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## Rediscovery of a lost type specimen of Alexander Wilson

Matthew R. Halley<sup>1,2\*</sup>

**ABSTRACT**—Only 2 of Alexander Wilson’s (1766–1813) study skins are known to exist in modern collections with data confirming their provenance. Both are type specimens, preserved at the Academy of Natural Sciences of Drexel University (ANSP), and are among the most precious artifacts of American science. In 2018, I discovered a third Wilson type in the ANSP collection with a note from John Cassin (1813–1869) confirming its provenance. This paper describes the discovery and rediscovery of the type specimen of Wilson’s “variety of the Black Hawk” (*Falco niger*), overlooked by ornithologists and historians for more than 150 yr. Nomenclature is unaffected because *F. niger* Wilson is a synonym of *Buteo lagopus* (Pontoppidan 1763), the Rough-legged Hawk. Received 23 September 2019. Accepted 4 February 2020.

**Key words:** *American Ornithology*, Black Hawk, *Buteo lagopus*, *Falco niger*, history of science, Peale Museum, Rough-legged Hawk

## Redescubrimiento de un espécimen tipo extraviado de Alexander Wilson

**RESUMEN** (Spanish)—Solo se sabe de la existencia de 2 de las pieles de estudio de Alexander Wilson (1766–1813) en colecciones modernas con datos que confirmen su proveniencia. Ambos son especímenes tipo, preservados en la Academy of Natural Sciences of Drexel University (ANSP), y se encuentran entre los artefactos más valiosos de la ciencia estadounidense. En 2018, descubrí un tercer espécimen tipo de Wilson en la colección de la ANSP con una nota de John Cassin (1813–1869) confirmando su proveniencia. Este artículo describe el descubrimiento y redescubrimiento del espécimen tipo de una “variedad del aguililla negra” (*Falco niger*) de Wilson, ignorada por ornitólogos e historiadores por más de 150 años. La nomenclatura no se afecta, porque *F. niger* Wilson es sinónimo de *Buteo lagopus* (Pontoppidan 1763).

**Palabras clave:** *American Ornithology*, *Buteo lagopus*, *Falco niger*, historia de la ciencia, Peale Museum

In the winter of 1811–1812, as the Madison administration prepared the United States for war against the British, the Scottish-born ornithologist Alexander Wilson (1766–1813; Fig. 1) was in Philadelphia, Pennsylvania, preparing the fifth and sixth volumes (both published in 1812) of his seminal project *American Ornithology* (1808–1814). For most of this period (1811–1812), Wilson “removed [himself] from the noise, bustle, and interruption of the metropolis” and took up residence at Bartram’s Garden, the homestead of his ornithologist-mentor, William Bartram (1739–1823), “in order to become better acquainted with the feathered tribes, and to observe their migrations with more accuracy, as well as to enjoy the important advantages of a rural retirement” (*vide* Ord in Wilson 1828:clix). This was the pinnacle of Wilson’s productivity, but he was overwhelmed by the pressures of managing nearly every aspect of *American Ornithology*. Mixed with a general anxiety about the prospect of war and how it might affect his delicate financial situation, Wilson’s health was rapidly declining (Hunter 1983:107).

In Philadelphia, the first 2 weeks of January 1812 were “mild, and considerable rain fell” (Peirce 1847:17). While exploring the tidal marshes (“meadows”) that line the Schuylkill and Delaware Rivers just south of Bartram’s Garden, Wilson collected several hawks that he thought were new to science (Fig. 2). Later that

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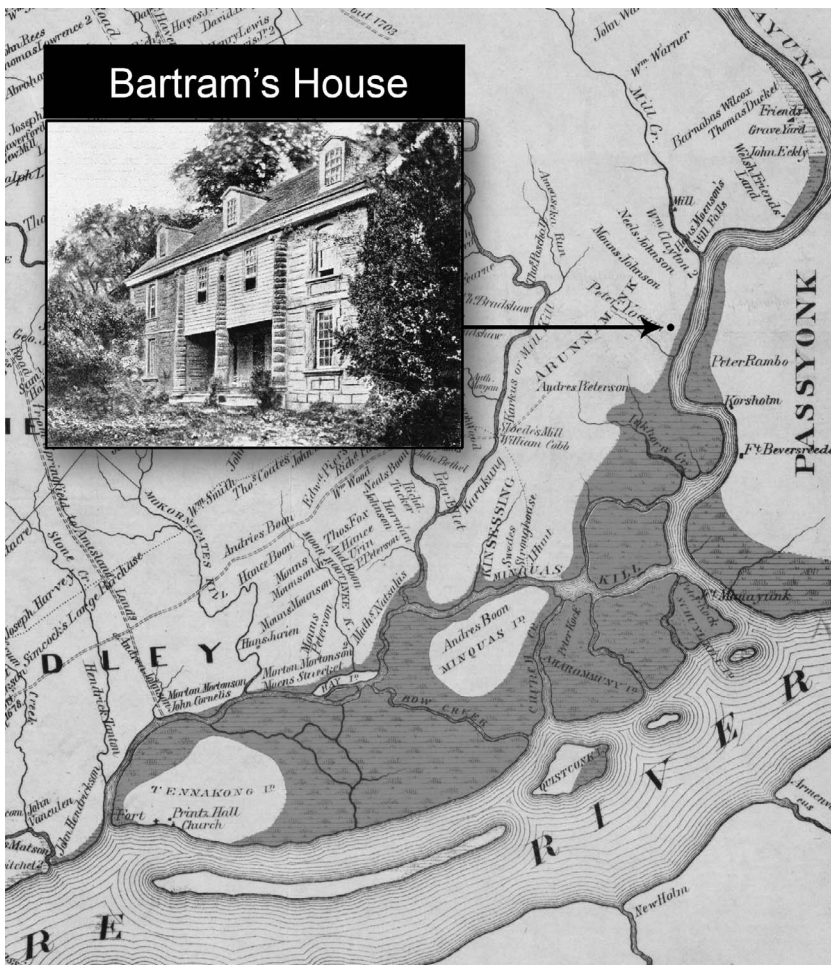
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**Figure 1.** Portrait of “Alexander Wilson, author of the American Ornithology, Native of Paisley Scotland, died 1813 aged 45,” drawn and engraved by John James Barralet (1747–1815) within 2 years of the ornithologist’s death. Reproduced courtesy of the Academy of Natural Sciences of Drexel University (ANSP) Archives, collection 457.





**Figure 2.** Location of Bartram's house and garden in relation to the (freshwater) tidal marshes at the confluence of the lower Schuylkill River (thin waterway, upper right of image) and the Delaware River (wide waterway, bottom of image). This map showing "early settlements of Delaware County, Penna." as they appeared in 1790, was published in 1862 by G. Smith and H. B. Ashmead, Bowen & Co., Philadelphia. It has been modified to highlight the extent of the marshes (dark gray) that were one of Wilson's favorite collecting grounds.

year, 2 of the specimens appeared in *American Ornithology* vol. 6 (1812, Pl. 53) under the name "Black Hawk *Falco niger*." Most writers have assumed that the name *F. niger* originated with Bartram and that Wilson used it out of respect for his mentor (see Burns 1909:135, Friedmann 1950:336). However, Wilson (1812) did not cite Bartram or even mention him (or any other author) in his account. The species called "*F. niger* the black hawk" in Bartram's (1791) famous list of American bird species was most likely a reference to the "*Falco, niger* . . . Black Hawk or Falcon" of

Edwards (1743: Pl. 4, 125) and *F. niger* of J. F. Gmelin (1788), both of which are identifiable as Peregrine Falcon (*Falco peregrinus*). Wilson's 2 Black Hawks—an adult (dark morph) male and an immature (light morph) male that he depicted in Pl. 53 of *American Ornithology* vol. 6 (1812)—were Rough-legged Hawks (*Buteo lagopus*): "Both were killed in the same meadow, at the same place and time." Wilson (1812:84) wrote, "I have no hesitation, therefore, in giving it as my opinion, that [these] birds are of the same species, differing only in age, both being males." That

Wilson considered his specimens to be a novel discovery (i.e., not the same as *F. niger* Bartram, 1791) is confirmed in his letter to Samuel L. Mitchell (1764–1831), the naturalist and U.S. congressman from New York, dated 14 January 1812:

I have lately shot a number of Fine Hawks, 4 of which are altogether new to me and I believe to Europeans. One is almost entirely black and of great strength and fierceness ... The United States will exhibit such a display of noble Eagles and Hawks in the 5th & 6th vols. of [*American Ornithology*] as I think no other country can produce. (Hunter 1983:396)

Wilson illustrated both specimens and then reduced them in size to fit on a single page (reproduced by Burt and Davis 2013:171), which was engraved by J. G. Warnicke for Pl. 53 of *American Ornithology* vol. 6 (1812). Wilson then submitted the specimens to the Philadelphia (Peale) Museum, the famous establishment of the Peale family at the Pennsylvania State House (now Independence Hall) in Philadelphia. At that time, the museum was managed by Rubens Peale (1784–1865), who wrote in an accession ledger on 16 January 1812: “Alexander Willson [sic] sent two skins of the Black Hawk” (Historical Society of Pennsylvania [HSP], coll. 0481). The adult and immature specimens were assigned Peale Museum numbers 404 and 405, respectively (Wilson 1812:82, 84).

### Tracing Wilson’s types

After moving locations in Philadelphia several times, the remnants of the Peale collection were eventually divided and sold to P. T. Barnum (1810–1891) and Moses Kimball (1809–1895) (reviewed by Faxon 1915). Barnum’s share is thought to have perished in the tragic fire at Barnum’s American Museum at the corner of Broadway and Ann Street in New York city (Anonymous 1865). Kimball’s share went first to the Boston Museum, then took a circuitous path to the Museum of Comparative Zoology (MCZ) at Harvard University, where portions of the collection still survive. However, the original (Peale) data were separated from the specimens in Kimball’s share and subsequently lost. By the time they arrived at MCZ, all that remained were (second-

ary) Boston Museum labels with taxonomic identifications and no provenance. Faxon (1915) generously speculated about which specimens in the MCZ collection may have been the subjects of Wilson’s illustrations, but the provenance of the specimens cannot be verified without original data.

Only 2 of Wilson’s study skins with verifiable provenance are known in modern collections. Both are type specimens and are preserved in Philadelphia at the Academy of Natural Sciences of Drexel University (ANSP). They were obtained “in exchange” sometime prior to the 1850 sale to Barnum and Kimball, according to Stone (1899). Coincidentally, both specimens are species in the Family Accipitridae: (1) the holotype specimen of Mississippi Kite (*Ictinia mississippiensis*; ANSP 2032; Peale Museum No. 403), collected by Wilson “a few miles below Natchez, [MS]” in 1811, and illustrated and published in *American Ornithology* vol. 3 (Wilson 1811, Pl. 25); and (2) the holotype of Broad-winged Hawk (*Falco pennsylvanicus*; ANSP 1551; Peale Museum No. 407), collected by Wilson in “Mr. Bartram’s woods, near the Schuylkill,” and published in *American Ornithology* vol. 6 (Wilson 1812, Pl. 54). Wilson also inadvertently gave the name *F. pennsylvanicus* to his “Slate-colored Hawk” (i.e., Sharp-shinned Hawk [*Accipiter striatus*]; see Wilson 1812:13, Pl. 46) and the error was independently noticed by Bonaparte (1824), who proposed *F. wilsonii* for Broad-winged Hawk to fill the nomenclatural vacancy, Ord (in Wilson 1824), who proposed *F. latissimus*, and Vieillot (in Bonaterre and Vieillot 1823), who proposed *Sparvius platypterus*, which holds priority (see Faxon 1901:217–218). According to the *International Code of Zoological Nomenclature* (ICZN 1999, Art. 72.7), the replacement names of *F. pennsylvanicus* are typified by the original material in Wilson (1812): ANSP 1551.

In 1869, the death of the ANSP curator of birds, John Cassin (1813–1869), “marked the close of active [ornithological] work [at the ANSP], and for twenty years the collection remained almost untouched by ornithologists” (Stone 1899:176). Witmer Stone (1866–1939) and his colleagues were, in 1888, the first ornithologists to resume work on the skin collection after Cassin’s death, and the first to implement a systematic catalog. When they began, the collection included more than 20,000 mounted birds with no catalog and



**Figure 3.** (left) Alexander Wilson's published image of the "Variety of [Black Hawk]" in *American Ornithology* (1812, Pl. 53). (right) Digital photograph of ANSP 1563, which served as the model for Wilson's drawing and was deposited by him in the Peale Museum in January 1812 (Peale Museum No. 405).

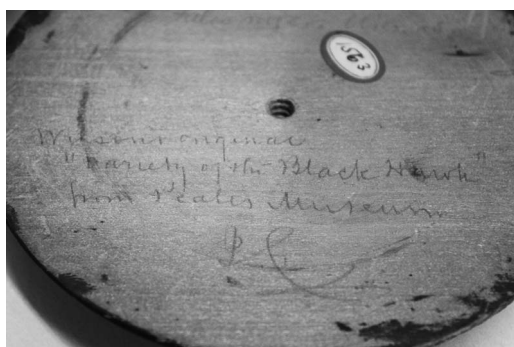
"no numbers ... on the specimens to fix their identity" (ANSP Archives, coll. 54, box. 4). Ten years later, by which time the modern ANSP numbering system had been implemented, Stone (1899) published a catalog of type specimens in the ANSP collection, in which he explained: "The collections [of the Peale Museum] were dispersed at auction upon the breaking up of the museum and such Wilson specimens as may have been there are probably lost. Two of the types [i.e., Broad-winged Hawk and Mississippi Kite] were, however, obtained in exchange by the Academy before the Peale collection was scattered" (Stone 1899:11). Stone (1915:512) later wrote that, along with the 2 specimens at ANSP and a third at Vassar College (see below), "[the MCZ specimens without data] probably comprise all that are extant

of the originals upon which the descriptions of Wilson, Ord and Bonaparte in the 'American Ornithology' and its continuation were based."

#### Rediscovery of a lost type

In 2018, in the ANSP collection, on the top shelf of a cabinet that required a ladder to reach, I found a missing Wilson type with exceptional provenance (Fig. 3, ANSP 1563): the immature specimen of *F. niger* from *American Ornithology* vol. 6 (1812, Pl. 53). A wooden base (socle), which presumably supported the bird in the Peale Museum, is tied to its tarsometatarsus with a piece of string. On the underside is a note confirming the provenance, written and initialed in pencil by Cassin: "Wilson's original 'variety of the Black Hawk' from Peale's Museum. JC." (Fig. 4). The





**Figure 4.** Bottom of the wooden base (socle) of ANSP 1563, which bears an inscription by John Cassin ("JC") that identifies the specimen as "*Falco niger* Wils. vol. [6] / Wilson's original / "variety of the Black Hawk" / from Peale's Museum / JC."

specimen is 208 yr old and most likely arrived at the ANSP with the other 2 Wilson types (ANSP 2032 and ANSP 1551), during Cassin's long tenure as curator.

ANSP 1563 was not included in the type catalog by Stone (1899) or recorded as a type in the specimen ledger he established (ANSP Archives, coll. 54, box 1). This may be because, by the time Stone worked on the collection, *F. niger* Wilson had already been listed for many decades as a synonym of *Buteo lagopus* (Pontoppidan, 1763). In any case, ANSP 1563 has not been discussed in ornithological literature and its status as a syntype of *F. niger* was until now unknown to ornithologists and historians.

The bill of the bird in Wilson's Pl. 53 (1812) is open, but the bill of the specimen was later forced closed with a metal clamp, probably when it was dismantled in the late 19th century (see Fig. 3). A paper label attached to the specimen reads: "Academy of Natural Sciences of Philadelphia No. 1563 / *Archibuteo lagopus sanctijohannis* (Gm.) / American Rough-leg / Alex. Wilson coll. [Phila]." (Fig. 5). This information is corroborated by an entry in the ANSP specimen ledger: "Donor: Alex Wilson / Remarks: Wilson's orig. specimen" (ANSP Archives, coll. 54, box 1). However, this entry is easily overlooked because it is written in miniscule letters, with erratic penmanship, and a similar name ("Dr. Wilson," referring to ANSP trustee Dr. Thomas B. Wilson) appears 6 times on the same ledger page.



**Figure 5.** Two labels attached to ANSP 1563: (upper) a historical label created around the time the specimen was given its ANSP number; (lower) a modern type label written by the author in January 2019.

## Nomenclature

The name *F. niger* Wilson, which was based on 2 specimens that are identifiable as Rough-legged Hawk *Buteo lagopus* (Pontoppidan, 1763), was based on a different species than *F. niger* Bartram, 1791. Regardless, *F. niger* Bartram is not available in avian taxonomy because all of Bartram's scientific names (in zoology, but not in botany) were suppressed by the International Commission on Zoological Nomenclature (ICZN) on account of his inconsistent use of Linnaean binomials (ICZN, Opinion 447, 1957). In contrast, the name *F. niger* Wilson, while not in use, was validly designated and is available according to the *Code* (ICZN 1999, Art. 11). Since the mid-19th century, ornithologists have appropriately listed *Falco niger* Wilson, 1812, as a junior synonym of *Buteo lagopus* (Pontoppidan, 1763) or *Buteo sanctijohannis* (J. F. Gmelin, 1788), which itself became a synonym of *B. lagopus*. Modern checklists that include subspecies recognize *Buteo lagopus sanctijohannis* (J. F. Gmelin, 1788) as the name of the eastern North American subspecies (e.g., Friedmann 1950, AOU 1957:110, del Hoyo et al. 1994:188). To my knowledge, the type specimen of *B. l. sanctijohannis* (Gmelin) is not extant.

With the guidance of the ANSP collection manager, N. H. Rice, the rediscovered type of *F. niger* Wilson (ANSP 1563) has been placed with the other Accipitridae types in the ANSP bird collection and a red type label with the appropriate

citation has been attached to its tarsometatarsus (Fig. 5). A citation to the present article has been added to the backside of the label.

### Directions for future research

This is one of several reports about the recent rediscovery of lost type specimens and/or artifacts that bear on the history of American science (e.g., Halley 2015, 2016, 2018, 2019a). Just as systematic zoology depends on the study of material (specimen) evidence for accuracy and stability, scholarly reconstructions of the history of science should be anchored to verifiable primary sources to maintain their integrity (e.g., Halley 2019b). Despite his pervasive influence on American ornithology, exceedingly few primary sources from Wilson's life and ornithology are known to exist (e.g., Hunter 1983, Burt and Davis 2013). The rediscovered type (ANSP 1563) is now the third of Wilson's study skins with verifiable provenance known in modern collections. Until the late 20th century, a fourth verified skin was known: the type of *Sylvia maritima* Wilson, a junior synonym of *Setophaga tigrina* (J. F. Gmelin, 1788), which was illustrated and described in *American Ornithology* vol. 6 (1812, Pl. 54). However, to my knowledge, the location of that specimen is uncertain after the collection at Vassar College (Poughkeepsie, New York) in which it was preserved (Orton 1871) was dismantled and dispersed in the 1980s and 1990s.

Detailed study of verified Wilson study skins may provide new information about his specimen preparation technique (e.g., via X-ray analysis; Rasmussen and Collar 1999) and enable other Wilson specimens with no apparent data to be identified (e.g., those purported to be in the Boston Museum collection at MCZ; Faxon 1915). Similarly, the original socle from the Peale Museum, tied to the tarsometatarsus of ANSP 1563, may reveal details of construction that enable other mounted specimens from the Peale Museum (with no other apparent data) to be identified in collections. Indeed, there is a dark morph specimen of *B. lagopus* in the Boston Museum collection at MCZ that may, upon further scrutiny, be identified as Wilson's adult syntype of *F. niger* from the Peale Museum (see Faxon 1915:143).

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