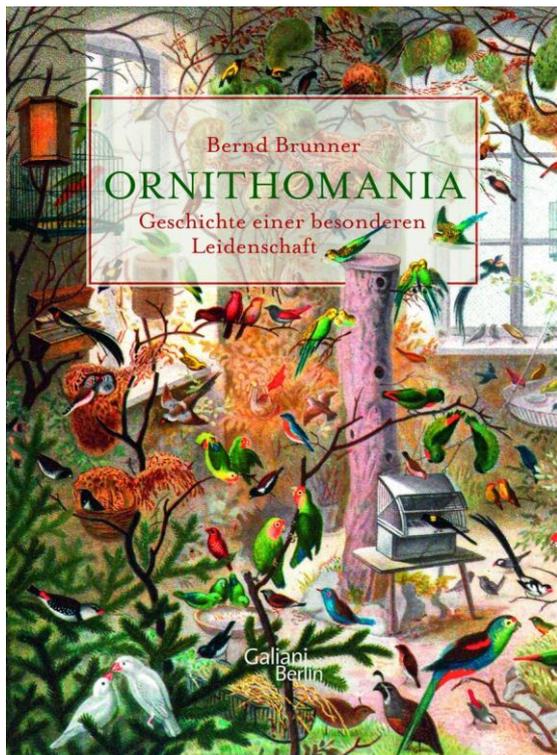


## Sample Translation

# Birdmania. The Story of a Remarkable Passion by Bernd Brunner

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If you're not out in the great outdoors at the moment, open the window. What can you hear outside? Passing cars? Can you catch any sounds behind the steady hum of modern civilization? Dogs barking? The buzzing of insects? Human voices? Anything else? Whirring caused by the beating of wings? Chirping or the clacking of beaks? Can you even distinguish the sounds of specific birds? The likelihood is quite high: an estimated 200 billion to 400 billion birds inhabit the earth – quite a respectable family within the great tribe of the larger organisms. If you wait a moment and listen carefully once again, you may notice that something about the mood and the interplay of bird sounds has changed. What you hear depends on the time of day, the temperature, and many other factors. Sometimes simply a cloud passing before the sun is enough to silence the birds. Or a gust of wind arises, unleashing intense excitement among the feathered folk.

For some people, background twittering is not enough. Not content to listen from a distance, they want to approach the creatures that make these sounds, observe them, and study the principles governing their lives. They may enjoy the company of birds – or the feeling of having these creatures under their control. In the worst case, people kill birds simply for the fun of it. Is it because they can't get over the fact that these airborne animals can so effortlessly do something they find impossible? In any case, birds seem to represent a way to surpass the limits of their own world.

And yet birds are fundamentally just winged vertebrates with beaks that serve them in the way our hands do. They are made of lighter material than we are; their bones are filled with air. Their body temperature is also higher. In a host of different forms, they are present around the globe, and they have been here for far longer than we have – about 160 million years. To human eyes, many birds possess a particular grace. They may sport bright colors or fascinating plumage. They sometimes emit sounds that sound like “songs” to us. And in many cases they are capable of overcoming their own weight and taking flight. In this state, they act as mediators between heaven and earth, traveling through space without leaving a trace. They ascend on columns of rising air, sail in spirals, and hop, spin, shoot, or paddle through the air. And they do so in different formations: cranes and wild geese arrange themselves in a V-shape, oystercatchers and curlews often form a line, and starlings amass as an army. It's as though an invisible conductor were guiding them.

And what about their human fans? Many famous bird lovers gave up successful careers to devote themselves to the objects of their fascination. Others longed so intensely to encounter a rare species of bird that they finally convinced themselves they had. Birds have occupied the thoughts of philosophers, musicians, and poets. A host of bird admirers have sought recognition for their efforts, while others cared nothing for fame or fortune – they never took up a pen and were content to bask in the silent glow of their obsession. In some cases, their passion extended to other animals as well, especially winged creatures such as butterflies, bees, tachinid flies, or bats.

Given this emotional investment, it's easy for bird lovers to project human experiences onto these creatures. While their sentimentality may be misplaced, their devotion makes them receptive to the beauty of these strange beings, whose lives follow their own mysterious laws and perhaps form an alternative to the human world. Whatever the reasons behind it, ornithomania – an obsession with birds – certainly makes a lot of people happy.

Ornithomania is a passion, and it often comes seasoned with a dash of scientific ambition. In its most extreme form – we could almost call it bird stalking – it can be an actual sickness: when nothing else measures up, when concerns about family, friends, or finances are forgotten, or when everything else in life takes a back seat to collecting, observing, or catching birds.

Ornithomania is also closely linked to the ongoing discovery of new species on every continent and the study of their characteristics and habits. It can be related to the desire to hold and observe these animals – something quite at odds with a bird's instincts, at least if that bird is capable of flight. And some bird maniacs surely derive tremendous satisfaction from the idea that they can protect their fragile favorites from civilization's threats. What does it say about an age or a culture when people focus their attention on dogs, cats, and birds – potentially at the expense of their fellow humans? Jonathan Rosen, an author who observes the birds in Central Park from his New York apartment, may be right when he claims “everyone is a birdwatcher, but there are two kinds of birdwatchers: those who know what they are and those who haven't yet realized it.”

Birdwatching, which these days often involves the preparation of a *life list* of every bird species the birder has seen or heard, has become a hobby that millions of people spare neither money nor effort to pursue. No weather conditions are too unfavorable and no time of the day or night too inconvenient. It is tempting to speculate about some primordial instinct behind the urge to collect these sightings.

But while some people find birds irresistibly attractive, others feel a pronounced aversion to them. In its extreme form, a phobia of birds can even turn into hatred. More than a hundred years go, Giovanni Salvadori, an Italian priest, physician, and lifelong advocate of bird trapping, argued with missionary zeal in favor of hunting songbirds to extinction. In his view, the birds represented a threat to soft-bodied insects, which he considered more important for humankind's survival. His call to “protect the insects and allow bird hunting!” met with considerable approval in some quarters. Perhaps the fact that birds' movements are often unpredictable is what makes them uncanny to so many people. As Hitchcock's classic film *The Birds* so memorably demonstrates, flying birds can be scary indeed. Their erratic, aggressive behavior doesn't just throw the film's characters completely off balance – many viewers are left with a strong distrust of birds as well. Then there's the office of the gruesome Bates Motel in *Psycho*, where simply the silent presence of stuffed birds foreshadows trouble to come. Hitchcock himself supposedly suffered from a fear of birds, and felt a deep disgust for eggs, those ever-present products of avian ovulation.

This book tells the stories of people who, in one way or another, cared a lot about birds. Many of them have a place in the annals of ornithology and have advanced our scientific understanding. Others dedicated themselves to a particular bird or a bird-related idea without contributing to humanity's shared store of avian knowledge. While each individual featured here reflects an aspect of the bird/human relationship, the book makes no claim to be comprehensive and the chapters are not as clearly delineated as the table of contents may suggest.

### **Explorers in birdland**

Birds have played a role in humanity's life and thoughts since our earliest days. One of the animals in the Ice Age paintings on the walls of the cave at Chauvet is an owl. The ancient Egyptians imagined that the souls of the dead flew off into the afterlife on birds' wings, and offered hundreds of thousands of mummified falcons to their gods. The Greeks associated doves with the Goddess of Love, and saw the owls that lived in the roof beams of the Acropolis as lucky omens. Small owls were likely used as hunting lures as far back as the Bronze Age. Carrier pigeons were popular in Egypt, India, and Persia. The Aztecs honored the red-and-green quetzal as the “god of the air.” In a number of mythological traditions, birds served as links between the earth and the heavens – a connection to the divine.

Cockfighting, an activity reaching back three millennia, constitutes a particularly dark chapter in the history of birds and humans. This essentially ritualistic practice played an important and perhaps even decisive role in the spread of the domestic chicken around the world. The chicken's earliest forbears were colorful birds from the humid jungles of Southeast Asia, and the first cockfights probably took place on the Asian continent. Later they caught on in ancient Greece and Rome, and eventually came to England. Yet these contests, which can last from a few seconds to a quarter hour, are no relic of the past. Cockfights continue to draw fans on the Philippines, Cuba, Haiti, and the Canary Islands, as well in Peru and France. Combatants undergo an intensive training program before they enter the ring. In many cases, they are also doped with any number of substances to push their fighting instinct to its limit. In the supposedly civilized United States – more precisely, the New York borough of Queens – police broke up a regular cockfighting ring in 2014. Six thousand birds were captured in the long-planned raid, which was dubbed “Operation Angry Bird.” The birds, outfitted with steel blades on their feet, would fight one until one or both combatants were dead – to the sadistic delight of the crowd. But base instincts are not the only motivation for cockfights: the stakes can amount to thousands of dollars. In the United States, participants in cockfights face years of imprisonment, and even spectators of such “blood sports” can be charged with a crime.

The peregrine falcon is the fastest creature on earth. And in the close connection between falconers and their falcon (or hawks or other birds of prey), the relationship of humans and birds reaches its most intimate apex. Falconers describe the birds they carry on their leather-clad hands as comrades, not as servants. In some cases, falconers even consider it their role to

serve the birds. The leather masks they often place over the birds' eyes shield the sensitive falcons from external stimuli and keep them calm. When the bird is unleashed, its flight and subsequent hunt trigger a flood of adrenaline in its human counterpart. As soon as the falcon seizes its prey, the hunter rushes to the scene, carefully disengages his feathered partner, and gives it a reward.

The origins of falconry are shrouded in obscurity. The practice may have first developed in Central Asia during the second millennium BC and gradually spread from there, or it may have developed independently in various locations. The Falcons are related to eagles or vultures only distantly – their closest cousins are probably parrots. With the exception of Antarctica and a few islands in the South Pacific, falcons inhabit every part of the globe. They perform a task for us that we can't manage ourselves and dramatically extend human capabilities. To channel a falcon's intelligence for this purpose, the hunter must tame, train, and control his feathered partner. Falconry inspires an enthusiasm in its adherents that's not easy to explain. It demands endless patience and care, because hunters must avoid punishing the birds at all costs. In the end, it's a passion, and the relationship of falconers and their charges can border on the romantic.

**Frederick II of Hohenstaufen** (1194-1250), who was Holy Roman Emperor from 1220 until his death, has gone down in history as one of the world's best-known fans of falconry. **Erwin Stresemann** (1889-1972), a noted German zoologist, even claimed that the emperor was the world's first great ornithologist. Frederick's groundbreaking book in Latin about birds and especially falcons, *De arte venandi cum avibus*, was translated into German in the 18<sup>th</sup> century as *On the Art of Hunting with Birds*. It reveals an intense interest in avian anatomy and behavior. The subjects covered range from birds' diets and their activities over the course of the day to migration, plumage, and the different ways birds fly. Frederick learned to hunt with a falcon at a very young age, and he spent some of his time during the Crusade of 1228-29 deepening his knowledge about falconry in the Middle East. Furthermore, he kept no fewer than 50 falconers at his court equipped with different birds of prey, including some from Northern Europe and Greenland he received as gifts.

In 1222, Frederick moved his residence from Palermo to the Calabrian town of Foggia. There he installed a vivarium: a landscape of ponds and swamps fed with masonry water channels and teeming with waterfowl. The medievalist Ernst Kantorowicz described the resulting scene as “a fantastic picture – the great palace with its columns of marble and serpentine, with bronze and marble statues, the Emperor within attended by Moorish slaves and noble pages, visiting his pools to study pelicans, cranes, herons, wild geese and exotic marsh fowl!” But once the Pope excommunicated the emperor, his book on birds sank into obscurity.

Falconry can exert such a strong pull that its adherents sometimes forget everything else. For Pero López de Ayala, the chancellor of Castille, the falcon was “the most noble and elevated of the birds of prey, the lord and prince of the hunting birds.” Throughout Europe, aristocrats

practiced falconry. In 1236, Norway presented eight gray-and-white gyrfalcons to Edward I of England. The 14<sup>th</sup>-century Sardinian ruler Eleonora of Arborea issued a law protecting the falcons on her island. (“Eleanora’s falcon,” a bird found on a number of Mediterranean islands but first described in 1839 – when this law was still in effect – was named in her honor.) Thanks to her efforts, Eleanora has gone down in history as one of the world’s first conservationists, although her motivation was simply to ensure the ruling class’ supply of falcons. Louis I – a.k.a. Louis the Great – the king of Hungary and, starting in 1370, Poland, was known as a particularly devoted fan of hunting with birds. At this point in time, a falcon cost about half of a knight’s annual earnings. Queen Elizabeth kept the falconry flame alive. And Louis XIII (1601-1643) could be found most days of the week hunting bats at dusk with his peregrine falcons. In 1930, the British falconer Colonel Gilbert Blaine claimed that the extraordinary enthusiasm falconry inspires was due to “an instinct inherited from our ancestors.”

Is this special way of working with falcons an art, a sport, a calling – or a combination of all three? Falconry may be the most poetic way humans have found to use the birds to their own advantage. With a few exceptions, the practice of falconry came to an abrupt end in the late 17<sup>th</sup> century, when firearms became common. However, wealthy citizens of the Middle East and northern India continue the tradition, passing it on like a precious ritual. The British Falconers’ Club, founded in 1927, still exists. In the countries on the Persian Gulf, falconry remains an important element of Bedouin culture. More than 20,000 hunting falcons are kept in the United Arab Emirates alone. In order to travel with their owners, the birds are issued passports, and it’s not uncommon for a sheikh to bring his favorite along with him in business class. Falcons are treated like family members, almost as if they were children. Several years ago, UNESCO declared falconry to be worthy of protection and support when it classified the practice as part of humanity’s cultural heritage. Perhaps, given this history, falconry can be considered the earliest form of bird mania. Abu Dhabi is home to the world’s largest falcon clinic, led by Margit Müller, a German veterinarian who is fascinated by birds of prey. The sheiks of the region entrust birds with all sorts of problems to her care. Thanks to her expertise, she has become a respected expert in this man-dominated culture.

### **Nest raiders**

When it comes to bird eggs, there’s no shortage of information. The scientific study of eggs is known as *oology* (and not *ovology*, as one might expect). Does the fascination many people feel for the shape or color of eggs stem from the joyful anticipation of the new life taking shape within them? It seems unlikely. The whole process of collecting the shells and storing them in boxes, cartons, or display cabinets – not to mention occasionally taking them out to whisk them with a feather duster – is predicated on the destruction of the eggs’ contents. Does an interest in eggs as objects bear any clear relation to the living birds that produce them? The two impulses hardly seem capable of coexisting within the same mind. Perhaps the perfect form of the egg itself is what motivates its admirers.

Into the second half of the 19th century, bird fans were smitten with egg collecting. Obtaining these specimens can be a daunting challenge, but eggs offer an advantage over the bodies of birds themselves: they require no complex preservation before they can be stored or displayed. Blowing them out is all it takes. In any case, oologists often indulged in leaps of logic or theories that seem a little suspect from today's perspective. One example is **Jean Guillaume Rey** (1838-1909), a chemist descended from French immigrants to Berlin. Described as an “essentially withdrawn individual,” Rey amassed a large collection of eggs and was particularly interested in the freeloaded childrearing habits of cuckoos. He also attempted to devise a system for classifying birds based on the characteristics of their eggs.

As the co-owner of a business specialized in natural specimens, **Franz Kricheldorf** (1853-1924) traveled for clients such as Walter Rothschild to locations as distant as China and Tibet. In addition to his commercial activities, he painstakingly built up an extensive egg collection over the years. One fellow enthusiast was moved to praise Kricheldorf's collection as “a genuine testament to German industriousness and German competence.” Among the treasures it contained were 310 cuckoo's eggs, mostly found in warbler's nests.

Reports about bird eggs were staple features of scientific journals from the time that these publications emerged in the 19th century. These articles described specimens purportedly in the shape of half-moons, sugar loaves, or cucumbers, or detailed various forms of the “egg-in-egg” phenomenon, such as a walnut-sized egg without a yolk found inside a larger egg. In 1901, Karl Russ related such an account to readers of the magazine *Gefiederte Welt* (Feathered World): “The smaller egg developed from within the larger one in such a way that its shell grew into the shell of the other, creating a relief-like elevation.”

Collectors often treated their eggs like cult objects, although they stopped short of investing them with the supernatural powers they possessed in some non-European cultures. In certain regions of Africa, for example, people place an ostrich egg in their homes to ward off lightning strikes.

Definitively identifying specific eggs in a collection is often fraught with difficulty. You can make all sorts of claims, but without additional information, it's rarely possible to prove the exact species an egg represents, let alone the location where it was found. Even worse, unscrupulous dealers sometimes painted commonplace specimens to look like the eggs of rare birds and bilk money from naive buyers. As more and more handbooks for identifying eggs and birds hit the mark at the end of the 19th century, such shady dealings became much harder to pull off.

One remarkable case study of egg mania is the story of **Alexis Romanoff**, a Russian who immigrated to the United States in 1921. Shortly after his arrival he developed a passion for eggs. Although he was still working to finish his doctorate at Cornell, he became determined to write the ultimate reference work on egg biology. For two decades, he and his wife Anastasia

toiled on the project every day, including on nights and weekends, with neither children nor travels to distract them. The end product – *The Avian Egg* – contains close to a thousand pages and 435 illustrations. Published in 1949, it became the Bible of avian embryologists. The Romanoffs spent the next ten years laboring on their follow-up book, *The Avian Embryo*, but failed to duplicate the success of their earlier work.

For surveyor **Max Schönwetter** (1874-1961), the hand of fate came in the form of “the remnants of a partridge egg and his discovery of the blood vessels still clinging to it.” This find unleashed “an unquenchable longing in the six-year-old boy to learn about bird eggs.” Schönwetter himself claimed “the collections of two classmates, a roofer, and the local museum” all fanned the flames of his interest. Over a period of sixty years, Schönwetter built up a private horde representing almost 4,000 species, often with the help of travelers. The smallest specimen – the egg of the bee hummingbird or zunzuncito, the world’s smallest bird – is the size of a pea: it measures a fifth of an inch and weighs less than a hundredth of an ounce. Schönwetter managed to get through two world wars with the tiny specimen intact, along with a 3.5-pound ostrich egg and all the rest of his collection. But his interests continued to develop. The *Ornithologists of Central Europe*, a massive tome by historian Ludwig Gebhardt, recounts that “due to his desire for a thorough understanding of the eggs of all species of birds, [Schönwetter’s] collection activities eventually gave way to decades spent with calipers, scales, and magnifying glass in all the museums, libraries, and natural history societies open to him, both at home and abroad. Late in life, he could take pride in the fact that he had studied more eggshells than anyone before him, and that no comparative method was more carefully reasoned or critically profound than the one he developed.” Gebhardt assures us that all this effort was not in vain; Schönwetter’s “relentless lifelong study of eggshell morphology reached its peak in 1952 when, after overcoming a multitude of obstacles, disappointments, and difficulties, he completed his *Handbook of Oology*.” This stirring account raises the suspicion that Schönwetter was born in the wrong age – long before the 1950s, studies of eggs prompted little more than a weary smile from most scientists. But today he is considered the founder of oology as a scientific discipline.

We don’t know whether Schönwetter knew his contemporary, the forester **Hans Domeier** (1881-1947), whose collection boasted 40,000 specimens and was fabled for including the eggs of extinct or extremely rare birds acquired primarily from collectors in Central and South America. Domeier suffered from a debilitating illness that left him bedridden after the First World War, but this obstacle did not curb his passion for collecting.

The story of **Charles E. Bendire** demonstrates that egg collecting could be a risky business. From the 1850s to the 1870s, Bendire was stationed in the American West. During a stint in Arizona, he climbed a cotton tree to retrieve a falcon egg and spotted several Apache on the horizon. Thinking quickly, he stuffed the egg in his mouth before climbing down and hurrying back to the fort. Although Bendire arrived safely, his jaw had seized up and the egg had to be

forcibly removed from his mouth. Once he was free to speak again, he sent the sentries in pursuit of the Native Americans.

When musician **Hermann Lau** hit Australia’s shores in 1854, he was actually hoping to find gold. But once he settled in Down Under, his collecting instinct found a new outlet: the eggs of Australian birds. He apparently shared his “breeding-biology leanings” with the great Australian ornithologist A.J. Campbell, who reports Lau’s observations here and there in his writings. Lau is said to have returned to Germany in 1892, and it seems likely that he took his collection with him. His birth and death dates are unknown. Were there others like Lau who shared a passion for both bird eggs and gold nuggets?

**Ferdinand Haag** (1861-1927 or 1928), a farmer from the outskirts of Frankfurt, goes down in the annals of egg collection for other reasons. Before the First World War, he traveled widely – to Spitsbergen (with Count von Berlepsch), Norway, and Bjørnøya, as well as Egypt and the Barents Sea. However, he soon turned his full attention to deformations and abnormalities in birds and especially eggs. Sparing no expense to pursue his eccentric hobby, Haag commissioned a number of dealers in natural specimens to obtain unusual eggs, such as those with a double yolk or no yolk at all. His collection grew to include such prizes as 653 “abnormal domestic chicken eggs.” He seems to have hoped that the “treasures” he accumulated over the years (which now reside in a private collection in Johannesburg and at the Senckenberg Museum in Frankfurt) would one day prove useful to science. During his own lifetime, Haag wrote a just few articles, including a study of “blue cuckoo eggs.” (As an aside, Haag’s interests seemed to have radically changed direction shortly before his death, when he suddenly produced an essay on “changes in the songs of city birds.”)

The largest collection of bird eggs in the world – with approximately 2 million specimens – is located at the Natural History Museum in the Hertfordshire city of Tring. The eggs are kept in the basement locked in safe-like cabinets. The Tring museum has enjoyed a measure of fame: in the 1960s, bird conservationist **Derek Ratcliffe** (1929-2005) was studying the decline of the peregrine falcon population. When he compared contemporary falcon eggs with the older specimens in the museum, he discovered that the shells of the newer eggs were much thinner. The pesticide DDT was found to be the cause, and its use was subsequently banned throughout Europe.

As early as 1850, bird enthusiasts began to voice doubts about the wisdom of unnecessarily collecting eggs. By the turn of the century, the practice increasingly came under fire from conservationists and, subsequently, lawmakers. Occasional skirmishes broke out at ornithological societies about whether egg collection was a legitimate activity at all. At the 1922 annual meeting of the Royal Society for the Protection of Birds, members were warned about the “explicit threat” posed by egg collectors affiliated with the British Ornithologists’ Union. In response, the somewhat misled Lord Rothschild helped to establish the British Oological

Association, which later became known as the Jourdain Society in honor of its other founder. The group's meetings became targets of police raids, and in the 1990s more than half of its members had been sentenced for the illegal possession of eggs. Like members of a terrorist organization, Jourdain Society members were no longer willing to give their names to interviewers.

For some fans, prohibitions on collecting the eggs of endangered birds seem to make the activity even more irresistible. And some egg collectors have achieved the status of criminal masterminds. **Matthew Gonshaw**, an unemployed Londoner, had already served three jail sentences when he was arrested in 2004. He was charged with having illegally collected 600 eggs. Authorities found 104 of these prizes hidden in a secret compartment in his bed frame. Gonshaw dressed in camouflage for his raids and equipped himself with topographical maps, a wire loop, and a military survival handbook. In addition, he brought along a collection of syringes so he could blow out the eggs right on the spot.

But Gonshaw's oological crimes pale in comparison to the antics of **Mervyn Shorthouse**, who was arrested in 1979. Melville was accused of smuggling an assumed 30,000 eggs out of the British Museum for Natural History, although only 10,000 specimens were actually found in his possession. In the course of his regular visits – he came to the museum at least once a week – he got to know the staff and earned their trust. And as a wheelchair-bound invalid, he appeared harmless. The loss of the eggs was bad enough, but Shorthouse's efforts to conceal his thievery were worse: he switched the labels on many of the specimens, drastically reducing the scientific value of the world's largest egg collection.

While the stories of Gonshaw and Shorthouse give the impression that Britain is a hotbed of egg-related crime, out-of-control egg collection takes place in other countries as well. Police in Finland recently confiscated ten thousand eggs from the house of a man allegedly involved in a network of Scandinavian egg dealers, including some suspected of illegally buying and selling the eggs of endangered birds.

One egg with a very special history has so far escaped the clutches of the egg mafia. The only surviving oological specimen from Charles Darwin's legendary voyage with the HMS Beagle, it was discovered a few years ago in the Zoological Museum at the University of Cambridge. It is apparently an egg of the nothura, a bird found in Uruguay. The dark-colored shell bears the inscription "C. Darwin." But the great scientist left his mark on the egg in more ways than one – his efforts to pack it into a box that was too small left a large crack in the shell.

Although the glory days of oological research lay in the past, many questions about bird eggs remain. For example, scientists still have no completely convincing explanation for why birds lay eggs in the first place, instead of bearing live offspring. A once-popular theory held that a pregnant bird would not be able to fly well, making her easy prey. Today, scientists tend to

believe that a bird's body temperature of almost 106 degrees Fahrenheit is too high to allow normal embryo development.

### **On the trail of extinct bird species**

For the general public, Lord Walther Rothschild (1868-1937) is probably best-known for driving through the park at Buckingham Palace in a cart hitched to zebras or riding on the back of a giant Galapagos tortoise. But they may not realize that Rothschild, the son of one of the 19th century's most prominent Jewish bankers (who made a fortune as a venture capitalist and investor in diamonds and the Suez Canal) opened one of the world's most extensive natural history museums in 1892. Rothschild developed his unusual passion for birds early in life. At the tender age of ten, he set up a small "museum" of stuffed birds in a shed on the family estate in Tring, 50 kilometers north of London. These humble beginnings planted the seed for the later Walter Rothschild Zoological Museum, which contained no less than 2,400 prepared birds, 30,000 bird skins, and 200,000 bird eggs – not to mention collections of mammals and reptiles. Between 1890 and 1908, more than 400 collectors traveled the world at his behest, and he supported expeditions to places like the Galápagos Islands, Australia, and New Guinea. But his involvement went far beyond the financial – expertise was required to ensure that the delivered specimens were really what they claimed to be. For example, in 1904 **Sir Walter Lawry Buller**, a leading expert on the birds of New Zealand and author of a book on the subject, offered Rothschild a specimen of an adult white-faced owl. (This particular species – which, contrary to what its name suggests, often has dark patches on its face – became extinct soon afterward.) When Rothschild inspected the find, he discovered that it actually consisted of the head of a juvenile white-faced owl stitched to the mismatched body of another species. He not only refused to pay the handsome fee Buller demanded, but took great pleasure in spreading the story. His aim, of course, was to tarnish the actually quite solid reputation of the man who had supplied him with hundreds of birds over the preceding 15 years.

Rothschild's curator was **Ernst Hartert** (1859-1933), who would become one of the top ornithologists of his age. Before taking up his duties in Tring, Hartert had explored the moors and marshes of Poland's Mazury region, taken part in an expedition to West Africa, and traveled through a host of Asian and South American countries – all on the trail of birds, butterflies, and beetles. Hartert was recommended to Rothschild by **Albert Günther**, (1830-1914), a fish and bird expert who left Germany for England in 1858 and went on to head up the zoological collection at the British Museum. Günther is known for his success in getting red-backed shrikes to breed – and for taking his vacations at the seaside so his tame cormorants could go swimming. Rothschild, an extremely shy man with a strong stutter, was a textbook example of an obsessed collector, and he became a zoological authority despite having very little formal education in the subject. He was known for his phenomenal memory and reportedly could locate any of his 300,000 specimens without a catalog, or even describe its condition without having it in front of him. His collection of 65 stuffed cassowaries – flightless birds

found mostly in New Guinea – was a particular highlight. Displayed in more or less natural poses, they took up quite a lot of room.

In addition to a book on the birds of the island of Laysan, Rothschild's oeuvre includes *Extinct Birds* (1907), a large-format work in a limited edition of just 300 printed copies. It was the first book of its kind and the product of painstaking work. *Extinct Birds* describes not only species that had disappeared during the previous 600 or 700 years, but those whose time was running out as Rothschild wrote. In any case, Rothschild knew quite well that pinpointing the exact date a species becomes extinct is often impossible. The appendix contains illustrations of 63 (mostly flightless) birds, often reconstructing their appearance based solely on remnants and descriptions. (Today we know that extinct bird species number in the hundreds.) Rothschild drew a distinction between birds that are "known externally as well as internally" and others "of which we know bones and egg-shells only." Nor surprisingly, the level of detail varies widely from one illustration to another. Next to the dodos, those popular symbols of extinction, the "oyseaux bleus" seem particularly worthy of mention. The *Apterornis coerulescens*, as the blue bird was officially known, lived on Réunion, an island next to Mauritius. Roughly the size of a goose, it supposedly sported blue plumage, a red beak, and feet like those of a chicken. Rothschild wrote: "They do not fly at all, but run extremely quickly, so that a dog can hardly catch them." Apparently these birds – which scientists would now classify as rails (or purple moorhens) – still weren't fast enough to escape their pursuers and save themselves from extinction. (Today this thoroughly hypothetical species is known as the Réunion swamp hen, *Porphyrio coerulescens*. It is probably identical to another flightless blue bird, the South Island takahe or *Porphyrio hochstetteri*, which is found only the South Island of New Zealand and was considered extinct from 1898 until its rediscovery in 1948).

Another species comes with a sobering anecdote: Rothschild reports that all existing specimens of the presumably flightless *Traversia lyalli*, which were held at different locations, were obtained through the efforts of "Tibbles," a cat belonging to David Lyall, the lighthouse keeper on Stephens Island. Just two other references to this bird exist in the literature (where it appears as *Xenicus insularis* and *Traversia insularis*.) Stephens Island is a 600-acre rocky outcrop in the Cook Strait between New Zealand's North and South Islands. Rothschild's footnote tersely summarizes Tibble's exploits: "evidently this feline discoverer has at the same time been the exterminator of *Traversia lyalli* and many may have been digested by that unique cat." At the same time, he suggests that the bird previously inhabited the main island as well, but was killed off much earlier there after rats and cats took up residence. In any case, it is also known as the Stephens Island Wren.

It's not much of a stretch to suggest that Rothschild focused on extinct birds as a way to come to terms with the fear that other species could disappear as well. He also had a complicated relationship to money. After being blackmailed – probably by a married lover – he was forced to sell his the bulk of his bird skins to the American Museum of Natural History in 1932. In a single blow, the museum gained one of the world's most significant bird collections, but

Rothschild had to give up nearly everything he held dear. He did manage to keep the bird skeletons and nests, along with his large egg collection. And his beloved cassowaries are still exhibited in Tring.

The fate of the passenger pigeon essentially follows the opposite trajectory of the starling's American adventures. At one point in time, nearly half the birds on the North American continent were probably passenger pigeons. These attractive birds constituted one of the approximately 300 species of the pigeons around the world. A typical passenger pigeon was about 15 inches long, with a slate-gray back and wings. It sported a red shimmer on its wings, throat, breast, and sides, with a touch of green, purple, or gold below its neck. Its beak was black and its eyes were a fiery orange. Passenger pigeons primarily ate beechnuts, acorns, and chestnuts, and they traveled in gigantic swarms. "The whole, with its glittery undulations, marked a space on the face of the heavens resembling the windings of a vast and majestic river. When this bend became very great, the birds, as if sensible of the unnecessary circuitous course they were taking, suddenly changed their direction, so that what was in column before became an immense front, straightening all its indentures, until it swept the heavens in one vast and infinitely extended line," wrote **Alexander Wilson**, a noted American ornithologist. Wilson once reported seeing a swarm that was 250 miles long and calculated that the birds were traveling more than 60 miles per hour. Since this speed was likely too high, he probably significantly overestimated the number of birds he saw, but the "cloud" streaming through the sky certainly contained at least several million birds. A swarm like that could plunge a sunny day into darkness, as if an eclipse were taking place. The meat of the young birds was prized for its tenderness, and the pigeons were also sometimes fed to pigs. A hunter could bring up to fifty birds tumbling from the sky with a single blast of a shotgun. When the swarm skimmed over a hill, it was even sometimes possible to simply beat the birds down with sticks. Hunters also waited for them to settle in for the night and then fired into the trees. On some occasions, up to 3,000 people would descend on the pigeons' breeding grounds, which were often enormous: Wilson claims they could contain 30 to 50 million birds. The list of tricks for killing passenger pigeons seemed endless. In New England, nets were a favorite method. But mostly, people couldn't resist shooting them – which is why even today "clay pigeons" are a regular feature of target practice.

No one seems to have thought that this widespread hunting could really be a threat to the pigeon population. A Select Committee of the Senate filed a report stating, "The passenger pigeon needs no protection. Wonderfully prolific, having the vast forests of the North as its breeding grounds, traveling hundreds of miles in search of food, it is here today and elsewhere tomorrow, and no ordinary destruction can lessen them, or be missed from the myriads that are yearly produced." But the birds' days were numbered. In 1862, Henry David Thoreau compared the dwindling passenger pigeons to vanishing thoughts: "the grove of our mind is laid waste," he wrote in his lovely essay *Walking*. Those thoughts left to us are domesticated, like chickens: "They no longer soar, and they attain only to a Shanghai and Cochin-China grandeur." The disappearance of the passenger pigeon also provides a

memorable lesson in denial. People continued to claim that they had witnessed a swarm, but these sightings were hallucinations. Henry Ford speculated that the pigeons sank into the Pacific on the way to Asia. The magazine *Science* suspected that they may be hiding in the Arizona desert; another theory placed them in Australia. A lumberjack insisted that he saw millions of passenger pigeons in Chile.

The rapid disappearance of forested land played a role in the birds' disappearance. But the expansion of the railways was also a factor. Once it became possible to quickly transport pigeon meat, demand shot up. To the best of our knowledge, the last passenger pigeon in the wild was shot around 1899. In the meantime, people had finally realized that species could go extinct. Large rewards were offered for information on a breeding pair of passenger pigeons – with no success.

The last example of the species, named “Martha,” died on September 1914 at the Cincinnati Zoo. For four years, she captured the imaginations of zoo visitors, who occasionally threw sand at her to get her to move. She had lost her partner, “George,” a few years earlier, and spent her final days completely alone. When she finally toppled from her perch, she was frozen into an enormous block of ice, shipped to Washington DC, and cut apart and stuffed. Since then, she has wandered through the world's natural history museums like a ghost, popping up here and there as a melancholy relic of the mighty passenger pigeon era – a time brought to an end by a troubling combination of greed, insatiable gun lust, and thoughtlessness.

The fate of these birds proved irresistibly fascinating for Paul Hahn (1875-1962), who was born in Reutlingen, Germany but emigrated as a teenager to Canada with his parents. Hahn played the cello and ran a successful business selling pianos. His romantic attachment to a woman related to J. H. Fleming, a noted ornithologist, sparked his interest in birds, especially passenger pigeons. More specifically, he was determined to track down all prepared specimens of this bird in private hands in North America and purchase them for the Royal Ontario Museum. Hahn devoted an incredible 45 years to this task, and managed to add 68 examples of the extinct species to the museum's holdings. Along the way, he branched out enough to also prepare an inventory of every specimen of extinct (or presumably extinct) North American birds held at museums of natural history worldwide. In his book *Where is that Vanished Bird?* Hahn discusses not only the passenger pigeon but the Carolina parakeet, the ivory-billed woodpecker, the great auk, the dodo, the Labrador duck, and the Eskimo curlew. In his history of great ornithologists, Ludwig Gebhardt credited Hahn's determination to his roots in southern Germany, declaring his tireless efforts to be “a simple monument to Swabian single-mindedness.”

But perhaps the passenger pigeon's absence from the earth is only temporary. **Ben Novak**, of California's Long Now Foundation, is on a mission to recreate the bird's genome and bring it back to life. So far he has obtained tissue samples from 34 preserved specimens owned by

various natural history collections. The goal is to generate primordial germ cells of passenger pigeons that could be implanted in the embryos of chickens or a related pigeon species. As the resulting birds grow up and breed, they will eventually produce the desired pigeons – or at least that’s what Novak and his colleagues hope. Novak certainly must realize that the road to skies filled with billions of passenger pigeons is a very long one – even assuming that it’s one we want to travel. Could the passenger pigeon really return? Perhaps it takes a peculiarly American sensibility to aspire to become a modern-day bird Frankenstein.

Like the passenger pigeon, the dodo – the remarkable giant pigeon whose name likely derives from the Portuguese *doido*, or “crazy” – lives only in our collective memory. Not even a photo remains, since the dodo went extinct before photography was invented. However, **Harri Kallio**, a Finnish photographer, has staged the rebirth of the dodo in pictures. He took specially prepared models to the birds’ former habitat on Mauritius and recreated imaginary scenes of dodo life. It’s a bizarre project, considering that not even a preserved skin of the dodo exists and all our theories about the birds’ appearance are based on a few bones found in a Mauritian swamp. Recent research suggests that real dodos had longer legs and slimmer bodies than those of the popular imagination. In any case, it will take a long time for our stereotypical images of the dodo to fade. They all go back to pictures by the Dutch artist **Roelandt Savery** (1576 or 1578-1639), who prepared drawings based on living dodos he had seen in a menagerie owned by Prince Maurice of Orange. But no amount of speculation can shake off the pervasive melancholy that the photos inspire. No matter what the dodo may have really looked like, we are left with the feeling even the most technical perfect recreation offers little more than a pale copy of the real thing.

**Tim Gallagher** – an American author, photographer, and employee of the Cornell Laboratory of Ornithology – pursues a different object of desire: the ivory-billed woodpecker. This graceful bird has black-and-white feathers, a red cap, and of course an ivory-colored bill. Gallagher first became interested in these woodpeckers in the 1970s, when he read an article in *Life* magazine by an author who claimed to have spotted the supposedly extinct bird in Big Thicket, a forested area in Texas. Scientists later came to doubt that the bird in question was really an ivory-billed woodpecker. In fact, the last confirmed sighting of the North American subspecies took place back in 1944, when Don Eckelberry not only observed one of the birds but even managed to get several snapshots. (The Cuban subspecies was last seen in 1987).

For Gallagher, the ivory-billed woodpecker is more than a large, beautiful, mysterious bird – it’s “a symbol of everything that has gone wrong with our relationship to the environment.” In this context, proving that the woodpecker is still with us would be an unimaginable opportunity: we would have “one final chance to get it right, to save this bird and the bottomland swamp forests it needs in order to survive.”

Not surprisingly, a turkey hunter’s 1999 report of seeing a pair of ivory-billed woodpeckers in a swamp reignited Gallagher’s passion. The story triggered an unparalleled search: for the most

obscure references in ornithological literature, for people claiming to have seen the bird, and of course for the woodpecker itself. In the end, Gallagher traveled to a number of swampy areas in the southern United States where he thought the bird might be found. This quest culminated on February 27, 2004, when he spotted a bird with the ivory-billed woodpecker's characteristic plumage of black feathers with a white pattern. A three-page article with no fewer than 17 co-authors followed in *Science* a year later, unleashing one of the most heated discussions in the history of ornithology. The claim that that ivory-billed woodpeckers still existed drove a rift through the US birding community. The bone of contention was shaky, blurred photo offered as proof. But where exactly was the white stripe on the bird's wings? One fraction believed that the image showed the long-sought ivory-billed woodpecker; the other side was equally convinced that the bird was “just” a pileated woodpecker – a species found in many parts of North America. The pileated woodpecker is not endangered; in fact, its numbers are growing. The following year *Science* published another article on the topic, this time refuting Gallagher's claims. The debate continued, as did the hunt for the bird.

Gallagher then shifted his efforts to finding a different bird: the imperial woodpecker. This two-foot-tall bird is native to Mexico and considered to be the ivory-billed woodpecker's closest relative. Its situation resembles that of its cousin north of the border as well. A reliable document attests to a sighting in 1956, half a century in the past, but rumors persist among the villagers of the western Sierra Madre that the bird could still be found in the region's remote areas. Gallagher was determined to find out if the story was true. While he realized that this task would not be easy, he did not anticipate the real difficulties. “Unfortunately, this region is the epicenter of illegal drug growing (both opium poppies and marijuana) in Mexico, and in my travels I had several dangerous encounters with armed narcotraficantes,” he explained. I launched five expeditions in search of this bird, and each time the situation seemed 100 times worse. On my final expedition, it seemed more like being in the mountains of Afghanistan than Mexico, with armed men, burning houses, and fleeing villagers, and I felt grateful to escape with my life.” Perhaps as a reaction to these frightening experiences in a strange land, Gallagher is now back on the trail of the ivory-billed woodpecker, just in time to celebrate the ten-year anniversary of his (alleged) first sighting.

This type of protracted, fanatical focus on a specific bird species may be a peculiarly American phenomenon. Does the stubborn search for the ivory-billed woodpecker really have a purpose beyond answering the question of whether it still exists or not? Mark Cocker offers a plausible explanation when he writes that the hunt “has acquired elements of a religious myth or parable, encompassing the notions of mortal sin but also of collective redemption through the bird's rediscovery.”

## **Hummingbirds**

The conquerors of the New World were searching for a different kind of treasure, but the sparkling creature fluttering around them like a tiny cloud raised

fascinating questions. Was it an insect? A bird? The French dubbed this discovery *oiseau mouche* (fly bird), the Portuguese *beija flor* (flower kisser) and *chupa flor* (flower sucker), and the Spanish *pica flor* (flower poker). Starting in around 1640, the English used the name *hum-bird*, and switched later to *hummingbird*. Particularly small varieties are known as *besourinho* (little beetles) in Brazil, and on Cuba an especially diminutive species bears the wonderful name *zunzuncito*. In other languages, hummingbirds are known as *kolibri*, a word likely of Caribbean origin. Linnaeus, who was familiar with 18 of the approximately 340 species known today, gave them the scientific label *Trochilus* in 1758. Curiously, in ancient Greece the name *Trochilus* referred to both a mythological demigod and a completely different bird – a type of kinglet.

The first known mention of hummingbirds by a European occurred in the accounts of **Jean de Léry**, a French sailor and explorer. De Léry was part of a group of sailors sent to the Brazilian coast in 1556. His report, which was published in 1557, describes a bird with a body “no larger than that of a hornet or a stag beetle” – “a singular miracle and masterpiece of minuteness.” **George Marcgrave**, who traveled to Brazil in 1638, declared the ruby-throated hummingbird – which weighs less than a fifth of an ounce – to be the most beautiful of its kind in his *Historia Rerum Naturalium Brasiliae*, which published in Amsterdam ten years later. Such a judgment implies that he had seen several different hummingbird species. Soon the birds were popping up in all sorts of contexts – their unusual features were always worth an anecdote. In his *Mundus Mirabilis Tripartitus* (1689), one of the compendia of all sorts of natural curiosities popular at the time, the German **Eberhard Werner Happel** speaks of a “tiny bird in its shining little plumage” that “is barely the length of a thumb and sucks the flowers like a bee.” In another passage, he describes the movements of this curious mini-bird: “The speed of its flight surpasses that of all other birds, and when they fly it sounds like the rushing of a whirlwind.” And Maria Sibylla Merian, who traveled through the Dutch colony of Surinam in 1699 and observed the flora and fauna there, depicted an unusual scene: a pinktoe tarantula with a hummingbird in its jaws. This disturbing account is surprising because hummingbirds have few natural enemies other than humans. Acrobats of the air, they can make a quick exit when danger threatens. At the same time, the tiny birds possess a fearlessness that has stunned many observers. **Charles Waterton** (1782-1865), an English naturalist who traveled through Latin America in the early 19th century, captured the hummingbird’s daredevil nature: “See it darting through the air almost as quick as thought! – now it is within a yard of your face! – in an instant gone! – now it flutters from flower to flower to sip the silver dew – it is now a ruby-now a topaz – now an emerald – now all burnished gold.”

Along with birds of paradise, hummingbirds were the highlights of natural history collections in the 18th and 19th centuries. It was common for hunters to sell the all-too-quickly taxidermied specimens to museums and private bird fans. During the early 19th century, one English dealer reportedly imported more than 400,000 birds from the Antilles in a single year. In Victorian salons, the birds filled a decorative function – like artificial flowers – and often simply ended up collecting dust. **René Primevère Lesson** (1794-1849) described close to 40 new species and published a multivolume work on hummingbirds with 261 beautifully detailed hand-colored lithographs. Lesson’s work drew on his voyages to destinations including South America on the French corvette *Coquille*. It bears mentioning that he was not on board as a naturalist, but rather as a ship’s doctor who had his hands full tending to sick crew members. **Philip Henry Gosse** (1810-1888) also played a role. This eccentric natural historian, who believed that species did not evolve and fossils were planted by God to demonstrate the age of the earth, would soon play a role in popularizing the aquarium. Gosse took a great interest in the hummingbirds of Jamaica, drawing on Lesson’s work to identify them. He also punctured the popular myth that these birds could pose a danger to humans. In *The Birds of Jamaica*, he writes, “The stories told of Hummingbirds attacking men, and striking at the eyes with their needle-like bills, originated, I have no doubt, in the exaggerating of fear, misinterpreting this innocent curiosity.”

But naturalists and biologists were not the only ones interested in hummingbirds. The eminent German philosopher Immanuel Kant mentioned hummingbirds as examples of “free natural beauty,” in that they “do not belong to any object determined in respect of its purpose by concepts, but please freely and in themselves.” Despite this enthusiasm, it is likely that Kant — who spent his entire life in Königsberg (now Kaliningrad) — never actually saw a live specimen of the bird. Hummingbirds are not the only instances of free natural beauty that Kant cites: in addition to flowers and seashells, he also mentions the parrot and the bird of paradise.

It’s no coincidence that when we see hummingbirds they are almost always flying. More than all other birds, they have freed themselves from the bounds of the earth. In fact, they are incapable of walking. In the absence of a concept to describe the close symbiotic relationship of birds and plants or their coevolution, hummingbirds’ attraction to flowers was long attributed to “love.” Of course, blossoms are the stock in trade of a number of different bird families, but none are as suited for this way of life as the hummingbirds. While other birds can also boast a curved beak with a shape and length suited to feeding from blossoms, they need a perch in order to use it. But when a hummingbird finds a choice delicacy, it can partake of the nectar simply by hanging in the air in front of its prize. At the same time, some hummingbirds have mastered more prosaic feeding methods. Describing the doctor bird or swallow-tailed hummingbird, Gosse noted that he often saw them perching on the blossoms with their wings folded, or even clawing a hold

in the leaves and hovering before a blossom with beating wings in order to drink its nectar. In doing so, they also pollinate the flowers that constitute their favorite meals.

Naturalists have known that hummingbirds eat nectar since the mid-17th century, but needed a few more decades to realize that they also eat insects. In addition to carbohydrates, the birds require protein and fat to survive. However, it took a long time for this information to get through to the general public – people simply preferred the romantic notion that these marvelous birds lived on nothing but dewdrops, love, and air. A description of the studies of the hummingbird diet alone could fill an entire book. In 1837, naturalist **Lorenz Oken** noted that the birds could survive no more than a few months on “sweet flower juices,” but that they could be kept for up to a year “if they are free in a room with only canvas blocking the windows that allows mosquitoes to pass through.” A number of people tried to ship live hummingbirds to Europe, but soon realized the birds could not survive in this new environment, even if they arrived intact.

**Count Hans von Berlepsch** (1850-1915; not to be confused with his namesake Baron Sittich Hans von Berlepsch, a bird conservationist) used his inherited fortune to sponsor a number of bird hunters in South America. With their help, he amassed an impressive collection of 55,000 bird skins over the course of his life, including no less than 6,000 hummingbirds. Although celebrated as a specialist in neotropical birds and “the art of bird preservation,” Berlepsch preferred to remain in Europe. His travels took him to Berlin, Budapest, Paris, and London, mostly to take part in ornithological congresses. While he never saw the Andes with his own eyes, Berlepsch was considered to be the world’s leading expert on the region, even from 7,500 miles away. In an epic memorial to Berlepsch written for the *Journal for Ornithology*, Carl Eduard Hellmayr recalled how he finally gained admittance to “the famous Berlepsch collection,” which ranked as “the most extensive in private hands in Germany”: “my visit lasted six weeks, which were rich in impressions and intellectual delights.” Despite this abundance of bird material, it’s quite possible that Berlepsch never actually saw a living hummingbird.

As beautiful as hummingbirds may be, trying to observe them in flight can be frustrating. In his typically flowery (but in this case, accurate) language, **Alfred Edmund Brehm**, nineteenth-century Germany’s foremost animal expert, complained that neither a pencil nor a brush was capable of capturing these “flying gemstones.” How can we learn to understand a creature that moves too quickly for our unaided senses to grasp? Towards the end of the 19th century, it became possible to use a film camera to break down the flight of most birds into its separate components. But the speed with which a hummingbird beats its wings – 12 to 80 times per second, as we now know – made a different approach necessary. MIT professor **Harold E. Edgerton** (1903-1990), who would later capture the legendary shot of a drop of milk landing to form a “crown,” had the idea of combining a camera with a stroboscope. In 1928, he began using this device to film tame hummingbirds in an acquaintance’s garden. Soon he was able to capture 540

images per second. The resulting films showed that hummingbirds beat their wings horizontally and that they are even capable of flying backwards. To accomplish this maneuver, the strongly rotated wings reach back and push the air away, like the arms of a swimmer doing the backstroke.

No less interesting than the way hummingbirds fly are the unusual sounds that their flight generates. Like certain large insects – such as the remarkably similar hummingbird hawk moth – hummingbirds produce a buzzing sound that ranges from dull to high-pitched depending on the size of their wings and the frequency of their wingbeats. Gosse observed Vervain hummingbirds swarming together “like bees” and causing the air to sound “with their humming, as if in the neighborhood of a hive.” The doctor bird was even more remarkable: it generated “a whirring exactly like that of a wheel put into rapid revolution by machinery.” Gosse could detect a birdsong in only one case. He reported that the zunzuncito or bee hummingbird – the smallest bird in the world – emitted “a very weak but very sweet tone.”

South America boasts the largest number of hummingbird species, with the greatest variety close to the equator. While some hummingbirds can also be found in Alaska and Canada, they migrate south from these northern regions for the winter. For example, the ruby-throated hummingbird flies to Central America in the fall, budgeting its energy carefully so that it effortlessly manages the 600-mile trip across the Gulf of Mexico. Researchers began tracking this annual journey in the early 19th century. One such observer, a certain Dr. Jones, witnessed the birds off the Canadian coast in 1905. His account describes a stream of low-flying hummingbirds passing by all day. They followed the movements of the waves, dropping into the troughs between them to escape the side wind. The birds seemed to take the strong West wind into account: they faced towards the southwest, but as a result of the wind they ended up flying due south.

Since that time our knowledge of hummingbirds has become increasingly precise. Scientists now know that they fill a comparable niche in the American ecosystem to the nectar birds in Africa and the honey-eaters in Australia. Biologists refer to such species as “ecologically equivalent.” Since the bones of hummingbirds are extremely fragile and break down easily, paleontologists long assumed that they would never find any fossils of these birds. But ten years ago Gerald Mayr, a paleontologist from the Senckenberg Research Institute, made a spectacular find: the fossilized remains of a hummingbird from the early Tertiary Period came to light in a clay pit near Wiesloch, Germany. The 30-million-year-old bird received a fitting name: *Eurotrochilus inexpectatus*, or “unexpected European hummingbird.”

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