

Audubon's Bird of Washington: unravelling the fraud that launched The birds of America

Author: Halley, Matthew R.

Source: Bulletin of the British Ornithologists' Club, 140(2) : 110-141

Published By: British Ornithologists' Club

URL: <https://doi.org/10.25226/bboc.v140i2.2020.a3>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

Audubon's Bird of Washington: unravelling the fraud that launched *The birds of America*

by Matthew R. Halley

Received 15 January 2020; revised 4 April 2020; published 22 June 2020

<http://zoobank.org/urn:lsid:zoobank.org:pub:DDBF6941-D20A-43F5-AABC-33A21E2696AE>

SUMMARY.—The Bird of Washington *Falco washingtonii* Audubon, 1827, was a new species of eagle published in the opening plates of John James Audubon's influential work, *The birds of America* (1827–38). It was the first plate engraved by Robert Havell Jr. and the first new species Audubon described in his career. However, the Bird of Washington was published without specimen evidence and, to this day, no specimen with the anatomical characters in Audubon's descriptions and plate has ever been found. To shed light on the case, I conducted an exhaustive search for primary (non-print) sources in multiple archives in the USA and transcripts in the literature. Here, I demonstrate beyond reasonable doubt that Audubon's painting of the Bird of Washington was not 'faithfully figured from a fresh-killed specimen', as he claimed, but was the product of both plagiarism and invention. The preponderance of evidence suggests that the Bird of Washington was an elaborate lie that Audubon concocted to convince members of the English nobility who were sympathetic to American affairs, to subscribe to and promote his work. Audubon rode his Bird of Washington to widespread fame and then actively maintained the ruse for more than 20 years, until his death, fuelling decades of confusion among scientists and the general public. The broad implications for Audubon-related scholarship and ornithology are discussed.

'...my motto is: *'Le temps decouvrira la vérité.'* [Time will uncover the truth.]'—Audubon (1897: 271)

Art and science are both creative and intellectual activities, but their products are judged by different (almost opposite) standards. Works of art are primarily evaluated based on their impacts on the subjective (emotional) experience of the observer. There is no penalty for infusing art with imaginative scenes and objects that resemble reality but do not (and are not intended to) accurately represent it. In contrast, the standard by which a body of scientific work is judged (its reliability) depends in large part on the author's integrity. Rasmussen & Prŷs-Jones (2003), who investigated the now infamous specimen fraud perpetrated by the British ornithologist, Richard Meinertzhagen (1878–1967), remarked: 'how slow and difficult the path may be from well-founded suspicion to a reasonable level of proof [of fraud] and ... in the intervening period, most researchers ... may remain entirely ignorant of the doubts surrounding the data ... with negative effects on ornithology.' In the case of 'natural history artists', who produced mixed works of visual art and scientific text, the different standards by which artists and scientists are judged may result in conflicting assessments of quality. 'Few men can transcendently excel in more than one branch' (Stroud 2000: 119).

John James Audubon (1785–1851) is regarded as one of the most influential and prolific natural history artists of all time. In the USA, the name Audubon is widely known and has become synonymous with everything related to birds. There are hundreds of local and

regional Audubon Societies and dozens of towns, neighbourhoods and streets bear his name. Audubon's work is considered by historians to signal a new era in American ornithology (Allen 1951). According to the standards by which artists are judged, Audubon's legacy is beyond dispute. His images are creative, demonstrate technical mastery and have broad aesthetic appeal. However, Audubon's writings must be judged by the rigorous standards of science (i.e., agnostic to the emotional appeal of his artwork). Remarkably, a thorough assessment of this kind is still pending because, to date, few professional ornithologists have immersed themselves in the primary record of Audubon's life. With the exception of Herrick (1917), who conducted early field research on the Bald Eagle *Haliaeetus leucocephalus* (Linnaeus, 1766), Audubon's biographers have not been professional ornithologists (e.g., St. John 1856, Peirce 1863, Arthur 1937, Ford 1964, Rhodes 2004, Souder 2014, Nobles 2017). This bias apparently contributed to several misconceptions concerning his scientific accomplishments (e.g., Halley 2018a,b).

By the time Audubon began publishing, in the late 1820s, the institutionalisation of the natural sciences in America and Europe was well underway. National and regional governments were funding scientific expeditions (e.g., James 1823) and universities and academic societies were offering classes in ornithology and other disciplines. Philadelphia, c.28 km from Audubon's teenage home (Mill Grove), was the hub of scientific activity in America. However, despite this proximity, Audubon was not formally trained in science. Like many other 'ordinary Americans' who dabbled in natural history observation, he apparently felt some contempt for wealthy elites and their scholarly institutions (Lewis 2011). This feeling was reinforced in 1824, when Audubon was rejected for membership at the Academy of Natural Sciences of Philadelphia (Halley 2018c: 63). Two years later, he would leave his wife and children in the USA and travel to Europe to seek subscribers and an engraver for the work that would become *The birds of America* (1827–38). In the months prior to his departure, Audubon corresponded with Reuben Haines III (1786–1831), the Corresponding Secretary who had nominated him for (the rejected) Academy membership, and his letters were filled with anxiety about an uncertain future:

'I must touch the only thing that ever vibrated sorrow to my heart.—I must leave America. ... With an allmost despairing heart I shall leave America early this ensuing spring, and now bid you my farewell.—Yes it is my farewell indeed for unless a success scarce expected should take place, I never will review this happy continent, will have to abandon my long acquired habits of watching nature at work and will droop moreso amongst the dreg of the world as it is called.' (Audubon to Haines, 25 December 1825; Haverford College Library, Quaker and Special Collections (HCL), reproduced in Halley 2015)

To say that Audubon's journey to Europe was a success would be a gross understatement. The publication of *The birds of America* was initiated within one year of his arrival in England, with the critical financial support of the British crown and European nobility (Fries 2006). The pivotal point in Audubon's fortune coincided with his publication of a new species of North American eagle that he called the Bird of Washington *Falco washingtonii* (Audubon, 1827, Pl. 11). It was the first new species described by Audubon and the first species engraved by Robert Havell Jr. (1793–1878). It was published when Audubon's financial prospects were at their bleakest, and helped to instigate a dramatic reversal in his career. Soon after publication of Pl. 11, on 3 December 1827, Audubon wrote triumphantly to Reuben Haines: 'I am engaged in the publication of my work at last' (HCL, see Halley 2015).

However, Audubon never produced a specimen with the anatomical characters of the Bird of Washington, as shown in Plate 11 (1827) and described in multiple text accounts (e.g., Audubon 1828, 1831, 1839). After nearly two centuries, the species is still known only from Audubon's anecdotes and plate, and secondary (anecdotal) sightings by his friends. Professional ornithologists have generally assumed that Audubon (innocently, most argue) misidentified an immature *H. leucocephalus*. On this basis, Audubon's scientific name *Falco washingtonii* and its variants (e.g., *F. washingtoniensis*) have occasionally been used for the northern subspecies of *H. leucocephalus*, depending on the extent to which different committees of ornithologists trusted Audubon's anecdotes (e.g., AOU 1944: 445, Mengel 1953). The name *washingtonii* has not been used in recent years, but 25 of Audubon's species names are currently in use by the American Ornithological Society (Chesser *et al.* 2018) and many more continue to be used for subspecies (e.g., Harris's Hawk *Parabuteo unicinctus harrisi* (Audubon); see Halley 2020a).

Methods

I conducted a multi-year (2015–19) investigation of primary (non-print) materials in the Academy of Natural Sciences of Drexel University Archives (ANSP), American Philosophical Society Library (APS), Historical Society of Pennsylvania (HSP), New-York Historical Society (N-YHS) and Yale University Archives (Yale). Whenever possible, I reconstructed the timeline of events exclusively via independent and / or contemporaneous primary sources (letters, memoranda, meeting minutes, etc.) because Audubon tended to distort the timelines in his published writings (e.g., Dallett 1960: 90–91, Halley 2018a). This approach differs from most previous authors, who treated *Ornithological biography* (1831–39) as a 'primary' historical source, despite many of Audubon's statements in that work being contradicted by independent primary sources. For example, contemporaneous sources confirm that Audubon was not in Pennsylvania when he claimed to have re-sighted ringed Eastern Phoebes *Sayornis phoebe* (Latham, 1790) there in 1805, and the original source of his (probably apocryphal) ringing experiment was Audubon's (1834: 126) own anecdotal account, published 30 years after the purported events took place (Halley 2018a). For this reason, unlike previous authors, I did not assume *a priori* that any published statement of Audubon was true. Only by reconstructing the timeline from independent sources were Audubon's manipulations (some inadvertent, some likely deliberate) able to be exposed. My semi-chronological approach thus enables the reader to assess the critical events of the Bird of Washington case as they developed in proper sequence.

With the exceptions of Herrick (1917) and Souder (2014), most biographers of Audubon barely mentioned the Bird of Washington. Thus, many of the sources quoted here are taken from my transcriptions of materials that have not appeared in print previously, to my knowledge. In such cases, I cite the appropriate archives and collections where the primary materials are stored. Where possible, I verified published transcriptions of primary sources by personally examining the original materials and, when necessary, translated from French and provided the original text for comparison. The remainder of the paper contains the results of this research, presented as a mixture of historical narrative and contemporary analysis. The narrative begins in 1826, when Audubon arrived in Europe and first displayed the Bird of Washington to the British public.

Unveiling the Bird of Washington

In late July 1826, Audubon arrived in England with his large portfolio of original paintings, hoping to find a publisher for his planned work, *The birds of America*. Within



Figure 1. Audubon's original painting of 'Falco ossifragus / Sea Eagle' (N-YHS 1863.17.11), reproduced courtesy of the New-York Historical Society. Digital image created by Oppenheimer Editions.

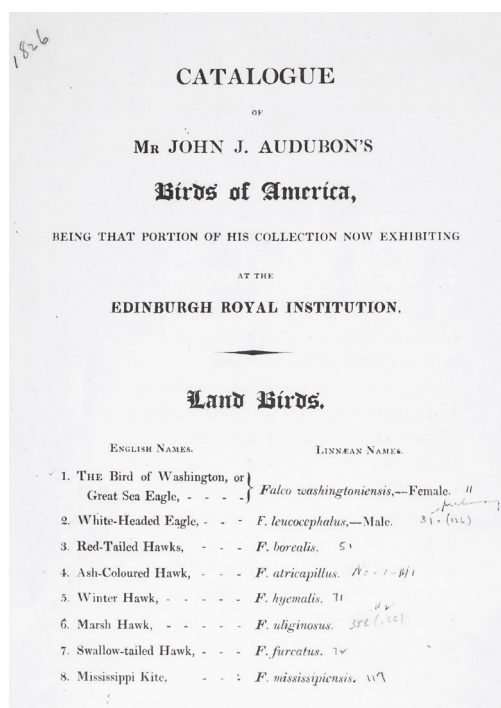


Figure 2. Title page of a 'Catalogue of Mr John J. Audubon's *Birds of America*, being that portion of his collection now exhibiting at the Edinburgh Royal Institution,' printed for attendees of his 1826 exhibition. Reproduced courtesy of the Division of Rare and Manuscript Collections, Cornell Univ. Library (coll. 3427).

two weeks, via the generosity of William Roscoe (1753–1831) and the Rathbone family, his paintings were enthusiastically received by more than 400 attendees at the Liverpool Royal Institution (Fries 2006: 5). Three months later, a similar exhibition was held in Edinburgh, where 'success was immediate [and Audubon] became the talk of the town' (Herrick 1917, 1: 359). There, Audubon was introduced to William Home Lizars (1788–1859), who would engrave the first ten plates of *The birds of America* in 1827.

The subject of Audubon's opening number—the first 'painting' (graphite, pastel, black ink and watercolour) on display in his exhibition of 209 original works—was a massive eagle perched on a bare rock (Fig. 1). Audubon's claim was extraordinary: it was a new species, not yet described by naturalists, and Alexander Wilson (1766–1813), late author of *American ornithology* (1808–14), had overlooked the largest eagle in North America despite travelling extensively within its range. Audubon's new species was most like *H. leucocephalus*, but differed in several anatomical details including the scutellation pattern on the feet, the shape of the bill, its much larger size, and (assuming it was an adult) the lack of white on the head and tail. Audubon prominently listed the 'Bird of Washington, or Great Sea Eagle / *Falco washingtoniensis*' in a pamphlet printed for exhibition attendees (Fig. 2). It was evidently sometime after he arrived in Europe that Audubon decided to name the new species after the celebrated American patriot and statesman, George Washington (1732–99),

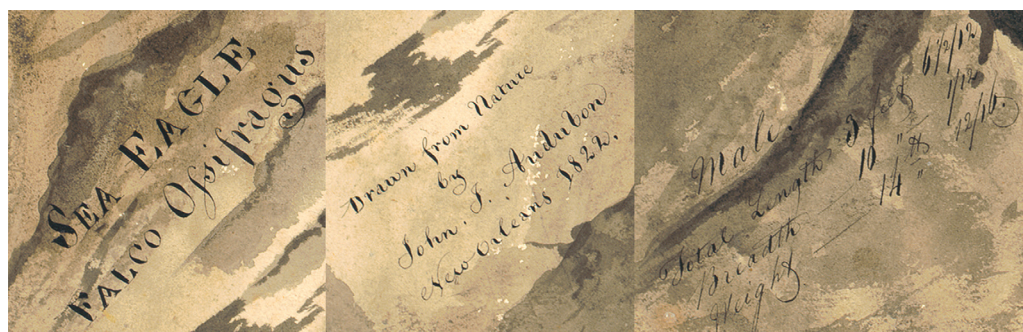


Figure 3. Annotations on the original 'painting' of the Bird of Washington (N-YHS 1863.17.11): (left) 'Sea Eagle / *Falco Ossifragus*.' (centre) 'Drawn from Nature / by / John J. Audubon / New Orleans 1822.' (right) 'Male ... Total Length 3 feet 6 ½ / 12 ... Breadth – 10 [feet] 1 / 12 ... Weight – 14 [pounds] 12 / 16.' Images reproduced courtesy of the New-York Historical Society. Digital image created by Oppenheimer Editions.

because the names 'Sea Eagle' and '*Falco ossifragus*', a synonym of *H. leucocephalus* (Ord in Wilson 1814: 129, Bonaparte 1824: 344), were (and still are) painted on the rock surface in Audubon's original painting (Fig. 3, N-YHS 1863.17.11).

By the 1820s, there was a general expectation among zoologists on both continents that new species descriptions should be accompanied by specimen evidence (Lewis 2011). In America, ornithologists had been depositing their new discoveries at the Philadelphia (Peale) Museum for more than two decades (e.g., Wilson 1813, Say in James 1823, Miller 1988). Audubon did not have a specimen of the Bird of Washington when he displayed his painting in Liverpool and Edinburgh, but the following year he claimed that his painting was based on a (non-extant) specimen that he had collected in Kentucky several years earlier (Audubon 1828). Curiously, Audubon's painting was annotated with the word 'Male' (Fig. 3) although the 1826 catalogue stated 'Female' (Fig. 2); in his 1828 paper and subsequent publications, Audubon maintained that his massive specimen had been a male. Females are the larger sex in *Haliaeetus* 'sea eagles', so it would stand to reason that if the dimensions Audubon wrote (in black ink) on his painting were indeed taken from a male specimen, a female Bird of Washington would be even larger (Fig. 3). These mensural data, and the fact that he signed and dated his painting with Wilson's usual tagline, 'Drawn from Nature', also implied that Audubon once had a specimen—evidence to support his extraordinary claim.

Evidence of plagiarism

In the late 20th century, Partridge (1996) noticed a striking resemblance between Audubon's painting of the Bird of Washington and an older image labelled 'Golden Eagle', ostensibly depicting *Aquila chrysaetos* (Linnaeus, 1758), published in an edited serial work *The Cyclopædia* (Rees 1802–19):

'Evidence points to the published plate [from *The Cyclopædia*] as [Audubon's] direct source. The golden eagle is perched on its out-cropping precisely as is Audubon's bird, with the same curve to the wings and wingtip overlapping tailfeathers [*sic*], the same angle of stance, contour of the head and beak, furrowed brow line, and even an identical highlight in the eye ... [Audubon] clearly shows ten tail-feathers in the drawing, where he specifies twelve in his text; but there are ten, though asymmetrically arranged, in the Rees print.' (Partridge 1996: 300)

Partridge (1996) and Olson (2012: 104) assumed that the 'Golden Eagle' image in the American edition of *The Cyclopædia* (1806–20) published by S. F. Bradford was Audubon's source and that it had been based on a specimen in the Peale Museum in Philadelphia. However, the 'Golden Eagle' in this edition was based on an earlier image that first appeared in January 1802, in the original British edition of *The Cyclopædia* published by Longman *et al.* (1802–19). The original image was produced in Europe, presumably to accompany the entry for 'Accipitres', following Linnaean taxonomy, and had no connection to a specimen in any American museum. Differences between the British and American editions merit consideration because many of the plates were re-engraved in Philadelphia. Indeed, the 'Golden Eagle' was re-engraved by George Murray (1766–1822) and published by Bradford in May 1806. Coincidentally, Alexander Wilson began working for Bradford as assistant editor in April 1806, one month earlier, so Wilson was probably familiar with the image (Hunter 1983: 79).

Murray's engraving differs subtly from the original and it is not clear which edition was Audubon's source (Fig. 4). A notch on the lower edge of the maxilla in Audubon's image, known to ornithologists as a 'tomial tooth', is more prominent in the British edition image than the American, but present in both. Neither *H. leucocephalus* nor *A. chrysaetos* in fact has a prominent tomial tooth, a character more typical of falcons (family Falconidae) than of Accipitriformes (del Hoyo *et al.* 1994). Another anatomical discrepancy, the scutellation pattern on the foot of the Bird of Washington, was evidently copied from a different line drawing in *The Cyclopædia*: the disembodied foot of a raptorial bird (labelled 'Falco' but anatomically ambiguous) first published in 1812, ten years before Audubon purportedly painted his Bird of Washington from a 'fresh-killed specimen' (Fig. 4). Also, neither *H. leucocephalus* nor *A. chrysaetos* has a scutellation pattern like the one shared by Audubon's image and the 'Falco' foot in *The Cyclopædia* (Cassin 1856). By the time he displayed his painting in Europe in 1826, the men most likely to have noticed Audubon's deception were dead, or nearly so: Sydenham Edwards (1768–1819), the English artist who drew the original images that Audubon copied; Thomas Milton (1743–1827), who engraved them for the British edition; George Murray (1766–1822), who re-engraved the 'Golden Eagle' image for the American edition; and Alexander Wilson, who had died in 1813.

As noted by Partridge (1996), Audubon had access to *The Cyclopædia* during his year-long residency (1819–20) in Cincinnati, Ohio, just prior to the date written on his Bird of Washington painting (1822). The Circulating Library Society of Cincinnati (CLSC) was housed in one of the lower rooms of the newly constructed Cincinnati College building, where Audubon was employed as a taxidermist preparing mounted specimens for the new 'Western Museum', which opened to the public the following year (Kellogg 1945, Hendrickson 1946). A rare pamphlet contains the following notice: 'a deposit of five dollars shall be made with the librarian by every shareholder on receiving a volume of the 'Cyclopædia' (Rees), 'Wilson's Ornithology', or the 'English and Classical Dictionary' (CLSC 1816). The copy of the American edition of *The Cyclopædia* owned by the CLSC was sold in 1824 to the University of Miami, where it is still present (McSurely 1908: 2).

Audubon probably had an opportunity to study the British edition too. One of the few American subscribers was John W. Francis (1789–1861), who was an undergraduate student in 1806–09 at Columbia College in New York (Duyckinck & Duyckinck 1856: 122). Francis was enrolled in class with Samuel L. Mitchill (1764–1831), professor of natural history, when Mitchill hired Audubon to prepare mounted specimens for his classroom during the winter of 1806–07 (Ford 1964: 66). Audubon was working in pastels during this period, and many of his drawings are now preserved in the Houghton Library at Harvard University



Figure 4. (1A–1C) Three images of Audubon's original painting of the Bird of Washington (N-YHS 1863.17.11), reproduced courtesy of the New-York Historical Society. Digital image created by Oppenheimer Editions. The close-up image at bottom left (1C) has been flipped horizontally for comparison to Audubon's sources. (2A, 2B) 'Golden Eagle' drawn by Sydenham Edwards, engraved by Thomas Milton and published in 1802 in the British edition of *The Cyclopædia* (Longman, Hurst, Rees, Orme & Brown), reproduced courtesy of the Univ. of Michigan (<https://catalog.hathitrust.org/Record/001464694>, accessed 9 October 2019). (2C) 'Falco' foot, published in 1812 in the British edition (Plate IV) of Rees (1802–19), reproduced courtesy of the Univ. of Michigan (<https://catalog.hathitrust.org/Record/001464694>, accessed 9 October 2019). (3A, 3B) 'Golden Eagle' re-engraved by William Murray and published in 1806 in the American edition of Rees (1806–20); reproduced courtesy of the Academy of Natural Sciences of Drexel Univ. (ANSP) Library (QH13.R32). (3C) 'Falco' foot, re-engraved by H. S. Tanner (Philadelphia) and published in the American edition (Plate IV, date uncertain), reproduced courtesy of the ANSP Library (QH13.R32).

(MS Am 21, MS Am 21.5, MCZ 118). Partridge (1996: 298) speculated that the Bird of Washington painting 'may be a copy of an earlier pastel', in part because of its similarity to Audubon's early pastel-dominated images. She remarked that the 'design and handling of some [of Audubon's later] drawings ... are more relaxed and assured than in the stilted 'Bird of Washington'; its archaic quality is odd even in light of his reliance on illustrational

conventions' (Partridge 1996: 298). This may be because the original 'painting' (pastel and pencil) of the Bird of Washington was executed in 1806–07, with both images from *The Cyclopædia* being used as source material (i.e., 'Golden Eagle' and 'Falco'); then, prior to Audubon's European exhibitions, he touched it up and embellished it with watercolour and black ink. At some point, Audubon also cut out the bird (and rock) and adhered it to a large piece of paper. The timing of these developments is not known.

Regardless of which edition of *The Cyclopædia* was Audubon's source, the most parsimonious explanation for the evidence presented here is that the Bird of Washington was not drawn from a specimen as he claimed. Rather, it was an amalgamation of two apparently imaginary images (i.e., not based on specimens themselves, as evidenced by multiple anatomical errors), copied by Audubon without attribution, to which he added colour and fine artistic details that rendered his painting more life-like and obscured the plagiarism. The fraudulent origin of the Bird of Washington painting is critical to understanding the subsequent developments in the story, including how and why Audubon concealed the truth from his readers, friends and family.

Publication of the Bird of Washington

By early June 1827, with fewer than ten of the plates for *The birds of America* completed, problems arose in Edinburgh and the production schedule of the book fell behind. 'I received a letter from Mr. Lizars that was far from allaying my troubles,' Audubon wrote in his journal, 'I was so struck with the tenure [*sic*] of it that I cannot help thinking now that he does not wish to continue my work' (Audubon 1897: 257)¹. However, the bad news was soon tempered by a new opportunity. The following day, Charles Lucien Bonaparte (1803–57), who was passing through London on his way back to America, introduced Audubon to influential members of the Royal Society:

'My portfolios were opened before this set of learned men, and they saw many birds they had not dreamed of [including the Bird of Washington]. Charles offered to name them for me, and I felt happy that he should; and with a pencil he actually christened upwards of fifty, urging me to publish them at once in manuscript at the Zoological Society.' (Audubon 1897: 257)

A few days after that meeting, Bonaparte boarded a ship to America with the first ten (Lizars) plates of *The birds of America* in his possession (Stroud 2000: 90). Audubon then 'removed the publication of [his] work from Edinburgh to London, from the hands of Mr. Lizars into those of Robert Havell ... because the difficulty of finding colourers made it come too slowly, and also because [he had] it done better and cheaper in London' (Audubon 1897: 258). The Bird of Washington was the first of Audubon's paintings to be engraved by

¹ Audubon's journals did not contain a contemporaneous account of events as they truly occurred. Rather, they contained a curated version that he prepared for his wife and sons, who were apparently ignorant of his plagiarism and did not know that the Bird of Washington painting was fraudulent. Almost every entry in Audubon's journals 'begins and ends with a morning greeting, and an affectionate good-night' to his family (Audubon 1897: 247). The questionable veracity of the accounts in Audubon's journals may have been one reason that his granddaughter Maria destroyed (burned) them, after publishing bowdlerised excerpts that showed 'what [she believed] he was and not what others *thought* he was' (Arthur 1937: 14). Thus, not only was the 'primary' record manipulated by Audubon himself; after his death, it was edited by his descendants so that he would be portrayed in the most favourable light. 'I burned it myself in 1895', wrote Maria Audubon in 1904, 'I had copied from it all I ever meant to give to the public' (Arthur 1937: 243). For this reason, journal extracts published by Lucy Audubon (Buchanan 1869) and Maria Audubon (1897) cannot now be verified.

Havell, and it served as the large plate in Audubon's third 'number' (set)². Each set included five double-elephant folio prints: one large species, followed by four relatively smaller species. This scheme served to attract subscribers while minimising costs (i.e., conserving paint and labour) during the early stages of *The birds of America*, when its pecuniary success was uncertain (Fries 2006). Of all the large, charismatic bird species that Audubon could have chosen at this critical juncture, for his third large plate, he chose to publish a (plagiarised) painting of a 'new' species of which (the evidence presented here suggests) he had no physical evidence (Fig. 5).

Audubon followed through on the suggestion of his new acquaintances at the Royal Society to publish an account of the Bird of Washington (Herrick 1917, 1: 400). In April 1828, at the insistence of John C. Loudon, editor of *The Magazine of Natural History*, Audubon submitted a manuscript entitled 'Notes on the Bird of Washington (*Falco Washingtoniæna*), or Great American Sea Eagle' for publication in the inaugural issue (Audubon 1828)³. In that article, which was distributed in July 1828, Audubon stated unambiguously that 'the bird here described [was] faithfully figured from a fresh-killed specimen', a statement he knew was not true. However, his readers seemingly were distracted by the political symbolism of the name, Bird of Washington, and Audubon's derisive (and ironic, in retrospect) criticism of his predecessor: 'Mr. Wilson's figure [of Sea Eagle *Falco ossifragus* Wilson, 1813, Pl. 55] is not so well done; it seems to be taken from a stuffed specimen' (Audubon 1828).

William Swainson (1789–1855), one of England's leading ornithologists, was convinced of the Bird of Washington's authenticity and, 'for a copy of the work at its cost price', published a glowing review of *The birds of America* in the same issue as Audubon's article (Herrick 1917, 1: 400). 'I have long aimed at that perfection, which M. Audubon has so fully attained', Swainson (1828) wrote, promoting Audubon as a 'genius' and imploring those individuals with the means to subscribe to Audubon's book to do so. Swainson (1828) did not comment on the Bird of Washington's unique anatomy or the remarkable circumstances of Audubon's discovery. Rather, he framed the species as Audubon



Figure 5. The Bird of Washington in *The birds of America* (1827, Pl. 11), engraved by Robert Havell Jr. and hand-coloured by Havell's team. Reproduced courtesy of the John James Audubon Center at Mill Grove, Audubon, PA, and Montgomery County Audubon Collection (<https://www.audubon.org/birds-of-america>, accessed 9 October 2019).

² The copper plate with Havell's engraving of the Bird of Washington is preserved in the collection of the Metropolitan Museum of Art, New York, NY (Fries 2006: 395).

³ For unknown reasons, Audubon changed the scientific name of the Bird of Washington three times in rapid succession: *Falco washingtoniensis* (1826, Fig. 2) became *Falco Washingtonii* in Pl. 11 (Audubon, 1827) and then *Falco Washingtoniæna* in Audubon (1828).

intended—a patriotic symbol—an idea he knew would appeal to wealthy English nobility who were sympathetic to American causes: ‘This noble figure is an upright, and occupies the full size of the paper ... if the passions of the brute creation can be traced in their physiology, (and no doubt they can,) we can discern as much of the mild dignity of the great American patriot [Washington], in this his emblem, as can well be expressed in the head of a bird.’ Furthermore, not only did Swainson give *The birds of America* his scientific endorsement; he made a direct appeal and sowed guilt among the English nobility who had not yet subscribed:

‘It will depend on the powerful and the wealthy, whether Britain shall have the honour of fostering such a magnificent undertaking [as *The birds of America*]. It will be a lasting monument, not only to the memory of its author, but to those who employ their wealth in patronising genius ... It is surely this; in as much as it exhibits a perfection in the higher attributes of zoological painting, never before attempted. To represent the passions and the feelings of birds, might, until now, have been well deemed chimerical [more irony] ... on casting my eyes over the list of subscribers, it is with gratified feelings that I see His Most Gracious Majesty at the head. From the fine and original taste which our king seems intuitively to possess, I question whether any of his subjects are better qualified to appreciate the merits of M. Audubon. The number of nobility who have followed the example of our sovereign, as yet, are few.’ (Swainson 1828)

Audubon added parts of Swainson’s review to a new issue of his prospectus for *The birds of America*, which helped him garner the subscribers needed to continue the work (Fries 2006: 30, 388). Swainson, however, eventually came to regret his full-throated endorsement. Two years later, in 1830, he conceded to Bonaparte that ‘many [species in Audubon’s book] are too obscure to be admitted on the mere authority of drawings which do not point out their specific characters ... I thought he would have been an authority, but few men can transcendently excel in more than one branch’ (Stroud 2000: 119). After the publication of Audubon (1831), Swainson remarked frankly that, ‘so far as technical science is concerned, it is, in short, a complete failure’ (Stroud 2000: 120).

Origins of the Bird of Washington

Plagiarism aside, did Audubon really think there were two species of ‘Sea Eagle’ in North America? His journal from late 1820, after he left his position in Cincinnati, was fortunately not burned by his granddaughter. It confirms that Audubon was aware that *Falco ossifragus* Wilson, 1813, the name on his Bird of Washington painting (Fig. 3), had been identified as an immature Bald Eagle by Wilson himself (Ord in Wilson 1814: 129)⁴. On 5 November 1820, while travelling south by boat on the Ohio River, Audubon ‘Saw about the same time a fine Brown Eagle—[and] Shot at it without effect.’ On 13 November, he wrote: ‘M^r Aumack saw an Eagle with a White head and Brown Body & Tail, [and] this Corroborates with the Idea of Willson of its being the same Bird with the Brown Eagle’, and the next day, he ‘Saw several Eagles, Brown & White headed.’ On 15 November Audubon wrote: ‘Saw

⁴ In fact, even before Wilson, the plumage maturation of the Bald Eagle was determined by Charles Willson Peale (1741–1827), proprietor of the Peale Museum in Philadelphia. Peale wrote in a letter to Etienne Geoffroy Saint-Hilaire on 30 April, 1797: ‘this [specimen] sent is young. they change the colour of the Bill to a light yellow, in 2 yrs become light coloured, the head & Tail feathers become quite white, and the other feathers change from that russet brown to a fine dark brown almost black. [About when] they attain the fifth year of their age. At least such has been the case with one that I have, which was taken from the nest 12 years past...’ (Miller 1988: 198).

more than a Dozen of Eagles and one I had a good view of had a White Tail & a Brown head, Again [Yet] I remark^d that the *Brown Eagles In Ohio* Esp. [i.e., not in Kentucky where he later claimed to have collected a specimen] were at Least $\frac{1}{4}$ Larger than the White headed ones' (Corning 1929: 15–28). One week later, after shooting an adult Bald Eagle on 23 November, Audubon was 'Convinced that the *Bald Eagle* and the *Brown Eagle* [were] Two Diferent [*sic*] Species', though he had still not collected a specimen of a brown eagle for comparison (Corning 1929: 38).

This is the earliest evidence that Audubon thought there was a second species that was larger than, but closely related to the Bald Eagle. Critically, his conjecture that the brown eagles in Ohio were larger than the 'White headed ones' was not based on specimen evidence, but on a field observation. It was only after he had an opportunity to see many eagles together in different plumages that Audubon concluded that (1) Wilson was right: Bald Eagles are brown in their immature plumage, and (2) there might also be another species, still unknown, that is larger than the Bald Eagle and brown in both immature and adult plumages. Nevertheless, the journal confirms that he did not have physical evidence of that putative species as of November 1820, only an unconfirmed speculation that they 'were at Least $\frac{1}{4}$ Larger'.

This is important because, eight years later, in his published account, Audubon (1828) claimed that this was his *last* sighting of the species, *after* he had already secured a specimen. 'My last opportunity of seeing the sea eagle,' Audubon (1828) wrote, 'was on the 15th of November, 1821, a few miles above the mouth of the Ohio; two passed over our boat, moving down in easy flappings.' Audubon did not travel 'a few miles above the mouth of the Ohio' river in 1821, and the 15 November entry of his 1820 journal contains his last sighting of 'brown eagles' of that year, so Audubon was presumably referring to that passage in his published account. However, based on his published timeline, the specimen Audubon claimed to have collected in Kentucky could not have been acquired later than 1819–20, despite his insistence that his painting inscribed 'New Orleans 1822' (N-YHS 1863.17.11) was 'faithfully figured from a fresh-killed specimen' (Audubon 1828).

Audubon (1828: 115) retroactively claimed to have first seen the species in February 1814, 'on a trading voyage, ascending the Upper Mississippi'. His next observations were 'a few years afterwards ... in Kentucky, near its junction with the Ohio' (c.1817–18), when he reportedly saw an adult Bird of Washington at the nest. Finally, 'after two years had gone by, since the discovery of the nest', Audubon (1828: 118) claimed that he collected a specimen of the Bird of Washington in Kentucky (c.1819–20). And yet, in his 1820 journal entries, Audubon was still uncertain whether his hunch about the larger eagle was correct: 'Again I remarkd that the Brown Eagles In Ohio Esp. were at Least $\frac{1}{4}$ Larger than the White headed ones' (Corning 1929: 15–28). Audubon's (1828) distortion of the timeline makes the story seem plausible, but it is not supported by his own journal.

Considering the evidence that the Bird of Washington was in part copied (without attribution) from line drawings (Fig. 4), the most parsimonious explanation for the myriad inconsistencies in Audubon's published anecdotes is that they were also invented. This includes his purported discovery of a nest of the Bird of Washington on a rocky cliff (vs. the Bald Eagle, which nests in trees) and his extraordinary claim that he observed copulations between members of both species, 'but on no occasion did they mix' (Audubon 1828: 116). Audubon's dramatic story of collecting a specimen, the purported subject of his painting, was also most likely fictional, but passed off as authentic:

'I come at last to the day I had so often and so ardently desired. Two years had gone by, since the discovery of the nest, in fruitless excursions; but my wishes were no longer to remain ungratified. In returning from the little village of Henderson [Kentucky] to the house of Doctor Rankin, about a mile distant, I saw [a Bird of Washington] rise from a small enclosure not a hundred yards before me, where the doctor had a few days before slaughtered some hogs, and alight upon a low tree branching over the road. I prepared my double-barrelled piece, which I constantly carry, and went slowly and cautiously towards him; quite fearless he awaited my approach, looking upon me with an undaunted eye. I fired and he fell; before I reached him he was dead. With what delight I surveyed this magnificent bird! Had the finest salmon ever pleased him as he did me? – Never. I ran and presented him to my friend, with a pride which those can only feel, who, like me, have devoted their earliest childhood to such pursuits; to others, I must seem 'to prattle out of fashion.' The doctor who was an experienced hunter, examined the bird with much satisfaction, and frankly acknowledged he had never before seen or heard of it' (Audubon 1828: 118)⁵.

Mc'Aren's Eagle and the Brano specimen

By 1830, two years after Audubon's (1828) account of the Bird of Washington was published, some European ornithologists, including Swainson, had begun privately to express doubts as to the authenticity of the species (Stroud 2000: 119). It was around this time that a rumour began about a specimen of the Bird of Washington in Philadelphia, which temporarily allayed these concerns. Audubon was passing through Philadelphia in March 1830, on his way to London via New York, when he met with an old acquaintance, the zoologist Richard Harlan (1796–1843). Harlan, like Audubon, had a mixed reputation among the intelligentsia of Philadelphia. According to the charismatic ornithologist George Ord (1781–1866), who completed the final two volumes of *American ornithology* after his mentor Wilson's untimely death, Harlan's 'moral character [was] so infamous ... that he [was] excluded from the society of gentlemen' (APS, Mss.B.Or2).

Two influential events that bear on the history of the Bird of Washington occurred during the meeting of Audubon and Harlan in March 1830. (1) They visited 'Mc'Aren's Garden' in (what was then considered) the Philadelphia suburbs⁶, where they saw a captive eagle that Harlan thought was a Bird of Washington. Audubon identified the captive bird as a Bald Eagle and correctly predicted that the bird would eventually moult into the normal adult plumage. However, Harlan was insistent that it was a Bird of Washington and they made a friendly (pretend) wager over it, which Audubon (unsurprisingly) won. (2) They visited the taxidermy shop of Joseph Brano (listed in Putnam 1866: 37), where they found a stuffed specimen of a large, immature Bald Eagle in its brown plumage. This time, Audubon took the opposite approach and convinced Harlan that it was indeed a specimen of the

⁵ To 'prattle out of fashion' is a quote from Shakespeare's *Othello* (Act 2, Scene 1). The interjection of this phrase into his narrative about killing a Bird of Washington is more evidence that Audubon had a target audience in mind when he wrote the manuscript: well-educated and affluent English citizens who might become subscribers. Othello said 'I prattle out of fashion, and I dote in mine own comforts' to save face with his wife (Desdemona) after talking too much about himself. Audubon's flirtatious, self-deprecating humour was probably not overlooked by his female readers in England.

⁶ The spelling of this location varies in literary sources. A catalogue published in Philadelphia for 'strangers' (tourists) in 1830 gives a brief description: 'M'Arens Garden / This beautiful garden lies between West Filbert street and Courtland street, and Schuylkill Fifth and Sixth streets. It is handsomely laid out, and the proprietor has collected a great variety of plants. It is an agreeable place of resort in the summer season' (Anon. 1830: 148). The historic garden was located only 300 m from the modern site of the ANSP, in the lot where the (now historic) Arch Street Presbyterian Church was built in 1855. The city block is now dominated by the Comcast Center skyscraper.

Bird of Washington. Thus began the widespread rumour that the Bird of Washington was supported by a specimen in Philadelphia.

Shortly after returning to London, on 14 July 1830, Audubon nonchalantly mentioned in a letter to Bonaparte, who doubted the validity of the species, that '[he] saw in Philadelphia a fine specimen of the Bird of Washington' (Yale 4, f. 172). Audubon had little reason to believe that Bonaparte, who had ceased all contact with Ord and had bitter feelings about the ANSP, would ever return to Philadelphia and see the purported specimen himself. 'Do not speak to me of the [Academy]. I think it is [damned]', Bonaparte had written in 1826, 'The death blow has been inflicted! ... my feelings are those of a foreigner [étrangé]' (Stroud 2000: 80). Bonaparte responded to Audubon on 6 December 1830:

'Vous me dites avoir vu a Philadelphia un bel individu de votre aigle Washington; etait-il mort ou vivant, et a que [...] J'admire votre courage et vos beaux projects.' [You tell me that you have seen in Philadelphia a fine individual of your Washington eagle; was he dead or alive, and of what [...] I admire your courage and your beautiful projects.] (APS, Mss.B.642)

Meanwhile, in Philadelphia, apparently without Audubon's knowledge, Harlan returned to Brano's shop and made a deal for the specimen, which he then deposited in the ANSP museum⁷. Curiously, the specimen did not appear in the list of donations during 1830 that was printed in the *Journal of the Academy of Natural Sciences of Philadelphia* (6: 323), although an anonymously written article published in January 1831 claimed that 'The Eagle of Washington (*Falco Washingtonianus*) recently described for the first time by Mr. Audubon' was in the ANSP bird collection (Anon. 1831: 93). Audubon, who was living in London, received a letter from Harlan dated 19 August 1830, which read:

'... that fine specimen of *Washington Eagle*, which you noticed in Brano's Museum is at present in my possession...I lent him some money on it as a pledge, and I believe he means to cheat me, I have deposited it in the Academy, where it will most likely remain ... the large Eagle you seen [sic] at MacArens Garden, does not wear a *white head* yet, though it must be 5 or 6 years old.' (Yale 4, f. 172)

Harlan's confidence in Audubon was strengthened when he lost the wager. Audubon (1834: 163) quoted from a letter from Harlan dated 26 April 1831: 'I wish I could walk with you this moment in M'Arran's [sic] garden, to shew you how *white* the head of the eagle, which we talked of betting about, has at last become, as well as his tail; but he must have been at least nine or ten years old first.' Meanwhile, although the deposit of the Brano specimen at the ANSP was potentially problematic for Audubon, he made the best of the situation and used it for leverage in Europe. He responded to Bonaparte on 2 January 1831: 'The bird of Washington is actually in the Society of Natural History of Philadelphia [i.e., ANSP, remainder of page illegible]' (Yale 4, f. 172). Audubon also quoted Harlan's 1830 letter in his (second) text account of the Bird of Washington, which was printed and ready for distribution by the end of March (Corning 1969, 1: 132):

⁷ My efforts to relocate this specimen at the ANSP have been unsuccessful. Only one contemporaneous record of the specimen at ANSP has been located, a notice inexplicably penned in a ledger of library (book) loans, which reads: 'Rec^d May 1st 1832, from curators, the Washington Eagle deposited by ... R. Harlan.' (ANSP, coll. 291)

'Whilst in Philadelphia, about twelve months ago, I had the gratification of seeing a fine specimen of this Eagle at Mr. Brano's Museum⁸. It was a male in fine plumage, and beautifully preserved. I wished to purchase it with a view of carrying it to Europe, but the price put upon it was above my means.'

'My excellent friend, Richard Harlan, M.D. of that city, speaking of this bird, in a letter, dated 'Philadelphia, August 19, 1830,' says, 'That fine specimen of Washington eagle, which you noticed in Brano's Museum, is at present in my possession. I have deposited it in the Academy, where it will most likely remain.' I saw the specimen alluded to, which, in as far as I could observe, agreed in size and markings exactly with my drawing [of the Bird of Washington], to which, however, I could not at the time refer ...' (Audubon 1831: 61–62)

Bonaparte replied to Audubon's letter on 10 April 1831: 'I should be very glad to see & examine the Washington eagle you mention, in order to persuade myself of its' specific existence of which I must confess I still strongly doubt. What I am certain of is that all those I examined were young Bald Eagles' (APS, Mss.B.B642). Bonaparte's doubt was not widely shared among European naturalists, however, as praise for Audubon's discovery continued to pour in. Rennie (1831) quoted long passages from Audubon's (1828) account and, though he found it peculiar that Audubon described a nest on the 'shelves of rocks' (i.e., on cliffs), was otherwise impressed by his 'very animated and interesting narrative of his discovery of this magnificent eagle, with a portion of which we shall enrich our pages.' The noted English botanist, Thomas Nuttall (1786–1859), who, like Audubon, published large commercial books about American birds that contained many errors (Brewster 1906: 79–80, Halley 2019), put his full support behind the Bird of Washington (Nuttall 1833). 'According to the magnificent plate of Audubon, it appears to be wholly of an almost uniform dark brown', wrote Nuttall (1833: 92), 'If this be the color of the adult bird, it is unquestionably a new species, and an additional piscatory kind to those already known.' Nuttall further remarked that 'a specimen from the vicinity of Egg-Harbor in new Jersey, is now in Brannau's [*sic*] Museum, in Market Street, Philadelphia; but in this there are some white spots, indicating the incomplete character of the plumage.' Nuttall (1833: 106) penned his article in April 1831, when he was living in Boston, and evidently did not realise that the specimen was no longer in Brano's Museum. As mentioned earlier, Harlan claimed in a letter to Audubon on 19 August 1830, that the specimen was 'at present in [his] possession' (Yale 4, f. 172).

Resistance in Philadelphia

Audubon's claims about the Brano specimen aroused the interest of ornithologists in Philadelphia, including Ord and Titian R. Peale (1799–1885), who went to ANSP to examine the specimen for themselves. After doing so, both men were convinced that Audubon was lying, but were hesitant to speak out because of his growing fame. In a letter dated 23 April 1832, to the English naturalist Charles Waterton (1782–1865), Ord wrote exasperatedly: 'I am confident that I should have a swarm of hornets about my ears, were I to proclaim to the world all that I know of this impudent pretender, and his stupid book' (Fig. 6).

⁸ A pencilled annotation inserted here in Sir William Jardine's (1800–74) copy of *Ornithological biography* (1831), reads: '[Brano's] Museum burned in 1839 or 40.' Jardine's copy later passed to Charles Darwin (1809–82), who consulted it while preparing *On the origin of species* (1859). It is now preserved in the Natural History Museum Library (London).

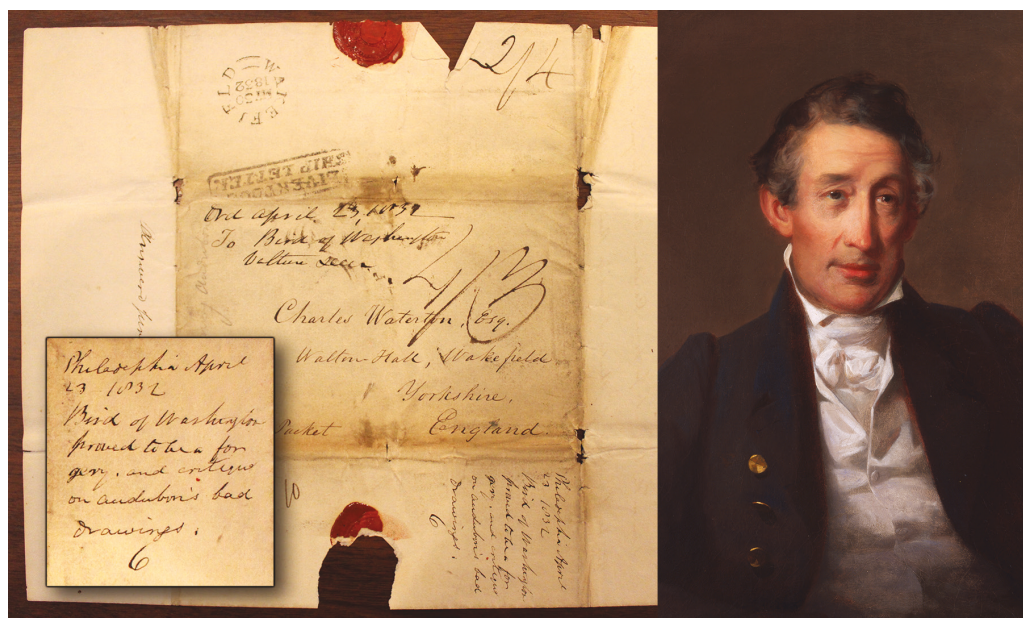


Figure 6. (Left) Address-bearing face of a letter from George Ord (1781–1866) to Charles Waterton (1782–1865) with the following inscription: 'Philadelphia April 23, 1832 / Bird of Washington proved to be a forgery, and critique on Audubon's bad drawings' (lower left inset); reproduced courtesy of the American Philosophical Society Library, Philadelphia, PA (Mss.B.Or2). (Right) Oil portrait of George Ord executed in 1829 by John Neagle (1796–1865), reproduced courtesy of the ANSP Archives (coll. 286).

Biographers have almost universally cast Ord as a petty antagonist, while minimising (or underestimating) his ornithological knowledge and prowess (e.g., Ford 1964, Souder 2014: 13). Rhodes (2004: 394) introduced Ord as a 'long-faced quarrelsome, wealthy English dilettante ... [who] marked [Audubon] down for destruction' because he was 'competition'. By all accounts, Ord was indeed cantankerous, but his antipathy for Audubon was not merely a personal grudge between men with incompatible personalities as implied or stated by recent biographers (e.g., Rhodes 2004, Souder 2014). Rather, the antipathy was Ord's reaction to the gradual uncovering of Audubon's extensive record of dishonesty and plagiarism (see Ord 1840). Substantial evidence has emerged in modern times that lends credence to Ord's suspicions (e.g., Dallett 1960, Partridge 1996, Markle 1997, Pick 2004, Woodman 2016, Halley 2016, 2018a, this study).

Ord and the other ornithologists in Philadelphia were evidently ignorant of Audubon's plagiarism in the *Bird of Washington*, but they rejected the species nonetheless because they were unable to verify his extravagant claims without specimen evidence. They followed the same standard of scientific evidence used by professional ornithologists today, a precedent that had been established by Audubon's predecessors in Philadelphia (e.g., Wilson 1812b, Say in James 1823). Audubon failed to meet that standard. In his letter to Waterton on 23 April 1832, Ord further wrote (author's comments in brackets):

'Patience, my dear, and you shall know all. Learn, then, that the boasted Bird of Washington must be eliminated, as Charles Bonaparte would say, for it is no other than the Bald Eagle, in an immature state of plumage. A specimen of this supposed new species is in the cabinet of our Academy. This is the identical specimen which belonged to a bird-stuffer named Brano (mentioned by A. in his book) and which has since been acknowledged by A. himself as the real Washingtonianus [Audubon 1831: 61–62].

I have diligently examined this bird, and compared it with two fine specimens of the acknowledged Bald Eagle, and can find no difference whatever in their characters: they are precisely the same; and you are at liberty to make use of my name, provided you esteem me of sufficient authority, for this decision.'

'This examination was made at the [insistence] of Titian Peale, who had previously announced to me his opinion that the birds were identical. Audubon's figure of the bird is greatly defective; he has represented the lower mandible of the bill much larger than it is in reality, and the tooth-like process of the upper mandible is falsely given; the head is also unnaturally flattened [see Fig. 4]. These circumstances are calculated to mislead those who have not an opportunity of comparing specimens. His dimensions are false, as can be proved by analogy. By his statement, his bird was 3 feet 7 inches long [1.1 m], and ten feet 2 inches broad [3.1 m]. Now this difference does not obtain in any known Eagle, or Hawk of similar conformation. The following table will enable us to form a pretty good idea of proportion.' (Table 1)

'Now, supposing Audubon's Eagle to have been 3 feet 7 inches long [1.1 m], it ought to have measured in breadth, or from wing-tip to wing-tip, 8 feet, 4 inches [2.5 m], instead of 10 feet 2 inches [3.1 m], as he says, which is an evident error. But his whole statement of its size is to be doubted, as well as its weight, which he says was 14 ½ lbs [6.6 kg]. [According to Audubon's 1820 journal, the adult male Bald Eagle that was the model for Pl. 31 weighed '8½ lb.' [3.9 kg], see N-YHS 1863.18.40 and Corning 1929: 40]. Wilson says that the Bald Eagle weighs 11 lbs [5.0 kg], and I think that it is seldom heavier. A male shot by Mr. Peale in Florida weighed only 7 lbs [3.2 kg]. In Audubon's Book it is said that Brano's specimen is of the size of the individual figured by the former. Now this very specimen is of the same size as our Bald Eagle: we hence see what reliance can be placed in Audubon's correctness.'

TABLE 1

George Ord's table of measurements, compiled from the writings of Alexander Wilson (1766–1813) and Thomas Bewick (1753–1828), comparing the distance from the tip of the bill to the tip of the longest rectrix (length) and wingspan (breadth) of freshly killed specimens of North American and European birds of prey. The top rows contain the measurements from Audubon's annotation on the original painting of the Bird of Washington (N-YHS 1863.17.11), his published text accounts (Audubon 1828, 1831), and the minimum expected values of an eagle 'at least ¼ larger' than the Bald Eagle, as per Audubon's 1820 journal (Corning 1929). Common names are given as Ord knew them, and scientific names reflect currently accepted nomenclature (Chesser *et al.* 2018). All measurements are reported in inches, as in Ord's original table.

English name	Scientific name	Length	Breadth	Source
Bird of Washington	<i>Falco washingtoniensis</i>	42.5	121	N-YHS 1863.17.11
'	'	43	122	Audubon (1828, 1831)
'	'	45	105	Corning (1829)
Bald Eagle	<i>Haliaeetus leucocephalus</i>	36	84	Wilson (1811b)
Sea Eagle	<i>Haliaeetus leucogaster</i>	42	84	Bewick (1797)
Osprey	<i>Pandion haliaetus</i>	24	60	Bewick (1797)
'	'	22	63	Wilson (1812a)
Red-tailed Hawk	<i>Buteo jamaicensis</i>	20	45	Wilson (1812b)
Broad-winged Hawk	<i>Buteo platypterus</i>	14	33	Wilson (1812b)
Black Hawk	<i>Buteo lagopus</i>	21	50	Wilson (1812b)
Marsh Hawk	<i>Circus cyaneus</i>	21	47	Wilson (1812b)
Peregrine Falcon	<i>Falco peregrinus</i>	20	44	Wilson (1814)

'In [Table 1] it will be observed, that the greatest difference obtains in the Osprey [*Pandion haliaetus*], which is a long-winged bird, the wings, when folded, extending about an inch beyond the tail, according to Wilson, and more than two inches according to Temminck. Now Audubon's Eagle's tail is said to be of ordinary length, extending considerably beyond the tips of the wings; he gives the same description of that of the Bald Eagle. Thus, from analogy, we are enabled to prove the falsity of the statement with respect to the size of this supposititious species.'

'One observation more, and then I am done. The wings of Brano's specimen measure, when folded, 26 inches [66.0 cm] from the shoulder to the tip. Audubon says that the length of his bird's wing, when folded, is 32 inches [81.3 cm]; now if this was the fact, then wouldn't the wings extend considerably beyond the tail, whereas it is asserted that the tail 'extends considerably beyond the tips of the wings.' The tail of Brano's specimen is 15 inches [38.1 cm] long, precisely the length of Audubon's.'

'When I commenced this epistle little did I suppose that I should fill two entire sheets; but the sin is committed, and I must run the risk of your displeasure. When I get on the subject of that individual [Audubon], who has afforded me so much space for remark, matter crowds so fast upon me, that I find it difficult to extricate myself.' (APS, Mss.B.Or2)

The Bird of Washington takes flight

Fuelling Ord's anxiety, the Bird of Washington was a marketing success on both continents and helped propel Audubon to widespread fame. In 1832, the first American edition of *Ornithological biography*, vol. 1, was published in Philadelphia, and the Bird of Washington was also featured in a popular book for youth by Goodrich (1832: 184), who wrote 'The following account of this noble bird, is from a description by the celebrated Audubon.'

In London, Jardine (1832: 92) was convinced by Audubon's claim about the Brano specimen and included the Bird of Washington in his expanded version of Wilson's *American ornithology*, perpetuating the Brano specimen fallacy: 'It has been first beautifully figured and described by [Audubon], and a specimen of it exists in the Academy of Philadelphia. Its immense size, and some other differences, seem to keep it distinct from any species we are acquainted with, and it is most probably before this time proved to be new.'

Likewise, Stanley (1835) included the Bird of Washington in *A familiar history of birds* (1835), with a woodcut image of an adult eagle feeding at a nest (Fig. 7). He further embellished Audubon's (1828, 1831) untrustworthy anecdotes and presented them as pure fact, including that Audubon (who he did not name, referring only to 'a naturalist') 'was fortunate enough to shoot [a Bird of Washington] dead on the spot ... the bird in this case seemed to be perfectly fearless, not only allowing the sportsman to approach within easy gun-shot distance, but looking at him all the time with an undaunted eye.' The clergyman Edward Stanley (1779–1849) served as the Bishop of Norwich and President of the Linnean Society (both during 1837–49) and *A familiar history of birds* became so popular that six editions were printed by 1854, each repeating the Bird of Washington myth unchanged and adding to Audubon's fame⁹. In Philadelphia, Ord marvelled and lamented at these circumstances in a letter to Waterton dated 15 April 1835:

⁹ Stanley's (1835) text about the Bird of Washington even remained intact in the 'new edition' of *A familiar history of birds* (1890), despite the publisher's note that it had been 'revised by a practical ornithologist of much experience.'

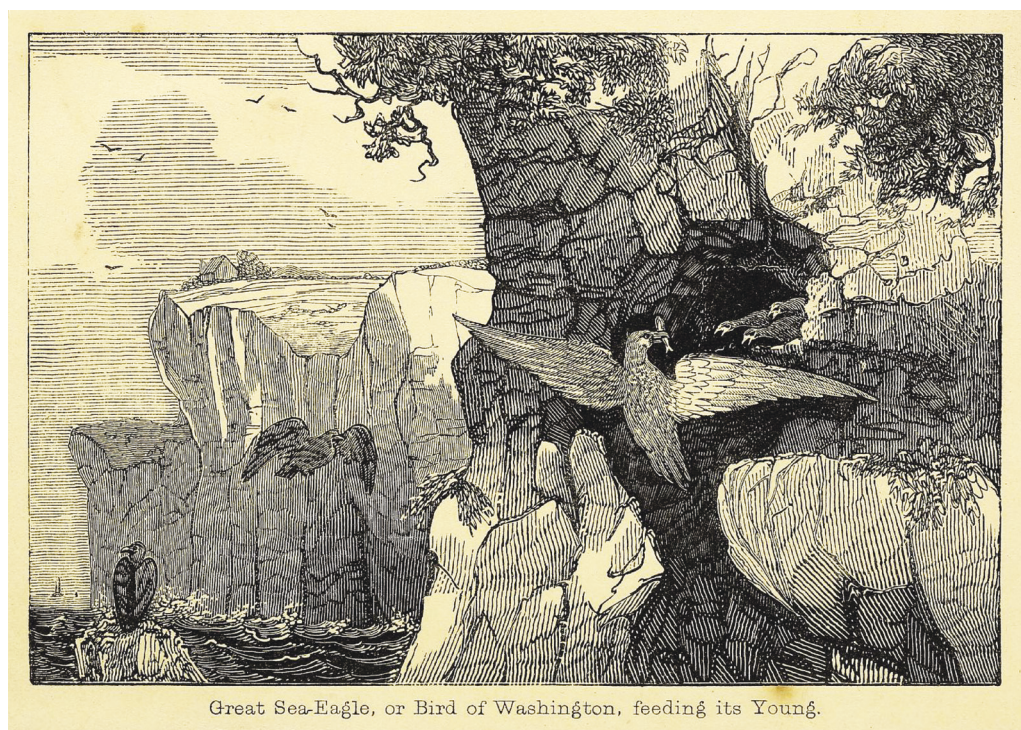


Figure 7. Woodcut print of the Bird of Washington feeding young at the nest, reproduced from Stanley (1835). The original caption reads, 'Great Sea-Eagle, or Bird of Washington, feeding its Young.'

'With respect to the Bird of Washington, [Titian Peale] says, positively, that he has no doubt of it being the Bald Eagle; and his opinion is of more weight, in my mind, in matter of this kind, than that of any person in existence. His [brother Rembrandt's] picture of [George] Washington, about which you request information, was purchased by our Congress, to adorn the capitol at Washington. What has possessed the self-called friends of Audubon? Are they determined to make him a great man in defiance of truth and common sense?'

'Mr. Audubon is certainly a prodigy, he hears what no other mortal hears, he sees what no other mortal sees ... [he has been] specially selected for the great purpose of writing the history of our birds, by the Deity himself, extraordinary powers must have been given, as to the Seers of old the divine [message] was communicated for the enlightening of the human race. Lest Mr. Audubon's singular assumption should be doubted, I quote his own words [Audubon 1834: 2]: 'and now, kind reader, let me resume my descriptions, and proceed towards the completion of a task, which, with reverence would I say it, seems to have been imposed upon me by Him who called me into existence!' Search the whole annals of egotism, from the creation of man, for an instance of presumptuous vanity to be paralleled with this: I should doubt whether one can be found.' (APS, Mss.B.Or2)

William MacGillivray (1796–1852), the often-acknowledged ghost-writer of large sections of Audubon's *Ornithological biography* (see Fries 2006: 48), expressed some doubt about the Bird of Washington. '[It] seems to be a distinct species of this genus; but although superior in size, it is too nearly allied to [White-tailed Eagle *Haliaeetus albicilla* (Linnaeus, 1758)], to be

generally admitted as such, until living individuals or skins of it can be shewn' (MacGillivray 1836: 52). Regardless, the opinions of sceptical ornithologists made little difference once the Bird of Washington myth made its way into popular press. For example, the following year, an article about the Bird of Washington appeared in *The Family Magazine* (Anon. 1837), a cheap and widely distributed periodical printed in New York under the editorship of an 'Association of Gentlemen'. It recycled details from Audubon's (1828, 1831) anecdotes and reproduced the woodcut print from Stanley (1835). Such publications likely had more of an impact on the opinions of the general public than MacGillivray's expensive volumes.

Inexplicably, Bonaparte (1838: 3) briefly recognised the Bird of Washington as a valid species: '*Haliaeetus Washingtoni*, Nob. / (*Falco Washingtoni*, Aud.) / Aud. pl. 11. Northern parts'. Notwithstanding, in the preface to this book, Bonaparte (1838) wrote 'the merit of M. Audubon's work yields only to the size of his book; whilst Mr. Gould's work on the Birds of Europe, inferior in size to that of M. Audubon's, is the most beautiful work on Ornithology that has ever appeared in this or any other country.' Audubon's vanity was wounded, and animosity flourished between him and Bonaparte (Stroud 2000: 138). In a letter dated 20 December 1837, Audubon announced to his American colleague, Revd. John Bachman (1790–1874), who believed in the Bird of Washington, that 'Bonap. has at last acknowledged the Bird of Washington as a good species having accidentally seen one of my specimen [*sic*]' (Corning 1969, 2: 193). However, unbeknownst to Bachman, no specimen that matched Audubon's painting existed in Europe, although there were many rumours. Bonaparte soon corrected the error by pulling the Bird of Washington from subsequent works without comment (e.g., Bonaparte 1850: 15).

On 19 December 1838, Audubon wrote about the Bird of Washington to Edward Harris (1799–1863), one of his closest allies and benefactors in the USA. Harris had been one of his earliest American subscribers and provided the funds for Audubon to purchase duplicates from John K. Townsend's (1809–51) collections of birds from western North America (Mearns & Mearns 2007). As a member of the Ornithological Committee at ANSP, Harris was probably aware of the controversy over the Brano specimen, but he remained loyal to Audubon and was a steadfast believer in the Bird of Washington, though he too had never seen a specimen. Audubon maintained the illusion and reassured Harris, who had reported to him an unconfirmed sighting:

'I am glad that you should have seen what you conceive to be the great *rara avis F. Washingtonii*. I am sorry you could not have pocketed it, but who knows if it is not left yet in store for you and I to shoot a pair of these noble birds at The West, and that, after having satisfactorily examined its habits, its eggs, or its young! Bonaparte, between you and I, is exceedingly ignorant as regards our birds, as I found to my cost when he was in London, and where he pumped me sadly too much, but it is now over and I forgive him as I do all others who have or who may try to injure me.' (Rhoads 1903: 382)

Audubon (1839: 10) stubbornly repeated the most controversial details of the Bird of Washington. He wrote that 'the specimen figured [had been] procured in Kentucky' and that the tarsometatarsus and toes of this 'exceedingly rare' species were 'uniformly scutellate in their whole length'. Then he doubled down, publishing the Bird of Washington image a second time in *The birds of America* Royal Octavo edition (1840–44), as a reduced-size lithograph (Steiner 2003: 188). Meanwhile, although Ord and his colleagues berated Audubon in private, they did not go public with their evidence that the Bird of Washington was a lie. 'The time for fully displaying [Audubon's] incompetency and mendacity to the world is not yet come', Ord wrote to Waterton on 30 April 1849:

'Both Charles Bonaparte and Titian Peale told me that in looking over [Audubon's] drawings of birds they saw several that they were convinced were fictitious representations. Depend upon it, he who will deliberately lie in words, will not hesitate to invent a representation. I have challenged all his admirers to produce a specimen of his boasted Washington Eagle; Bonaparte did the same. When last in Paris two of his friends assured me that they had found it in a private collection, the specimen would not be questioned, and I should be convinced of it by [regular] evidence. However, when they found that I was not willing to rely upon their authority, they had to admit that they themselves had some doubts on the subject. So the bird I did not see.' (APS, Mss.B.Or2)

Audubon's death and its aftermath

The symbolic power of the patriotic name Bird of Washington was as effective in the USA as in Europe. In 1842, an anonymously penned article defending the Bird of Washington posed the question: 'Is not John James Audubon, as we said in the outset, an admirable specimen of the Hero as a man of science? ... 'Learned societies, to which the likes of Cuvier belonged, [bowed] down to welcome his presence' (Anon. 1842). One year before his death, Audubon was included in *The gallery of illustrious Americans* (Lester 1850), published in New York, which profiled 12 of the most influential American citizens since the death of Washington. The editor proclaimed that Audubon was, like Washington, 'an imperishable name — a name that is not in the keeping of history alone. From every deep grove the birds of America will sing his name ... and the bird of Washington, from his craggy home far up the rocky mountains, will scream it to the tempests and the stars' (Fries 2006: 128).

After his death in 1851, an obituary in the *Illustrated London News* praised Audubon not only for his scientific contributions, but for his 'pecuniary sacrifices' and 'indefatigable exertions'. It was claimed that, 'as a delineator of birds, Audubon never had an equal', and that his paintings were 'remarkable for the accuracy and imitation of the feathering, and in those parts most essential to the naturalist, namely the beaks and feet, [which] are drawn with matchless skill and beauty' (Fries 2006: 127–129). However, in Philadelphia, at least in intellectual circles, reactions to Audubon's death were more measured. At the ANSP, his perseverance and skill with the paintbrush were not disputed, but many members openly questioned Audubon's scientific merits. At a meeting on 4 February 1851, in a carefully worded statement, it was 'Resolved, That by the demise of this truly great man, Science has lost one of her most zealous and gifted disciples of the Arts, a master in the branch he cultivated' (ANSP, coll. 502). However, some ANSP members (notably the ornithologists) were unable to appreciate the art for its own sake because they were aware of pervasive dishonesty in Audubon's written accounts and 'fictitious representations' in *The birds of America*. A shadow of doubt was cast across his entire body of work. On 8 October 1852, Ord wrote frankly of Audubon's death to Waterton:

'Looking in the Proceedings of the Linnaean Society of London, I find a notice of Audubon's death. He is there said to be 'deservedly celebrated' as one of the finest ornithological painters.' The principal events of his life are taken from an autobiography, published some years ago. Born near New Orleans, went young to France, and studied the elements of design under David; presented by his father with a plantation in Pennsylvania, &c., all of which is a fable. Audubon is fairly entitled to the merit of perseverance and industry. His elephant folio is a proof of this. [However] As a naturalist and a traveller, but little reliance can be placed on his narratives, in

consequence of an inveterate habit of mendacity, which should seem to have been the *premium mobile* [prime mover] of his intellect.' (APS, Mss.B.Or2)

Ord was not alone in his opinion that Audubon's works could not be relied on as sources of scientific knowledge. As Audubon's reputation soared in other American cities and in Europe, it was not Ord but the ANSP curator of birds, John Cassin (1813–69), who publicly rebuked the Bird of Washington and its creator in a popular column in the *United States Magazine*: 'This eagle is stated by Mr. Audubon to have been discovered by him in the state of Kentucky, and noticed also elsewhere, but there has always been an air of doubt and mystery involving both the discovery and the existence of the species. Most unfortunately, many statements made by this author have proved to be erroneous, which fact, and the egotistical and pretentious style of all his writings, have rendered it quite impossible for him to be regarded with entire confidence by naturalists¹⁰, or entitled to high popular regard.'

'No specimen possessing all the characters of this bird, as given by Mr. Audubon, has ever come under the notice of any other naturalist¹¹; and late European ornithologists have regarded it generally as the young of the Bald Eagle, but in some instances as a pure invention ... As a naturalist [Audubon's] works are very doubtful authority, and contain more errors and misstatements than those of any other modern author ... [the Bald Eagle] has not the large scales in front of the tarsus continued without interruption to the toes, as represented in the plate to which we allude. That character we have never seen in any species of Eagle, and [it] is unknown to naturalists.' (Cassin 1856: 205)

Nevertheless, despite the objections of the Philadelphians, the Bird of Washington myth continued to spread, propelled by its symbolic name. Ross (2017) wrote that 'Audubon's status as a celebrated naturalist and accomplished artist pushed the eagle into the realm of controversy' when in fact it was the other way around: Audubon rode the Bird of Washington to stardom. His apparently fabricated anecdotes were repackaged and elaborated in St. John (1856), one of the first popular biographies to appear after his death. The manuscript was derived from 'Audubon's works, from the recollections of his friends, and from fragments published in the United States'. The book was so popular that more than 30 editions were printed between 1856 and 2000 (WorldCat.org, accessed 12 January 2020). The Bird of Washington also found its way into musical culture. In Boston, a songwriter named James G. Clark published a song called 'Bird of Washington', which clearly demonstrates that it was no longer merely a bird, but a symbol of American independence and pride:

'When Liberty looks on the woes of the world,
Thro' clouds of oppression and crime
When tyrants and knaves from their high thrones are hurled
And men burst the fetters of Time,

¹⁰ For example, Hoy (1853) claimed that he kept a living specimen of the Bird of Washington in captivity, though he conceded that 'before its death it underwent changes plumage which led [him] to believe that, had it lived, it would have proved to be the white-headed species.' Haymond (1856) was also misled by Audubon's apocryphal anecdotes (and comparisons to the Osprey, e.g., Audubon 1831: 60) and placed the Bird of Washington in the genus *Pandion*: 'I have myself observed one or more [Birds of Washington] almost every winter for more than twenty years. Their habits being almost identical with those of the Osprey, I have placed them, without any other authority, in the same genus.' These observations were not supported by specimen evidence.

¹¹ Cassin, a colleague of Ord and Peale, undoubtedly knew the Brano specimen had been identified as an immature Bald Eagle. Whether Cassin ever examined the specimen himself is unknown.

'Tis then that I rise on the death rolling night
And strike for the brave in the battle of Right,
I laugh as the legions of tyranny flee
And they call me the bird of the free.' (Clark 1857)

Trade books continued to repeat the fallacious claim that the Bird of Washington was supported by specimen evidence, lending it legitimacy. 'But one specimen as yet exists in the American collections', wrote LeMoine (1866: 14), 'that in the museum of the Natural History Society of Philadelphia.' By this time, the resistance to Audubon was waning. The deaths of Ord (1866) and Cassin (1869) began a period of 20 years when the collection was 'almost untouched by ornithologists' (Stone 1899: 176). By the time activity resumed, in early 1888, the controversy about the Bird of Washington had been forgotten, and many in the new generation of ornithologists naïvely assumed that Audubon had simply misidentified an immature Bald Eagle (e.g., Allen 1870, but see Coues 1876). Still, the symbolic power endured, and the myth persisted among the general public for decades after Audubon's death. The ornithologist-historian Elliott Coues (1842–99), who was ignorant of the plagiarism in the Bird of Washington, nevertheless remarked: 'I wonder how many more times the 'Washington Eagle' must be put down before it will stay down!' (Gilpin 1873).

Cryptozoology and the Bird of Washington

The Bird of Washington did not stay down. The controversy was reinvigorated by Maruna (2006), who overlooked and / or neglected to cite the evidence of plagiarism uncovered by Partridge (1996). Under the assumption that Audubon was an honest narrator, Maruna (2006) argued that the Bird of Washington was in fact a real species and that Audubon was one of the last witnesses of a now-extinct member of the Pleistocene megafauna. Maruna (2006) cited the unique scutellation pattern on the feet of the Bird of Washington (see Fig. 4) and many details from Audubon's (unreliable) published anecdotes in support of his hypothesis. Souder (2014: 160) added that the dimensions of the bird in the original painting and Audubon's description of a 'mated pair with their young' made the story plausible. This thin evidence was enough to convince the owners of Donald H. Heald Rare Books (New York, NY) to use Maruna's (2006) paper in advertisements for one of the double-elephant folio prints of Pl. 11, which was on sale for \$25,000:

'...it has now been convincingly argued by Scott Maruna in an article entitled 'Substantiating Audubon's Washington Eagle' that the Bird of Washington was indeed a third species of North American eagle, larger than both the Bald and Golden Eagles, that became extinct or confined to very remote regions.' (<http://www.donaldheald.com>, accessed 11 March 2019)

To his credit, Maruna (2006) effectively demonstrated that 'the [Bird of Washington's] distribution, morphology, and ethology lay outside the accepted range of variation for the bald eagle, especially those of its juvenal stages.' However, every piece of evidence cited in support of his cryptozoological hypothesis stemmed from unreliable anecdotes published by Audubon (1828, 1831) and second-hand field observations reported by his friends (like Edward Harris) who, like Maruna (2006) and Souder (2014), assumed *a priori* that Audubon's accounts were truthful, including the claim that his painting was 'faithfully drawn from a fresh-killed specimen' (Audubon 1828). Maruna (2006) sympathetically wrote that Audubon was 'attacked' and suffered 'abuse' from his

‘detractors’, but the truth is that Audubon did not meet the standard of evidence required by systematic zoologists.

Maruna (2006: 141) mischaracterised Cassin’s position by implying that the ANSP curator thought the Bird of Washington was a ‘good species’. In fact, as quoted above, Cassin (1856: 205) fiercely rebuked the Bird of Washington in a paper Maruna (2006) did not cite. To this day, no reliable documentation of a species that matches the details in Audubon’s painting and descriptions has ever been produced. In contrast, there is compelling evidence of plagiarism (Fig. 4). With respect to cryptozoological theories about the Bird of Washington, it is probably worth revisiting the sage advice of Elliott Coues:

‘While we have gray eagles, and black eagles, and eagles without tint, [take] my word for it, reader, this eagle business is about done to death. Let me beg you not to publish the next eagle you kill. Eagle-stories are almost always ‘fishy.’ As to the number of different kinds of eagles in this country, believe me when I assure you that there never have been but two species discovered in all the length and breadth of this country. That famous ‘bird of Washington’ was a myth. Either Audubon was mistaken, or else, as some do not hesitate to affirm roundly, he lied about it. The two species are, the golden eagle (*Aquila chrysaetos*), and the bald eagle (*Haliaeetus leucocephalus*).’ (Coues 1876)

Separating man from myth

There are now at least six cases of alleged plagiarism in Audubon’s works, in addition to several ‘mystery birds’ in *The birds of America* that have never been seen by any other naturalist (Holt 2005). William Dunlap (1766–1839), the American playwright and art historian, reported an anecdote about Audubon from Alexander Lawson (1773–1846), engraver of most of Wilson’s plates. Lawson told Dunlap that, in 1824, Audubon showed him a painting of Great Horned Owl *Bubo virginianus* (J. F. Gmelin, 1788): ‘On examining it closely he thought, notwithstanding its size, that it had a remarkable resemblance to his friend Wilson’s original picture of the same bird. ‘Come here, my dear,’ said [Lawson] to his daughter, ‘bring down the Horned Owl.’ It was brought, and Audubon’s proved to be a copy from Wilson’s, reversed and magnified’ (Dunlap 1834: 203–204). An anonymous author defended Audubon from Dunlap’s claim and several other accusations of misconduct: ‘[Mr. Dunlap] has the presumption to suppose, that on his bare assertion, his readers will believe that Mr. Audubon’s figures, in his great work, are occasionally copies from Wilson, ‘reversed and magnified!’ (Anon. 1835: 58). Audubon’s plate of Great Horned Owl (Pl. 61, 1829) indeed does not closely resemble Wilson’s, but possibly he painted a new image after his encounter with Lawson.

Ord investigated further and found undeniable proof that Lawson’s (*vide* Dunlap 1834) charge of plagiarism was valid (Ord 1840: 272). Two birds in Audubon’s image (Pl. 67) of Red-winged Blackbird *Agelaius phoeniceus* (Linnaeus, 1766) were evidently copied from Wilson (1811a, Pl. 30) and subsequently embellished (Fig. 8). One of these birds, Wilson’s adult female, was printed by Audubon at reduced size and claimed by him to be a juvenile. Also, one of the Mississippi Kites *Ictinia mississippiensis* (Wilson, 1811) in Pl. 117 of *The birds of America* is indeed a mirror image of Wilson’s illustration (1811b, Pl. 25), as Lawson claimed Audubon had done with the Great Horned Owl. When one image is flipped horizontally, the outlines of the birds overlap perfectly (except a toe which was sliced off in Audubon’s plate) (Fig. 9; Ord 1840).

Audubon falsely claimed that the Mississippi Kite in his plate was a female; the illustration he plagiarised was of a male (Wilson 1811b: 82). ‘I first saw the Mississippi Kite: ascending in the Steamboat Paragon in June 1819,’ Audubon wrote in his 1820 journal,



Figure 8. Comparison of two images of Red-winged Blackbird *Agelaius phoeniceus* (Linnaeus, 1766) in (right) Pl. 67 of *The birds of America* (Audubon 1829) and (left) Pl. 30 of *American ornithology* (Wilson 1811b). Reproduced courtesy of the John James Audubon Center at Mill Grove in Audubon, PA, the Montgomery County Audubon Collection (<https://www.audubon.org/birds-of-america>, accessed 9 October 2019) and Smithsonian Libraries (QL674.W73).

several months after the events; 'having At that time no Crayons or Paper, [I] did not Draw one, and determined Never to Draw from a Stuffed Specimen, [and] Carried No Skins' (Corning 1929). Ironically, when the time came to produce his plate of Mississippi Kite in 1831, Audubon plagiarised Wilson's image that had been drawn from a stuffed specimen! This represents yet more evidence that Audubon's journal entries were not a contemporaneous record of events as they happened, but a manicured version prepared for his family, who were apparently ignorant of the plagiarism and fictional species in *The birds of America*. Yet another accusation was levied by Hunter (1983), who stated that one of the birds in Audubon's plate 117, which depicts the Northern Flicker *Colaptes auratus* (Linnaeus, 1758) is extremely similar in profile to Wilson's Pl. 25 (1811). The images are indeed similar, but the match is not conclusive.

Two of Audubon's original paintings of an adult Bald Eagle, the first clutching a Canada Goose *Branta canadensis* (Linnaeus, 1758) with its right foot (N-YHS 1863.18.40) and the second with a large catfish swapped for the goose (N-YHS 1863.17.31), which served as the basis of Pl. 31 (1828), are extremely similar in pose and composition to Wilson (1811a, Pl. 36; Fig. 10). The similarity of the plates led Rhodes (2004: 93) to suggest that Audubon's painting was, like Wilson's, based on the mounted Bald Eagle in the Peale Museum and not a freshly killed specimen as the passages in his 1820 journal imply. Nevertheless, the painting with the goose bears the inscription, 'Drawn from Nature by



Figure 9. Comparison of Mississippi Kite *Ictinia mississippiensis* (Wilson, 1811) in (left) Pl. 25 of *American ornithology* (Wilson 1811a) and (right) Pl. 117 of *The birds of America* (Audubon 1831). Reproduced courtesy of the John James Audubon Center at Mill Grove in Audubon, PA, the Montgomery County Audubon Collection (<https://www.audubon.org/birds-of-america>, accessed 9 October 2019) and Smithsonian Libraries (QL674.W73).

J. J. Audubon / Little Prairie Mississippi [sic] November 24, 182[...]', and is corroborated by passages in Audubon's journal (Corning 1929). 'I shot a Beautifull White headed Eagle *Falco Leucocephalus*—probably 150 yards off,' Audubon wrote on 23 November 1820, 'My Ball Went through its body' (Corning 1929: 37). The probability of killing an adult Bald Eagle with an early 19th century muzzle-loaded gun at 150 yards [137 m] is extremely low, so the distance of his shot seems to be exaggerated. Nevertheless, on the following day, Audubon wrote that he 'spent the greater part of the day drawing,' and on 25 November, 'spent the whole day drawing the White headed Eagle.' On 27 November, Audubon 'finished [his] drawing of the White headed Eagle, having been 4 days at it.' Despite these apparently contemporaneous sources, it is difficult to believe that Audubon was not influenced by Wilson's image (Fig. 10), especially when he had easy access to *American ornithology* in Cincinnati during the months preceding this trip (CLSC 1816).

In addition to these alleged instances of plagiarism, Audubon scholars have revealed a case of probable specimen theft (Fries 2006: 189–90, Halley 2020a), fraudulent drawings and data given to Rafinesque (Markle 1997, Woodman 2016), complete or partial fabrication of his famous ringing experiment (Halley 2018a), the seemingly deliberate distortion of the timeline in his published writings (Halley 2015, 2018a, this study) and a case of suspected backdating of a painting (Pick 2004). There is also an interesting case of self-plagiarism; the



Figure 10. Comparison of (top) White-headed Eagle (Pl. 36) in *American ornithology* (Wilson 1811b) and (bottom) White-headed Eagle (Pl. 31) in *The birds of America* (Audubon 1828). Reproduced courtesy of the John James Audubon Center at Mill Grove in Audubon, PA, the Montgomery County Audubon Collection (<https://www.audubon.org/birds-of-america>, accessed 9 October 2019) and Smithsonian Libraries (QL674.W73).

image that accompanied the original description of Western Meadowlark *Sturnella neglecta* Audubon, 1844, was copied and modified from an image of a juvenile Eastern Meadowlark *S. magna* (Linnaeus, 1758) in the double-elephant folio (Pl. 136), though the plate bears

the false caption ‘drawn from nature by J. J. Audubon’ (Halley 2016, based on a drawing reproduced in Tyler 1993: 100).

‘I cannot help mentioning another anecdote as to his veracity,’ Bonaparte wrote to the naturalist William Cooper (1798–1864) in July 1831, after perusing *Ornithological biography* vol. 1 (1831) for the first time. ‘Audubon has strenuously maintained to me that *Strix noevia* & *Strix Asio* [i.e., colour morphs of the Eastern Screech-Owl *Megascops asio* (Linnaeus, 1758)] were two species, that he had bred them, found their nests & had every proof’ (Stroud 2000: 118). However, Audubon (1831: 486) treated them as one species and claimed that the idea ‘was first publicly maintained by my friend Charles Lucien Bonaparte, although the fact was long before known to many individuals with whom I am acquainted, as well as to myself.’ Bonaparte mused, ‘What must we suppose by such misrepresentation?’ (Stroud 2000: 119). A few years later, a similar case was discussed by Ord in a letter to Waterton dated 29 September 1835:

‘I should wish the English reader to compare Wilson’s account of the Cow Bunting [*Molothrus ater* (Boddaert, 1783)] with Audubon’s: he would find that, notwithstanding the boasted knowledge of the ornithologist par excellence, the latter has pilfered the whole of Wilson’s supposed facts; and palmed them upon the reader, as the result of his own researches.’ (APS, Mss.B.Or2)

Audubon’s claim to have studied under the French painter David was also a lie, exposed by Bonaparte, whose sister-in-law Charlotte was actually David’s student in Brussels (Ford 1964: 374, Stroud 2000: 56). As Ord intimated, even basic information in Audubon’s autobiographical writings cannot be trusted. It took more than a century after Audubon’s death to confirm that he was actually born on the island of Hispaniola (Dallett 1960), not in France, as he claimed to Bonaparte and others, or the USA, as he implied in *Ornithological biography* (1831: v–x) and claimed outright in his autobiographical essay, ‘Myself’ (Audubon 1897: 7). There is no doubt that Audubon knew his true origin. In his naturalisation papers, filed in Philadelphia on 3 July 1812, he claimed to be ‘a native of the Island of St. Domingo aged about Twenty Six years’ (Dallett 1960: 91). ‘What in fact must we think of a man who prints he is born an American,’ Bonaparte wrote to Cooper, ‘after he has for years repeated to every body he was a Frenchman by birth though an American by heart’ (Stroud 2000: 118).

What was Audubon’s motivation?

When Audubon (1828) published his description and chose the Bird of Washington as the large plate for the third set of *The birds of America*—his first plate with Havell—he was gambling that his audience (potential subscribers) would believe in its authenticity. Audubon disingenuously stated in his 1827 prospectus that his paintings were the result of ‘attentive examination of the objects portrayed during a long series of years’ (Fries 2006: 385), when his leading painting was plagiarised and invented (Fig. 4). Irrespective of whether or not he believed that the Bird of Washington was, in fact, a real and distinct biological entity, (1) Audubon’s painting was not based on a specimen and he knew it, (2) he fabricated data to make the painting more convincing (e.g., Fig. 3) and (3) published the fraudulent species with boisterous claims of discovery:

‘Not even Herschell when he discovered the famous planet which bears his name [now Uranus] could have experienced more happy feelings. To have something new to relate,

to become yourself a contributor to science, must excite the proudest emotions of the human heart.' (Audubon 1828: 115)

We can only assume that Audubon's motive to lie was economic, as evidenced by the fact that, with the help of the Bird of Washington, he succeeded in his attempts to attract the wealthy patrons needed to launch *The birds of America*. However, after he published, backed by the investments of the British nobility and the King himself, Audubon could not afford to jeopardise his new success by admitting the truth to anyone. It was probably for this reason alone that, 'In spite of the opinions of others, Audubon, to the day of his death, stubbornly maintained his *Haliaetus Washingtoni* was separate and distinct from the emblematic bird of his adopted land' (Arthur 1937: 245). How could Audubon admit the truth, when his closest friends and family were believers in the Bird of Washington and had thrown their own resources behind his project? At Beech Woods plantation, where Audubon's wife Lucy worked as governess, a portrait of her husband and a print of the Bird of Washington were juxtaposed on the parlour wall:

'In the hospitable mansion of [William Garret Johnson], in the parish of West Feliciana [Louisiana], if one will look into the parlor, they will see over the piano a cabinet-sized portrait [of the ornithologist], remarkable for a bright eye and intellectual look ... Opposite hangs 'a proof impression' of 'the bird of Washington,' a tribute of a grateful heart to an old friend ... in the family holding these pleasing mementos, the 'Audubons' lived for many years ... Here it was that the wife of the great naturalist bid him go forward with his work, and not only cheered him on, but threw the acquirements of her own industry into the glory of the future.' (Thorpe 1851)

Conclusions and implications

The Bird of Washington fraud was not perpetrated with a chimerical specimen like the 'Piltdown Man' (Russell 2012), but with a fictional painting that Audubon claimed was based on a specimen that never existed. It was the first of Audubon's plates to be engraved by Havell and the first new species Audubon published. He described the Bird of Washington in a scientific journal, in the very place where the 'new science' of specimen-based ornithology began more than a century before (Birkhead 2018, Halley 2020b). Audubon led with the Bird of Washington after his arrangement with Lizars fell through and the financial success of *The birds of America* seemed most unlikely. He attached to his fictional species the venerated name 'Washington', an established symbol of American patriotism that was likely to appeal to his target subscriber base (i.e., affluent members of English society who were sympathetic to American affairs). The Bird of Washington was more than a hoax. It was the cornerstone of a highly successful (and fraudulent) marketing strategy and a lie that Audubon took to the grave.

Some insight can be gained through comparison to other fraudsters, the most notable being Richard Meinertzhagen. Garfield (2007) called the life of Meinertzhagen 'an eye-popping case study in narcissistic pathology', to which Olson (2008) responded, 'it provides powerful testimony in support of the fact that we cannot believe a word that Richard Meinertzhagen ever wrote or said about anything.' By the time his 'colossal fraud' was exposed (e.g., Knox 1993, Rasmussen & Prýs-Jones 2003, Garfield 2007), Meinertzhagen's works had been widely cited in biological literature and popular books including the epoch-making *Evolution: the modern synthesis* (Huxley 1942). Olson (2008) summarised the situation:

'[Meinertzhagen] stole specimens of birds from museum collections, fabricated label data for them, and published deliberately falsified information about birds in scientific journals—facts that have only been brought to light in recent years through painstaking research and scientific investigation. Many of us in the museum community who had long been aware of Meinertzhagen's ornithological perfidies had come to wonder if the rest of his history might prove to be just as grand a prevarication.'

The above 'ornithological perfidies' (and more) were also committed by Audubon, but historians and ornithologists have routinely given him a free pass. 'If one were to believe the claim that [Audubon] backdated a portrayal of a grouse to compete with [Wilson], he would be not just an occasional teller of tall tales, but rather a cut-throat participant in a bid to dominate the American ornithological landscape' (Olson & Mazzitelli 2017). Audubon's biographers have instead depicted his 'romantic imagination which defeats verification' (Arthur 1937: 14) as a positive and charming characteristic, shrugging it off as merely reflective of his 'frontier sense of humor' (Rhodes 2004: 134). Audubon has been given the benefit of the doubt perpetually, no matter how much doubt accumulates. As in the case of Meinertzhagen, a 'cover-up appears still [to] be in effect' (Olson 2008).

Audubon's untrustworthy anecdotes were cited by Darwin (1859) without critical scrutiny and many of his fabrications are still believed by biologists and the general public (see Halley 2018a). Audubon fabricated data (see Fig. 3) and 'published deliberately falsified information about birds in scientific journals' (e.g., Audubon 1828) and commercial books (e.g., Audubon 1831, 1839). He also gave falsified data to other naturalists, who published them unknowingly (e.g., Markle 1997, Woodman 2016). There is strong evidence that he stole the type specimen of Harris's Hawk *Parabuteo unicinctus harrisi* (Audubon, 1837) and then pretended not to know its collector, one of his subscribers (!), who intended to name the species 'Morton's Hawk' after Dr Samuel Morton (Fries 2006: 189–90; Halley 2020a).

Ord warned that a thorough review of 'The misrepresentations and lies of five enormous octavo volumes would severely tax the patience of him who should undertake to expose them, as well as of him who should listen to the detail' (APS, Mss.B.Or2). The 'Audubon collection' includes more than 435 life-size paintings (N-YHS collection), the Havell and Royal Octavo editions of *The birds of America* and more than five volumes of anecdotal accounts of American birds (*Ornithological biography*) and various other writings (e.g., Audubon 1828, 1839, 1897). Dozens of scientific names authored by Audubon are currently in use and many are based on his plates alone, because they were published prior to the text descriptions (Stone 1906, Chesser *et al.* 2018).

More than a century of Audubon-related scholarship needs to be revisited because most of the 'primary' sources used by biographers (e.g., *Ornithological biography* and Audubon's journals) are replete with deliberate distortions of the truth, perpetrated by Audubon himself and / or bowdlerised by his descendants (Arthur 1937: 243). Olson's (2008) lament, 'we cannot believe a word that Richard Meinertzhagen ever wrote or said about anything', applies as well to Audubon, but the rise of birding as a hobby in America and abroad has created a voracious appetite for Audubon-related books, which publishing houses are eager to satiate with little regard for historical accuracy. Few ornithologists today are sufficiently acquainted with historical primary sources, and therefore are unable to identify Audubon's timeline distortions and false narratives. Biographers writing for a general audience seem not to notice or care about the extent of his deception. Notwithstanding these difficulties, 'Time will uncover the truth' (Audubon 1897: 271).

Final thoughts

‘Your remarks on the subject of Audubon’s Biography of Birds are just’, George Ord wrote to Waterton in February 1844, ‘but should you seriously engage in a criticism of that voluminous romance, where will it end?’ (APS, Mss.B.Or2). Ord’s question remains unanswered, but a critical review is now underway, as he envisioned, and a more accurate history of Audubon and his ornithology will inevitably emerge as fact is separated from fiction. Audubon’s works are indeed voluminous, but the fruits of careful scholarship are cumulative.

Acknowledgements

I am again grateful for the guidance of Robert M. Peck, who reviewed an early draft of the manuscript and provided his own notes and transcriptions of unpublished letters from the Yale Archives. Robert P. Prýs-Jones and four anonymous reviewers made helpful suggestions during peer review. Patricia T. Stroud and Kenneth D. Frank donated valuable books to my library that were useful in my research. Nathan H. Rice, Jason D. Weckstein, Guy M. Kirwan, Therese A. Catanach and Albert Filemyr supported my work with thoughtful comments and advice. I also thank the curators and staff of the N-YHS for displaying the Bird of Washington in the rotating Audubon exhibit in 2018, and the ANSP and APS staff, especially Jennifer Vess, Evan Peugh and Kelsey Manahan, for help with archival materials.

References:

- Allen, J. A. 1870. What is the ‘Washington Eagle’? *Amer. Natur.* 4: 524–527.
- Allen, E. G. 1951. The history of American ornithology before Audubon. *Trans. Amer. Philos. Soc.* 41: 387–591.
- Anon. 1830. *Philadelphia in 1830—1: or, a brief account of the various institutions and public objects in this metropolis forming a complete guide for strangers, and a useful compendium for the inhabitants.* E. L. Carey & A. Hart, Philadelphia.
- Anon. 1831. Notice of the Academy of Natural Sciences of Philadelphia. *Amer. J. Sci. Art.* 19: 88–96.
- Anon. 1835. Audubon’s ornithology. *Amer. Q. Rev.* 18: 38–62.
- Anon. 1837. Sea Eagle. *The Family Magazine, or Monthly Abstract of General Knowledge* 4: 91–92.
- Anon. 1842. John James Audubon. *US Democratic Rev.* 10: 436–450.
- AOU (American Ornithologists’ Union). 1944. Nineteenth supplement to the American Ornithologists’ Union Check-list of North American birds. *Auk* 61: 441–464.
- Arthur, S. C. 1937. *Audubon: an intimate life of the American woodsman.* Harmanson, New Orleans.
- Audubon, J. J. 1827–1838. *The birds of America*, Havell edn. Self-published, Edinburgh & London.
- Audubon, J. J. 1828. Notes on the Bird of Washington (*Fálco Washingtoniàna*), or Great American Sea Eagle. *Mag. nat. hist. & J. zool., bot., min., geol. meteor.* 1: 115–120.
- Audubon, J. J. 1831. *Ornithological biography*, vol. 1. Adam Black, Edinburgh.
- Audubon, J. J. 1834. *Ornithological biography*, vol. 2. Adam & Charles Black, Edinburgh.
- Audubon, J. J. 1839. *A synopsis of the birds of North America.* Adam & Charles Black, Edinburgh.
- Audubon, J. J. 1844. *The birds of America, from drawings made in the United States and their territories*, vol. 7. E. G. Dorsey, Philadelphia.
- Audubon, M. (ed.) 1897. *Audubon and his journals*, 2 vols. Scribner’s Sons, New York.
- Bewick, T. 1797. *A history of British birds*, vol. 1. Sol Hodgson for Ralph Beilby, Newcastle.
- Birkhead, T. 2018. *The wonderful Mr Willughby: the first true ornithologist.* Bloomsbury, London.
- Bonaparte, C. L. 1824. Observations on the nomenclature of Wilson’s Ornithology. *J. Acad. Nat. Sci. Phil.* 3: 340–371.
- Bonaparte, C. L. 1838. *A geographical and comparative list of the birds of Europe and North America.* J. Van Voorst, London.
- Bonaparte, C. L. 1850. *Conspectus generum avium.* E. J. Brill, Leyden.
- Brewster, W. 1906. The birds of the Cambridge region of Massachusetts. *Mem. Nutt. Orn. Cl.* 4: 1–426.
- Buchanan, R. (ed.) 1869. *The life and adventures of John James Audubon, the naturalist.* S. Low & Marston, London.
- Cassin, J. 1856. Ornithology of the United States and British and Russian America, pt. 3. *US Mag.* 3: 205–206.
- Chesser, R. T., Burns, K. J., Cicero, C., Dunn, J. L., Kratter, A. W., Lovette, I. J., Rasmussen, P. C., Remsen, J. V., Stotz, D. F., Winger, B. M. & Winker, K. 2018. *Check-list of North American birds* (online). American Ornithological Society. <http://checklist.aou.org/taxa> (accessed 30 April 2019).
- Circulating Library Society of Cincinnati (CLSC). 1816. *Systematic catalogue of books belonging to the Circulating Library Society of Cincinnati.* Self-published, Cincinnati.
- Clark, J. G. 1857. *The Bird of Washington* [musical score]. Russell & Tolman, Boston.
- Corning, H. (ed.) 1929. *Journal of John James Audubon made during his trip to New Orleans in 1820–1821.* The Business Historical Society, Cambridge, MA.

- Corning, H. (ed.) 1969. *Letters of John James Audubon, 1826–1840*. The Club of Odd Volumes, Boston; Kraus Reprint Co., New York.
- Coues, E. 1876. Letters on ornithology. No. 9.—The Red-tailed Buzzard and other hawks. *Chicago Field*, 23 December 1876.
- Dallett, F. J. 1960. Citizen Audubon: a documentary discovery. *Princeton Univ. Library Chronicle* 21: 89–93.
- Darwin, C. 1859. *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*. John Murray, London.
- Dunlap, W. 1834. *History of the rise and progress of the arts of design in the United States*, vol. 2. George P. Scott & Co., New York.
- Duyckinck, E. A. & Duyckinck, G. L. 1856. *Cyclopædia of American literature*, vol. 2. Charles Scriber, New York.
- Ford, A. 1964. *John James Audubon*. Univ. of Oklahoma Press, Norman, OK.
- Fries, W. H. 2006. *The double elephant folio: the story of Audubon's Birds of America*, reprint. Zenaida Publishing, Amherst, MA.
- Garfield, B. 2007. *The Meinertzhagen mystery: the life and legend of a colossal fraud*. Potomac Books, Washington DC.
- Gilpin, J. B. 1873. Variation in the tarsal envelope of the Bald Eagle. *Amer. Natur.* 7: 429–430.
- Goodrich, S. G. 1832. *A book of ornithology, for youth; embracing descriptions of the most interesting and remarkable birds in all countries, with particular notices of American birds*. William Hyde & Co., Boston.
- Halley, M. R. 2015. The heart of Audubon: five unpublished letters (1825–1830) reveal the ornithologist's dream and how he (almost) achieved it. *Commonplace: J. Early Amer. Life* 16(1). <http://commonplace.online/article/the-heart-of-audubon/> (accessed 8 October 2019).
- Halley, M. R. 2016. Neglected type specimens of Western Meadowlark *Sturnella neglecta* from Audubon's last expedition. *Bull. Brit. Orn. Cl.* 136: 287–290.
- Halley, M. R. 2018a. Audubon's famous banding experiment: fact or fiction? *Arch. Nat. Hist.* 45: 118–121.
- Halley, M. R. 2018b. The ambiguous identity of *Turdus mustelinus* Wilson, and a neotype designation for the Veery *Catharus fuscescens* (Stephens). *Bull. Brit. Orn. Cl.* 138: 78–91.
- Halley, M. R. 2018c. Lost tales of American ornithology: Reuben Haines and the Canada Geese of Wyck (1818–1828). *Cassinia* 76: 52–63.
- Halley, M. R. 2019. The misidentification of *Turdus ustulatus* Nuttall, and the names of the nightingale-thrushes (Turdidae: *Catharus*). *Bull. Brit. Orn. Cl.* 139: 238–259.
- Halley, M. R. 2020a. The theft of Morton's Hawk, now known as Harris's Hawk. *Cassinia* 77: 27–33.
- Halley, M. R. 2020b. *The wonderful Mr Willughby: the first true ornithologist* (book review). *Auk* <https://doi.org/10.1093/auk/ukz075>.
- Haymond, R. 1856. Birds of south-eastern Indiana. *Proc. Acad. Nat. Sci. Phil.* 8: 286–298.
- Hendrickson, W. B. 1946. The Western Museum Society of Cincinnati. *Sci. Monthly* 63: 66–72.
- Herrick, F. H. 1917. *Audubon the naturalist*, 2 vols. D. Appleton & Company, New York & London.
- Holt, J. 2005. Notes on Audubon's 'mystery' birds. *Cassinia* 70: 20–22.
- Hoy, P. R. 1853. Notes on the ornithology of Wisconsin. *Proc. Acad. Nat. Sci. Phil.* 6: 304–315.
- del Hoyo, J., Elliott, A. & Sargatal, J. (eds.) 1994. *Handbook of the birds of the world*, vol. 2. Lynx Edicions, Barcelona.
- Hunter, C. 1983. *Life and letters of Alexander Wilson*. Memoirs of the American Philosophical Society, Philadelphia.
- Huxley, J. 1942. *Evolution: the modern synthesis*. Allen & Unwin, London.
- James, E. (ed.) 1823. *Account of an expedition from Pittsburgh to the Rocky Mountains*, 2 vols. H. C. Carey & I. Lea, Philadelphia.
- Jardine, W. (ed.) 1832. *American ornithology, or, The natural history of the birds of the United States*, 4 vols. Whittaker, Treacher & Arnot, London.
- Kellogg, E. R. 1945. Joseph Dorceuille and the Western Museum. *J. Cincinnati Soc. Nat. Hist.* 22: 1–29.
- Knox, A. G. 1993. Richard Meinertzhagen — a case of fraud examined. *Ibis* 135: 320–325.
- LeMoine, J. M. 1866. *The birds of Canada: a popular lecture delivered before the Literary and Historical Society of Quebec, April 25th, 1866*. Middleton & Dawson, Quebec.
- Lester, C. E. (ed.) 1850. *Gallery of illustrious Americans: containing the portraits and biographical sketches of twenty-four of the most eminent citizens of the American republic, since the death of Washington*. Brady, D'Avignon & Lester, New York.
- Lewis, A. J. 2011. *A democracy of facts: natural history in the early republic*. Univ. of Pennsylvania Press, Philadelphia.
- MacGillivray, W. 1836. *Descriptions of rapacious birds of Great Britain*. Maclachlan & Stewart, Edinburgh.
- Markle, D. F. 1997. Audubon's hoax: Ohio River fishes described by Rafinesque. *Arch. Nat. Hist.* 24: 439–447.
- Maruna, S. 2006. Substantiating Audubon's Washington Eagle. *Ohio Cardinal* 29: 140–150.
- Mearns, B. & Mearns, R. 2007. *John Kirk Townsend, collector of Audubon's western birds and mammals*. Privately published, Dumdries.
- McSurely, W. J. 1908. History of the library of Miami University. *Miami Bull.* (6)10.

- Mengel, R. M. 1953. On the name of the Northern Bald Eagle and the identity of Audubon's gigantic 'Bird of Washington'. *Wilson Bull.* 65: 145–151.
- Miller, L. B. (ed.) 1988. *The selected papers of Charles Willson Peale and his family*, vol. 2(1). Yale Univ. Press, New Haven, CT.
- Nuttall, T. 1833. Remarks and inquiries concerning the birds of Massachusetts. *Mem. Amer. Acad. Arts Sci.* 1: 91–106.
- Nobles, G. 2017. *John James Audubon: the nature of the American woodsman*. Univ. of Pennsylvania Press, Philadelphia.
- Olson, R. J. M. 2012. *Audubon's aviary*. Skura Rizzoli, New York.
- Olson, R. J. M. & Mazzitelli, A. 2017. Audubon's Grouse: no more grouching around. *Master Drawings* 55: 539–548.
- Olson, S. L. 2008. *The Meinertzhagen mystery: the life and legend of a colossal fraud* (book review). *Wilson J. Orn.* 120: 917–926.
- Ord, G. 1840. Minutes from the Stated Meeting, September 18 [1840]. *Proc. Amer. Philos. Soc.* 1: 272.
- Partridge, L. D. 1996. By the book: Audubon and the tradition of ornithological illustration. *Huntington Library Q.* 59: 269–301.
- Pearce, B. K. 1863. *Life in the woods: or, Audubon's adventures*. Carlton & Porter, New York.
- Pick, N. 2004. *The rarest of the rare: stories behind the treasures at the Harvard Museum of Natural History*. Harper Resource, New York.
- Putnam, F. W. (ed.) 1866. *Naturalists' directory, part II. North America and the West Indies*. Essex Institute, Salem, MA.
- Rasmussen, P. C. & Prŷs-Jones, R. P. 2003. History vs mystery: the reliability of museum specimen data. *Bull. Brit. Orn. Cl.* 123A: 66–94.
- Rees, A. (ed.) 1802–19. *The cyclopædia; or, Universal dictionary of arts, sciences, and literature*. Longman, Hurst, Rees, Orme & Brown [etc.], London.
- Rees, A. (ed.) 1806–20. *The cyclopædia; or, Universal dictionary of arts, sciences, and literature*. S. F. Bradford, Philadelphia.
- Rennie, J. 1831. *The architecture of birds*. The Library of Entertaining Knowledge. Charles Knight, London.
- Rhoads, S. N. 1903. Auduboniana. *Auk* 20: 377–383.
- Rhodes, R. 2004. *John James Audubon: the making of an American*. Vintage Books, New York.
- Ross, D. G. 2017. The role of ethics, culture, and artistry in scientific illustration. *Tech. Communication Q.* 26: 145–172.
- Russell, M. 2012. *The Piltdown Man hoax: case closed*. History Press, Stroud.
- Souder, W. 2014. *Under a wild sky: John James Audubon and the making of The birds of America*. Milkweed Editions, Minneapolis, MN.
- Stanley, E. 1835. *A familiar history of birds: their nature, habits, and instincts*, vol. 1. John W. Parker, London.
- Stanley, E. 1890. *A familiar history of birds*. New edn. Longmans, Greene & Co., London.
- Steiner, B. 2003. *Audubon art prints: a collector's guide to every edition*. Univ. of South Carolina Press, Columbia.
- St. John, H. 1856. *Audubon, the naturalist of the new world: his adventures and discoveries*. C. S. Francis & Co., New York.
- Stone, W. 1899. Some Philadelphia ornithological collections and collectors, 1784–1850. *Auk* 16: 166–177.
- Stone, W. 1906. A bibliography and nomenclator of the ornithological works of John James Audubon. *Auk* 23: 298–312.
- Stroud, P. T. 2000. *The emperor of nature: Charles-Lucien Bonaparte and his world*. Univ. of Pennsylvania Press, Philadelphia.
- Swainson, W. 1828. Some account of the work now publishing by M. Audubon, entitled *The birds of America*. *Mag. nat. hist. & J. zool., bot., min., geol. meteor.* 1: 43–52.
- Thorpe, T. B. 1851. Incidents in the life of Audubon. *Godey's lady's book*, vol. 2. L. A. Godey, Philadelphia.
- Tyler, R. 1993. *Audubon's great national work*. University of Texas Press, Austin.
- Wilson, A. 1811a. *American ornithology*, vol. 4. Bradford & Inskeep, Philadelphia.
- Wilson, A. 1811b. *American ornithology*, vol. 3. Bradford & Inskeep, Philadelphia.
- Wilson, A. 1812a. *American ornithology*, vol. 5. Bradford & Inskeep, Philadelphia.
- Wilson, A. 1812b. *American ornithology*, vol. 6. Bradford & Inskeep, Philadelphia.
- Wilson, A. 1813. *American ornithology*, vol. 7. Bradford & Inskeep, Philadelphia.
- Wilson, A. 1814. *American ornithology*, vol. 9. Bradford & Inskeep, Philadelphia.
- Woodman, N. 2016. Pranked by Audubon: Constantine S. Rafinesque's description of John James Audubon's imaginary Kentucky mammals. *Arch. Nat. Hist.* 43: 95–108.

Address: Academy of Natural Sciences of Drexel University, Dept. of Biodiversity, Earth & Environmental Science, Drexel University, Philadelphia, Pennsylvania 19104, USA, e-mail: matthewhalley@gmail.com