

North American Songbirds as Zoo Animals

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speaker notes in italics

His Most Serene Highness,
Prince Louis II de Bourbon,
Le Grande Conde
(1621-1686)



In 1682, the 39th year of the reign of Louis XIV, a letter was received by his cousin, Prince Louis II de Bourbon, Le Grande Condé, veteran of the Thirty Year's War, and widely considered one of the great military figures of all times. Its author was a clergyman resident in Paris, Bernard Lenet, L'abbé de la Victoire. In part, it translates thusly:

“The bird-seller having notified me that he had an extraordinary bird freshly arrived from the Indies, I went to see it, and I found it as rare in its figure as in its plumage. It is a little larger than a big lark; it is all fire-colored with a crest on its head, and a large reddish bill too, well made, and steady on its feet, very cheerful, very lively and eating well.

It has, says the bird-seller, a warbling song like a nightingale's, but I did not hear it, although I did hear an occasional whistle which was very pretty and gracious; and if one were assured that it would live a long time, it should not be passed up; it is true that it seems healthy and eats well, of a certain seed that is called alpiste [canary grass], which it likes very much. If Y.M.S.H. [Your Most Serene Highness] would like it, I will make the trip, pay for it and send it to you.”

*As it happened, the purchase of this North American Cardinal (*Cardinalis cardinalis*) became a protracted affair. In a subsequent letter to the Prince, the Abbé wrote that he had managed to convince the seller – a member of the Guild of Oiseleurs – to reduce the price to ten louis (the better part of a year's wages for an artisan, or the price of “five writing desks”). The Abbé promptly purchased this bird, since an agent of His Majesty the King appeared ready to offer twelve louis! Thus, a Coq de Virginie was added to the extensive aviaries of His Most Serene Highness, upon which he had lavished attention since 1663, when he had to retire to his Chantilly estate in temporary disgrace.⁴⁶¹ Despite its treasured status, this was not the first Cardinal in France. Appropriately, the earliest import appears to have been of two “redbirds” presented to King Henri IV in 1607, by Samuel de Champlain, following his third expedition to the New World.”*

(Le Grand Conde had already received six Wood Ducks, in 1633)



*“Reception a Conde a Versailles” Jean-Leon Gerome (1824 – 1904) 1878
A depiction of the restoration of le Grande Conde to favor by his Cousin, Louis XIV, 1674*

“The Menagerie” c. 1690

Melchior d’Hondecoeter
(1636 – 1695)



*Animals from the Royal Dutch
Menagerie at Het Loo*







“Birds and Fruit in a Landscape” c.1708, Jakob Bogdani (1658 – 1724)

Birds in the Collection of William III or Queen Anne, of England.



The commercial exploitation of North American Cardinals began early. In 1698, Gemelli Carreri documented the trade, in Havana harbor, of “a sort of scarlet birds to keep in cages, for their color called cardinals”. They were brought to Cuba from Florida, by Native Americans who sold them ship-side to merchants in galleons. During one such transaction, these merchants “laid out eight thousand pieces of eight upon those foolish birds”.

The price of individual birds varied from six to ten pieces of eight, so the number of birds in this consignment was in the neighborhood of a thousand. According to Carreri, one could live for a week in Havana on ten pieces of eight.⁴⁶⁸ By 1749, Peter Kalm, a pupil of Carl Linnaeus, observed that “red birds” were “sent abundantly to London, in cages”, “on account of their agreeable song”, which “very nearly resembles that of our European Nightingale”. He personally trapped a number, using a male as a decoy, noting “they have such strength in their bill that when you hold your hand to them they pinch it so hard as to cause the blood to issue forth”. He kept his decoy for five months: “It ate both corn and buckwheat, for I gave it nothing else”.⁴⁶⁹

*While Peter Kalm also described the Cardinal’s song as “exceedingly sweet”, his contemporary, Antoine-Simon, Le Page du Pratz, who lived with the Natchez and published his *Histoire de**

las Louisiane in 1758, considered it too loud to be enjoyed indoors. This was obviously not the opinion of Lord Botetourt, Royal Governor of Virginia who kept 28 “red birds” in individual cages at his estate in Williamsburg in 1769. In 1788, traveler Nicolas Louis Bourgoise noted Cardinals “are easy to maintain, and sing in their cage; as a result, all the ships take away a large number of them”.

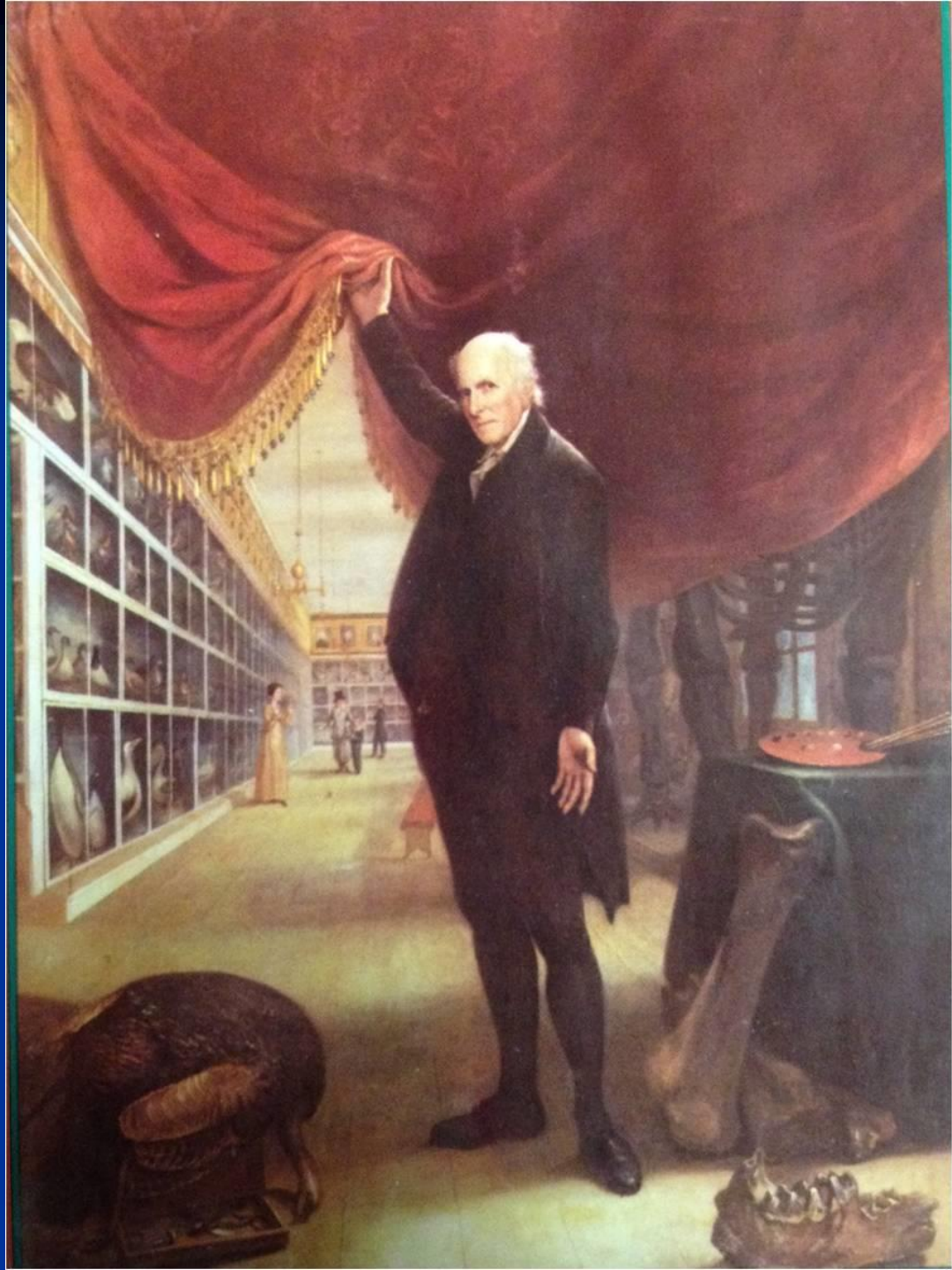
That same year, a “lemonade seller” in Paris offered for sale “10 Cardinals with scarlet plumage, having a 1-inch crest on the head, and the beak crowned with black; they have a very pleasant song and quickly learn airs from a bird-organ”. 1788 was also the year Georges-Louis Leclerc, the Comte de Buffon died. His ten volumes Histoire Naturelle des Oiseaux, published from 1770 through 1783, was considered the authoritative reference of its time. In this, he “surmised [...] that when travelers described a cardinal with a pleasant song they were referring to the South American bird [the tanager (Ramphocelus bresilius)], because the North American species was a type of grosbeak and so would not sing [!]”.⁴⁷⁰

Other North American species became available in Europe at the same time, in particular, Painted Buntings (Passerina ciris) and Indigo Buntings (Passerina cyanea), known in the trade respectively as Papes and Blue Papes. Indigo Buntings appear to have been a specialty of Ange-Auguste Chateau, Bird Seller to the King. While the journalist Helen Ossa mentions that the Cardinal was bred in Holland from the middle of the eighteenth century, I have not located further details. On the other hand, English ornithologist Marmaduke Tunstall (1743–1790) “had a pair which built a nest in an orange tree placed in an aviary, and eggs were laid, but whilst the hen was sitting, a high wind blew down the nest and the eggs were broken; young birds were, however, found in them”. The chronicler of this event, John Latham, whose General History of Birds was published in ten volumes, from 1821 to 1824, goes on to mention “another instance on record, but I have not heard whether the young birds were brought to perfection”. Latham also mentions that Tunstall kept American Goldfinches (Carduelis tristis). While he did not breed the “American Yellow Finch”, Tunstall recorded that “both sexes lost their yellow color in winter and became pale olive, but recovered their beautiful yellow plumage in spring”.⁴⁷¹

By the 1820s, Latham was able to record that “the Dutch contrive to breed” the Painted Bunting, but “we believe the attempt has rarely succeeded in England”. He continued: “I was assured by the late Mr. Tunstall that it has happened more than once, and that two pairs made nests and laid eggs in orange trees in a menagerie of a friend.”

Charles Wilson Peale
(1741 – 1827)

Philadelphia
1786-1854



In 1784, Charles Wilson Peale, whose fame then rested as a painter (and who had already executed three military portraits of Washington), established a museum in Philadelphia. Here (as he informed Washington in 1786) he intended to display “everything that is curious in this Country”. The Peale Museum, which closed in 1849, would achieve renown for the first mounted Mastodon skeleton, excavated in 1802.

Part of the eventually large collection of animals preserved by Peale was displayed in habitat groups, which drew worldwide attention. And, as will be further discussed, it housed living exhibits as well.⁴⁶⁶ After 1850, many of Peale’s specimens were lost, or suffered damage and loss of data into the early twentieth century. Among the lost objects was one of the “two groups of mounted birds, arranged in two glass cases, presented to the Peale Museum by General George Washington”. However, the contents of the of the other glass case, a male and female Golden Pheasant, are now, since 1914, treasures in the Harvard Museum of Natural History.

While we cannot be certain where Cardinal in Peale’s Museum, said to have “lived twenty-one years in the cage” by the bird dealer, James, Mann, in 1848, resided in life, evidence suggests it lived and died in the same place where it was eventually exhibited as a mounted specimen. Peale’s Museum existed from 1784 to 1849, for most of this time in the Pennsylvania State House, now revered as Independence Hall. The bird collection, to which George Washington’s 1787 Golden Pheasants were an early addition, had by 1802 grown to 1,800 species of birds displayed in rows of cabinets, most prepared by Charles Wilson Peale, an innovator in taxidermy. They shared this Philadelphia establishment with a grand series of preserved mammals, fishes, insects, molluscs and other animals, ethnographic artifacts and the first mounted skeleton of a mastodon, unearthed and prepared in 1801 (now in Hessisches Landesmuseum in Darmstadt).

Alexander Wilson (1766 – 1813)

American Ornithology Vol. I, 1808



The arrival of what was to be the most famous bird to live at the Museum was announced in a letter of 21 October 1805 to Peale:

'Dear Sir

The day before yesterday I sent...

- 1. a large box containing skins, skeletons & horns*
- 2. small box containing the Polygraph*
- 3. D:o. With minerals for the Phil. Society to be presented in Captain Lewis' name. A cage with a living magpie.*

These were delivered to Capt. Elwood as you will see by the inclosed [sic] receipt & the freight paid. He promised he would sail yesterday & I hope you will receive them in good order. The undressed skins arrived here full of worms. I fear you will be puzzled to put them into form. Accept friendly salutations.

Th. Jefferson.'

The Magpie (the survivor of an original group of four), a live Prairie Dog (sent to Peale several days earlier), a collection of Native American artefacts (kept by Jefferson at Monticello), the minerals and an extensive collection of skins and skeletons (which arrived crawling with "great numbers of vermin") arrived at the White House on 12 August 1805. They had traveled by way of New Orleans and Baltimore, from Fort Mandan (in present day North Dakota), the last outpost of civilization on the Missouri River, from whence they were sent by Lewis and Clark on 7 April 1805 before they plunged into The Unknown.

The President was in Monticello when this collection was delivered to the White House, where it was received by Etienne Lemaire, Jefferson's French butler, who wrote: "This is to inform you that I have just received by Baltimore a barrel and 4 boxes, and a kind of cage in which there is a little animal very much resembling the squirrel, and in the other a bird resembling the magpie of Europe". Jefferson replied on 17 August:

"Be so good as to have particular care taken of the squirrel & pie [sic] which came with the things from Baltimore that I may see them alive at my return." Lemaire wrote again on 20 August: "The magpie and the kind of squirrel are very well; they are in the room where Monsieur receives his callers...". That would have been the uncompleted East Room.

Charles Wilson Peale wrote to President Jefferson on 22 October 1805: "I am surprised to see the Magpie so correctly like that of Europe, for I have always found some difference in the Birds which has been described [sic] in belonging to both continents [sic]. It is interesting to get the living one in good condition, for a better comparison and also to give it a place near one I have from Great Britain handsomely mounted".

*On 3 November Peale again wrote to Jefferson: "The Magpye [sic] is in good health [...] It may be well to inquire whether this breed of the Magpye has not originally [sic] been from Europe". As it happens, the American Black-billed Magpie (*Pica pica hudsonia*) was not given a formal scientific description until 1823, following the British ornithologist Joseph Sabine's travels in the Arctic. It has "rather longer wings and tail and usually a very distinct white, or white and grayish, band across the rump". At any rate, no one in the scientific community had been aware of magpies in Western North America before the Lewis and Clark Expedition.*

Alexander Wilson used Jefferson's present as a model for the picture in his American Ornithology (1808–14): "The drawing was taken from a very beautiful specimen, sent from the Mandan nation, on the Missouri, to Mr. Jefferson, and by that gentleman presented to Mr. Peale of this city, in whose museum it lived for several months, and where I had an opportunity of examining it. On carefully comparing it with the European Magpie in the same collection, no material difference could be perceived".

John James Audubon
(1785 – 1851))

Ornithological Biography, 1833



Cardinals appear to have been captive-bred in the United States before 1834. Audubon's plate 182 in The Birds of America is of the Common Ground-Dove (Columbina passerina). This was engraved in 1833.⁴⁸¹ In the corresponding text in his Ornithological Biography, Audubon noted: "They readily become domesticated, and indeed so very gentle are they, that I have seen a pair which, having been caught at the time when their young were quite small, and placed in an aviary, at once covered the little ones, and continued to nourish them until full-grown.

They afterwards raised a second brood in the same nest, and shewed great spirit in keeping the jays and starlings from their charge. In this aviary, which belonged to Dr. Wilson of Charleston, several other species bred, among which were the Carolina Dove, the Cardinal-bird, the Blue Grosbeak, the White-throated Sparrow, the Towhe [sic] Bunting, the Common Partridge [Bobwhite], and the Wood Duck. The Ground Doves were fed on rice and other small grain".

In his profile of the Cardinal (plate. 159, also engraved in 1833), Audubon went on to note that this species is "easily raised when taken from the nest, and breed when kept in aviaries. My friend, Dr. SAMUEL WILSON of Charleston, has had them breeding with him, having placed straw-baskets for the purpose, in which the female deposited her eggs, without improving the nest any more than by placing a few grass blades, perhaps pilfered from some of her neighbors".

Dr. Wilson and Audubon had been introduced through the Rev. Dr. John Bachman, a Lutheran Minister, whom he met in Charleston in 1831. Bachman, who eventually became father-in-law to both of Audubon's sons, and wrote the text for the Quadrupeds of America, was also an aviculturist. Regarding the Painted Bunting, he wrote:

"I have kept these birds for many years in aviaries. The males and females of a year old were of a uniform color, but I have invariably found them to assume their perfect plumage in the second year. This bird could be easily domesticated and multiplied in Europe, in the manner of the canary. I have had them to raise three broods of young in the year in confinement. The plumage, however, in this state, was never so brilliant as when wild".

*Audubon noted that Bachman's "very interesting notice regarding its change of plumage" was "greatly at variance" with data published by Alexander Wilson. Bachman achieved interesting early results with a softbill, the Brown Thrasher (*Toxostoma rufum*), which he referred as the Ferruginous Thrush. Audubon noted:*

They breed well in aviaries, and are quite tractable in a closer state of confinement. The young are raised in the same manner, and with the same food, as those of the Mocking-bird. In cages it sings well, and has much of the movements of the latter bird, being full of activity, petulant, and occasionally apt to peck in resentment at the hand which happens to approach it. The young begin their musical studies in autumn, repeating passages with as much zeal as ever did Paganini. By the following spring their full powers of song are developed. My friend BACHMAN, who has raised many of these birds, has favored me with the following particulars respecting them: -- 'Though good-humoured towards the person who feeds them, they are always savage towards all other kinds of birds. I placed three sparrows in the cage of a Thrush one evening, and found them killed, as well.'

Reverend John Bachman (1790 - 1874)





Audubon attempted imports of his own. In March 1830, he bought “about 350” Passenger Pigeons (Ectopistes migratorius)” in “the market of New York, at four cents apiece” (Audubon 1831– 1839). He documents that “most of these I carried alive to England, and distributed them amongst several noblemen, presenting some at the same time to the Zoological Society”. The Gardens of the Zoological Society of London (established in 1828) commenced breeding this species in 1832. That same year, one of the “noblemen” was also successful.

A less fruitful import by Audubon involved the Blue Jay (Cyanocitta cristata):

“While at Louisville, in Kentucky, in the winter of 1830, I purchased twenty-five of these birds, at the rate of 61 cents each [compare this to his price for Passenger Pigeons!], which I shipped to New Orleans, and afterwards to Liverpool, with the view of turning them out in the English woods. They were caught in common traps, baited with maize, and were brought to me one after another as soon as secured. In placing them in the large cage which I had ordered for the purpose of sending abroad, I was surprised to see how cowardly each new caught bird was when introduced to his brethren, who, on being in the cage a day or two, were as gay and frolicsome as if at liberty in the woods.

The new comer, on the contrary, would run into a corner, place his head almost in a perpendicular position, and remain silent and sulky, with an appearance of stupidity quite foreign to his nature. He would suffer all the rest to walk over him and trample him down, without ever changing his position. If corn was presented to him, or even placed close to his bill, he would not so much as look at it. If touched with the hand, he would cower, lie down on his side, and remain motionless.

The next day, however, things were altered: he was again a jay, taking up corn, placing it between his feet, hammering it with his bill, splitting the grain, picking out the kernel, and dropping the divided husks. When the cage was filled, it was amusing to listen to their hammering; all mounted on their perch side by side, each pecking at a grain of maize, like so many blacksmiths paid by the piece. They drank a great deal, ate broken pacan [sic] nuts, grapes, dried fruits of all sorts, and especially fresh beef, of which they were extremely fond, roosted very peaceably close together, and were very pleasing pets...

They bore the passage to Europe pretty well, and most of them reached Liverpool in good health; but a few days after their arrival, a disease occasioned by insects adhering to every part of the body, made such progress that some died every day. Many remedies were tried in vain, and only one individual reached London. The insects had so multiplied on it, that I immersed it in an infusion of tobacco, which, however, killed it in a few hours.”

As it happens, the Blue Jay was propagated by the French aviculturist Andelle in 1876.

Berlin, 1882

Karl Russ (1833 - 1899)





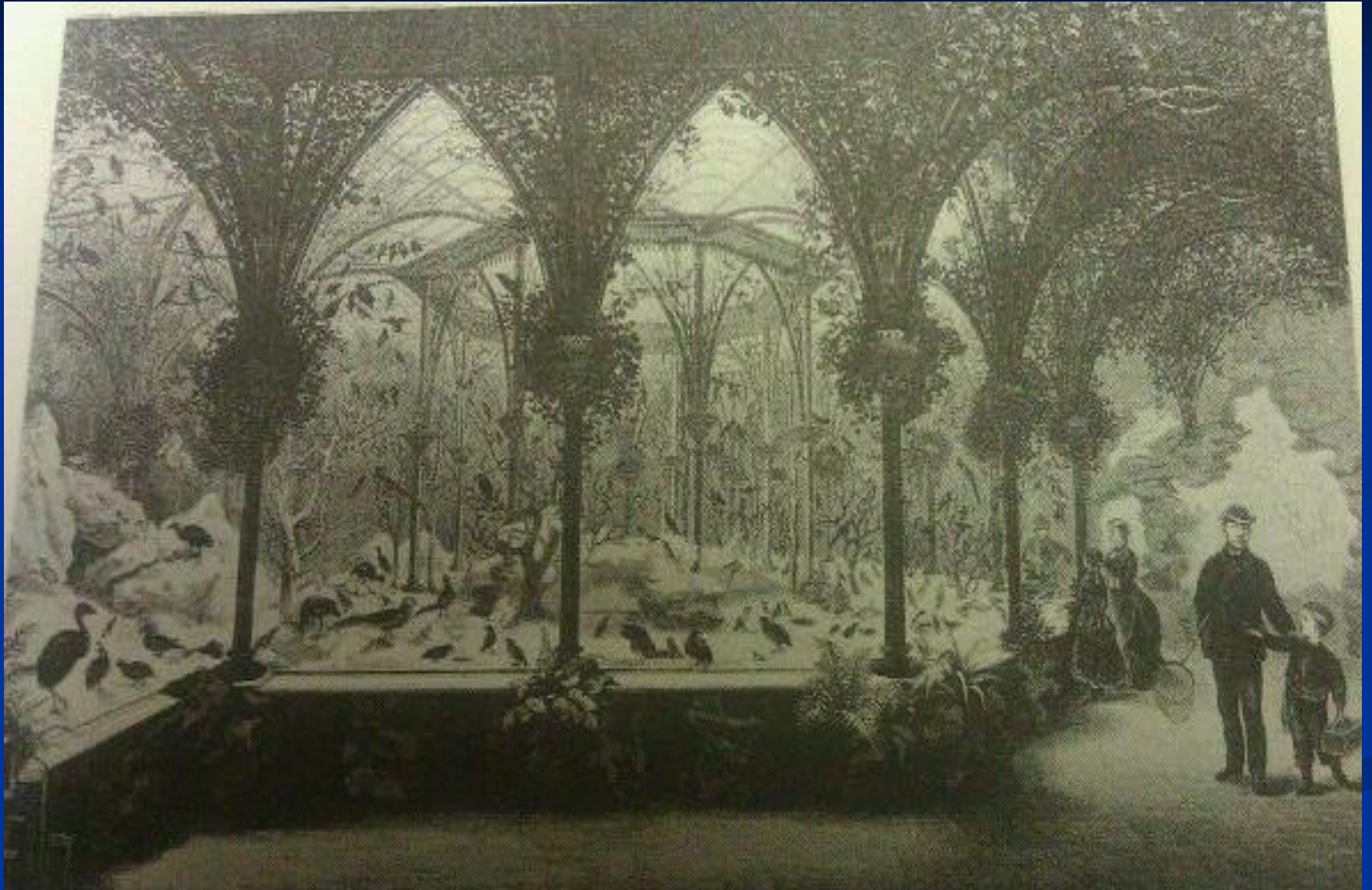
The following are the earliest records of which the avicultural historian Emilius Hopkinson was aware:

Indigo Bunting, Painted Bunting and Rose-breasted Grosbeak (Pheucticus ludovicianus) by famous Karl Russ in Berlin before 1870; Eastern Towhee (Pipilo erythrophthalmus), by German aviculturist Landauer, before 1870; Common Grackle (Quiscalus quiscula) by German aviculturist Julius Wentko in 1884; Northern Mockingbird (Mimus polyglottos) by “Chiapella at Bordeaux in France before 1865”; Eastern Bluebird (Sialia sialis) at London Zoo in 1860.

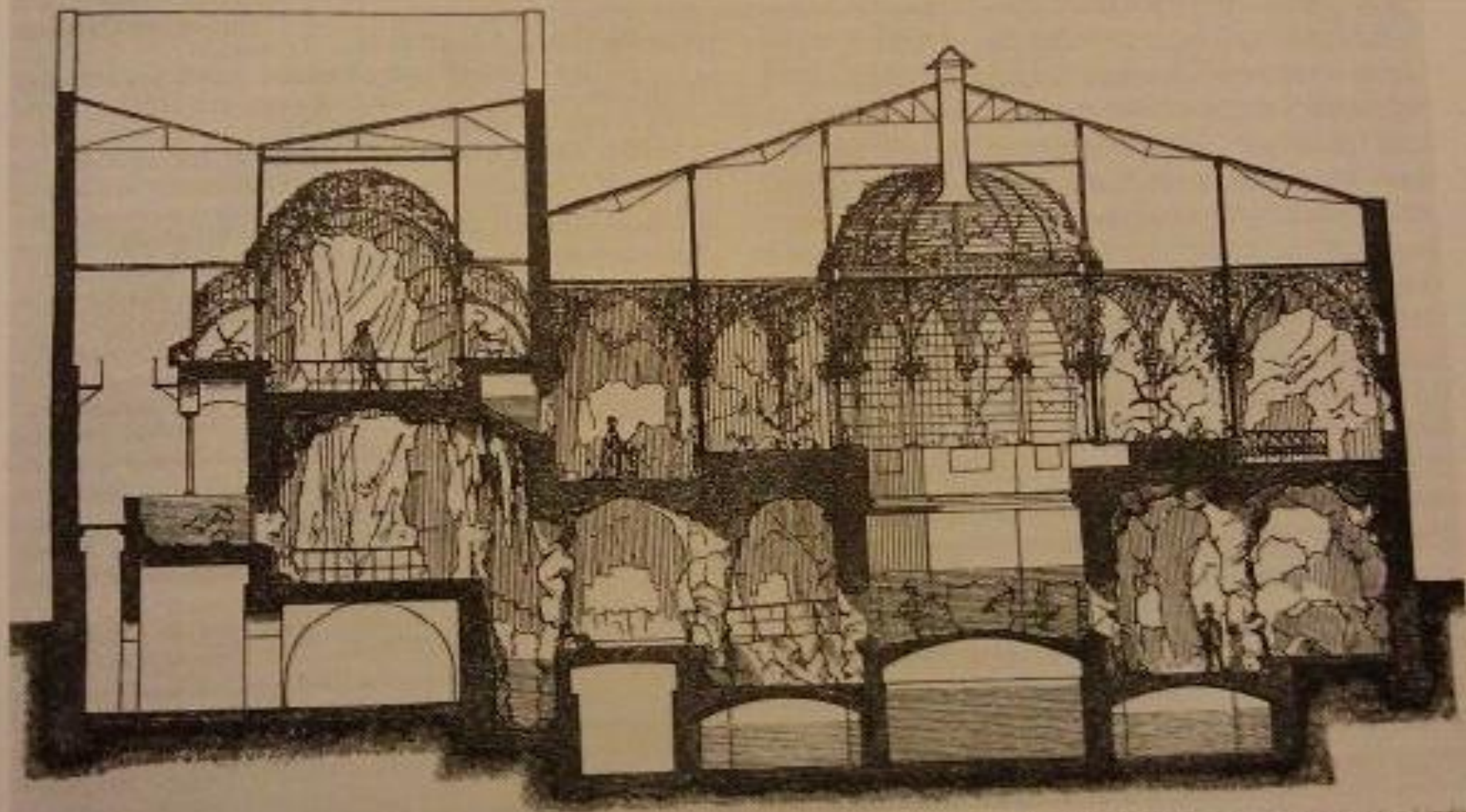
Hopkinson was less precise regarding the Cardinal. He was apparently not, at the time he published his Records of Birds Bred in Captivity, aware of Marmaduke Tunstall’s nineteenth century near success, though he cited it later (Hopkinson, 1940). Instead, he proposed that “Viellot early in the nineteenth century was probably the earliest to attempt and to probably succeed in its breeding”.

Ornithologist Louis Jean Pierre Viellot (1748– 1831) was also a pioneering aviculturist, and certainly succeeded in propagating Cut-throat Finches (Amadina fasciata), the Red-billed Firefinch (Lagonosticta senegala) and the Zebra Finch (most likely the Timor subspecies Poephila g. guttata). Hopkinson was also unaware of the first certain British success, achieved by the Earl of Derby in 1834, when three chicks were raised at Knowsley. This has been proposed as the “possible first captive breeding”, though occurring three years after Viellot’s death, would obviously not be the case if Viellot had indeed been successful.

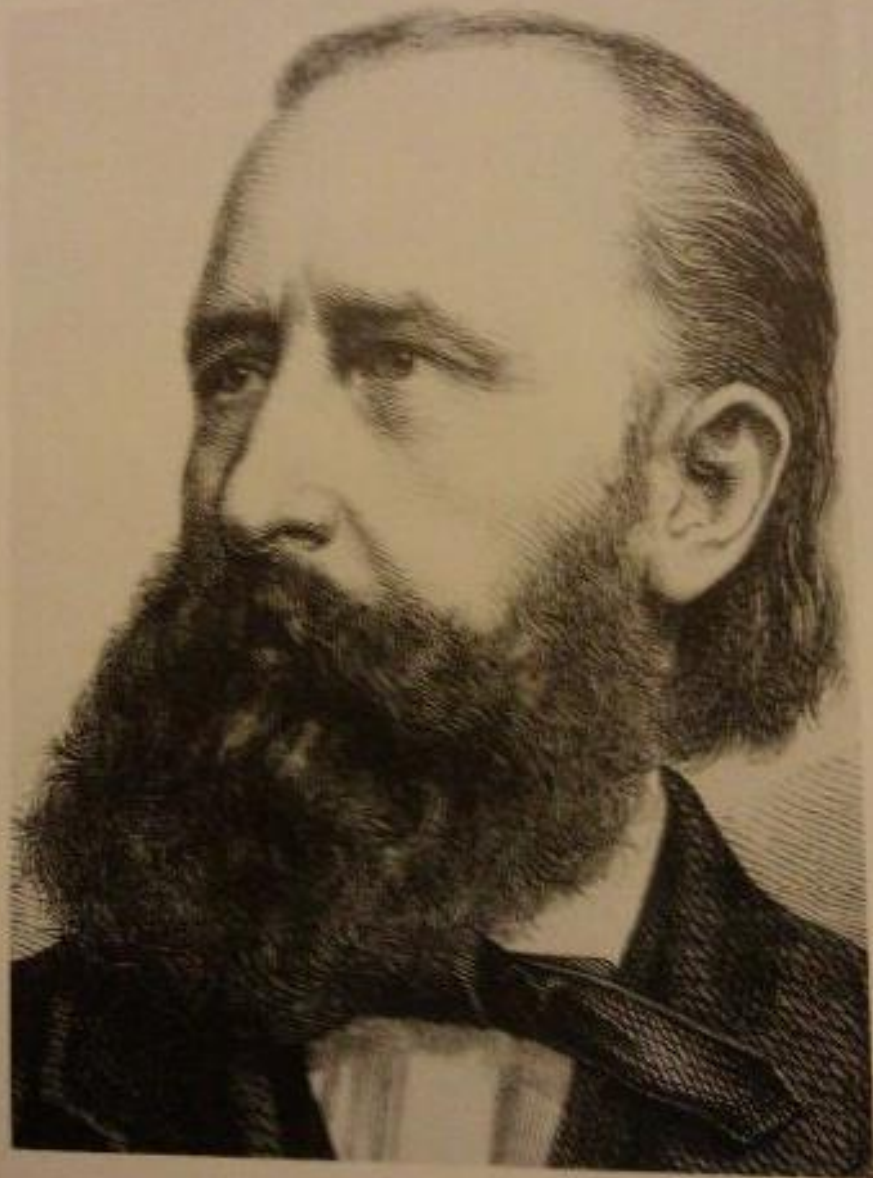
Berlin 1869-1910



Berliner Aquarium unter den Linden



Längsschnitte durch das Berliner Aquarium Unter den Linden



Dr. Alfred Edmund Brehm (1829–1884)

Andrew Erkenbrecher and his associates made a far more lasting contribution by reorganizing the Society for the Acclimatization of Birds as the Zoological Society of Cincinnati in 1873, initially "incorporated as a joint stock company for profit, patterned after similar European institutions". Several months prior to this transition, the Acclimatization Society's Secretary Armin Tenner (who had procured the afore-mentioned European birds and escorted them across the Atlantic) was directed by Erkenbrecher to solicit the advice of no less a person than Dr. Alfred Brehm (1829–1884).

This ornithologist was not only the author of the enormously popular Tierleben, whose first edition was published from 1864 through 1869, but was the founding director of the (now defunct) Zoologischer Garten Hamburg (1863–1867), and the Berlin Aquarium Unter den Linden (1869–1874). Closed in 1910, the Aquarium featured grand indoor aviaries housing a major collection of birds.

Not long after the 11 July 1873 incorporation, in his capacity as the new Zoological Society's Corresponding Secretary, German-born Tenner was in his native country, negotiating Brehm's appointment as Director of the Cincinnati Zoo. This came to naught as a result of the Panic in 1873, commencing with the Vienna Stock Exchange in May and culminating in a plethora of US bank collapses in September, resulting in another American depression that only ended in 1879.

Despite the difficult times, the site of Cincinnati Zoo was chosen and work began in 1874. Armin Tenner went back to Germany, researching the latest in zoo technology and successfully recruiting as Superintendent Dr. Herman Dorner, Scientific Secretary of Zoologischer Garten Hamburg. Dr. Dorner commenced his duties at Cincinnati in April 1875, just before construction of the zoo's primary buildings began. These included a series of outdoor aviaries connected by seven small stone buildings, each with an ornate roof of Japanese style.

The zoo was opened on 18 September 1875 and by the end of the year, the bird collection included 494 specimens of 84 species. While it is mentioned 200 of these birds were “pigeons”, the collections held rarities from the start. An Abyssinian Ground Hornbill (*Bucorvus abyssinicus*), present at the opening, died in 1910; a record Hornbill longevity for many years. Possibly it was part of a collection Dr. Dorner purchased from Carl Hagenbeck to form the zoo’s nucleus.⁵¹⁹ Other birds obtained that year were a Bald Eagle from the Central Park Menagerie and a Golden Eagle from the Cincinnati Parks Board. Along with ten breeds of pure-bred dogs, Andrew Erkenbrecher donated a substantial portion of his personal bird collection, as well as several very ugly aviaries. One constructed in 1868 remained at the zoo well into the twentieth century, full of Barred Owls (*Strix varia*) as a memorial to Erkenbrecher.

Another founding benefactor was fellow German immigrant Adolph Strauch (1822–1883), who in his youth studied landscaping at Vienna’s Schönbrunn Palace, the site of the oldest continuously existing zoo in the world. In America he became a famous and innovative landscape designer and Cincinnati Superintendent of Parks. While not a member of the Zoological Society’s Board, he took an early interest in the zoo and gave much advice during the selection and preparation of the site. It was forgotten for decades that Strauch had successfully bred the Trumpeter Swan in the nineteenth century, producing more than fifty, some exported to Europe and England.

The authoritative *First Breeding of Wild Waterfowl in North America*, compiled by Greenwell and Sturgeon in 1988, credits Dr. W.H. Whealton of Chincoteague Island, Virginia in 1915.

At the Zoo’s opening, Strauch donated “pairs of Owls, Mute Swans (*Cygnus olor*), and Canada Geese (*Branta canadensis*)”. He appears to have eventually donated Trumpeter Swans as well. At any rate, Cincinnati Zoo bred them in 1880, another long-lost fact. When Philadelphia Zoo achieved success in 1965, it was widely believed this was the first such occurrence in a US zoo. A Whooping Crane was added to the collection in the 1884 and in the 1890s, Blue Jays were bred in an aviary. This was eventually proclaimed a North American first breeding by the Bronx Zoo’s Lee Crandall, who also credited Cincinnati with the first American breeding of the Strawberry Finch sometime before 1917.

The Cincinnati Zoo's most famous early inhabitants were the last living Carolina Parakeet and Passenger Pigeon. Unfortunately the history of both these species at Cincinnati is not clearly documented, and data is contradictory. This is in part due to some disorder in the administration during the first decade. Dr. Dorner, who had arrived from Hamburg in 1875, was discharged in 1876.

An official history of Cincinnati Zoo states this was "for reasons unknown", but he in fact went to work for none other than Charles and Henry Reiche, who after more than thirty years in the business had turned their New York bird shop into an international animal importing empire, supplying large mammals to circuses. In partnership with the circus impresario William Cameron Coup, they opened the Great New York Aquarium in 1876. Dr. Dorner became its manager and shortly after wrote a ninety-page guidebook. Armin Tenner, who had arranged Dorner's Cincinnati appointment, took over the post himself, only to resign several weeks later. For seven years until 1885, the Superintendent was Captain Frank J. Thompson, who had resigned from Philadelphia Zoo in 1876.

*Thompson, Philadelphia's first Superintendent, had assembled an enormous collection of animals in Australia and nearby places, including a "wonderful assortment of colorful birds from the southwest Pacific area", forming a major portion of the collection at that zoo's opening on 1 July, 1874. A list is not present, but the mammals included the now extinct Toolache Wallaby (*Macropus greyi*) and the since hardly ever exported Gaimard's Rat Kangaroo (*Bettongia gaimardi*). Thompson eventually also became first superintendent of Buffalo Zoo (whose nucleus was deer presented in 1870) in 1895.*

This pattern of fairly brief management positions ended in 1886, when Sol (Salvator) A. Stephan (1849–1949) was promoted from the post of Head Keeper. He retired in 1937. Born in Ohio to German immigrants, his background was with circus elephants, arriving with Cincinnati's first elephant, an African bull in 1875. In 1902 he became the American agent for Carl Hagenbeck, so that the zoo served as a holding compound for animals imported for eventual sale to zoos and circuses. His son Joseph Stephan spent several years

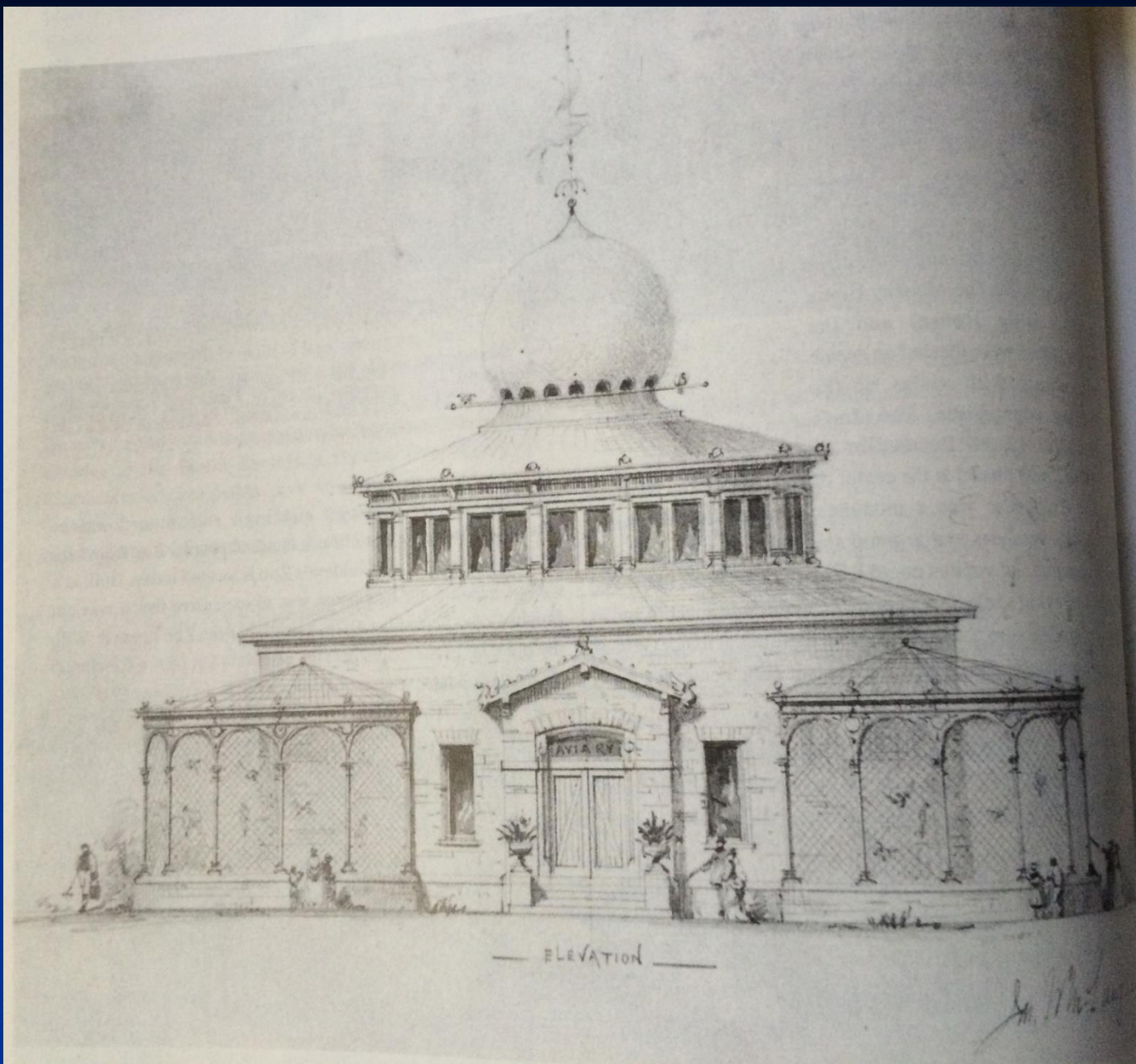


While the Passenger Pigeons received by the Central Park Menagerie in 1891 may possibly have been the last wild specimens acquired by an institution, another American zoo attained lasting fame as the home of the last known living specimen, as well as the last living Carolina Parakeet. Opened 18 September 1875, Cincinnati Zoo was established by German immigrants, who had previously distinguished themselves by an attempt to establish a sizeable fraction of the European Avifauna in the Ohio Valley.

Led by Andrew Erkenbrecher (1821–1885), who came to America at the age of fifteen and made his Cincinnati fortune in laundry starch, the Society for the Acclimatization of Birds spent \$9,000 for 4,000 European birds imported from 1872 through 1874.

The major portion of this collection was liberated from “the garret of a towering old mansion standing in a part of the city known as Burnet Woods” on a single May morning in 1873, and included Corn Crakes (*Crex crex*), Skylarks (*Alauda arvensis*), Wagtails (*Motacilla*), Great Tits (*Parus major*), Blue Tits (*Parus caeruleus*), European Water Ouzels (*Cinclus cinclus*), Hedge Sparrows (*Prunella modularis*), Blackbirds (*Turdus merula*), Missel Thrushes (*Turdus viscivorus*), Song Thrushes (*Turdus philomelos*), “Hungarian” Thrushes (?), Nigh-tingales (*Luscinia megarhynchos*), European Robins (*Erithacus rubecula*), Starlings (*Sturnus vulgaris*), House Sparrows (*Passer domesticus*), Linnets (*Carduelis cannabina*), Goldfinches (*Carduelis carduelis*), Bullfinches (*Pyrrhula pyrrhula*) and 156 Crossbills (*Loxia sp.*).

It is often stated that this experiment was prompted by a disastrous plague of caterpillars in 1872. However, in marked contrast to Audubon, who had lived in there in the 1820s, and had a high regard for the local birdlife, Andrew Erkenbrecher found Cincinnati “in comparison with European Cities [...] so bare of feathered songsters”, and expected “the ennobling influence of the song of birds will be felt by the inhabitants”. At any rate, for the majority of the species involved, nothing in particular appears to have resulted from these efforts.



ELEVATION

A. P. M.

Cincinnati, 1875

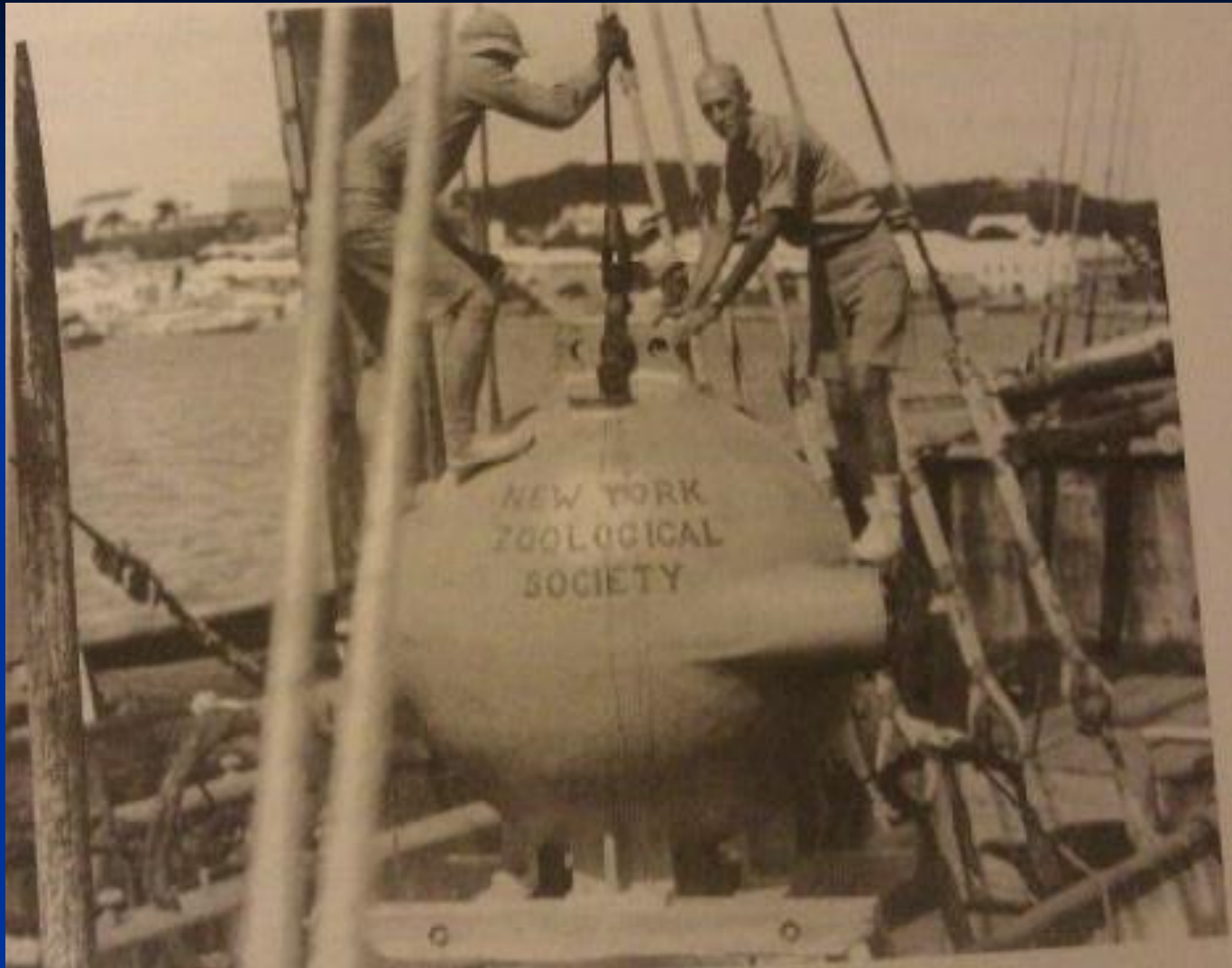


Aviaries. This lithograph from an early souvenir album shows these Japanese-style buildings and their large outdoor cages, which housed much of the Zoo's large bird collection. The aviaries were similar to the Indian-style aviaries of the Berlin Zoological Garden. One of Cincinnati's aviaries has been preserved as today's Passenger Pigeon Memorial.

New York 1899



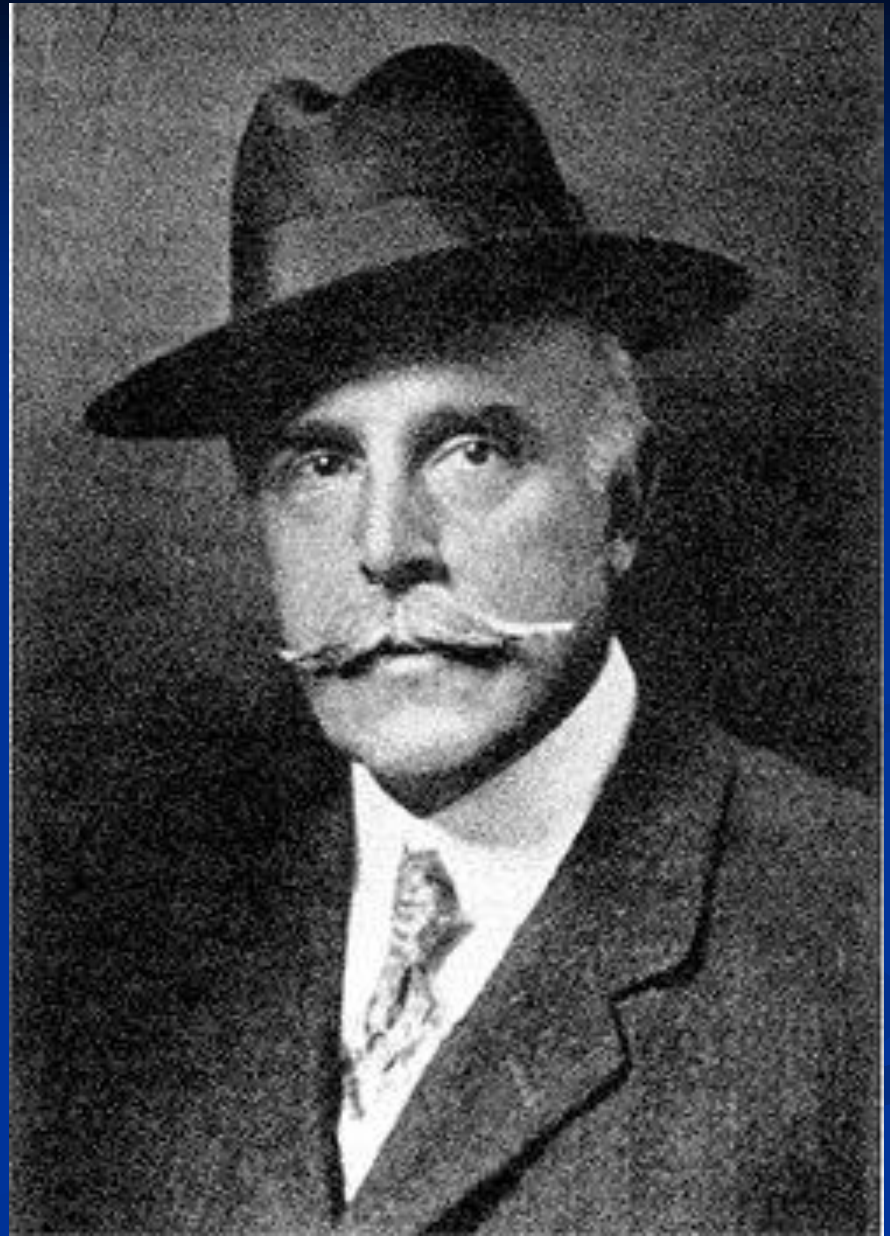
William Beebe 1877-1962



The Bronx Zoo's first Curator of Birds, appointed in 1899, was to become far more famous as a deep sea explorer, among his many activities as Director of Tropical Research for the New York Zoological Society. His active role as Curator essentially ended in 1909, when he embarked on a several year expedition to conduct research on pheasants in their Asian habitats.

Madison Grant (1865 – 1937)

From its incorporation in 1895, the New York Zoological Society was as involved in conservation politics as it was in zoo making. For instance, in 1904, William Beebe, Curator of Birds, and Madison Grant, the Society's Secretary, spent the night at the base of the torch of the Statue of Liberty, documenting the deaths of songbirds attracted to the light. As a result, the iconic torch was "diminished and rendered indirect". This richly ironic, as Madison Grant (1865-1937) was a principal force behind the passage of the 1924 Immigration Act, which drastically reduced the number and diversity of immigrants to the United States. Grant, a founder of the New York Zoological Society, and its President from 1925 until his death, was, along with his passionate dedication to conservation efforts, a notoriously ferocious eugenicist.



Lee S. Crandall
(1887-1969)



WILD BIRDS BRED IN CAPTIVITY IN THE EASTERN UNITED STATES.

GALLIFORMES

Glabose Curassow	<i>Cyrus glaberrima</i>	Gould.
Ruffed Grouse	<i>Bonasa umbellus</i>	Hodge.
Cabot Tragopan	<i>Tragopan caboti</i>	Kuser.
Impeyan Pheasant	<i>Lophophorus impeyanus</i>	Little.
Manchurian Eared Pheasant	<i>Crossoptilon manchuricum</i>	Little.
Black-crested Nepal Pheasant	<i>Gaeanans leucomelanus</i>	N. Y. Zool. Park.
Melanotus Pheasant	" <i>melanotus</i>	Kuser.
Anderson Pheasant	" <i>andersoni</i>	N. Y. Zool. Park.
Lineated Pheasant	" <i>lineatus</i>	Little.
Silver Pheasant	" <i>argenteus</i>	N. Y. Zool. Park.
Swinhoe Pheasant	" <i>swinhoi</i>	Kuser.
English Pheasant	<i>Phasianus colchicus</i>	N. Y. Zool. Park.
White Pheasant	" <i>var.</i>	N. Y. Zool. Park.
Ring-necked Pheasant	" <i>torquatus</i>	N. Y. Zool. Park.
Versicolor Pheasant	" <i>versicolor</i>	Kuser.
Reeves Pheasant	<i>Syrnietus reevesi</i>	N. Y. Zool. Park.
Golden Pheasant	<i>Chrysolophus pictus</i>	N. Y. Zool. Park.
Lady Amherst Pheasant	" <i>amherstiae</i>	N. Y. Zool. Park.
Red Jungle Fowl	<i>Gallus gallus</i>	N. Y. Zool. Park.
Indian Peafowl	<i>Pavo cristatus</i>	N. Y. Zool. Park.
Black-winged Peafowl	" <i>nigripennis</i>	N. Y. Zool. Park.
Wild Guinea Fowl	<i>Numida meleagris</i>	N. Y. Zool. Park.
Wild Turkey	<i>Melagris gallopavo sibiricus</i>	N. Y. Zool. Park.
Plumed Quail	<i>Oreortyx pictus plumiferus</i>	N. Y. Zool. Park.
California Quail	<i>Lophortyx californicus</i>	N. Y. Zool. Park.
Bob-white	<i>Colinus virginianus</i>	Hodge.

COLUMBIFORMES

White-backed Pigeon	<i>Columba leucozona</i>	Whitman.
Rock Dove	" <i>livia</i>	N. Y. Zool. Park.
Stock Dove	" <i>oenas</i>	Whitman.
Triangular-spotted Pigeon	" <i>guinea</i>	Whitman.
Bare-eyed Pigeon	" <i>gymnophthalma</i>	Whitman.
Spotted Pigeon	" <i>maculosa</i>	Whitman.
White-crowned Pigeon	" <i>leucocephala</i>	Whitman.
Rufous Pigeon	" <i>rufina</i>	Whitman.
Band-tailed Pigeon	" <i>faxiata</i>	Whitman.
Wood Pigeon	" <i>pulchellus</i>	Whitman.
Passenger Pigeon	<i>Ectopistes migratorius</i>	Whitman.
Mourning Dove	<i>Zenaidura macroura carolinensis</i>	Whittington.
Venezuela Dove	<i>Zenaidura macroura rufa</i>	Whitman.
White-winged Dove	<i>Melopelia leucoptera</i>	Kuser.
European Turtle Dove	<i>Turtur turtur</i>	N. Y. Zool. Park.
Oriental Turtle Dove	" <i>orientalis</i>	Whitman.
Barbary Turtle Dove	<i>Streptopelia risoria</i>	N. Y. Zool. Park.
White Turtle Dove	" <i>var.</i>	Whitman.
Damara Turtle Dove	" <i>damarensis</i>	Whitman.
Indian Turtle Dove	" <i>douraca</i>	Whitman.
Dwarf Turtle Dove	<i>Onopopelia humilis</i>	Whitman.
Chinese Turtle Dove	<i>Spilopelia chinensis</i>	Whitman.
Tigrine Turtle Dove	" <i>tigrina</i>	Whitman.
Senegal Turtle Dove	<i>Stigmatopelia senegalensis</i>	N. Y. Zool. Park.
Barred-shouldered Dove	<i>Geopelia humeralis</i>	Thompson.
Peaceful Dove	" <i>tranquilla</i>	Whitman.
Barred Dove	" <i>striata</i>	Whitman.
Graceful Ground Dove	" <i>cuneata</i>	Thompson.
Inca Dove	<i>Scardafella inca</i>	Whitman.
Northern Ground Dove	<i>Chamaepelia passerina</i>	Whitman.
Talpacoti Ground Dove	" <i>talpacoti</i>	Whitman.
Bronze-winged Pigeon	<i>Phaps chalcoptera</i>	Whitman.
Australian Crested Pigeon	<i>Oryzopsis lophotes</i>	Kuser.
White-fronted Dove	<i>Leptoptila fulviventris brachyptera</i>	Whitman.
Reichenbach Dove	" <i>reichenbachii</i>	Whitman.
Wonga-wonga Pigeon	<i>Leucosarcia picta</i>	Whitman.

LARIFORMES

European Herring Gull	<i>Larus argentatus</i>	N. Y. Zool. Park.
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GRUIFORMES

Demoiselle Crane	<i>Anthropoides virgo</i>	Kuser.
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ARDEIFORMES

White Ibis	<i>Gnarus alba</i>	N. Y. Zool. Park.
Black-crowned Night Heron	<i>Nycticorax nycticorax naevius</i>	Natl Zool. Park.

ANSERIFORMES

Whooping Swan	<i>Cygnus cygnus</i>	Wheaton.
Mute Swan	" <i>olor</i>	Natl Zool. Park.
Black Swan	<i>Chenopsis atrata</i>	Wheaton.
Wood Duck	<i>Aix sponsa</i>	N. Y. Zool. Park.
Mandarin Duck	" <i>galeritellata</i>	Cox.
Greater Snow Goose	<i>Chen hyperborea sibirica</i>	Wheaton.
Bean Goose	<i>Anser fabilis</i>	Gallatin.
Canada Goose	<i>Branta canadensis</i>	N. Y. Zool. Park.
Ruddy Sheldrake	<i>Casarca casarca</i>	Browning.
Mallard Duck	<i>Anas platyrhynchos</i>	N. Y. Zool. Park.
Black Duck	" <i>obscura</i>	Gallatin.
Australian Gray Duck	" <i>superciliosa</i>	Kuser.
Gadwall	<i>Chaulelasmus strepera</i>	Hudson.
European Widgeon	<i>Mareca penelope</i>	Cox.
Green-wing Teal	<i>Nellion carolinensis</i>	Cox.
Blue-wing Teal	<i>Querquedula discors</i>	Cox.
Pintail Duck	<i>Dafila acuta</i>	Cox.
Chilian Pintail Duck	" <i>epinacula</i>	Kuser.
Shoveller Duck	<i>Spatula clypeata</i>	Cox.
Red-head Duck	<i>Aythya americana</i>	Gallatin.
Canvas-back Duck	" <i>callinera</i>	Lawrence.
Indian Spotted-bill Duck	<i>Palaonetta pocillorhyncha</i>	Gallatin.

PELECANIFORMES

Florida Cormorant	<i>Phalacrocorax dilophus</i>	Natl Zool. Park.
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ACCIPITRIFORMES

Bald Eagle	<i>Haliaeetus leucocephalus</i>	Bull. Zool. Gdn.
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PASTRIFORMES

Cockatoo	<i>Calopsittacus vocans-hollandiae</i>	Browning.
Carolina Parakeet	<i>Conuropsis carolinensis</i>	Phila. Zool. Gdn.
Grass Parakeet	<i>Melospiza undulata</i>	N. Y. Zool. Park.
Black-faced Lovebird	<i>Agapornis personata</i>	Thompson.

PASSERIFORMES

MIMIDAE		
Caracoo Mockingbird	<i>Mimus gilvus rostratus</i>	N. Y. Zool. Park.
Catbird	<i>Galeoscoptes carolinensis</i>	Kuser.
TURDIDAE		
Gray Robin	<i>Planesticus tristis</i>	N. Y. Zool. Park.
American Robin	" <i>migratorius</i>	N. Y. Zool. Park.
Wood Thrush	<i>Hylocichla ustulata</i>	N. Y. Zool. Park.
Rock Thrush	<i>Monticola saxatilis</i>	Whittington.
Bluebird	<i>Sialia sialis</i>	N. Y. Zool. Park.
SITTIDAE		
White-breasted Nuthatch	<i>Sitta carolinensis</i>	Whittington.
FRINGILLIDAE		
Rose-breasted Grosbeak	<i>Zamelodia ludoviciana</i>	N. Y. Zool. Park.
Saffron Finch	<i>Scolecus fuscicola</i>	Thompson.
Song Sparrow	<i>Melospiza melodia melodia</i>	Whittington.
PLOCEIDAE		
Cut-throat Finch	<i>Ammodia fasciata</i>	Thompson.
Zebra Finch	<i>Taeniopygia castanotis</i>	Browning.
Black-headed Manakin	<i>Munia atricapilla</i>	Whittington.
Gray Java Sparrow	" <i>oryziora</i>	N. Y. Zool. Park.

Snowy Duck.....	<i>Spatula clypeata</i>	Cox.
Red-head Duck.....	<i>Aythya americana</i>	Gallatin.
Canvas-back Duck.....	“ <i>vallisneria</i>	Lawrence.
Indian Spotted-bill Duck.....	<i>Polionetta poecilorhyncha</i>	Gallatin.

PELECANIFORMES

Florida Cormorant.....	<i>Phalacrocorax dilophus</i>	Nat'l Zool. Park.
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ACCIPITRIFORMES

Bald Eagle.....	<i>Haliaeetus leucocephalus</i>	Buff. Zool. Gdn.
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PSITTACIFORMES

Cockateel.....	<i>Calopsittacus norae-hollandiae</i>	Browning.
Carolina Parakeet.....	<i>Conuropsis carolinensis</i>	Phila. Zool. Gdn.
Grass Parakeet.....	<i>Melopsittacus undulatus</i>	N. Y. Zool. Park.
Black-faced Lovebird.....	<i>Agapornis personata</i>	Thompson.

PASSERIFORMES

MIMIDAE

Curacao Mockingbird.....	<i>Mimus gilvus rostratus</i>	N. Y. Zool. Park.
Catbird.....	<i>Galeoscoptes carolinensis</i>	Kuser.

TURDIDAE

Gray Robin.....	<i>Planesticus tristis</i>	N. Y. Zool. Park.
American Robin.....	“ <i>migratorius</i>	N. Y. Zool. Park.
Wood Thrush.....	<i>Hylocichla mustelina</i>	N. Y. Zool. Park.
Rock Thrush.....	<i>Monticola saxatilis</i>	Worthington.
Bluebird.....	<i>Sialia sialis</i>	N. Y. Zool. Park.

SITTIDAE

White-breasted Nuthatch.....	<i>Sitta carolinensis</i>	Worthington.
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FRINGILLIDAE

Rose-breasted Grosbeak.....	<i>Zamelodia ludoviciana</i>	N. Y. Zool. Park.
Saffron Finch.....	<i>Sycalis flaveola</i>	Thompson.
Song Sparrow.....	<i>Melospiza melodia melodia</i>	Worthington.

PLOCEIDAE

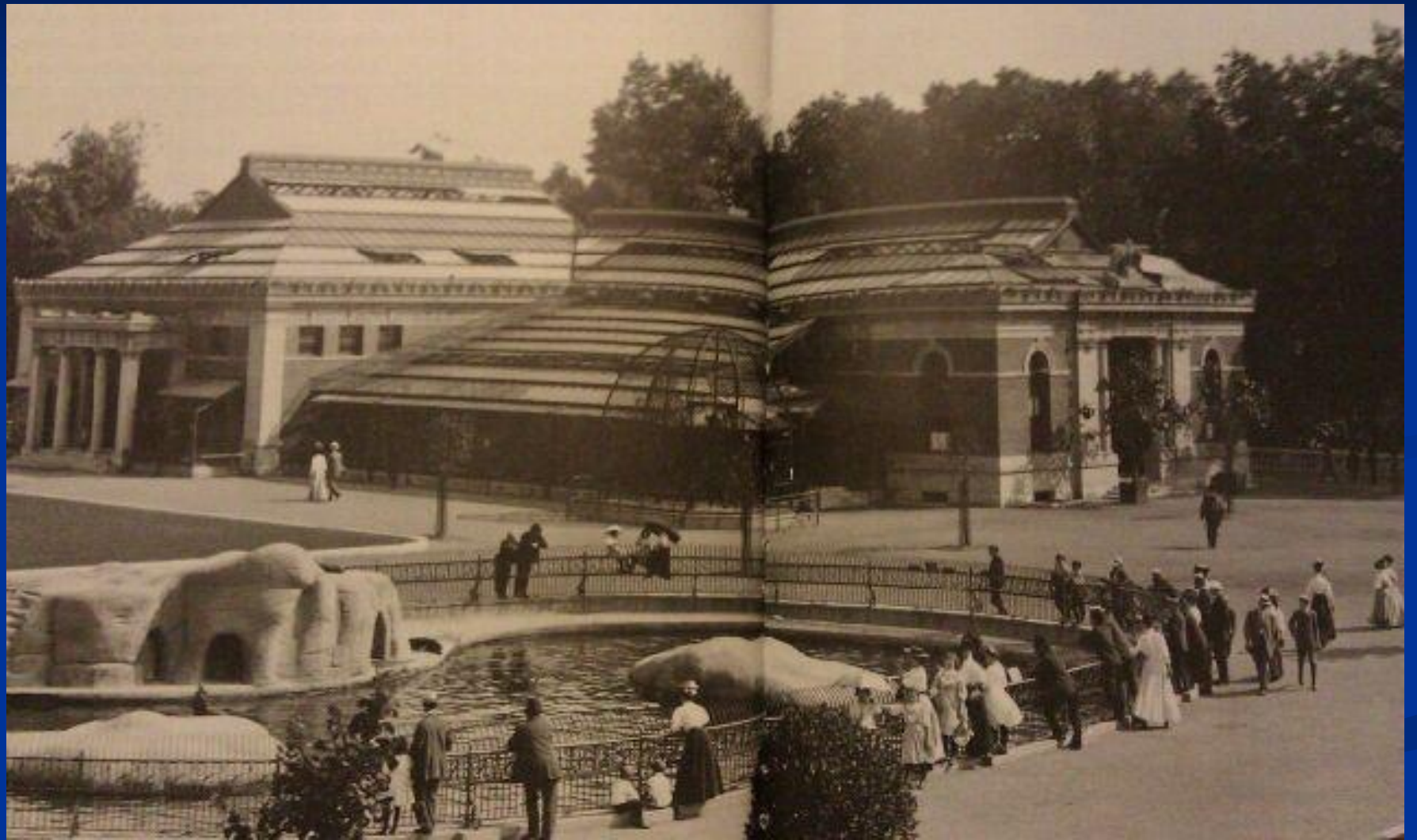
Cut-throat Finch.....	<i>Amadina fasciata</i>	Thompson.
Zebra Finch.....	<i>Taeniopygia castanotis</i>	Browning.
Black-headed Mannikin.....	<i>Munia atricapilla</i>	Worthington.
Gray Java Sparrow.....	“ <i>oryzivora</i>	N. Y. Zool. Park.

A total of fifteen species of passeriform birds were included in the 1909 list. Somewhat surprisingly, only four were Estrildid Finches; Cut-throat Finch, credited to Mrs. Thompson, Australian Zebra Finch to William H. Browning (who wrote that his birds “bred so abundantly” that they outnumbered the other inhabitants of his finch aviary “three to one”), Chestnut Mannikin or Black-headed Nun (*Lonchura malacca atricapilla*) to the aviaries of C.C. Worthington (whose aviculturist was C.W. Miller) at Shawnee-on-Delaware, Pennsylvania, and Java Sparrow to the ten-year-old Bronx Zoo, which Bird House was completed in 1905. The other eleven passerines are a rather odd assortment, reflecting the fact that commercial native bird trapping had ended only three years before. White-breasted Nuthatch (*Sitta carolinensis cookei*) was bred at C.C. Worthington’s aviaries. So was the Eastern Song Sparrow (*Melospiza m. melodia*), as well as the European Rock Thrush (*Monticola saxatilis*). Crandall considered the Worthington and Thompson aviaries the “only two collections of consequence in private hands” of aviary birds – as opposed to game-birds or waterfowl – in the first decade of the twentieth century, and noted: “Both these early collections came to the New York Zoological Park on the deaths of their owners.”

Anthony Kuser was credited further with Northern Catbird (*Dumetella carolinensis*). The New York Zoological Park hatched American Robins (*Turdus m. migratorius*), Eastern Bluebirds (*Sialia sialis*), Wood Thrush (*Hylocichla mustelina*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Curacao subspecies of Tropical Mockingbird (*Mimus gilvus rostratus*), and what was then mysteriously referred to as “Gray Robin (*Planesticus tristis*)”, but later identified as *Turdus assimilis*, White-throated Robin of tropical America.⁵⁷⁸ Curacao Mockingbirds reared “one or two broods year after year in a cage only four by five, by eight feet high”. Beebe and Crandall noted that “thousands of people pass daily within six feet of the nest without disturbing the sitting bird, or causing the male to interrupt his singing, which he continues long after his mate has begun incubation”. The final species was the Saffron Finch, bred in Mrs. Thompson’s “miniature jungle” community aviary.

William Temple Hornaday (1854 – 1937)





ZOOLOGICAL SOCIETY BULLETIN

No. 18

PUBLISHED BY THE NEW YORK ZOOLOGICAL SOCIETY

July, 1905

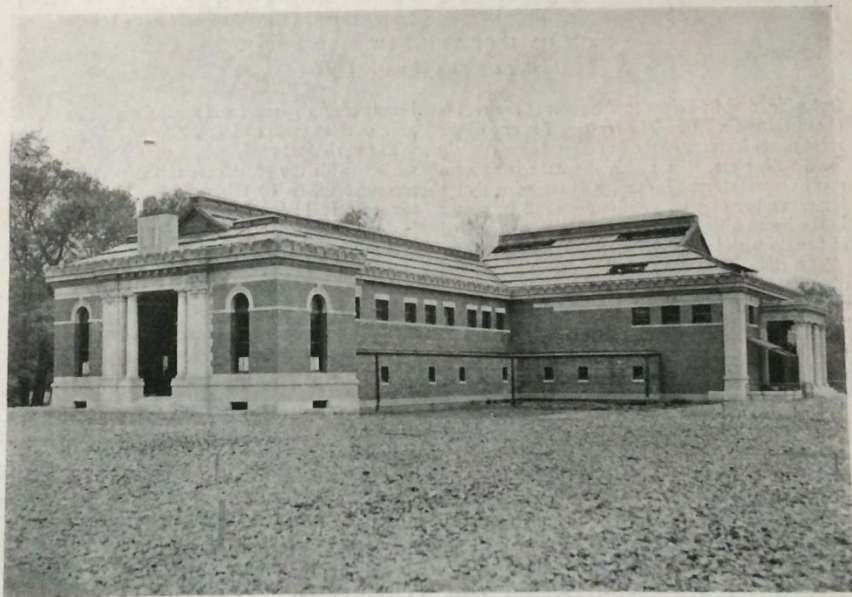
THE NEW BIRD HOUSE.

By C. WILLIAM BEEBE,
CURATOR OF BIRDS.

THE new Bird House in the Zoological Park will be opened to the public on July 1st. From an aesthetic and utilitarian point of view, there is no doubt that it excels most other buildings of its kind in the world. The most necessary requirements for the successful keeping of birds are

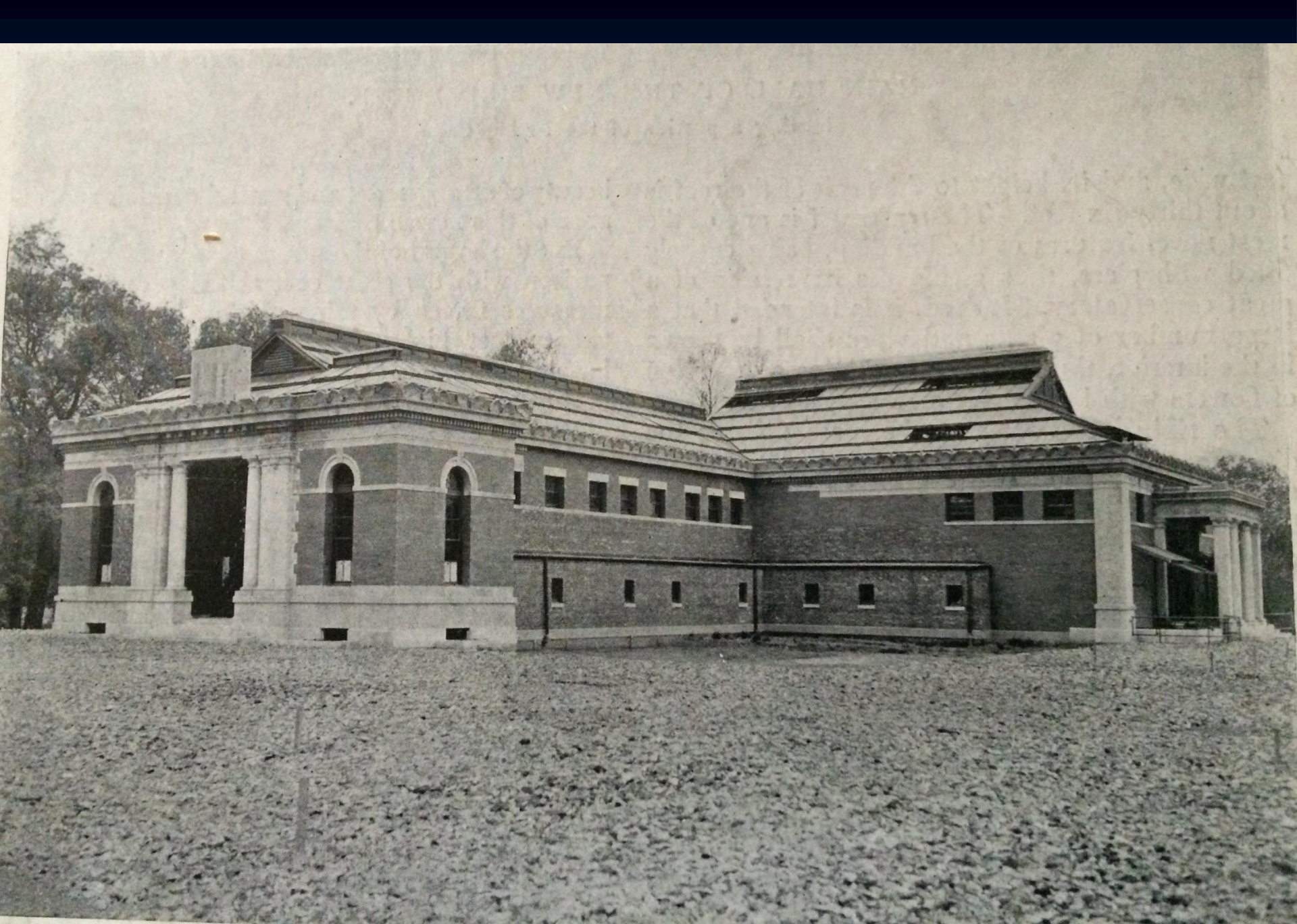
fresh air, light and plenty of room, and in the planning of this building, these desiderata were never out of mind.

The building consists of two large exhibition halls, built in the shape of an L, one of which, the parrot room, measures sixty-five feet long by fifty



THE NEW BIRD HOUSE FROM THE SOUTHEAST.

The Glass Court, soon to be constructed, will fill the unoccupied angle.



“In the Glass Court and around it, the Curator of Birds, Mr. C. William Beebe, has scored a gratifying success in the installation of the Order Passerces. The birds are arranged by Families, and all of the twenty-one families of eastern North American perching birds are represented.

These Families are as follows: Flycatchers, Swallows, "Wrens, Mockingbirds and Catbirds, Thrushes, Kinglets, Vireos, Waxwings, Shrikes, Chickadees, Nuthatches, Brown Creepers, Warblers, Pipits, Horned Larks, Sparrows, Honey Creepers, Tanagers, Blackbirds and Orioles, English Starling, Crows and Jays. It is only those who have attempted to form and install such a collection who can appreciate the effort which that collection has cost, or the difficulties involved in the maintenance of so large a number of insect-eating birds. The birds in this section of the Bird-House are especially interesting to the teachers and pupils of the public schools of this city”

The large circular flying cage, at the outer corner of the Glass Court, is filled with Robins, Bluebirds, Thrushes and Woodpeckers which wintered there very comfortably, because they were fed and watered, and sheltered from the worst storms.

Along the western wall of the Large Bird-House, outside, fourteen large cages are filled with members of the Crow and Blackbird Families {Corvidae and Icteridae), such as the Ravens, Crows, Jays, Magpies, Blackbirds, Meadowlarks, Cowbirds and Grackles, beside which appear our old friends the Yellow-Shafted Flicker and Red-Headed Woodpecker.“

William Temple Hornaday, 1909, Guidebook to the New York Zoological Park.

keepers in charge.

The capacity of this installation as a whole may be judged from the following memorandum of cages:

APPROXIMATE SIZES OF CAGES OF THE LARGE BIRD-HOUSE

INDOORS

Main Hall....	Central Flying Cage	15x36x20 feet high	1
	Side Cages	5x5x9	35
	End Cages	5x12x9	2
Parrot Hall..	Large Cages	6x8x9	21
	Small Cages		38
Glass Court..	West Cages	8x9x9	6
	East & North Cages	5x6x8	16

OUTDOORS

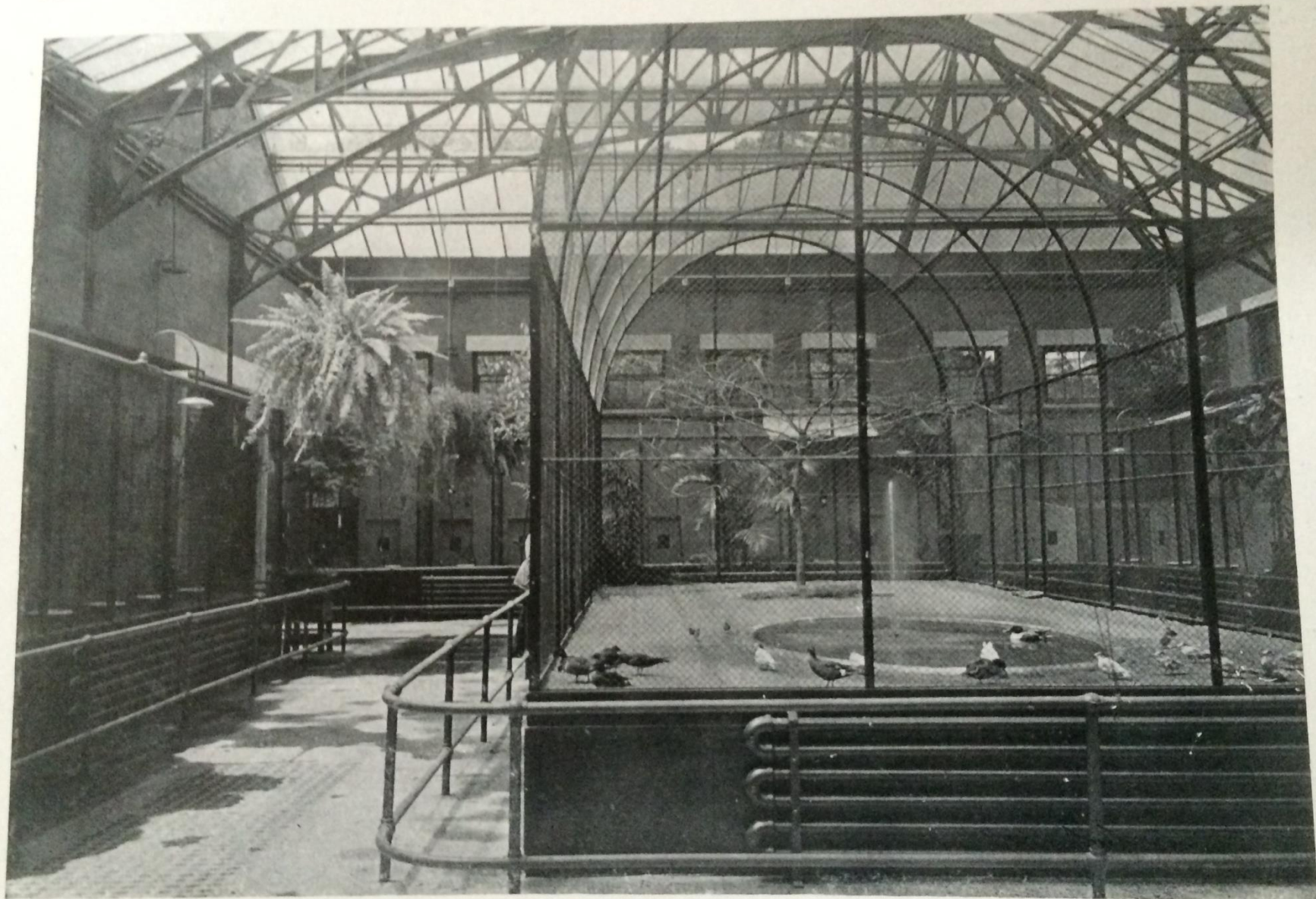
Northeast Cages	7x12x10	2
East Cages	6x8x10	10
Southeast Circular Flight Cage	20x20x20	1
South Cages	6x8x10	3
Large Western Cages	15x15x15	3
Smaller Western Cages	6x9x10	14

Total number of cages.....152

In view of the great number of avian species inhabiting the Large Bird-House, it is a practical impossibility to give more than a general outline of the groups and leading features of

15 X 36 X 20 feet high





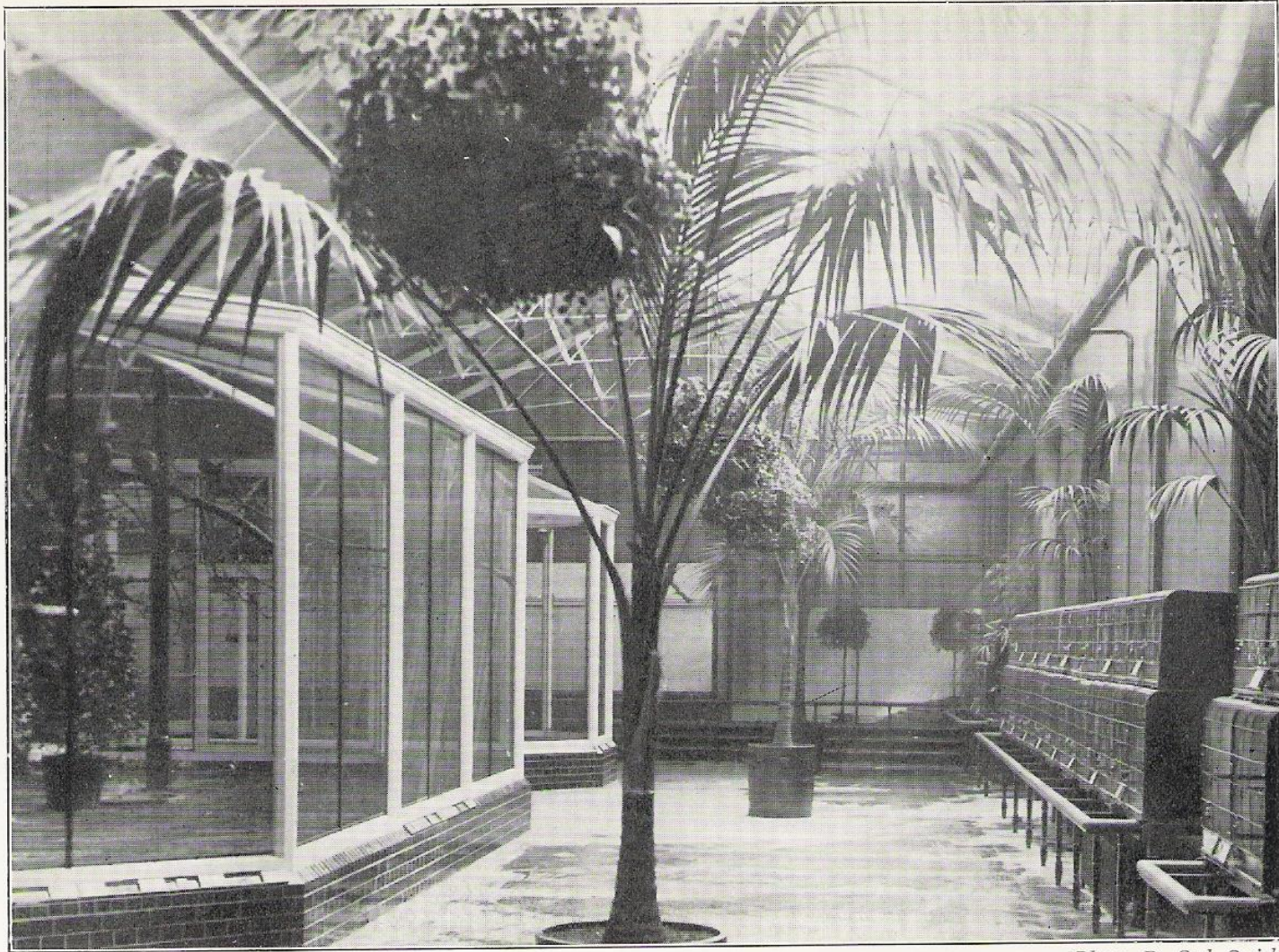
MAIN HALL OF THE NEW BIRD HOUSE.

Showing a portion of the Flying Cage.

London Zoo 1928

[To face p. 103.]

AVIC, MAG. 1928



[Photo. D. Seth-Smith.]

The new Bird House at the Zoological Gardens.

South side facing east.

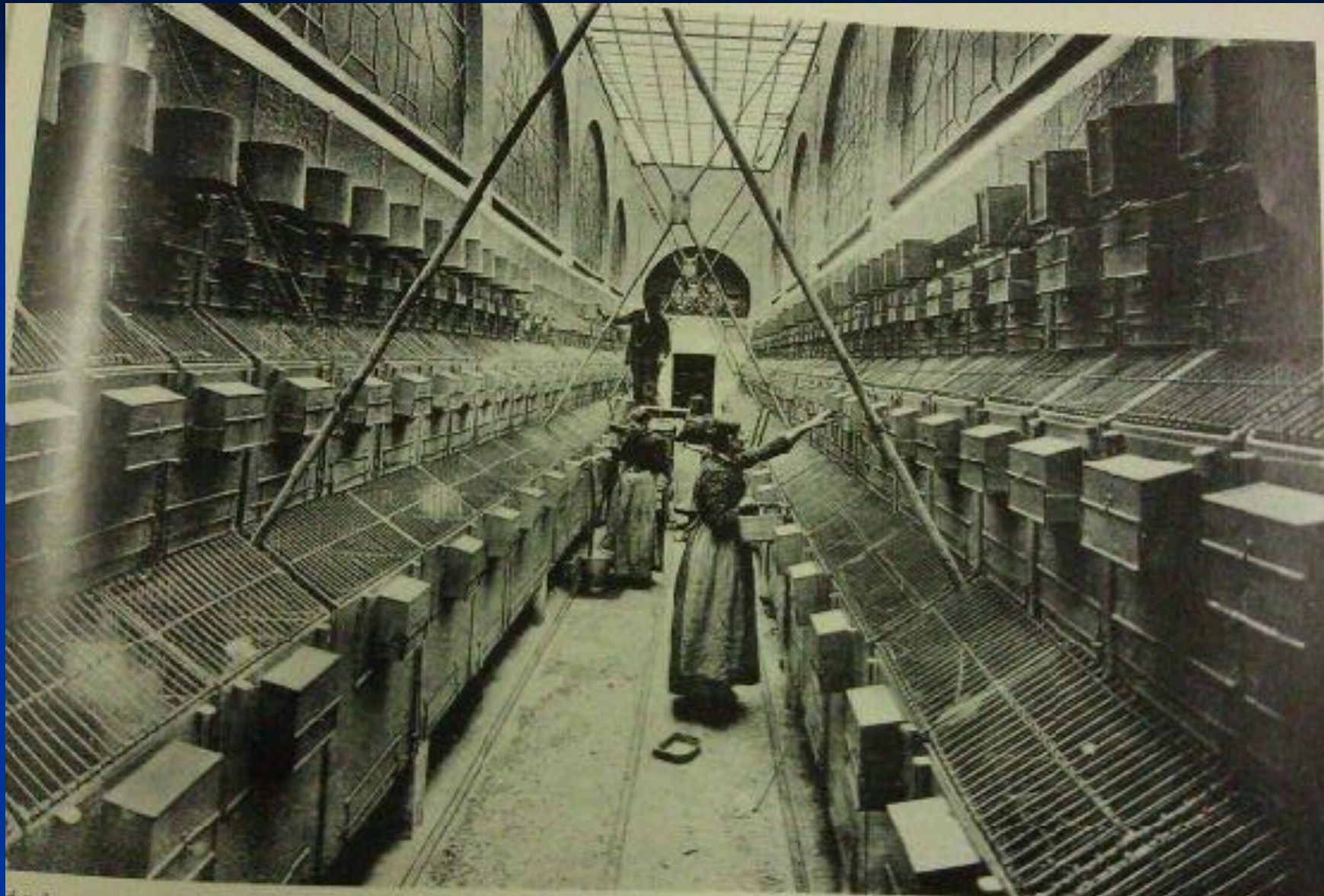
Fig. 104 The ambition to collect as many species as possible is out of place in a zoo. The exhibition of a number of solitary animals is not in accordance with biological principles and suggests a museum. A zoo should exhibit a limited selection of species in natural breeding groups.

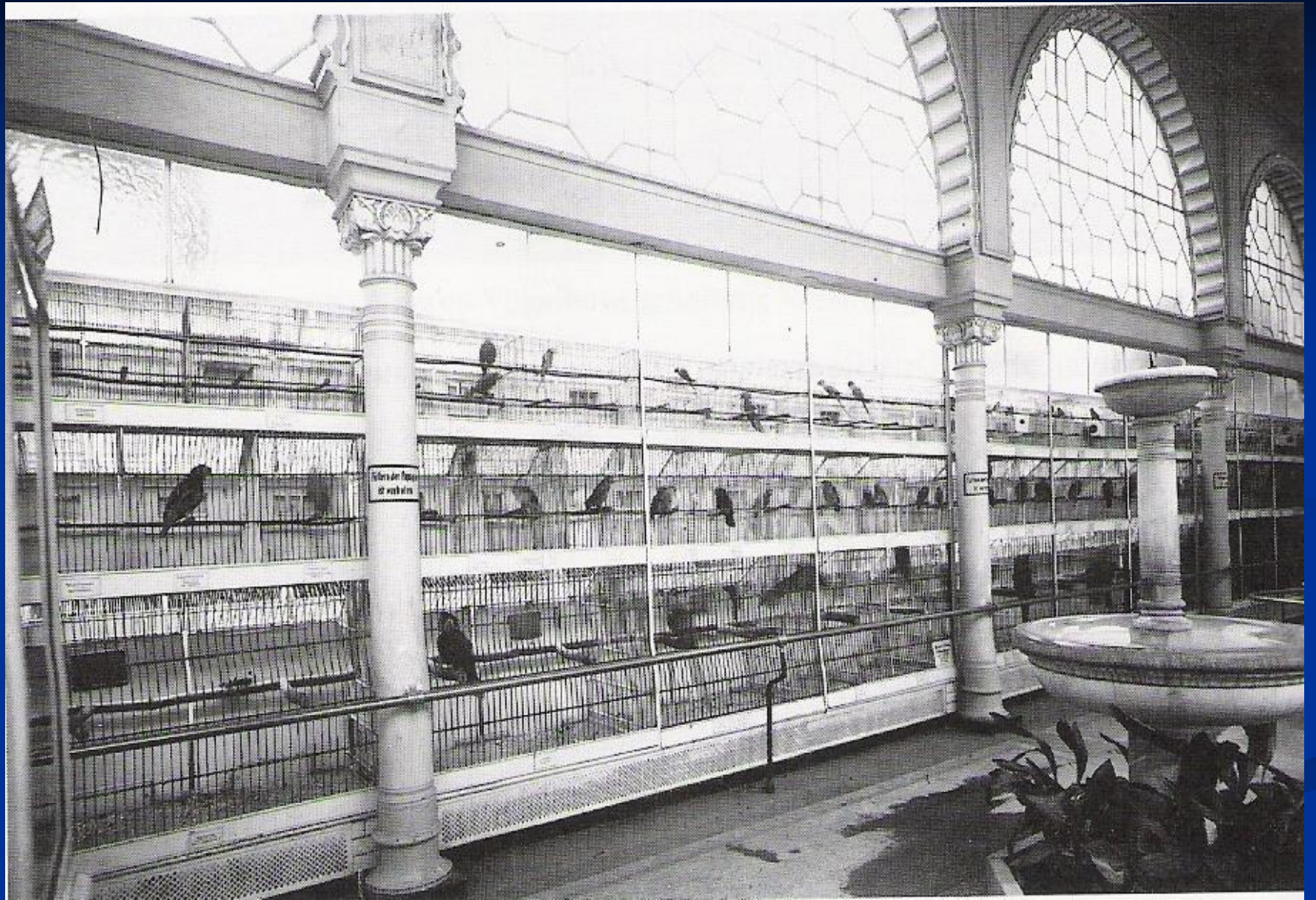


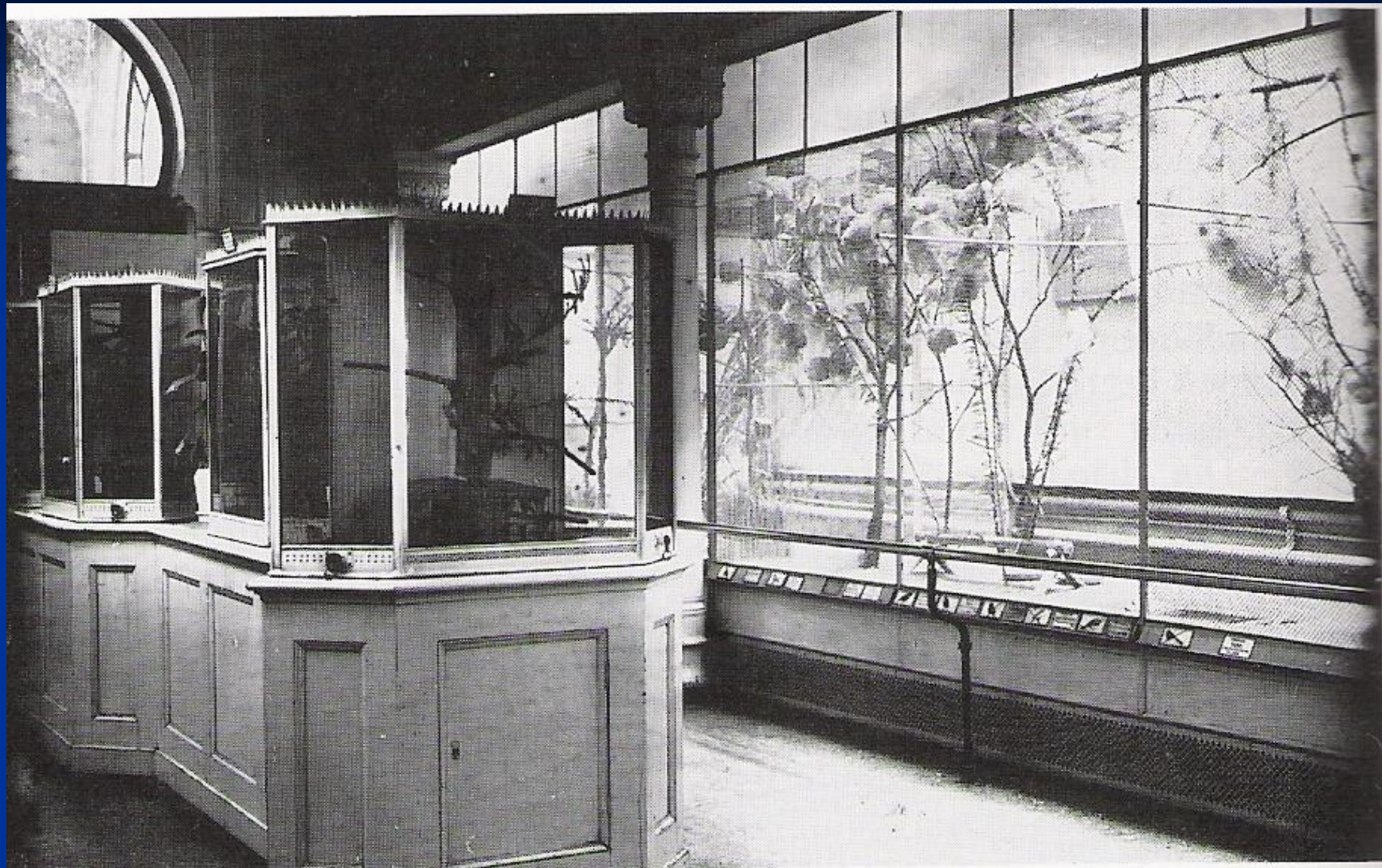
Berlin 1895

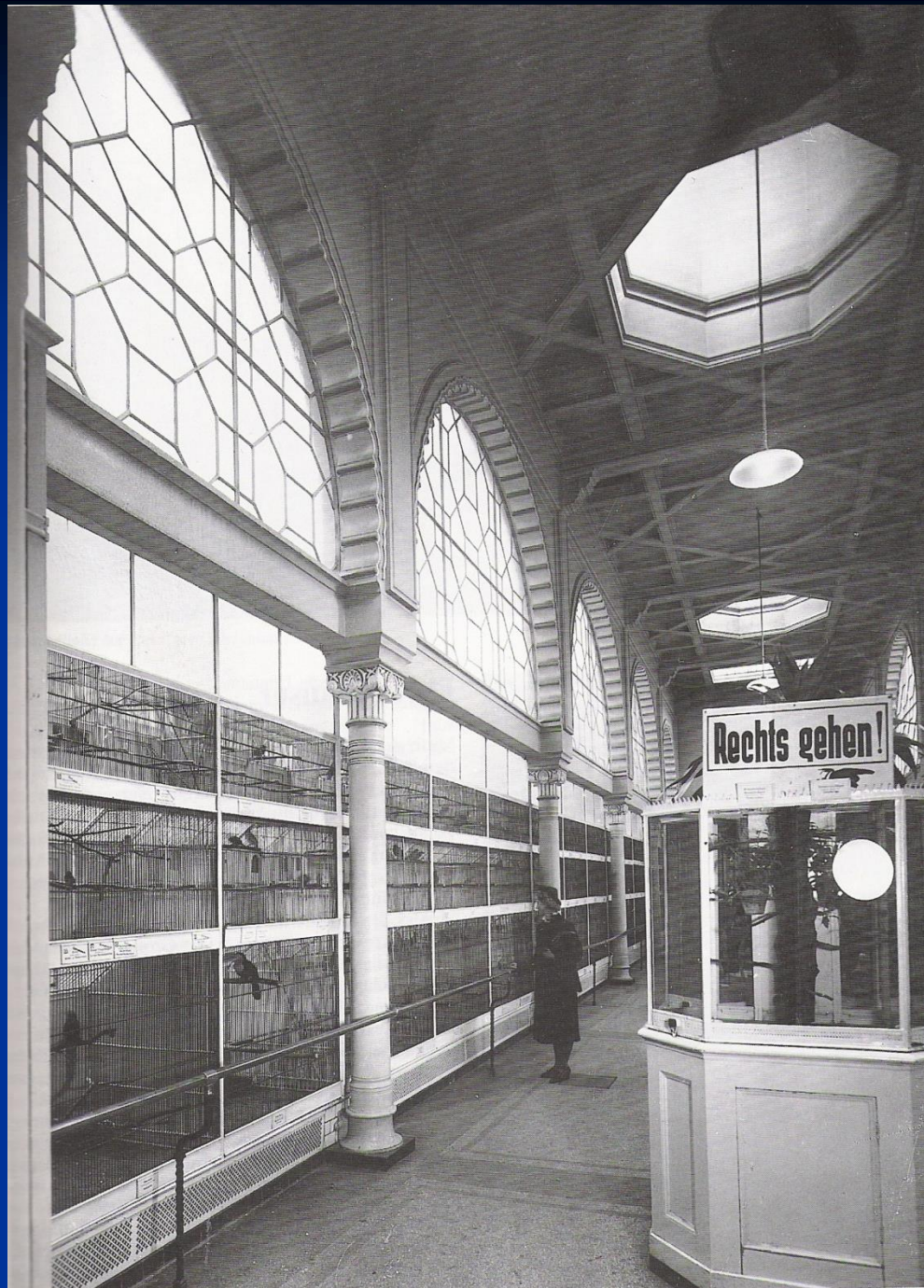


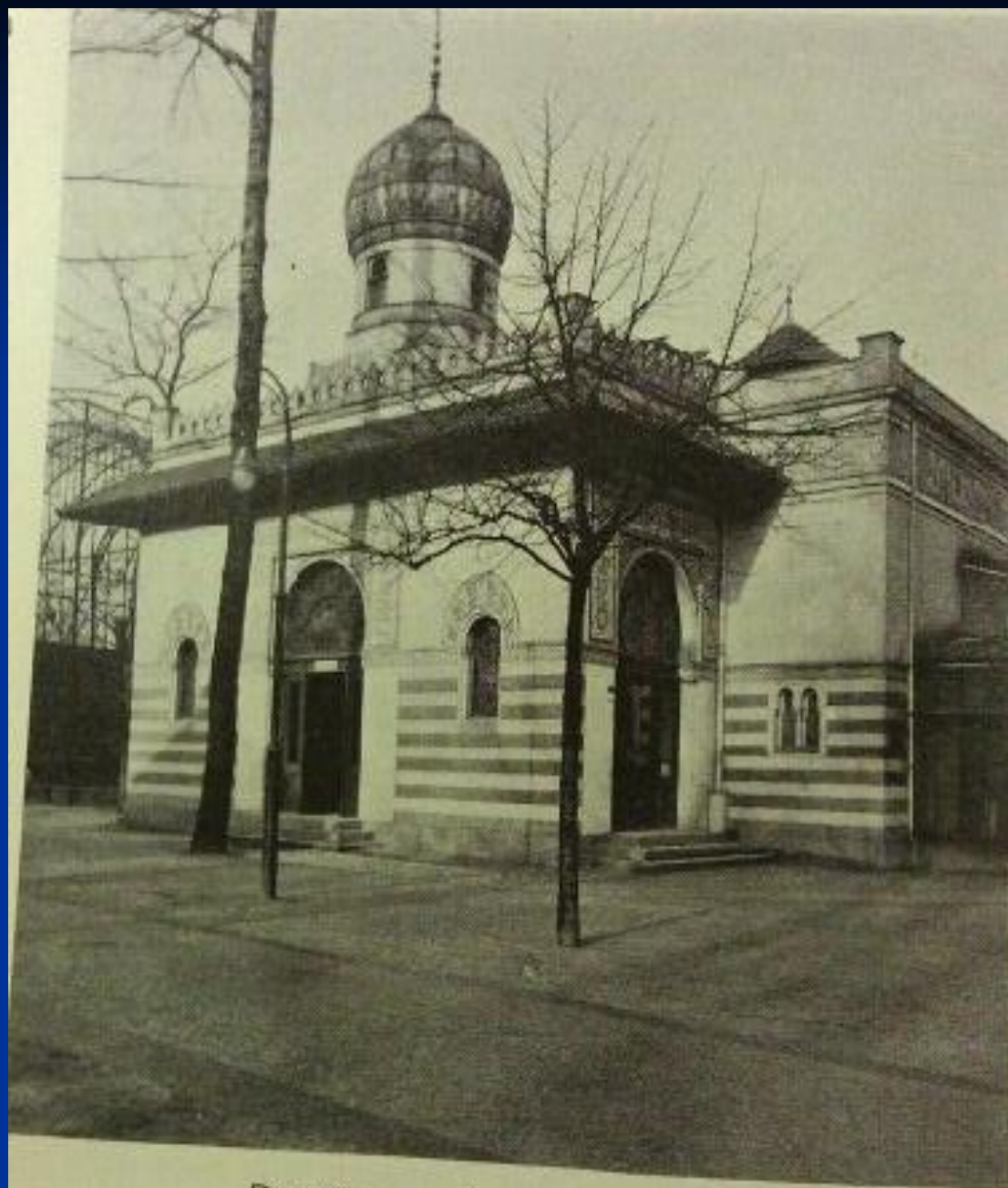












Der Eingang des Vogelhausés.



Ruine des Vogelhauses. 1943

(Zoo-Archiv)

Jean Delacour
(1890-1985)



CAPTAIN JEAN DELACOUR
President O.P.S.



THE GREEN HOUSE — AVIARY AT CLÈRES



New York Zoological Society Photo
Captain Delacour and Lee S. Crandall, General Curator of the New York
Zoological Park, 1943

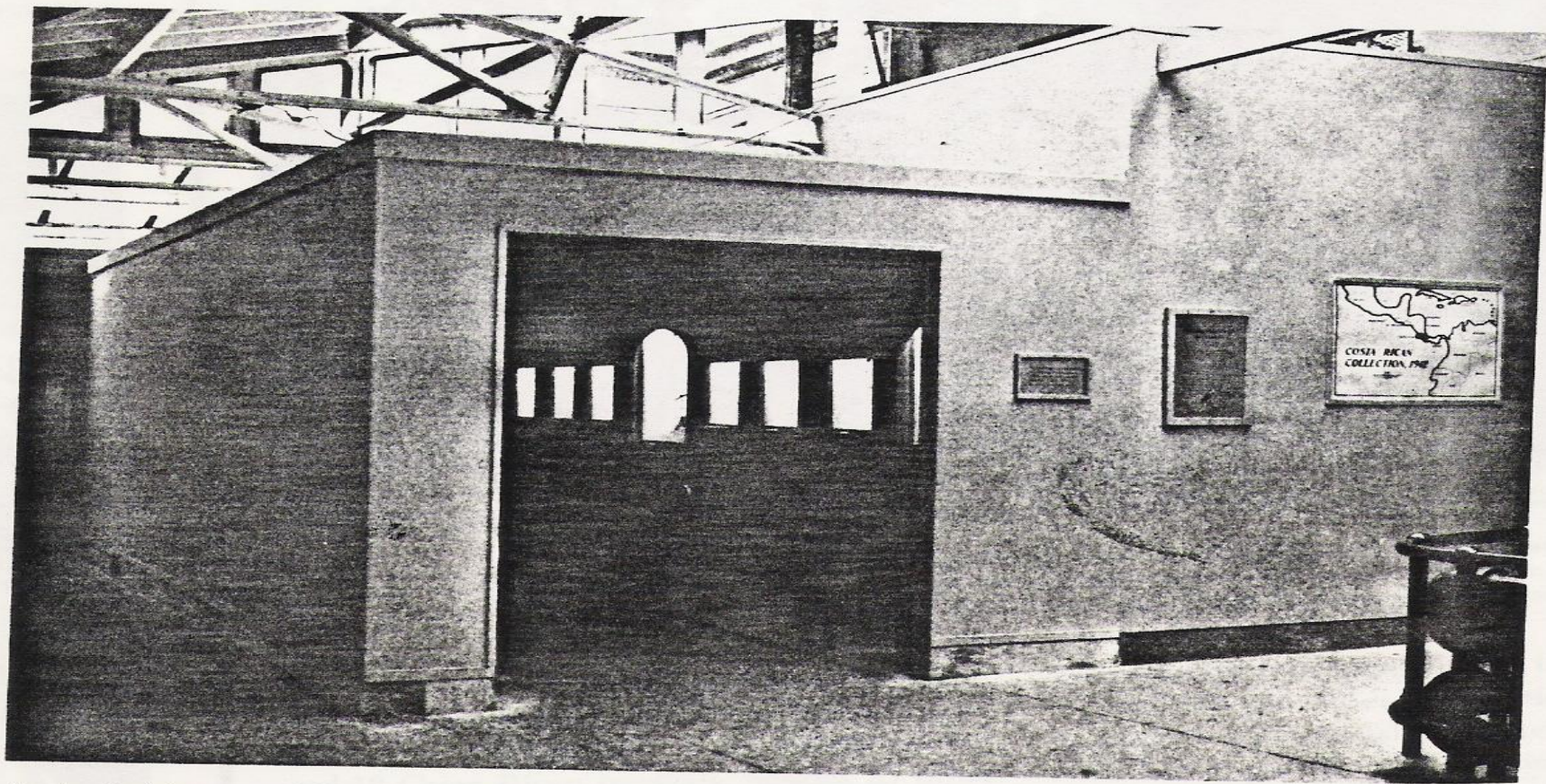


New York Zoological Society
Dr. Jean Delacour - taken during his years at the Bronx Zoo in the 1940s

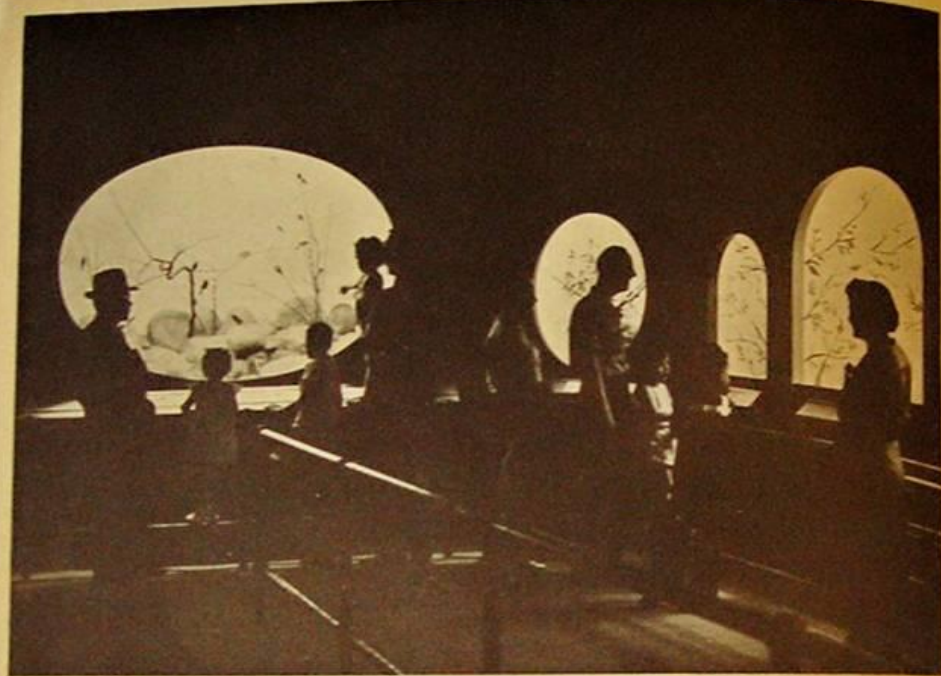


12. Tea party at the Bronx Zoo, 1941. From left to right: Laurance Rockefeller, Fairfield Osborn, Jean Delacour, Raymond Ditmars.





In the dark interior of this room — the Jewel Room — that occupies a corner of one hall in the Main Bird House, our new collection of Costa Rican hummingbirds is magnificently displayed. Seven small and three larger compartments hold the birds, and each is planted with hardy green plants and freshly blooming flowers.



The JEWEL ROOM

Our jewels are tropical birds — the snippets of living light that actually glitter and glow with the fires of ruby and topaz, opal and aquamarine, sapphire and lapis lazuli until there is scarcely a precious stone that cannot be matched by some glinting color in these living jewels.

At last they have a setting, in the Bird House of the Zoological Park, that is worthy of their superlative beauty. Twenty brightly lighted compartments circle the darkened room in the southeast wing of the

building; visitors stand in the darkness and watch the flashing wings, the glittering throats, the glowing bodies of the birds among the tropical foliage.

No small part of the beauty of the setting is lent by the artistry of Jean Delacour, who designed the rockwork and planting of the individual compartments.



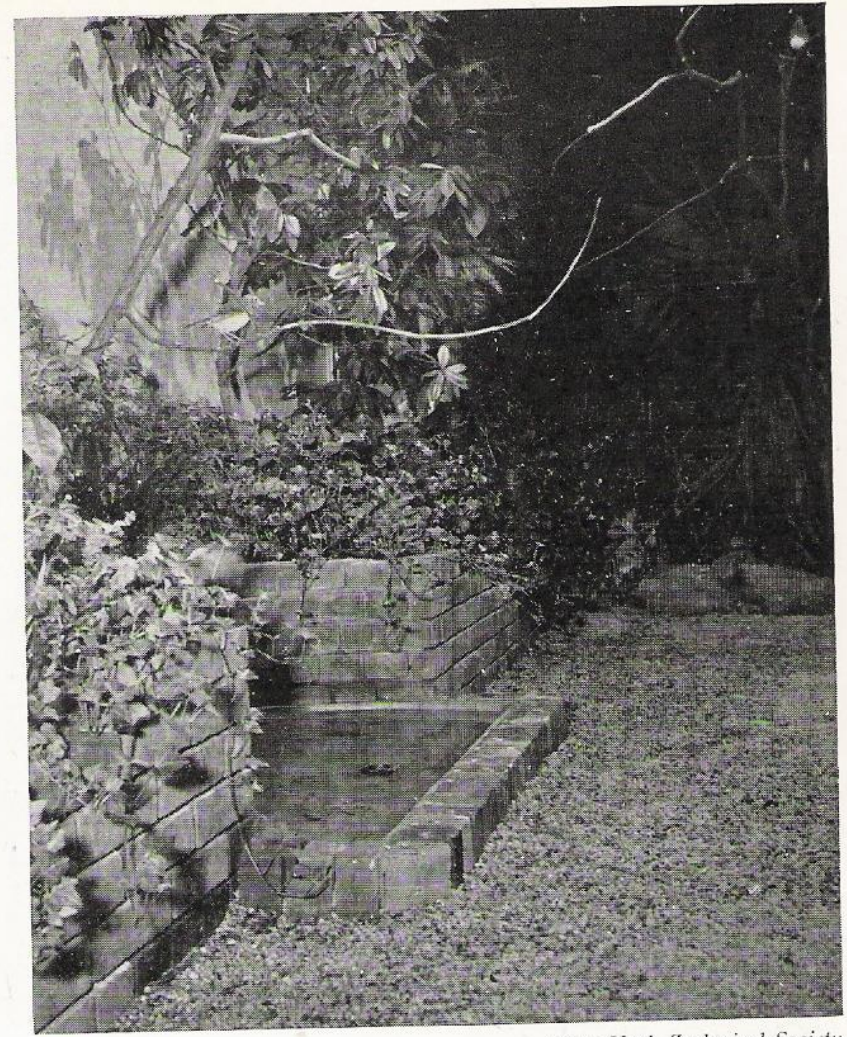
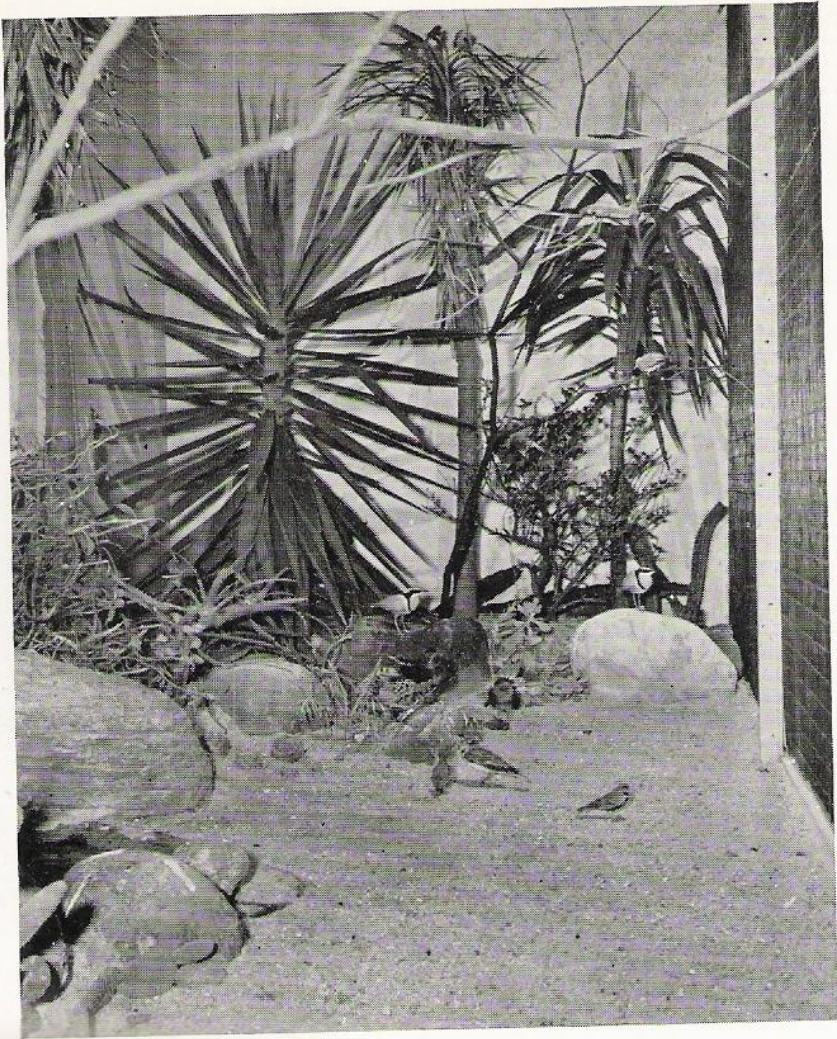
▲ Rothschild's Myna is a slim and mostly snow-white bird that often displays in its leafy home. In a green corner of jungle foliage, the Eastern Cock-of-the-Rock flaunts his beauty ▼





PARROTS' HALL IN THE NEW BIRD HOUSE.

View looking toward the Main Hall, showing a number of the wall cages.



Copyright]

ARID PLAIN.

AVIARIES IN NEW YORK ZOO.

[New York Zoological Society

“NEW ENGLAND GARDEN” FOR NATIVE BIRDS.

Delacour, Jean T. 1943. "A Collection of Birds from Costa Rica." *Avicultural Magazine Series 5*, 8:29– 32.

———. 1945. "Decorative Aviaries in the New York Zoo." *Avicultural Magazine Series 5*, 10:57– 58.



86 The new Rockefeller House of New York Zoo is designed to let the bird watcher see the birds in their natural habitat. The enclosure is built on a concrete base and is surrounded by a concrete wall. The birds are seen through a series of glass panes. The enclosure is built on a concrete base and is surrounded by a concrete wall. The birds are seen through a series of glass panes.

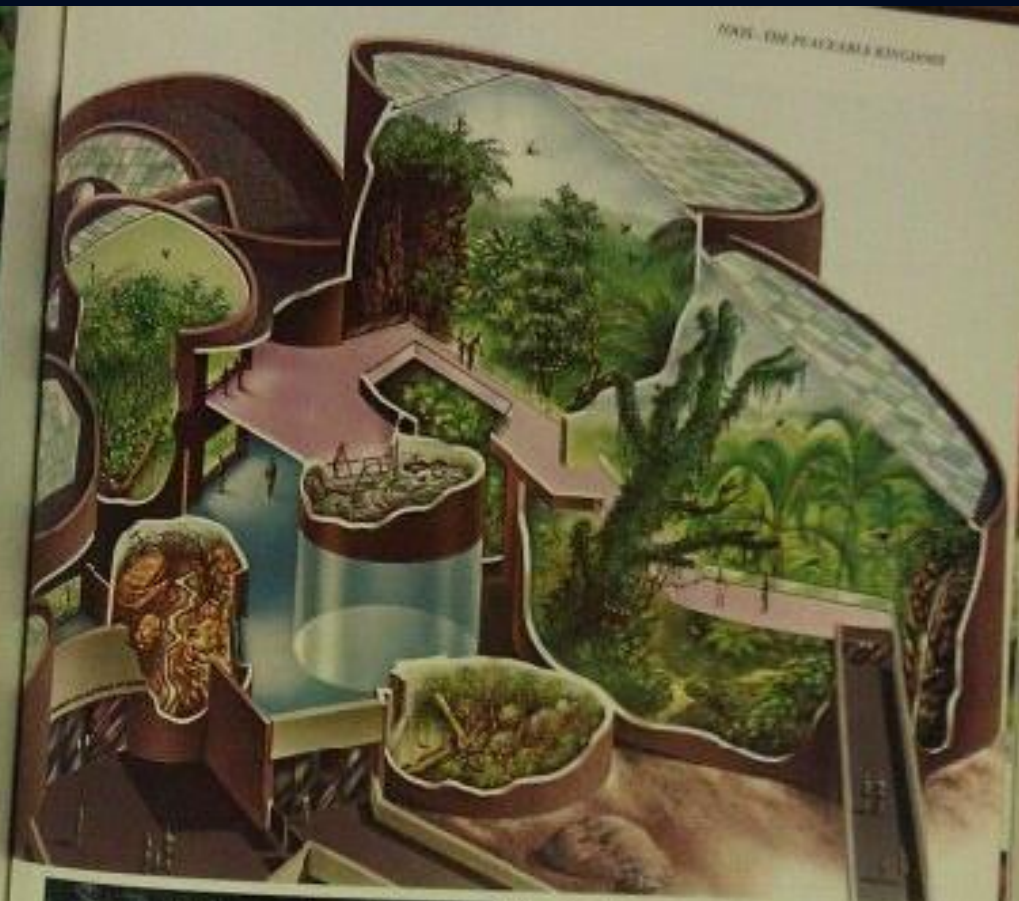
87 This is a view of the new Rockefeller House of New York Zoo. The enclosure is built on a concrete base and is surrounded by a concrete wall. The birds are seen through a series of glass panes. The enclosure is built on a concrete base and is surrounded by a concrete wall. The birds are seen through a series of glass panes.



88 The Monkey enclosure is built on a concrete base and is surrounded by a concrete wall. The enclosure is built on a concrete base and is surrounded by a concrete wall. The birds are seen through a series of glass panes.

89 The enclosure has been built on a concrete base and is surrounded by a concrete wall. The enclosure is built on a concrete base and is surrounded by a concrete wall. The birds are seen through a series of glass panes.





The World of Birds Brings People and Birds Together

The World of Birds building, with its sun-catching skylight roofs, is a striking example of functional design. The photograph (left) highlights the portion of the building that is integrated and cut away in the painting (above). This section of the building contains a variety of bird flight exhibits, ranging from a rocky hillside to a wooded swamp, from the dry Australian scrub to the tropical rain forests of Africa and South America. While some exhibits feature habitat groupings, others explore such aspects of bird behavior as nesting and migration. Several species exhibits can be viewed both from ground and viewing levels. An impressive layout leads visitors past every exhibit without ever turning back; ramps emphasize the road to each exhibit.

Chattanooga 1992

The Tennessee Aquarium





Photo Ben Hallberg.

MAIN ENTRANCE TO PERCHING-BIRD HOUSE, CHICAGO ZOOLOGICAL PARK, BROOKFIELD, ILL.
This is the centre building of three—all connected by loggias.

[To face p. 173.]

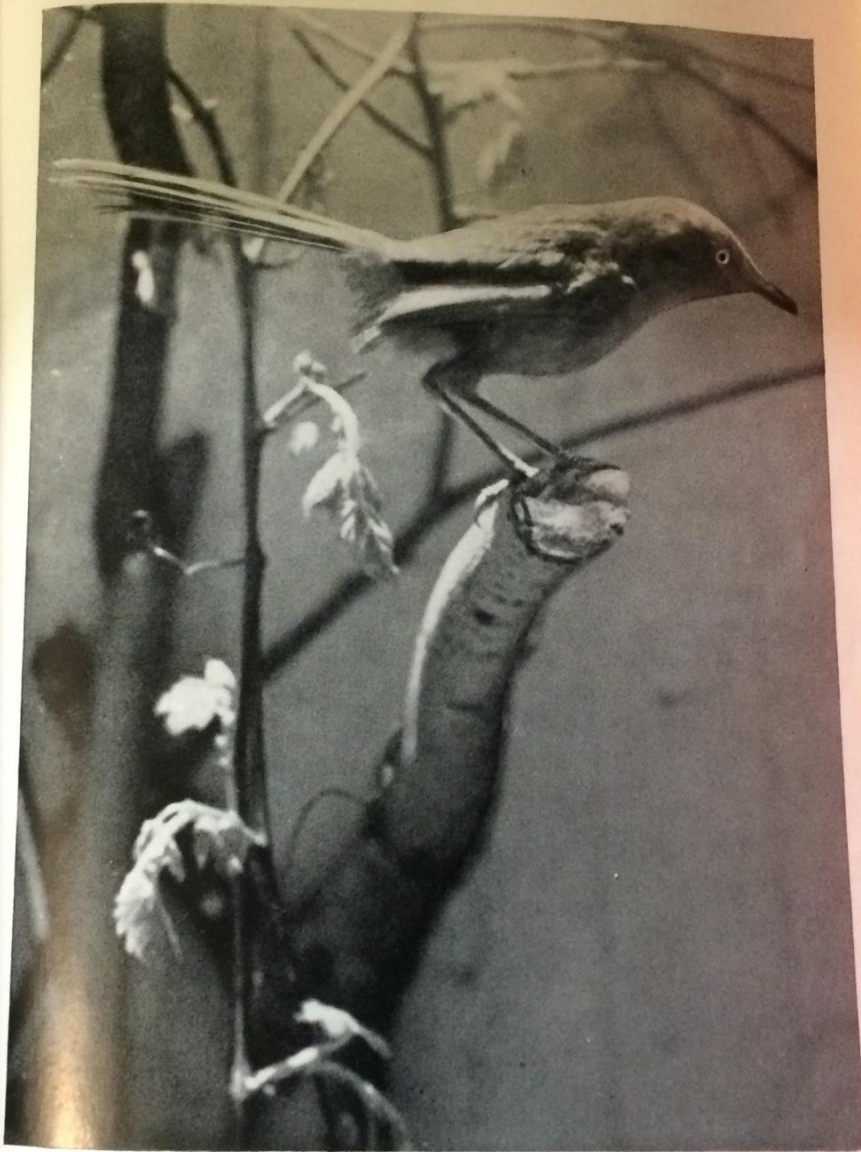


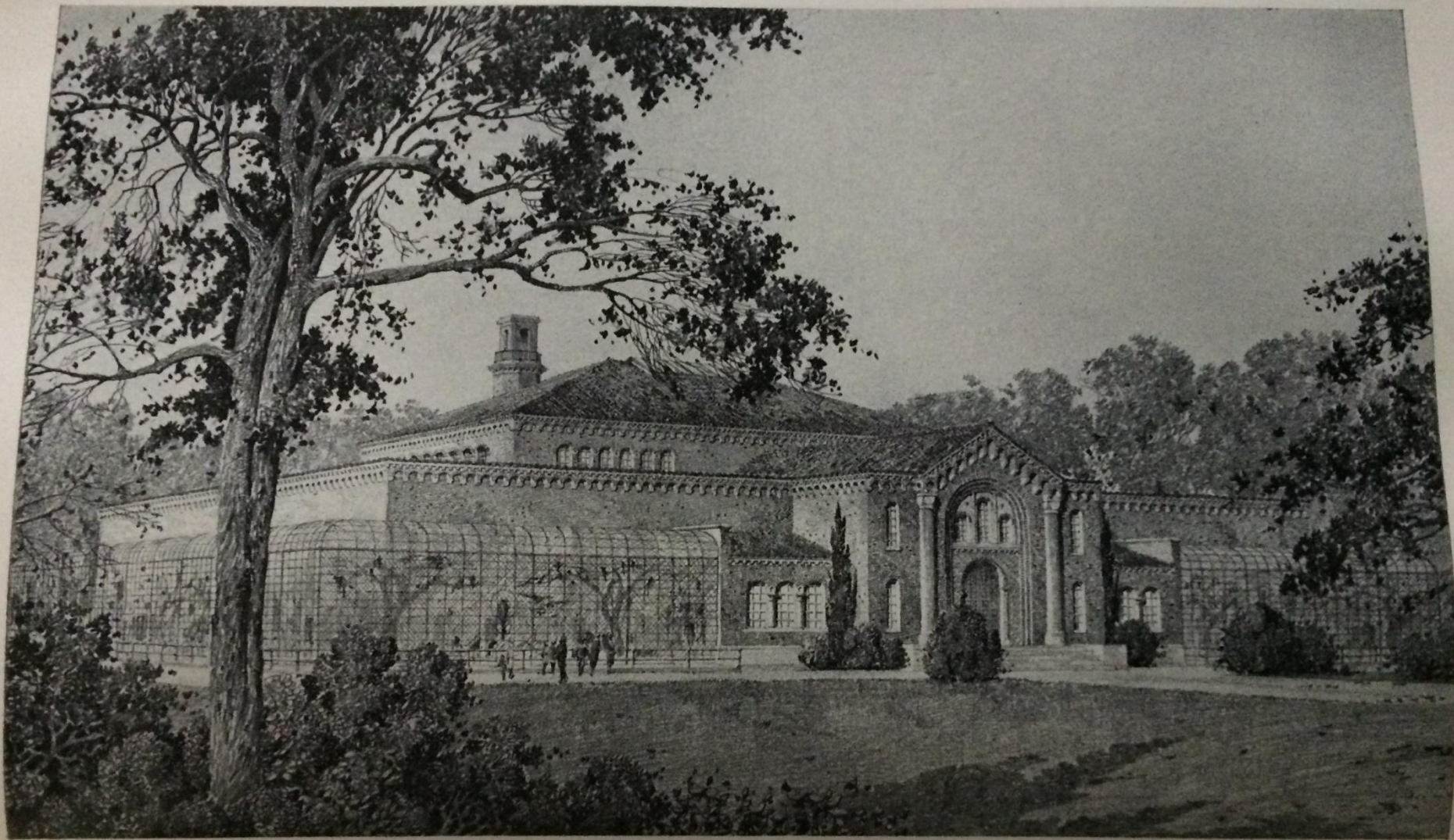
Photo Ralph Fallert.

WREN-TIT IN CHICAGO ZOOLOGICAL PARK, BROOKFIELD, ILL.

This is the sole member of a genus (*Chamaea*) found only along the Pacific coast of California and part of Oregon. A plainly-coloured grey bird about $6\frac{1}{2}$ in. long, very vivacious, combining characteristics of wren and titmouse.

[To face p. 174.

Plath, K. 1937. The birds at the new Chicago Zoological Park I. Ser 5 Vol 2:173-179.

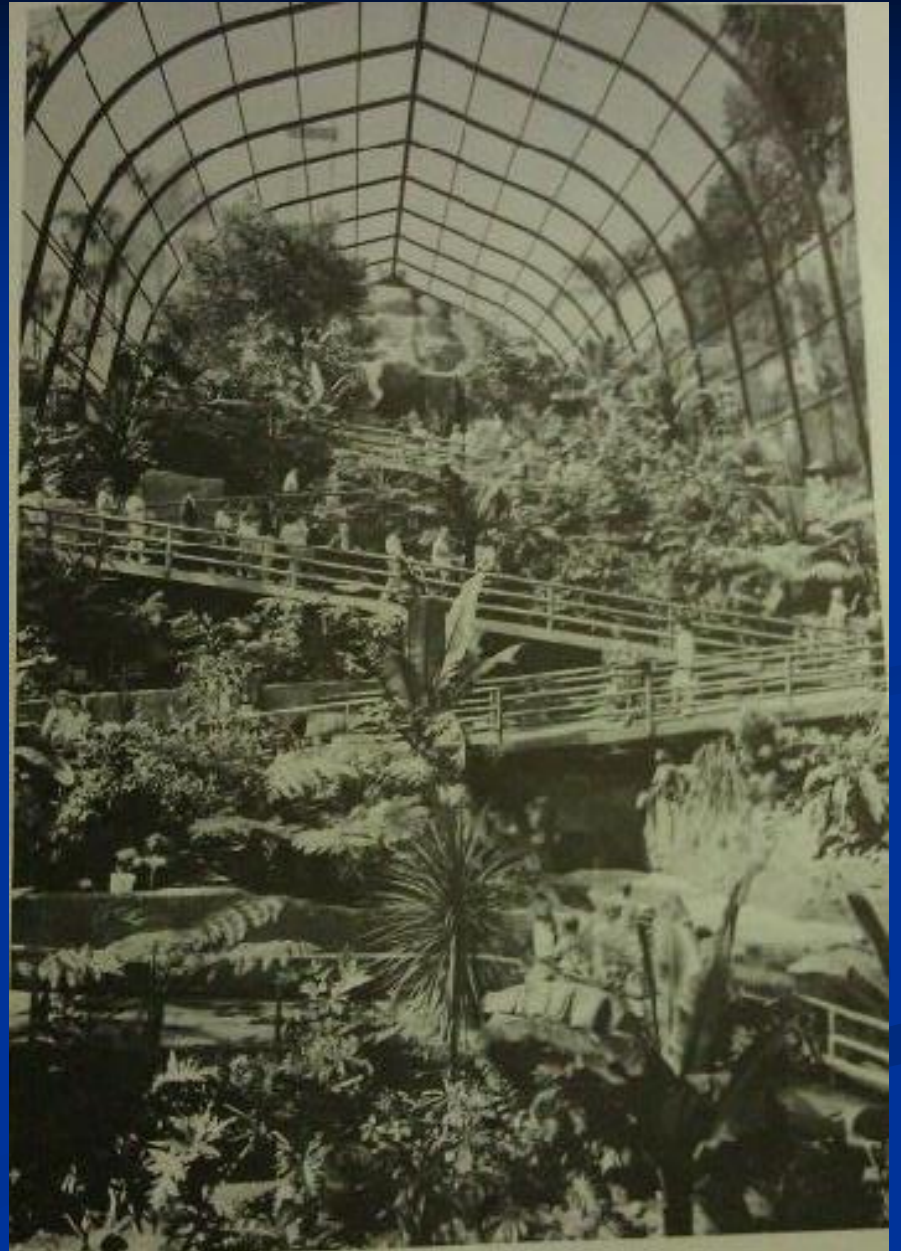


The bird house, first of the modern buildings in the National Zoo

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NUMBER OF SPECIMENS	BIRDS	LONGEVITY RECORD	
		YEARS	MONTHS
	<i>PASSERIFORMES—Continued</i>		
16	<i>Carduelis carduelis</i> (European goldfinch).....	9	
19	<i>Spinus spinus</i> (Siskin).....	11	
1	<i>Astragalinus psaltria mexicanus</i> (Mexican goldfinch).....	4	
7	<i>Linota cannabina</i> (Linnet).....	1	
20	<i>Passer griseus suahelicus</i> (Coastal pale-bellied sparrow).....	2	4
140	<i>Serinus canarius</i> (Common canary).....	10	3
18	<i>icterus</i> (Green singing finch).....	6	10
10	<i>Polioptila leucopygia</i> (Gray singing finch).....	4	9
31	<i>Sicalis flaveola</i> (Saffron finch).....	8	11
5	<i>Carpodacus purpureus</i> (Purple finch).....	1	4
2	<i>purpureus californicus</i> (California linnet).....	1	
6	<i>mexicanus frontalis</i> (House finch).....	9	4
2	<i>mexicanus ruberrimus</i> (San Lucas house finch).....	5	11
38	<i>Pyrrhula europaea</i> (Bullfinch).....	4	
21	<i>Emberiza citrinella</i> (Yellowhammer).....	4	9
5	<i>Junco hyemalis</i> (Slate-colored junco).....	5	7
2	<i>Spizella monticola</i> (Tree sparrow).....	2	6
4	<i>Zonotrichia albicollis</i> (White-throated sparrow).....	9	
5	<i>Melospiza melodia</i> (Song sparrow).....	3	
8	<i>melodia cooperi</i> (San Diego song sparrow).....	9	2
4	<i>Passerella iliaca</i> (Fox sparrow).....	3	1
3	<i>Passerina cyanea</i> (Indigo bunting).....	1	6
28	<i>ciris</i> (Painted bunting).....	7	10

WILD ANIMALS



Birds Exhibited in the Tropical Rain Forest

25 Java Rice Birds, 3 Orange Weavers, 2 Ribbon Finches, 2 Pine Siskins, 1 Fire Finch, 2 Non-pareil Pintail Buntings, 2 Painted Buntings, 2 Strawberry Finches, 6 Zebra Finches, 2 Red-backed Juncos, 2 White-headed Mannikins, 2 Nutmeg Finches, 2 Cherry Finches, 2 Golden-crowned Sparrows, 2 White-crowned Sparrows, 2 Song Sparrows, 2 Western Bluebirds, 1 Blue-winged Siva, 2 Evening Grosbeaks, 1 Black-headed Grosbeak, 1 Japanese Hawfinch, 1 European Hawfinch, 4 Pyrrhuloxias, 2 Virginian Cardinals, 2 Venezuelan Cardinals, 2 Crested Cardinals, 2 Pope Cardinals, 3 Bullock's Orioles, 1 Yellow-headed Blackbird, 4 Red-winged Blackbirds, 2 Song Thrushes, 2 Hermit Thrushes, 2 Dwarf Cowbirds, 1 Himalayan Blue Whistling Thrush, 1 Indo-Chinese Roller, 1 Regent Bower Bird, 3 Spotted Bower Birds, 1 Apostle Bird, 1 Black-headed Sugar Bird, 10 Yellow-winged Sugar Birds, 2 Violet Tanagers, 1 Black-throated Tanager, 5 Maroon Tanagers, 3 Silver-throated Tanagers, 6 Slate-blue Tanagers, 2 Emerald-spotted Waxwings, 2 Cedar Waxwings, 2 Bohemian Waxwings, 2 European Blackbirds, 1 Com Bunting, 1 European Robin, 2 Bald-headed Mynahs, 1 Java Mynah, 2 Andaman Mynahs, 2 Indian Hill Mynahs, 1 Cuban Tragopan, 2 Quetzals, 1 Orange Cock-of-the-Rock, 1 Scarlet Cock-of-the-Rock, 1 Grey-winged Trumpeter, 1 White-winged Trumpeter, 2 Sun Bitterns, 1 Inca Green Jay, 2 Black Crakes, 2 Sora Rails, 1 Wilson's Rail, 3 Florida Gallinules, 2 Thick-knee Plovers, 2 Black-bellied Plovers, 1 Lapwing Plover, 1 Black-necked Stilt, 1 Killdeer Plover, 3 Sulphur-breasted Toucans, 1 Toco Toucan, 3 Chestnut-cacoe Aracaris, 1 Lettered Aracari, 3 Persian Nightingales, 4 Pekin Robins, 1 Buff-throated Saltator, 5 American Anhingas (Water Turkeys), 2 Kaysna Touracos, 1 Sclater's Motmot, 3 Russet-crowned Motmots, 2 Western Mockingbirds, 2 Californian Brown Towhees, 2 Mourning Doves, 1 Bleeding-heart Dove, 2 Peruvian Yellow-eyed Doves, 1 Black-fronted Amethyst Dove, 2 Peaceful Doves, 6 Diamond Doves, 4 Pearl-necked Doves, 2 Senegal Doves, 1 Tambourine Dove, 2 Blue Ground Doves, 2 Pigmy Doves, 1 Plumed Dove, 2 White-collared Ringneck Doves, 1 Crowned Pigeon, 1 Victorian Crowned Pigeon.

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_____.(1961).
Tropical rain forest at San Diego Zoo.
International Zoo Yearbook 2:67-68.

**Curve-billed Thrasher, Tulsa Zoo,
The Southwestern Desert Exhibit,
Robert Lafortune North American Living Museum**







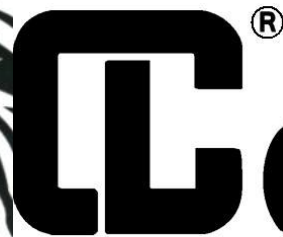
Tierpark Berlin 2008



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