Remarks on extinct giant owls (Strigidae) from Cuba, with description of a new species of Ornimegalonyx Arredondo

Author: Suárez, William

Source: Bulletin of the British Ornithologists' Club, 140(4) : 387-392

Published By: British Ornithologists' Club

URL: https://doi.org/10.25226/bboc.v140i4.2020.a3

Remarks on extinct giant owls (Strigidae) from Cuba, with description of a new species of *Ornimegalonyx* Arredondo

by William Suárez

Received 29 April 2020; revised 28 October 2020; published 9 December 2020

http://zoobank.org/urn:lsid:zoobank.org:pub:5D785324-2E0A-4FC4-BAC2-FE2D394236DE

Summary.—A revision of large extinct members of Strigidae described from Quaternary cave deposits in Cuba here reduces the number of valid taxa from five to three. *Ornimegalonyx oteroi* Arredondo, 1958a, is the only valid species of the four previously described in the genus. The type series of *Bubo osvaldoi* Arredondo & Olson, 1994, is revealed to be a composite, comprising two different species in the genera *Bubo* Duméril, 1805, and *Ornimegalonyx* Arredondo, 1958a, with the latter described herein as a new, diminutive species.

Confused with a terror bird (Phorusrhacidae Ameghino) because of its gigantic size (Arredondo 1954, 1955, 1956, 1957a,b, 1958a,b, Koopman 1958), the extinct genus *Ornimegalonyx* was erected by Arredondo (1958a) on the basis of post-cranial elements from Cueva de Pío Domingo, Pinar del Río province, western Cuba. The material was collected from the floor of the cave on 2 January 1954 by members of the Sociedad Espeleológica de Cuba (SEC). Subsequently, Brodkorb (1961) realised that this taxon actually belonged to the family Strigidae due to the presence of an ossified supratendinal bridge in the tarsometatarsus. He designated a lectotype for the type species: *Ornimegalonyx oteroi* Arredondo, 1958a. Arredondo (1975) later summarised the taxonomic history of *O. oteroi*, including synonyms, new material and localities. He believed that a number of specimens that were larger or smaller than the type material (a single individual) represented new species (*contra* Brodkorb's opinion, see Arredondo 1975: 140). Apparently discarding the possibility of considerable intraspecific variation in so large a raptor (see also Kurochkin & Mayo 1973: 59), those specimens, mostly from western Cuba, were described as *O. acevedoi*, *O. minor* and *O. gigas*, respectively, with the result that four synchronic species in the genus were recognised as having occurred sympatrically in Cuba during the Quaternary (Arredondo 1982: 45–47).

In 1947, a decade prior to the description of *Ornimegalonyx*, A. Moreno of the Museo Felipe Poey, La Habana, sent to A. Wetmore, at the Smithsonian Institution, Washington DC (USNM), two fossil bones of a large bird from eastern Cuba for study (Arredondo & Olson 1994: 436). Wetmore (1959: 15) identified them as a giant barn owl, Tytonidae, but this was never published. Thirty-five years later, Arredondo & Olson (1994) reassessed the material (Fig. 1B–C)—a near-complete right femur (USNM 447022) and partial humerus (USNM 447023). They identified it with fossils of a large extinct strigid discovered in western Cuba, which was named *Bubo osvaldoi* Arredondo & Olson, 1994. Both east Cuban bones were included in the type series of *B. osvaldoi* because they 'probably belong to the same species as represented by the bones from Pinar del Río [west Cuba], which cannot be referred to any known species of owl, living or fossil' (Arredondo & Olson 1994: 436).

I have now had the opportunity to study fossil and living Strigiformes from the West Indies (Olson & Suárez 2008, Suárez & Olson 2015, 2020) for some years, and have collected and examined material pertaining to *Ornimegalonyx* in Cuba (see, for example, Alegre 2002, Suárez 2020), as well as the type material of *Bubo osvaldoi* including specimens at the Museo

ISSN-2513-9894 (Online)

Figure 1. Left humeri (A–B, palmar view) and right femora (C–D, anterior view) of three large owls: (A) *Bubo bubo* (Linnaeus, 1758), large female (USNM 610384); (B) *Ornimegalonyx ewingi* sp. nov. (paratype, USNM 447023 [paratype of *Bubo osvaldoi*]); (C) *O. ewingi* sp. nov. (holotype, USNM 447022 [paratype of *B. osvaldoi*]); (D) *B. osvaldoi* (paratype, MNHNCu 75.27.3 [formerly MNHN 27.3]). Scale = 2 cm. Modified from Arredondo & Olson (1994: figs. 2 and 4) with permission of the *Proceedings of the Biological Society of Washington*.

Nacional de Historia Natural de Cuba (MNHNCu), La Habana. After comparisons with living and extinct taxa, including *Bubo*, I have discovered that the type series of *B. osvaldoi* is a composite, comprising two different large strigid owls that are similar in size. The holotype of *B. osvaldoi*, a right tarsometatarsus (MNHNCu 75.27.1), and two topotypical paratypes (cited here with their original numbers), a femur (MNHNCu 75.27.3) and a shaft of tarsometatarsus (MNHNCu 75.27.2), are from western Cuba, assigning the name *Bubo osvaldoi* to that form. However, the two remaining USNM bones, from the eastern extreme of the archipelago, belong to a species that agrees with *Ornimegalonyx* and differs from *Bubo* Duméril, 1805, by the following qualitative characters (see Arredondo & Olson 1994: figs. 2A, 3A–D; Fig. 1): (1) humerus small, having (2) shaft (palmar and / or anconal aspect) thinner proximally (also unlike large extinct Tytonidae), with (3) marked curvature and (4) impression of brachialis anticus reduced; femur (anterior and / or posterior aspect) with (5) shaft wider at ends (less expanded in *Bubo*), (6) anterior intermuscular line crossing (transversal) completely the anterior face of the shaft, from proximal (more lateral) to distal (medial) margins of the bone, not parallel with borders of the shaft (parallel, or almost

ISSN-2513-9894 (Online)

TABLE 1
Measurements (mm) of the holotype femur of *Ornimegalonyx ewingi* sp. nov. (USNM 447022) compared to those of the type species of the genus, *O. oteroi*. Measurements by WS unless otherwise stated. Sequence: range (mean, sample size).

Character	*O. ewingi* sp. nov.[a]	*O. oteroi*
Femur		
Total length	112.4	130.0*–168.0 (163.0, n = 6)
Proximal width	27.7	32.2–45.9 (40.1, n = 10)
Midpoint shaft width	11.5	13.6–20.0 (16.6, n = 10)
Midpoint shaft depth	9.9	12.4–17.6 (14.4, n = 6)
External condyle depth	21.9	24.3–33.4 (31.6, n = 10)

[a] Arredondo & Olson (1994: 439, table 1).
[*] Arredondo (1982: table 6).

parallel in *Bubo*), (7) anterior face of the shaft very flat above condyles (more rounded or convex in *Bubo*; some characters, including this one, were incorrectly depicted in Arredondo & Olson 1994: fig. 3), (8) rotular groove extremely wide, with condyles placed far apart (closer together in *Bubo*), and (9) external condyle bent laterally (not, or less bent in *Bubo*).

I was unable to detect any diagnostic character, or distinction, between the highly variable material of *O. oteroi* (with chronoclines at some localities; WS unpubl.) and specimens of the other three species described in the genus (see Arredondo 1982: 45–47). But all of the material agrees in intraspecific variation observed in skeletons of modern Strigidae. The most enigmatic of the extinct taxa is *O. minor*, of which the type material, two fragmentary proximal femora (Arredondo 1975: fig. 9; 1982: fig. 14), was unavailable to me until recently. These fossils were sent to B. Patterson at the Museum of Comparative Zoology (MCZ), Harvard Univ., MA, by O. Arredondo (see Arredondo 1975: 139). Thanks to S. L. Olson, this material and that of other Cuban taxa at MCZ, were sent on loan to USNM, were I examined it. No differences other than sexual were observed in *O. minor*, of which material named by Arredondo appears to represent the male (smaller sex) of *O. oteroi*. The holotype, a proximal right femur (SEC P-37), is the smaller of the two specimens, and Arredondo (1982: table 6) estimated its total length at 130 mm. The paratype, a proximal left femur (SEC P-38), is larger than the holotype, with a fractured trochanter. This fragment of bone is similar in size to other specimens previously identified by Arredondo (in some cases in my company) as *O. oteroi*; but its measurements (see Table 1) were not included in the original description of *O. minor*. If we take the above-mentioned estimated length of the holotype of *O. minor* as correct, which persuaded Arredondo to describe it as a new species, we have a strigid too large for the *Ornimegalonyx* material previously included within *Bubo osvaldoi* (see Table 1).

In conclusion, of the species previously referred to *Ornimegalonyx* only *O. oteroi* Arredondo, 1958a, is valid; the other three described by Arredondo (1982) are junior subjective synonyms. The much smaller species *Bubo osvaldoi* Arredondo & Olson, 1994, is represented solely by material from the type locality in Pinar del Río in western Cuba, whereas two other specimens from its type series, collected in eastern Cuba, are representative of a previously undescribed *Ornimegalonyx*, as diagnosed above. This is named below, in the following taxonomic arrangement:

Order STRIGIFORMES
Family STRIGIDAE Leach
Genus *Bubo* Duméril, 1815
***Bubo osvaldoi* Arredondo & Olson, 1994**

ISSN-2513-9894 (Online)

Bubo osvaldoi Arredondo & Olson, 1994 (part), *Proc. Biol. Soc. Wash*. 107: 438.
Tyto riveroi: Salgado *et al*. 1992: 28, table 1.

Holotype.—Right tarsometatarsus lacking proximal end, MNHNCu 75.27.1 (see Arredondo & Olson 1994: fig. 1B–D).

Paratypes.—Complete right femur without internal condyle, abraded about the trochanter, MNHNCu 75.27.3 (see Arredondo & Olson 1994: fig. 2B) (Fig. 1D); shaft of left tarsometatarsus without proximal portion and digital trochleae, MNHNCu 75.27.2 (not illustrated).

Type locality.—All of the above material is from Cueva del Mono Fósil, Sierra de Galeras, municipality of Viñales, Pinar del Río province, western Cuba. This is the type locality of *Paralouatta varonai* Rivero & Arredondo, 1991.

Distribution.—Restricted to the type locality in western Cuba (see above).

Remarks.—The humerus of *Bubo osvaldoi* is unknown, as USNM 447023, described as a paratype in the original description, represents a new taxon described below. The species is a large Bubonini, similar in size to female *B. bubo* Linnaeus, 1758 (see descriptions in Arredondo & Olson 1994).

Genus *Ornimegalonyx* Arredondo, 1958a (type, by monotypy [*contra* Brodkorb 1961], *O. oteroi* Arredondo)

***Ornimegalonyx oteroi* Arredondo, 1958a**

Ornimegalonyx oteroi Arredondo, 1958a, *El Cartero Cubano* 17(7): 11.

Ornimegalonyx acevedoi Arredondo, 1982: 45, **new synonymy** (type locality 'Cueva de Quinto, Boca de Camarioca, Matanzas' province, Cuba).

Ornimegalonyx minor Arredondo, 1982: 46, **new synonymy** (type locality 'Cueva de Paredones, San Antonio de los Baños [= Caimito], Habana' [= Artemisa] province, Cuba).

Ornimegalonyx gigas Arredondo, 1982: 47, **new synonymy** (type locality 'Cantera de los Hornos de Cal, a unos 4 km al este de la ciudad de Sancti Spíritus', Sancti Spíritus province, Cuba).

Cathartes aura: Arredondo 1984: 9 (see Suárez 2001: 110).

Lectotype.—Left tarsometatarsus lacking distal end, SEC P-383.E (at MCZ; designated by Brodkorb 1961: 634, Arredondo 1958a: 12, fig. unnumbered, 1975: figs. 1–2, 1976: fig. 5, 1982: figs. 5–6).

Type locality.—Cueva de Pío Domingo, Sierra de Sumidero, Ensenada de Pica Pica, Pinar del Río province, Cuba. This is the type locality of other Cuban extinct birds, including *Antigone cubensis* (Fischer & Stephan 1971a) and *Nesotrochis picapicensis* (Fischer & Stephan 1971b).

Distribution.—Common in Quaternary fossil deposits throughout Cuba and Isla de la Juventud (see, *inter alia*, Kurochkin & Mayo 1973, Arredondo 1975, 1976, 1984, 1996, Alegre 2002, Suárez 2020).

Emended diagnosis.—The largest species of the genus *Ornimegalonyx*.

Remarks.—Treatment of the names *arredondoi* and *borrasi* (see Arredondo 1958a: 11; 1964: 21) as *nomina nuda*, in the synonymy of *Ornimegalonyx oteroi* (Arredondo 1975: 145) or *O. acevedoi* (Arredondo 1982: 46), are incorrect. In the original description of *O. oteroi*, Arredondo (1958a: 11), in reference to *arredondoi* stated: 'nombre que ahora declino y propongo el de Oteroi' [= 'a name that now I reject and propose that of Oteroi']. As *arredondoi* was not validly introduced when first published (Arredondo 1958a), it is not

ISSN-2513-9894 (Online)

made available there (ICZN 1999, Art. 11.5). Brodkorb (1961) treated it, incorrectly, as an available name, but as a synonym of *oteroi*. Thus, the name *arredondoi* is not available (ICZN Art. 11.6). On the other hand, *borrasi* was mentioned only conditionally by Arredondo (1964: 21): 'parece tratarse de otra especie, que de lograrse la certeza, llevaría el nombre específico de "Borrasi"...' [= 'it seems to be another species, which if proven, would bear the specific name "Borrasi"...']. Therefore *borrasi* too is not available (ICZN Art. 15.1), but was cited subsequently by Acevedo (1965: 21) for a bird that was never described by Arredondo. The same fossils, to which those names were applied, were explicitly treated as *O. oteroi* by Arredondo (1975), and not mentioned in Arredondo (1984).

Ornimegalonyx ewingi sp. nov.

Bubo osvaldoi: Arredondo & Olson, 1994: 438 (part).

Holotype.—Right femur without anterior surface of head, piece of posterior face of shaft, and internal condyle, USNM 447022 (see Arredondo & Olson 1994: figs. 2A, 3A–C) (Fig. 1C).

Paratype.—Left humerus without proximal end and the external part of the distal articulation, USNM 447023 (see Arredondo & Olson 1994: fig. 3D, 4B) (Fig. 1B).

Type locality.—A 'mine' in the vicinity of Baire, Oriente (= Santiago de Cuba) province, Cuba. The age of both the holotype and paratype, and the precise location of the type locality are unknown. Probably they were collected at the same time as mammal material known from this locality (see Arredondo & Olson 1994: 438). According to Mayo (1980: 223, 225), the 'mine' is in the south of the former Oriente province, and probably a cave (but see Aguayo & Howell Rivero 1955). It is also the type locality of the extinct sloth *Neocnus baireiensis* Mayo, 1980.

Distribution.—Known only from the type locality in eastern Cuba (see above).

Diagnosis.—A diminutive species of *Ornimegalonyx*, slightly larger than *Bubo osvaldoi*.

Etymology.—I take great pleasure in dedicating this new species to my close friend and colleague Dr Gil C. Ewing, in recognition of his great knowledge and passion for birdlife.

Description and comparisons.—Differs from *O. oteroi* by its much smaller size (*c*.30% smaller), with femur shaft more columnar, less constricted bilaterally at the midpoint, and flaring less at both ends. Humerus relatively more robust, with shaft shorter, less curved and more expanded at the distal end; impression of brachialis anticus relatively larger, less vertical, and more distally placed; entepicondylar prominence less projected. For additional comparisons and descriptions, see Arredondo & Olson (1994).

Remarks.—The type series of *O. ewingi* represents the first material pertaining to the genus to be collected (probably pre-1942, see Aguayo 1950). Given its size, the species' prey must have been smaller compared to those of its gigantic congener. Some specimens from the tar seeps Las Breas de San Felipe, Matanzas province, Cuba (Suárez 2020: 32), may also be referrable to this taxon, but additional comparison and study is needed to clarify their identity.

Acknowledgements

I thank Storrs L. Olson for making available critical fossil specimens. An early version of the manuscript was reviewed by Philip Reese. Gary Graves (USNM) and Rick Hochberg (*Proceedings of the Biological Society of Washington*) provided assistance with pertinent material and permissions necessary for reproducing Fig. 1. William Suárez Jr. further assisted with its preparation. The manuscript benefitted substantially from critical revisions by Steven D. Emslie and Lázaro W. Viñola. I express my gratitude to Guy Kirwan for his constant help with this manuscript. Nomenclature in this paper was reviewed by Dick Schodde and Vítor Piacentini on behalf of the Working Group on Avian Nomenclature of the International Ornithologists' Union.

ISSN-2513-9894 (Online)

References:
Aguayo, C. G. 1950. Observaciones sobre algunos mamíferos cubanos extinguidos. *Bol. Hist. Nat. Soc. "Felipe Poey"* 1: 121–134.
Aguayo, C. G. & Howell Rivero, L. 1955. Sinopsis de los mamíferos cubanos. *Circ. Mus. Bibl. Zool. La Habana*: 1283–1324.
Alegre, Y. 2002. Análisis morfofuncional de la locomoción del búho gigante *Ornimegalonyx oteroi* (Aves: Strigidae) del Cuaternario de Cuba. Tesis de Diploma. Facultad de Biología, Univ. de La Habana.
Arredondo, O. 1954. Toda una fauna extinguida hallada en las montañas de Pinar del Río. *Bohemia* 46: 46–48, 92.
Arredondo, O. 1955. Contribuciones a la paleontología de la Sociedad Espeleológica de Cuba. *Bol. Soc. Espeleológica Cuba* 1: 3–13.
Arredondo, O. 1956. Como identificar los restos óseos de algunos mamíferos cubanos extinguidos que resultan de suma importancia en las investigaciones arqueológicas y antropológicas. *Bol. Soc. Espeleológica Cuba* 2: 3–38.
Arredondo, O. 1957a. El trágico fin de los vampiros cubanos. *Bohemia* 49: 70–72, 84–85.
Arredondo, O. 1957b. Origen y antigüedad de nuestra fauna extinguida y la unión de Cuba con el continente Americano. *El Cartero Cubano* 16: 10–13.
Arredondo, O. 1958a. Aves gigantes de nuestro pasado prehistórico. *El Cartero Cubano* 17(7): 10–12.
Arredondo, O. 1958b. Los roedores cubanos extinguidos. *El Cartero Cubano* 17(12): 8–11, 48.
Arredondo, O. 1964. La lechuza gigante de la prehistoria cubana. *Bohemia* 56: 18–21, 90.
Arredondo, O. 1975. Distribución geográfica y descripción de algunos huesos de *Ornimegalonyx oteroi* Arredondo, 1958 (Strigiformes: Strigidae) del Pleistoceno superior de Cuba. *Mem. Soc. Cienc. Natur. La Salle* 35: 133–190.
Arredondo, O. 1976. The great predatory birds of the Pleistocene of Cuba. *Smiths. Contrib. Paleobiol*. 27: 169–187.
Arredondo, O. 1982. Los Strigiformes fósiles del Pleistoceno cubano. *Bol. Soc. Venez. Cienc. Natur*. 140: 33–55.
Arredondo, O. 1984. Sinopsis de las aves halladas en depósitos fosilíferos pleisto-holocénicos de Cuba. *Rep. Invest. Inst. Zool*. 17: 1–35.
Arredondo, O. 1996. Lista de las especies extinguidas de vertebrados halladas en las provincias orientales de Cuba. *Garciana* 24–25: 1–2.
Arredondo, O. & Olson, S. L. 1994. A new species of owl of the genus *Bubo* from the Pleistocene of Cuba (Aves: Strigiformes). *Proc. Biol. Soc. Wash*. 107: 436–444.
Brodkorb, P. 1961. Recently described birds and mammals from Cuban caves. *J. Paleontology* 35: 633–635.
Fischer, K. & Stephan, B. 1971a. Ein flugunfähiger kranich (*Grus cubensis* n. sp.) aus dem Pleistozän vom Kuba-Eine osteologie der familie kranich (Gruidae). *Wiss. Z. Humboldt-Univ. Berlin, Math.-Naturwiss. Reihe* 20: 541–592.
Fischer, K. & Stephan, B. 1971b. Weitere Vogelreste aus dem Pleistozän der Pio-Domingo-Höhle in Kuba. *Wiss. Z. Humboldt-Univ. Berlin, Math.-Naturwiss. Reihe* 20: 593–607.
International Commission on Zoological Nomenclature (ICZN). 1999. *International code of zoological nomenclature*. Fourth edn. International Trust for Zoological Nomenclature, London.
Koopman, K. F. 1958. A fossil vampire bat from Cuba. *Breviora* 90: 1–4.
Kurochkin, E. & Mayo, N. A. 1973. Las lechuzas gigantes del Pleistoceno Superior de Cuba. *Inst. Geol., Acad. Cienc. Cuba. Actas, Resum., Comun. Notas V Consejo Científico* 3: 56–60.
Linnaeus, C. 1758. *Systema naturae per regna tria naturae*, vol. 1(2), Laurentius Salvius, Holmia.
Mayo, N. A. 1980. Nueva especie de *Neocnus* (Edentata; Megalonychidae de Cuba) y consideraciones sobre la evolución, edad y paleoecología de las especies de este género. *Actas Segundo Congr. Argentino Paleontología y Bioestratigrafía y Primer Congr. Latinoamericano Paleontología* 3: 223–236.
Olson S. L. & Suárez, W. 2008. A new generic name for the Cuban Bare-legged Owl *Gymnoglaux lawrencii* Sclater and Salvin. *Zootaxa* 1960: 67–68.
Rivero, M. & Arredondo, O. 1991. *Paralouatta varonai*, a new Quaternary platyrrhine from Cuba. *J. Human Evol*. 21: 1–11.
Salgado, E. J., Calvache, D. G., MacPhee, R. D. E. & Gould, G. C. 1992. The monkey caves of Cuba. *Cave Sci*. 19: 25–28.
Suárez, W. 2001. A reevaluation of some fossils identified as vultures (Aves: Vulturidae) from Quaternary cave deposits of Cuba. *Carib. J. Sci*. 37: 110–111.
Suárez, W. 2020. The fossil avifauna of the tar seeps Las Breas de San Felipe, Matanzas, Cuba. *Zootaxa* 4780: 1–53.
Suárez, W. & Olson, S. L. 2015. Systematics and distribution of the giant fossil barn owls of the West Indies (Aves: Strigiformes: Tytonidae). *Zootaxa* 4020: 533–553.
Suárez, W. & Olson, S. L. 2020. Systematics and distribution of the living and fossil small barn owls of the West Indies (Aves: Strigiformes: Tytonidae). *Zootaxa* 4830:544–564.
Wetmore, A. 1959. Birds of the Pleistocene in North America. *Smiths. Misc. Coll*. 138: 1–24.

Address: P.O. Box 16477, West Palm Beach, FL 33416, USA, e-mail: ws@wsbirdingtours.com

ISSN-2513-9894 (Online)