



## CYMINDIS WILSONII CASSIN, 1847 (= CUBAN KITE *CHONDROHIERAX WILSONII*): ORIGINAL DESCRIPTION, TYPES, COLLECTOR, AND TYPE LOCALITY

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**Abstract** · The Cuban Kite (*Chondrohierax wilsonii*) has usually been considered a species-level taxon endemic to Cuba, where it is now confined to the extreme east and is exceptionally rare. It was described by John Cassin, whose text was repeated basically verbatim in four different periodicals in 1847. The last of the four has been frequently but erroneously cited as the original description. Equally, the type locality has been reported with varying levels of vagueness, but the collector of the specimens, Richard Cowling Taylor, mentioned a rather precise locality. A report on Taylor's geological work reveals the specimens were collected in 1836 at La Silla, c. 13.5 km southeast of Gibara, Holguín province, northeast Cuba. Cassin and later Witmer Stone, the first person to revise type material held at the Academy of Natural Sciences of Philadelphia, confused the sexes of this kite, so that the female specimen must be considered the lectotype, although Stone apparently wished to nominate the male as the "type".

**Resumen** · *Cymindis Wilsonii* Cassin, 1847 (= Gavilán caguarero *Chondrohierax wilsonii*): descripción original, tipos, colector y localidad tipo

El gavilán caguarero (*Chondrohierax wilsonii*) ha sido considerado usualmente como un taxón endémico a nivel de especie. En la actualidad está confinado al extremo este de la isla de Cuba, donde es extraordinariamente raro. El taxón fue descrito por John Cassin, quien repitió literalmente el texto de su descripción en cuatro publicaciones periódicas de la Academia de Ciencias Naturales de Filadelfia (Academy of Natural Sciences of Philadelphia, ANSP) en 1847. La última de las cuatro parece haber sido la más frecuente y erróneamente citada como la descripción original. Igualmente, la localidad tipo ha sido reportada con varios niveles de ambigüedad, pero el colector de los primeros especímenes, Richard Cowling Taylor, mencionó una localidad bastante precisa. Se hace mención a un reporte de este último en su trabajo geológico, donde se revela que estos fueron colectados en 1836 en una localidad llamada La Silla, 13,5 km al sureste de Gibara, provincia de Holguín, noreste de Cuba. Cassin y más tarde Witmer Stone, quien fue la primera persona en revisar el material tipo depositado en la ANSP, confundió los sexos de este gavilán y, como resultado, el espécimen hembra tuvo que ser considerado el lectotipo, aun cuando Stone aparentemente deseó nominar al macho como el "tipo".

**Key words:** Cuba · Raptors · Threatened species · Type specimens

After just over half a century in the 'subspecific wilderness', following the work of Amadon (1960, 1964) there has been a tendency in recent years to once again recognize the Cuban Kite (*Chondrohierax wilsonii*) as a species separate from the geographically widespread Hook-billed Kite (*C. uncinatus*) (Raffaele et al. 1998, 2020; Johnson et al. 2007, del Hoyo & Collar 2014, Kirwan et al. 2019, Kirkconnell et al. 2020, Chesser et al. 2022). This returned to the treatment virtually universally accorded to *wilsonii* from its original description until the 1950s (e.g., Peters 1931, Friedmann 1934, Hellmayr & Conover 1949, Friedmann 1950). Whereas *C. uncinatus* occurs from western Mexico and southern Texas to northern Argentina, including Trinidad and the southernmost Lesser Antillean island of Grenada (Bierregaard et al. 2020), *C. wilsonii* is confined to Cuba's easternmost provinces and is now exceptionally rare (Kirkconnell 2012, Kirkconnell et al. 2020). It is known from a total of 39 specimens in museums, mostly in the USA (especially the National Museum of Natural History, Smithsonian Institution, Washington, D.C.) and fewer than ten sightings since the 1960s (Kirkconnell 2012, Kirkconnell et al. 2020). Fears have been expressed for its survival, and it is currently listed as Critically Endangered on the IUCN Red List (BirdLife International 2022).

Described in 1847 by John Cassin (1813–1869), the name *Cymindis Wilsonii* was published four times that year in virtually identical texts (Cassin 1847a, b, c, d). The first of these appeared in the *Proceedings of the Academy of Natural Sciences of Philadelphia* (Cassin 1847a) and the fourth in the *Journal of the Academy of Natural Sciences of Philadelphia*, which was accompanied by a plate (see Figure 1) (Cassin 1847d). The second and third (Cassin 1847b, c), one of which is purely a bibliographic

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**Figure 1.** Original plate of *Cymindis Wilsonii* Cassin, 1847 (= Cuban Kite *Chondrohierax wilsonii*) published in the *Journal of the Academy of Natural Sciences*, courtesy of Biodiversity Heritage Library.

notice, are discussed below. Various authors, among them keynote works such as Peters (1931), Hellmayr & Conover (1949), Stresemann & Amadon (1979), Thiollay (1994), and Chesser et al. (2022) have incorrectly attributed the original description to Cassin (1847d), evidently following initially the influential works of Bonaparte (1850: 21) and Strickland (1855: 129). Nevertheless, the primacy of the description in the *Proceedings* was recognized by Gray (1849: Appendix, p. 2) and Charles W. Richmond (1868–1932) in his card catalogue universally known as the Richmond Index, currently hosted online at [www.zoonomen.net](http://zoonomen.net) (the entry for *wilsonii* appears at: <https://zoonomen.net/cit/RI/SP/Cyan/cyan00293a.jpg>). Whereas the issue of the *Journal* in which Cassin's description appeared is dated from December 1847, the meeting, notified in the *Proceedings*, at which the original description was first read, was held on 20 April 1847, and the authority for its publication was given at its next meeting on 27 April. Nolan (1913), who investigated dates of publication for both periodicals, records that the relevant part of the *Proceedings* (volume 3, part 8) was received by the Boston Society of Natural History no later than mid-June 1847, whereas the first volume of the second series of the *Journal* was presented to a meeting of the Academy only on 7 December in the same year. That the description in the *Proceedings* is cross-referenced in the *Journal*, but not vice versa, provides additional evidence of earlier publication, as does the fact that notices of publication in the *Proceedings* appeared elsewhere too before the relevant part of the *Jour-*

*nal* appeared. These include, and are perhaps limited to, the *American Journal of Science and Arts* (2)3: 149, dated September 1847 (Cassin 1847b), and the *Annals and Magazine of Natural History* 20: 356, which cross-references also "the Silliman's Journal for Sept. 1847" (i.e., *Amer. J. Sci. Arts*, founded by Benjamin Silliman) and dates from 1 December 1847 (Cassin 1847c).

The specimens upon which Cassin based the new name, an adult male and female, reported to be a pair, were collected by the English-born surveyor, geologist, and archaeologist Richard Cowling Taylor (1789–1851; see Lea 1851), and are held at the Academy of Natural Sciences of Drexel University, Philadelphia (ANSP 1944 and ANSP 1945) (Cassin 1874a, d; Stone 1899, Ingersoll & Fisher 2006). Given that Cassin did not specifically indicate the specimens collected by Taylor as types, Stone's (1899) specification of ANSP 1944 as the "type" can be considered as a valid lectotype designation (under Art. 74.5; ICZN 1999), thereby making ANSP 1945 a paralectotype (cf. Ingersoll & Fisher 2006). The specimens were erroneously referred to as syntypes in Kirkconnell et al. (2020). Stone (1899) stated that his type (ANSP 1944) was the male, but in fact it is the female; whether he intended to nominate ANSP 1945 (which is indeed a male) as the type and it was a slip of the pen is unclear, but he may have just taken his lead from Cassin (1847a, c, d) who reported the male as having blackish-brown upperparts, versus the female's blue-gray dorsal surface (whereas the reverse is true) (Gundlach 1876, 1893; Raffaele et al. 1998, Garrido &



**Figure 2.** Ventral and dorsal views of the lectotype (right) and paralectotype of *Cymindis Wilsonii* Cassin, 1847 (= Cuban Kite *Chondrohierax wilsonii*) at ANSP (Nate Rice, © Academy of Natural Sciences of Drexel University, Philadelphia).



**Figure 3.** A) Map of Cuba, with an arrow marking the approximate location of the type locality of *Cymindis Wilsonii* (= Cuban Kite *Chondrohierax wilsonii*), at La Silla, south of Gibara, Holguín province, northeast Cuba. B) La Silla, viewed from near Gibara, May 2014 (Guy M. Kirwan).

Kirkconnell 2000, Kirwan et al. 2019). The year of collection does not appear to have been reported in the ornithological literature, but can be ascertained as being sometime in 1836 from Taylor's paper (1846) on his geological reconnaissance. Unfortunately, he does not appear to have been more specific concerning the dates he spent in Cuba.

Cassin himself considered the new bird's *terra typica* ("hab.") to be "Insulae Cubae" or "Island of Cuba"; however, the type locality is usually given as "near Gibara, Cuba" (e.g., Peters 1931, del Hoyo & Collar 2014, Chesser et al. 2022). On the basis of Taylor's notes published as part of Cassin's original description, it is clear precisely where the types were collected, at the massif of La Silla, c. 21.02657°N, 76.08386°W (Figure 3) (as also intimated by Kirkconnell 2012). Therefore, if a restriction beyond "Cuba" is preferred, then the type locality should be cited as "La Silla, c. 13.5 km south of Gibara, Holguín province, northeast Cuba." La Silla is

a karstic hill with an elevation of 307 m above sea level, mostly covered by tropical karstic forest.

Taylor (in Cassin 1847a, d) mentioned that he had been informed by local people that this raptor fed mainly on birds, especially doves, perhaps supplemented by lizards. This appears to be one of the few suggestions in the literature that *Chondrohierax* kites feed on anything but tree snails, and seems to be almost certainly mistaken. *C. wilsonii* is generally believed to be specialized on the Cuban endemic mollusc genus *Polymita* (Helminthoglyptidae), which comprises six species: *P. picta*, *P. muscarum*, *P. venusta*, *P. sulphurosa*, *P. versicolor*, and *P. brocheri*, of which the most commonly recorded species appears to be the painted snail *P. picta* (Garrido 1985, Kirkconnell 2012, Kirkconnell et al. 2020; Figure 4). Gundlach (1876) found only snails in the stomach contents of individuals he collected in eastern Cuba, and according to his collecting localities two other species beside



Figure 4. *Polymita picta* snails (Gerardo Begué).

*P. picta* must have been prey for the Cuban Kite: *P. venusta* near the Cauto River and *P. versicolor* at Guantánamo Bay, and La Silla is in the range of *P. muscarum*. However, Gundlach (1893) defined the diet as molluscs with larger shells, without mentioning any specific species or genus, and *Polymita* does not occur in the kite's former range in west-central Cuba (Garrido 1985), where tree snails of the genus *Liguus* (presumably *L. fasciatus* and *L. vittatus*, based on range) might be the predominant replacement (Wiley 1986). Ironically, Taylor noted the presence of large numbers of snails of different species at La Silla, but unsurprisingly (given the local knowledge he reported) did not make the association with the raptor he had collected.

Natural history museums are undeniably critical storehouses of the world's biodiversity, including its birds. With respect to the present study, the importance of collections in terms of specimens of endangered and already extinct species (especially in the current age of extinction) and as repositories for type specimens cannot be underestimated. Although the goal of a world avian type specimen list (Prŷs-Jones 2003) currently remains elusive, data on increasing numbers of type specimens are available via online platforms including GBIF (<https://www.gbif.org/>), VertNet (<http://portal.vertnet.org/>) and museums' own portals, in addition to published catalogues. Nevertheless, detailed work such as that attempted here can still improve, augment, and correct existing information captured in museum databases.

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#### REFERENCES

- Amadon, D (1960) Notes on the genus *Chondrohierax*. *Novedades Colombianas* 1(5): 237–238.
- Amadon, D (1964) Taxonomic notes on birds of prey. *American Museum Novitates* 2166: 1–24.
- Bierregaard, RO, J del Hoyo, GM Kirwan, N Collar, JS Marks & CJ Sharpe (2020) Hook-billed Kite (*Chondrohierax uncinatus*), version 1.0. In Billerman, SM, BK Keeney, PG Rodewald & TS Schulenberg (eds). *Birds of the World*. Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bow.hobkit.01> [Accessed 7 August 2022]
- BirdLife International (2022) Species factsheet: *Chondrohierax wilsonii*. Available from <http://datazone.birdlife.org/species/factsheet/cuban-kite-chondrohierax-wilsonii>. [Accessed 7 August 2022]
- Bonaparte, CL (1850) *Conspectus generum avium, Volume 1*. E.J. Brill, Leiden, Netherlands.
- Cassin, J (1847a) Description of a new rapacious bird in the Museum of the Academy of Natural Sciences of Philadelphia. *Proceedings of the Academy of Natural Sciences of Philadelphia* 3: 199–200.
- Cassin, J (1847b) Bibliography. Proceedings of the Academy of Natural Sciences of Philadelphia. *Cymindis Wilsonii*, a new rapacious bird from Cuba; J. Cassin—p. 200. *American Journal of Science and Arts* (2)3: 149.
- Cassin, J (1847c) Miscellaneous. Description of a new rapacious bird in the Museum of the Academy of Natural Sciences of Philadelphia. *Annals and Magazine of Natural History* 20: 356.
- Cassin, J (1847d) Description of a new rapacious bird in the Museum of the Academy of Natural Sciences of Philadelphia. *Journal of the Academy of Natural Sciences of Philadelphia* (2)1: 21–23.
- Chesser, RT, SM Billerman, KJ Burns, C Cicero, JL Dunn, BE Hernán-

- dez-Baños, RA Jiménez, AW Kratter, NA Mason, PC Rasmussen, JV Remsen, Jr, DF Stotz & K Winker (2022) Sixty-third supplement to the American Ornithological Society's *Check-list of North American birds*. *Ornithology* 139: ukac020. <https://doi.org/10.1093/ornithology/ukac020>
- Friedmann, H (1934) The hawks of the genus *Chondrohierax*. *Journal of the Washington Academy of Sciences* 24: 310–318.
- Friedmann, H (1950) The birds of North and Middle America. Part XI. Cathartidae to Falconidae. *United States National Museum Bulletin* 50. Smithsonian Institution, Washington, DC, USA.
- Garrido, OH (1985) Cuban endangered birds. Pp. 992–999 in Buckley, PA, MS Foster, ES Morton, RS Ridgely & FG Buckley (eds). *Neotropical ornithology*. Ornithological Monographs No. 36, American Ornithologists Union, Washington, DC, USA.
- Garrido, OH & A Kirkconnell (2000) *Field guide to the birds of Cuba*. Cornell University Press, Ithaca, NY, USA.
- Gray, GR (1849) *The genera of birds*, vol. 3 (pt. 48, Appendix). Longman, Brown, Green & Longmans, London, UK.
- Gundlach, J (1876) *Contribución a la ornitología cubana*. Imprenta La Antilla, La Habana, Cuba.
- Gundlach, J (1893) *Ornitología cubana*. Archivos Policlínicas, La Habana, Cuba.
- Hellmayr, CE & B Conover (1949) Catalogue of Birds of the Americas and the Adjacent Islands. Part 1, Number 4. Cathartidae-Accipitridae-Pandionidae-Falconidae. *Publications of the Field Museum of Natural History (Zoological Series)* 13, part 1(4).
- del Hoyo, J & NJ Collar (2014) *HBW and BirdLife International illustrated checklist of the birds of the world. Volume 1. Non-passerines*. Lynx Edicions, Barcelona, Spain.
- ICZN [International Commission on Zoological Nomenclature] (1999) *International Code of Zoological Nomenclature*. 4th edition. International Trust for Zoological Nomenclature, London, UK.
- Ingersoll, AW & CT Fisher (2006) Type specimens of birds in the Academy of Natural Sciences of Philadelphia. Unpublished typescript. Available from [https://www.ansp.org/~media/Files/ans/research/sys-ornithology/ANSP\\_typelist\\_v1.ashx?la=e](https://www.ansp.org/~media/Files/ans/research/sys-ornithology/ANSP_typelist_v1.ashx?la=e) [Accessed 8 October 2022]
- Johnson, JA, R Thorstrom & DP Mindell (2007) Systematics and conservation of the Hook-billed Kite including the island taxa from Cuba and Grenada. *Animal Conservation* 10: 349–359.
- Kirkconnell, A (2012) *Chondrohierax wilsonii*. Pp 213–214 in González Alonso, H, L Rodríguez Schettino, A Rodríguez, CA Mancina & I Ramos García (eds). *Libro rojo de los vertebrados de Cuba*. Editorial Academia, La Habana, Cuba.
- Kirkconnell, A, GM Kirwan, OH Garrido, AD Mitchell & JW Wiley (2020) *The birds of Cuba: an annotated checklist*. BOC Checklist Series 26. British Ornithologists' Club, Tring, UK.
- Kirwan, GM, A Levesque, M Oberle & CJ Sharpe (2019) *Birds of the West Indies*. Lynx Edicions, Barcelona, Spain.
- Lea, I (1851) Necrological notice of Richard C. Taylor. *Proceedings of Academy of Natural Sciences of Philadelphia* 5: 290–296.
- Nolan, EJ (1913) *An index to the scientific contents of the Journal and Proceedings of the Academy of Natural Sciences of Philadelphia 1812–1912*. The Academy of Natural Sciences, Philadelphia, USA.
- Prÿs-Jones, R (2003) Introduction. Pp 5–6 in Collar, N, C Fisher & C Feare (eds). *Why Museums Matter: Avian Archives in an Age of Extinction*. *Bulletin of the British Ornithologists' Club* 123A (Supplement).
- Raffaele, HA, J Wiley, O Garrido, A Keith & J Raffaele (1998) *A guide to the birds of the West Indies*. Princeton University Press, Princeton, New Jersey, USA.
- Raffaele, HA, J Wiley, O Garrido, A Keith & J Raffaele (2020) *A guide to the birds of the West Indies*. Princeton University Press, Princeton, New Jersey, USA.
- Peters, JL (1931) *Check-list of birds of the world. Volume 1*. Harvard University Press, Cambridge, MA, USA.
- Stone, W (1899) A study of the type specimens of birds in the collection of the Academy of Natural Sciences of Philadelphia, with a brief history of the collection. *Proceedings of the Academy of Natural Sciences Philadelphia* 51: 5–62.
- Stresemann, E & D Amadon (1979) Order Falconiformes. Pp 271–425 in Mayr, E & GW Cottrell (eds). *Check-list of birds of the World, Volume 1*, 2nd edition. Museum of Comparative Zoology, Cambridge, MA, USA.
- Strickland, HE (1855) *Ornithological synonyms, Volume 1, Accipitres*. John van Voorst, London.
- Taylor, RC (1846) Memoir on the character and prospects of the copper region of Gibara, and a sketch of the geology of the north-east part of the island of Cuba. *Transactions of the American Philosophical Society* (2)9: 204–218.
- Thiollay, J. M. (1994) Pp 52–254 in del Hoyo, J, A Elliott & J Sargatal (eds). *Handbook of the birds of the world. Volume 2. New World Vultures to Guinea-fowl*. Lynx Edicions, Barcelona, Spain.
- Wiley, JW (1986) Status and conservation of raptors in the West Indies. *Birds of Prey Bulletin* 3: 57–70.