



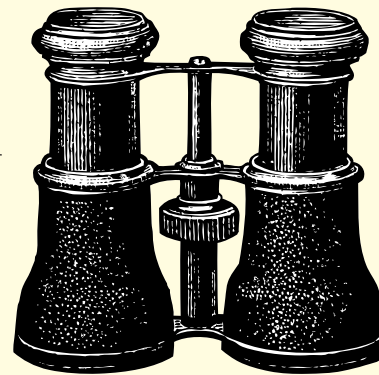
*Otto
Widmann*

and the

*Birds of
Missouri*

by BONNIE STEPENOFF

By 1907, a studious German immigrant named Otto Widmann had spent four decades traveling through Missouri recording the movements of more than three hundred species and



sub-species of birds. In that year, he published his *Preliminary Catalog of the Birds of Missouri*, the only comprehensive book on the state's birds before 1992. Widmann, who was born in 1841, did his work in the post-Civil War period of industrialization, urbanization, railroad-building, and rapid deforestation. As time went on, he became painfully aware that some of the wildlife he encountered would soon disappear from the state. In essays and speeches throughout his long life, he implored Missourians to protect the birds and preserve the woodlands and marshes that gave them a home.'

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contributing articles to prominent scientific journals.*

When Widmann arrived in 1867, St. Louis had a vibrant group of scientists studying various aspects of natural history. Prominent among them was another German immigrant, George Engelmann, a practicing physician and a distinguished amateur botanist. Engelmann traveled widely in the Mississippi River Valley, Arkansas, and the western territories of the United States, publishing studies of cacti, oaks, conifers, mistletoe, and grapes. He advised and encouraged Henry Shaw to establish the Missouri Botanical Garden. In 1856, he was a founding member of the Academy of Science of St. Louis, the organization that, half a century later, would publish Widmann's *Catalog*.²

In 1867, St. Louis was a bustling commercial center that still contained pockets of untamed land, even within the city limits. On the riverboat journey on the Mississippi River from New Orleans in the spring of that year, Widmann wondered at "ducks by thousands, geese, hawks, plovers, gulls, grebes, crows, and vultures." For the first ten years of life in the city, he concentrated on his pharmacy business, but he managed to find time for long hikes to wooded places, where bird-life abounded. On the banks of the River des Peres, a tributary of the Mississippi River, in the southern reaches of the city, he found a "giant wood," where he rarely met another human being, but encountered many species of birds, including owls, hawks, and the graceful, high-flying Mississippi Kite.³

Widmann began his field studies with only a campstool, binoculars, and a great deal of patience. However, he came to the conclusion that it was impossible to identify some birds on sight. He had to obtain specimens in order to measure them and study their characteristics. He explained this to his wife, Augusta, whom he married in 1872. Having purchased books for him, she also gave him, as a Christmas present, a cane-gun for shooting small birds. Over the years he obtained and used other firearms.⁴

In his defense, it should be said that the great John James Audubon was a hunter-naturalist who found it necessary to kill and procure specimens for study. Widmann did not kill for sport, only for what he perceived as the advancement of science. Many years later, his grandson Homer Widmann remembered:

I recall being astonished, as a small boy, at the amazing visual acuity of my grandfather and at his extraordinary accuracy with small bore firearms. My elder brother and I often accompanied him on field trips, where, observing an uncommon specimen he would shoot it, remarking "Quick, boys. Get it," and then put it in his pocket.

After taking such an action, his grandson explained, "He would always admonish us never to kill wantonly, that only in the interest of science was the killing of any bird justified."⁵

By 1880, Widmann had become a respected ornithologist, contributing articles to prominent scientific journals. One of his early publications in the *Bulletin of the Nuttall Ornithological Club* drew attention to an "immense gathering of crows on Arsenal Island," an accretion of sand in the Mississippi River in the vicinity of St. Louis. Located near the St. Louis Arsenal, the island was also known as Smallpox Island because the city's smallpox hospital was situated there. During the Civil War, the island served as both a city and a military cemetery. After the war, floods washed away many of the grave markers, and many graves were moved to the military cemetery at Jefferson Barracks. When Widmann observed the island in the summer of 1879, thousands of crows spent nights there, after feeding all day in the fields and gardens on both sides of the river. According to Widmann, the din of their cawing voices could be heard from miles away.⁶

He continued to observe bird-life along the Mississippi River. In the early 1880s, he participated in a cooperative study under the supervision of Wells Woodbridge Cooke (1858-1916), a young man who would become an eminent authority on bird migration. Widmann collected data in St. Louis, while Cooke made observations in Jefferson, Wisconsin, and they presented their findings in a joint report on the movements of various species along the river. Widmann made his notes, for the most part, in the woods along the River des Peres near the point

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PLATE I.



EUROPEAN TREE AND HOUSE SPARROWS.

Otto Widmann (1841-1933) was among the first to study and document the birds in Missouri, reflecting his interest in bird migration patterns. A local drugstore owner, Widmann's interest in ornithology was rekindled when he saw a Baltimore oriole in his yard in 1873. He became one of the region's leading ornithologists.

(Image: Bird Lore: An Illustrated Bi-Monthly Magazine Devoted to The Study and Protection of Birds, 1902)



Eurasian Tree and House Sparrows, color illustration by Otto Widmann, appears as the frontispiece to Widmann's *Summer Birds of Shaw's Garden* (1909), his most popular and well-known work.

(Image: St. Louis Mercantile Library Associaton)

“...Cooke and Widmann identified more than 130 species of birds at observation points along the river in Missouri and Wisconsin.”

where it flowed into the Mississippi. Nearly every day for several months in winter and spring, he made the long walk to his observation point at 4:30 in the morning and did not return until the afternoon. In addition, he made numerous evening excursions to points overlooking the great flyway.⁷

Through their cooperative efforts, Cooke and Widmann identified more than 130 species of birds at observation points along the river in Missouri and Wisconsin. Some appeared in large numbers. On March 4, 1882, for instance, Widmann reported that bluebirds “were seen and heard everywhere; the males doing most of the warbling; the females most of the fighting. I caught two females in my hands, which had come down to the ground in combat.” Other species were scarce. Widmann saw only one Pileated Woodpecker in St. Louis; Cooke saw none. Widmann recognized one Yellow-billed Cuckoo; Cooke saw two, but at too great a distance for clear identification.⁸

The movements of crows roosting in and near St. Louis continued to fascinate Widmann. In 1888, he reported that thousands of crows still came to roost on fall and winter evenings on desolate Arsenal Island. The raucous scavengers found a plentiful supply of grain and carrion in a large city surrounded by farms, dairies, and pastures. At that time the city also contributed to the crows’ omnivorous diet by depositing its garbage in the river. After sunset in autumn, he wrote, the trees on the island

were black with these birds. On the coldest nights, they stayed down on the ground, huddling together on the sand.⁹

Within a few years, Arsenal Island had moved down the river, eventually disappearing underwater, and the crows found two new places for their nightly roosts. One of these gatherings was on Gabbaret Island in the Mississippi River opposite the northern reaches of St. Louis, but a much larger one was on the Illinois side of the river opposite Jefferson Barracks. During the day, the birds spread over a wide area, up to twenty or thirty miles from the roost, on both sides of the river, searching for food and causing animosity among farmers. Studies by Widmann and others revealed, however, that the birds did less harm than good, because they reduced the numbers of insects, mice, and other harmful pests.¹⁰

At the age of 48 in 1889, Widmann retired from the pharmacy business and devoted his time to ornithology. With Augusta and their growing family, he moved from the city to a wooded four-acre property in the outlying community of Old Orchard (which later became part of Webster Groves). Scattered among the trees on his land were dozens of white birdhouses that sheltered wrens, martins, bluebirds, and sparrows. As the years went by, Augusta took increasing interest in her husband’s studies, often accompanying him on field trips. During this time he participated in several organizations, including the St. Louis Bird

Club, the Audubon Society, and the American Ornithologists Union.¹¹

While living in the suburbs, he continued to enjoy the company of science-minded men in the city. Beginning in 1898, he met on a monthly basis with a group of colleagues in the Naturalists’ Club. The group had no officers, no by-laws, no dues, and limited itself to twelve members, who had achieved prominence in zoology, anthropology, anatomy, or some related field of research. Members had to receive an invitation and be approved unanimously. Typically, they met on a Saturday evening in one member’s home. One of them read a paper on a scientific topic, followed by general discussion and refreshments. The men smoked pipes and cigars and socialized far into the night.¹²

At the same time, beginning in the 1890s, he ventured far from St. Louis, exploring various regions in the state. He was particularly fascinated by the Bootheel of southeastern Missouri, a wide, flat, swampy stretch of woodlands bordering the Mississippi River. When he first visited the area, near the Arkansas state line, he marveled that, with the exception of a few ridges, “the whole territory is still covered with the original forest.” Here he observed vast numbers of birds, including uncommon varieties like the Pileated Woodpecker and the Yellow-billed Cuckoo.¹³

There in the Bootheel, Widmann discovered the first nest and eggs of the Bachman’s Warbler that had ever been



Otto Widmann (far left) was among the founding members of the St. Louis Zoological Society, seen here with other zoo founders around 1920. (Image: Missouri Historical Society)

identified in Missouri. On May 8, 1897, he heard males of the species singing in a swampy area of Dunklin County. For the next several days, he followed the warblers through woods, brambles, and pools of water, until he finally found a female building a nest. For three subsequent days, he watched as the bird produced three eggs in the shelter of dense woods that protected her brood from roving hogs, cattle, and humans.¹⁴

Even in these forested wetlands, Widmann perceived threats to wildlife. For example, in the late 1880s, fashionable ladies rushed to purchase clothing adored with egret feathers. Egrets, also known as White Cranes, roosted in the Little River and St. Francis River basins of the Bootheel. On one of his visits to the lowlands,

Widmann met a crane hunter who boasted that he made a profit of \$800 from the sale of crane feathers. There were many others like him who drastically reduced the number of Egrets. Fortunately, the fashion craze faded, and at least some of these graceful white birds survived the hunters' onslaught.¹⁵

Based on his observations at the turn of the century, Widmann called urgently for the protection of Missouri's birds. He spoke not only to his scientific colleagues, but also to the general public. In an article published in the *St. Louis Post-Dispatch* in 1901, he stated that "The protection of birds has become imperative." Recalling an incident in which he scolded a group of boys for wantonly "killing every bird their guns could reach," he pleaded

with parents, teachers, and pastors to instruct young people "in the science of bird life, their species and the purposes of their creation." His zeal on the subject was clearly religious. Game laws, and their enforcement, would not suffice. "The only salvation," he wrote, "is changing public sentiment," and this must begin with the children.¹⁶

In 1902, he suffered a dramatic setback. While he was away on a trip to Germany, his home in Old Orchard burned down. Lost in the blaze were books, notes, a series of diaries covering twenty-five years of research, and the unfinished manuscript of his planned catalog of the birds of Missouri. This discouraging blow prompted a return to the city, where he and his family resettled in a two-story brick house at 5105 Enright

European Tree Sparrow.

*Geog. Dist. —
Europe and Asia to
China and Japan.*

**"In America only in the
neighborhood of St. Louis where
it was introduced in 1870.**

It has left the thickly settled parts
[of] St. Louis but is found
scatteringly throughout the outskirts and
suburbs, spreading to
neighboring cities, Alton, Grafton,
and Belleville, Ill., to Creve
Coeur Lake, St. Charles, and
westward as far as Washington,
54 miles from St. Louis."

Excerpt from *A Preliminary Catalog of the Birds
of Missouri*, Otto Widmann, 1907

*The Cardinal, by way of contrast, was a
bird that thrived in the state.*

.....

Avenue in a neighborhood of elite families on the city's west side. In these new quarters, with the help of his wife, he recovered from his dejection, slowly reassembled his materials, and resumed his life's work.¹⁷

In May of 1906, Otto and Augusta traveled on the new branch of the Iron Mountain Railroad to Branson in southwestern Missouri. He had already visited the Ozarks and had spoken eloquently to the Naturalists' Club of the abundant wildlife in the "rows upon rows of long-stretched hills, so characteristic of the region." Branson impressed him as a lively and prosperous town that "was all new and everything built on a large scale, the hotels, drug stores, general and furniture stores, livery, barns, post office building and a bright new bank." He predicted that the town would grow and prosper, but as a nature lover he placed a higher value on the nearby White River and its steep bluffs. During their four-day visit to the area, the Widmanns observed eighty-four different kinds of birds, including numerous hummingbirds, hovering around "many a wildflower seldom or never seen in other localities."¹⁸

Widmann relied on numerous friends and colleagues in St. Louis and other areas of the state to collect data for his *Catalog*. For example, James Newton Baskett of Mexico (Audrain County) in north central Missouri was an avid bird-watcher and the author of several children's books, including *The Story of the Birds*, first

published in 1897. Widmann's long-time friend John Kastendeck of Billings (Christian County) in southwestern Missouri amassed a large collection of mounted birds of the Ozarks. Philo W. Smith of St. Louis collected birds' eggs from all around the state. Another local associate, Frank Schwarz, was a taxidermist and also a member of the Naturalists' Club. Schwarz's son Max remembered that Widmann, "a very amiable and quiet person," was "always ready to go out in the field with you."¹⁹

His constant field work reflected a sense of urgency, expressed in his *Catalog* as a stern warning about the decrease in the number of birds, its causes and its consequences. "When we consider how much one organism is dependent on others," he wrote, "we do not wonder that an annihilation of many forms of animal life, high and low, is inseparably bound up with such a change as deforestation and subsequent cultivation." In the early twentieth century, Missouri had already lost a large percentage of its original woodlands, and massive drainage projects were quickly transforming the forested wetland of the southeastern Bootheel into endless flat fields of corn and cotton. Many woodland birds had already vanished. Where, he wondered, would the marsh birds go?²⁰

Protection of these birds required more than restrictions on hunting. The game and fish protection law of 1905, Widmann said, was a good start, but its

effectiveness remained to be seen. Not only hunters, but also farmers, landowners, and corporations, would have to change their behavior. People should band together to create bird sanctuaries in places where forests still existed. Farmers should pause before removing trees, stumps, vines, thickets, and shrubs, which provide shelter for birds. Home owners and community leaders should set up bird nesting boxes in gardens and parks. Most urgently, bird lovers, and there were many of them, should speak up and inspire appreciation of "the wonderful works of creation, and certainly not the least among them is the bird!"²¹

His *Catalog* included a lengthy entry on the Carolina Parakeet, which had already vanished from Missouri. Early nineteenth-century explorers had seen many of them in the Missouri River Valley. In the 1840s, Audubon encountered numerous parakeets in northwestern Missouri. These flashy birds with green, yellow, and red feathers and strident voices appeared frequently in wooded river bottoms until the late 1850s, when the sight of them became rare. In counties along the Missouri River, bird-watchers saw the last of them in the 1860s. Widmann had second-hand reports of a few sightings in the Ozarks after 1890. The bird's disappearance remains a mystery, but by the mid-twentieth-century the species was extinct.²²

The Cardinal, by way of contrast, was a hardy bird that thrived in

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a brick chimney that was sixty feet high and tapered
from six feet square at the bottom to five feet square at the top.*

the state. According to the *Catalog*, the brilliantly colored Redbird was “A common resident in all parts of Missouri, very common in most of southern Missouri, the Ozark region as well as the prairie and swamp lands.” Cardinals did not just pass through the state on their way north or south, but remained through all the seasons. In winter, some of them stayed in their summer homes, but many of them retreated to “sheltered woods in the bottomland, or to nooks and corners on warm hillsides” near cornfields. Their high-pitched calls pierced the air for most of the year, especially from February through the end of summer.²³

After his *Catalog* appeared in print, winning praise as a well-crafted and much-needed summary of bird life in the state, Widmann continued his field work and writing. In the summer of 1908, he made twenty visits to the Missouri Botanical Garden (Shaw’s Garden), observing and recording the birds that made appearances there. Forty species had nests in the Garden; another six species visited regularly, and twenty species were transients. Residents included quail, doves, cuckoos, woodpeckers, blue jays, crows, meadowlarks, and sparrows.²⁴

At the age of seventy-nine, Widmann wrote a charming essay on the Chimney Swift, presenting it to the St. Louis Naturalists’ Club on February 26, 1921. Small, lithe, high-flying Chimney Swifts spent summers in the United States and Canada and adapted

to the growth of towns and cities by nesting in chimneys rather than hollow trees. For many years, beginning in the 1880s, Widmann and his family had observed their nesting patterns in various spots around St. Louis, finally discovering “the roost which in size and accessibility and ease of observation surpasses all others, the chimney of the greenhouse in Tower Grove Park.” There, on a September evening, he noticed an immense number of the birds flying near the park. He and his companions followed them and watched excitedly as the “enormous mass of highly excited, twittering birds” descended into the chimney.²⁵

The stream of birds kept pouring into the opening for another ten minutes. According to accepted practice, he estimated the number of birds by counting how many entered the chimney in one second and multiplying that by the number of seconds that elapsed. The final number was three thousand birds, sliding down into a brick chimney that was sixty feet high and tapered from six feet square at the bottom to five feet square at the top. Park personnel recalled that the birds had been using the chimney for twenty years. In addition, they filled up another chimney on a street outside the park.²⁶

Through all his years of studying Missouri’s birds, Widmann relied on the supportive presence of Augusta. As they grew older, he wrote in his brief “Autobiography,” they lost their ability to walk for long distances

on rough terrain. Trains and automobiles allowed them to continue their travels, but they “had to confine their visits to places easily reached and having good walks and benches when tired.” On May 18, 1921, a few months after he gave his talk on Chimney Swifts to the Naturalists’ Club, his wife passed away, leaving her husband “dependent for companionship on my children and grandchildren.”²⁷

On his ninetieth birthday in 1931, Widmann received an honorary life membership in the St. Louis Bird Club, which he had helped to organize. Ornithologists from many parts of the world sent congratulatory telegrams. He also received a letter from President Herbert Hoover. An article in the *St. Louis Post-Dispatch* noted that his publications on Missouri birds were widely known and that his essay on “The Birds of Shaw’s Garden” was studied in the public schools. The *Post-Dispatch* article also praised the late Augusta Widmann for unswervingly supporting her husband’s work and launching his career by presenting him with a subscription to Theodore Jasper’s illustrated *Birds of North America*.²⁸

Widmann died in his home on Enright Avenue on November 26, 1933, with family members in attendance. In spite of his advanced age, he remained active until a few weeks before his death, participating in field trips with the St. Louis Bird Club. When friends approached him with the idea of forming a new organization to be called the Widmann Bird Club,

he protested, saying there was no need for more clubs, just more members. By all accounts, he was a modest and retiring man, who deflected overblown praise and described himself as “just a bird lover.”²⁹

At the time of his death, Bachman’s Warbler still existed in the state, but within twenty years it was gone. Widmann had first discovered the eggs of this bird in the spring of 1897. In the early twentieth century, other ornithologists recorded sightings, not only in the Bootheel, but also in the Ozarks. According to Mark Robbins’ *Birds of Missouri* (1992), the last observation of the species occurred in 1948. “Searches during the late 1950s at the former breeding sites were unsuccessful,” Robbins wrote. The bird had been extirpated from Missouri and was possibly extinct.³⁰

Fortunately, according to Robbins, most of the species Widmann had observed remained in the state, which retained a relatively large population of birds. In his 1992 book, Robbins positively identified 385 species in Missouri, and he also praised Widmann for his pioneering work. “Certainly the most fortuitous event to shape Missouri ornithology,” said Robbins, “was the arrival of Otto Widmann to St. Louis in 1867.” Widmann’s *Catalog* provided the only thorough summary of Missouri’s bird population around 1900, and, according to Robbins, much of the information remained applicable in the 1990s.³¹

...*the* St. Louis Post-Dispatch *noted that his publications on Missouri birds were widely known and that his essay on “The Birds of Shaw’s Garden” was studied in the public schools.*

Widmann’s careful observations and clearly-written descriptions of bird life not only contributed to the scientific record but also expressed a deep sense of wonder. His own grandson, Homer Widmann, may have given the best summation of Widmann’s legacy when he wrote, “He loved birds. Their manifestation of true freedom and the joy of their natural beauty was impressed upon us as was the love of nature and an interest in all phases of natural history.”³²



According to *Peterson's Field Guide to the Birds*, the Eurasian Tree Sparrow, native to Europe and Asia, was brought to St. Louis around 1870. They seem to be peculiar to this area, not at all common in any other parts of the United States. (Image: Bonnie Stepenoff)

The Eurasian Tree Sparrow

German immigrants who missed the songbirds of their homeland brought the Eurasian Tree Sparrow (ETS) to St. Louis. Journalist Carl Daenzer, founder of the *Westliche Post* and editor of the *Anzeiger des Westens*, financed the importation of the bird, known then as the European or German Sparrow, to the city. On April 25, 1870, Daenzer brought a box of twenty or thirty of the birds to Lafayette Park and set them free. These small birds, with their characteristic white cheeks, black ear-spots, and white collar at the nape of the neck, flew away almost immediately and seemed to disappear.³³

Nearly forty years later, Otto Widmann told the story of the birds' spread in the St. Louis area. Soon after leaving Lafayette Park, some of them found nesting sites in the southern part of the city near the breweries. As time went on, however, the larger and more aggressive English House Sparrow competed with the Tree Sparrows and pushed many of them outside the city limits. The House Sparrow thrived in rural and

urban areas throughout the United States. For the most part, the ETS, with its gentler disposition and higher-pitched voice, remained in or near the city of St. Louis, mostly in suburban and nearby rural areas, with some of them finding shelter in Shaw's Garden.³⁴

Prized as a St. Louis bird, the ETS slowly extended its range through parts of eastern Missouri and western Illinois. In the 1920s, their thatchy nests began to appear in the Illinois towns of Alton (Madison County), Grafton (Calhoun County), and Belleville (St. Clair County). By the 1930s, the birds were sighted in small colonies along the Missouri River as far west as Washington (Franklin County), Missouri. In the 1940s, they became a common sight through much of St. Louis County and neighboring St. Charles County. By the 1970s, some of them had moved south to Farmington (St. Francois County), Missouri, and by the 1990s, they had been spotted as far north as Burlington, Iowa, and Pierce County, Wisconsin.³⁵

Avid bird-watchers often travel to St. Louis to catch a glimpse of the ETS and add it to their life lists. The birds are fairly common in the St. Louis area all year 'round, often visiting backyard feeders or flocking together in winter near bodies of water or in hedgerows. For many years before his death in 2012, G. Michael (Mike) Flieg, a prominent local ornithologist, hosted birders visiting the area. In the yard at his home near the St. Louis Airport, he kept as many as ten birdhouses occupied by the ETS. Birders may also find the birds in public areas, such as Clarence Cannon National Wildlife Refuge, just north of Annada (Pike County), Missouri.³⁶

ENDNOTES

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- ² Michael Long, "George Engelmann and the Lure of Frontier Science," *Missouri Historical Review* 89, no. 3 (April 1995): 251-68.
- ³ Otto Widmann, "Autobiography of Otto Widmann," *Wilson Bulletin* 39, no. 3 (July-September, 1927): 149, 151.
- ⁴ Widmann, "Autobiography," 151.
- ⁵ Homer Widmann, letter to James F. Comfort, Director, Audubon Society of Missouri, 5 June 1961, in the Widmann, Otto (1841-1933) Collection, 1898-1965, Folder 3, State Historical Society of Missouri. For discussions of the issue, regarding Audubon, see Christoph Irmischer, "Violence and Artistic Representation in John James Audubon," *Raritan* 15, no. 2 (Fall 1995): 1-34, and Thomas L. Altherr, "The American Hunter-Naturalist and the Development of the Code of Sportsmanship," *Journal of Sport History* 5, no. 1 (Spring 1978): 7-22.
- ⁶ Otto Widmann, "Notes on Birds of St. Louis, Mo.," *Bulletin of the Nuttall Ornithological Club* 5, no. 3 (July 1880): 191; Frederick A. Hodes, *Divided City: A History of St. Louis, 1851 to 1876* (St. Louis: self-published, 2015), 556-57; William Hyde and Howard L. Conard, *Encyclopedia of the History of St. Louis* Volume I (New York: Southern History Company, 1899), 42-43.
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- ⁸ Cooke and Widmann, "Bird Migration," 20, 37.
- ⁹ Otto Widmann, "The Crows' Winter Roost at St. Louis," *Ornithologist and Oologist* 13, no. 2 (February 1888): 17-19.
- ¹⁰ Otto Widmann, "Great Roosts on Gabbaret Island, Opposite North St. Louis, Mo.," *Auk* 15, no. 1 (January-March 1898): 27; Otto Widmann, "St. Louis Ornithologist Scientifically Considers Great Crows' Nest in Illinois," *St. Louis Post-Dispatch Sunday Magazine*, February 17, 1901, 10.
- ¹¹ Widmann, "Autobiography," 151; "Ornithologist Widmann Wants a Bird Day Established," *St. Louis Post-Dispatch*, December 1, 1901, 16; Otto Widmann handwritten timeline, Widmann Collection, Folder 3. The United States Federal Census for 1900 for Webster Groves, St. Louis County, Missouri, lists Otto Widmann living in a household with his wife, Augusta, and seven children, ranging in age from ten to twenty-six.
- ¹² "Unique Club of St. Louisans with Scientific Hobbies," *St. Louis Globe-Democrat Sunday Magazine*, October 15, 1905, 3; "The St. Louis Naturalists' Club is Unique in Organization is Ultra-Exclusive," *St. Louis Globe-Democrat Sunday Magazine*, March 25, 1928, 5.
- ¹³ Otto Widmann, "Swainson's Warbler an Inhabitant of the Swampy Woodlands of Southeastern Missouri," *Auk* 12, no. 2 (April-June 1895): 113-14.
- ¹⁴ Otto Widmann, "Summer Home of Bachman's Warbler No Longer Unknown," *Auk* 14, no. 3 (July-September 1897): 305-8; Robbins, *Birds of Missouri*, 199.
- ¹⁵ Otto Widmann, "The Brown Creeper Nesting in the Cypress Swamp of Southeastern Missouri," *Auk* 12, no. 4 (October-December 1895): 350-55.
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- ²⁰ Widmann, *Preliminary Catalog*, 16-17. See Bonnie Stepenoff, "'The Last Tree Cut Down': The End of the Bootheel Frontier, 1880-1930," *Missouri Historical Review* 90, no. 1 (October 1995): 61-78.
- ²¹ Widmann, *Preliminary Catalog*, 18-20.
- ²² Widmann, *Preliminary Catalog*, 113-16. For a very detailed treatment of this topic, see Daniel McKinley, "The Carolina Parakeet in Pioneer Missouri," *Wilson Bulletin* 72, no. 3 (September 1960): 274-87. McKinley cites Widmann and praises his work. In preparation for a biography of Widmann, which was never completed, McKinley gathered the materials that are included in the Widmann Collection, previously cited.
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- ²⁴ Otto Widmann, "Summer Birds of Shaw's Garden," *Missouri Botanical Garden 20th Annual Report* (St. Louis, 1909), 59-62.
- ²⁵ Otto Widmann, "Chimney Swift," presented to the St. Louis Naturalists' Club, February 26, 1921, *Extracts from the Diary of Otto Widmann*, 49-62.
- ²⁶ Widmann, "Chimney Swift," 59-60. In 1925 and 1926, Chimney Swifts appeared in very high numbers and remained in St. Louis later in the year than usual. See Otto Widmann, "Chimney Swifts in November, 1925," *Wilson Bulletin* 40, no. 3 (July-September 1928): 151-54.
- ²⁷ Widmann, "Autobiography of Otto Widmann," 164.

²⁸ "Bird Expert to Be Honored on his 90th Birthday," *St. Louis Post-Dispatch*, June 14, 1931, 10A; "Otto Widmann, Bird Authority, Dies at 92," *St. Louis Post-Dispatch*, November 27, 1933, 3B. *The Birds of North America*; drawn from life and uniformly reduced to one-quarter their natural size by Theodore Jasper was originally issued in forty parts, 1873-1878, and later appeared as Jacob Studer's *Popular Ornithology*, illustrated by Jasper, in several editions.

²⁹ "Otto Widmann, Bird Authority, Dies at 92," *St. Louis Post-Dispatch*, November 27, 1933, 3B; "Just a Bird Lover," *St. Louis Post-Dispatch*, November 28, 1933, 16.

³⁰ Robbins, *Birds of Missouri*, 277-78.

³¹ Robbins, *Birds of Missouri*, 2-4.

³² Homer Widmann, letter to James Comfort, June 5, 1961, previously cited.

³³ Jim Jackson, "Eurasian Tree Sparrow," *Missouri Conservationist Magazine* (May 2003), <https://mdc.gov/conmag/2003/05/Eurasian-tree-sparrow>; Webster Groves Nature Study Society, *Birds of the St. Louis Area*, Revised Edition, Webster Groves, Missouri, 1998, 5.

³⁴ Widmann, "Summer Birds of Shaw's Garden," 60-61.

³⁵ Jackson, "Eurasian Tree Sparrow"; Robbins, *Birds of Missouri*, 374-75; Webster Groves Nature Study Society, *Birds of the St. Louis Area*, 5.

³⁶ Jackson, "Eurasian Tree Sparrow"; Webster Groves Nature Study Society, *Birds of the St. Louis Area*, 5, 144, 173; Ted Cable, "Exceptional Immigrant," *Bird Watching* (December 22, 2011), <http://birdwatchingdaily.com/news/species-profiles>; Michael D. Sorkin, "G. Michael Flieg: Longtime zoo curator brought back Antarctica penguins to help set up program here," *St. Louis Post-Dispatch*, July 15, 2012, A20.