and a year later was appointed conservator of the museum of the Edinburgh College of Surgeons.

In 1830 he met and developed a close relationship with Audubon who asked him to improve his text describing *Birds of America*. For the next 10 years, MacGillivray published 13 books and worked with Audubon to produce the 5 volumes of the Ornithological Biography. He also started the *Edinburgh Journal of Natural History and the Physical Sciences* in 1835 and worked on it until its termination in 1840. The following year he moved back to his birthplace to become a Professor of Natural History at Marischel College. MacGillivray is recognized as a gifted artist and is known for combining his artistic flair with creating dramatic design with scientific accuracy in detail.
John Gould (1804-1881) is considered the Audubon of Great Britain for his 19th century ornithological illustrations. In fact Gould produced the largest and most diverse body of bird illustrations ever published on nearly every continent except Africa and Antarctica. He was the force behind nearly 3,000 hand-colored lithographs as well as smaller plates of birds in the accounts of various voyages of exploration. In fact, Gould helped Charles Darwin in correctly identifying some of the unique birds collected during Darwin’s famous voyage aboard the HMS Beagle. Gould is also credited with naming more new species of birds than any other naturalist. He identified 377 species although later some were found to be hybrids.

Gould was the son of a foreman in the Royal Gardens of Windsor and became a taxidermist. In 1828 he obtained the position of Creator and Preserver of Birds at the Zoological Society. Several years later he published his first book, A Century of Birds from the Himalaya Mountains that was very successful. As a result, Gould never sought a professional publisher and managed the entire process on his own.

Gifted in business, Gould was able to interest many subscribers at different price points by offering 3 versions of the book. One version was entirely hand-colored; another featured hand coloring of the bird(s) only and the third was produced in black and white. He also chose to use the new process of lithography that removed the engraver from the production process and enabled Gould to preserve his artistic vision. Lithography now enabled artists to transfer their sketches directly to lithographic stones that were then meticulously hand-colored. This technique flourished in the latter half of the 19th century.

Iris Snyder of the University of Delaware in Color Printing in the Nineteenth Century: An Exhibition (1996) (p. 11) summarized the stone lithographic process: “Lithography is based on the chemical repellence of oil and water. Designs are drawn or painted with greasy ink or crayon on specially prepared limestone. The stone is moistened with water, which the stone accepts in areas not covered by the crayon. Oily ink, applied with a roller, adheres only to the drawing and is repelled by the wet parts of the stone. The print is then made by pressing paper against the inked drawing.”

Gould’s wife, Elizabeth served as his lithographer, collaborator and partner on expeditions until her death in 1840. He also employed some of the period’s most respected bird artists; among them Edward Lear (1812-1888), Joseph Wolf (1820-1899) and Matthew Hart (1830-1908). Among Gould’s most popular works are his monographs of Toucans and Hummingbirds; as well as The Birds of Europe, Great Britain, New Guinea and Australia.

His hummingbirds are restrained and delicate with the inclusion of exotic flowers of the birds’ habitats and the highlighting of the birds’ iridescent plumage with gold leaf under the hand coloring and heightened with gum Arabic. Gould had a lifelong fascination with hummingbirds and he exhibited a collection of 320 species at the Great London Exhibition of 1851. It wasn’t until a trip to Washington D.C. in 1857 that he saw one in nature.

By the late nineteenth century, Britain had become the trade center for fine bird books known for their artistic and scientifically accurate illustrations using lithography. With the British Empire expanding, an increasing number of new and rare bird species were sent to museum specialists to describe, name and study while talented artists were in demand to be employed as illustrators. Institutions such as the British Library and wealthy patrons commissioned their work. The illustrations of John Gerrard Keulemans and Frederick William Frohawk exemplify this period.
John Gerrard Keulemans (1842-1912) was one of the most prolific natural history artists. He spent his early years in the Netherlands and traveled extensively in Europe and Africa collecting specimens of wild animals and supplying them to museums. He became a protégé of Schlegel at the Leyden Museum before he relocated to London at Schlegel’s recommendation.

Keulemans became the most popular animal painter of his day and produced more than 4,000 published illustrations, contributed to more than 115 books and leading journals including *Ibis* and both the *Proceedings* and *Transactions of the Zoological Society of London*. His colorful and accurate representation of birds gave him prominence in his field and he was able to draw a vast array of birds with equal accuracy.
Frederick William Frohawk (1861-1946) was another talented artist with varied interests in painting and engraving techniques. Likewise he illustrated a wide array of mammals, reptiles, amphibians and insects. However, most of his book illustrations focused on birds. In 1888, he developed a relationship with ornithologist and entomologist, Dr. Arthur Gardiner Butler of the Zoology Department at the British Museum who commissioned him to paint and lithograph weaverbirds and finches as well as British birds with their nests and eggs. One product of this partnership was the artistic and sought-after publication *Foreign Finches in Captivity* (1894-1896).

The years 1850-1890 were considered the golden age of lithography. After 1890 expensive hand-colored lithographed bird books were on the wane due to the development of faster and cheaper printing techniques, such as chromolithography, and the wider availability of paper stocks. Photographic processes were also being developed and would replace lithography in the twentieth century.
References


