

Azara's No. 12 Gavilán de estero chorreado and *Circus albicollis* Vieillot, 1816 do not refer to the Long-winged Harrier *Circus buffoni* (Gmelin, 1788)

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Abstract. Azara's No. 12 "Gavilán de estero chorreado" and the scientific name *Circus albicollis* Vieillot, 1816, which is based on it, have been understood to refer to a juvenile of the Long-winged Harrier *Circus buffoni* Vieillot, 1816 for over two centuries. However, there are clear inconsistencies in the description of plumage coloration, shape and measurements that make that identification obviously erroneous. Azara's No. 12 can in fact be convincingly identified as the juvenile plumage of the Savannah Hawk *Buteogallus meridionalis* (Latham, 1790), an identity that Azara himself postulated and then discarded. *Circus albicollis* is thus a junior synonym of *B. meridionalis* and is available for application to southern populations of this species (which is currently considered monotypic). In addition, Azara's No. 14 "Gavilán de estero roxo obscure" can also be identified as an adult Savannah Hawk, correcting the unconvincing traditional association of this description with the extralimital, mangrove-inhabiting Rufous Crab Hawk *Buteogallus aequinoctialis*.

Key words: *Busarellus nigricollis*, *Buteogallus aequinoctialis*, *Buteogallus meridionalis*, Savannah Hawk, synonymy.

Since the publication of Azara's (1802, 1805a,b) superb, descriptive, three-volume text "Apuntamientos para la historia natural de los páxaros del Paraguay y Rio de la Plata", many of his descriptions and the nomenclature associated with them have been resolved (Hartlaub 1847, Berlepsch 1887, Bertoni 1901, Laubmann 1939, Pereyra 1945, Smith 2017, 2018a,b,c,d, 2020a,b, Smith et al. 2018). However, there remain several descriptions and scientific names based on them for which the identity is elusive, whilst others are in need of correcting. The identity of Azara No. 12 Gavilán de estero chorreado (Azara 1802) and the scientific name *Circus albicollis* Vieillot, 1816 that is based on it, have long been accepted to refer to a female or juvenile of the Long-winged Harrier *Circus buffoni* (Gmelin, 1788). This identity was first proposed by Kaup (1847), and the conclusion has been repeated by all major reviewers of Azara's work (Hartlaub 1847, Berlepsch 1887, Bertoni 1901, Laubmann 1939, Pereyra 1945). However, the description and measurements provided bear little or no resemblance to a harrier and there are serious contradictions in coloration and form that clearly disqualify that species as a candidate.

The texts of Azara (1802) and Vieillot (1816) were meticulously compared with modern identification literature, jointly with the employment of the author's own field knowledge of Paraguayan avifauna. Special attention was paid to the morphological descriptions, which have often been overlooked by reviewers who have concentrated more on plumage descriptions. Azara (1802) presented his measurements in inches (= 25.6 mm) and lines (=2.21 mm) and these were converted to modern units.

Azara described his No. 12 Gavilán de estero chorreado as follows (my translation, the original text is included in Appendix 1):

"I have had and observed several identical individuals; and although I have not seen them hunt, being that they have the claws so dirty with mud, and it is so similar overall to the previous species, it is to me without doubt that they subsist in the same way. At first I erred in thinking them to be the same species; but I corrected myself comparing them together, because I found that the size, bill and wingspan of the *Acanelado* are somewhat larger in proportion. Besides, that species has the tarsus more feathered frontally on the upper part, with a more notable triangular shape, with different scales, small on the front, and at most medium-sized; when those of the

Chorreado are quadruple the size, flattened, and of very diverse shape.

Length 20 inches: tail 8: wingspan 52. A white patch runs from the bill over the eye to the nape; but the centers of the feathers are dark. The feathers of the top of the head are of this same color, streaked with a little white, and the centers dark. From there to the tail, scapulars, and three or four orders of greater coverts on the inner webs, are also dark, streaked with a little whitish. The flight feathers red with scalloped stripes and the tips dark, and the lesser coverts yellowish-cinnamon with dark speckling. Below the head white; the throat dark, with long white streaking: the breast buffy, and the sides of the body dark, with white edging. The under-tail coverts are white, with occasional dark marks: the venter varied equally in white and dark, and the legs barred with cinnamon and dark. The underside of the flight feathers and the underwing coverts whitish cinnamon with occasional dark flecks. The tail dark with white tip, and varied in the basal two-thirds with bands and patches of dark and white, hardly visible above when the tail is closed, but when open and from below, they are very notable.

Flight feathers 25, the fourth longest: tail 12 feathers of equal length. Leg 60 lines. Tarsus 54, a triangular prism with the edge on the front, yellow with large scales on the back side and outer edge. Mid-toe 20, nail 9. Bill 15, shiny black with a yellow membrane which includes the circular nostril. Iris weakly cinnamon.

At first sight I thought this may be the *Harpaye* of Buffon; his plate 460 gives it the same length and the same colors, but with such a different distribution that I do not dare to believe the identity, although they belong to the same family, as both are from marshlands; that is, places full of water and aquatic plants.

El Alcon de la India Oriental of Aldrobando has the head flat and wide, iris brown and the bill membrane yellow; which are characters of many hawks, rather than of a falcon. The colors seem like the swamps dweller; and who knows if it is my species? Who, if the colors are not exactly the same, but at least their distribution is the same? So that you may decide, I copy them here, "The head, neck, upperside and wings are of a grey tending towards brown. The breast and upper part of the underside of the wing, venter, rump and legs are of an orange that is nearly red. On the upper breast, below the shaft there is a large grey spot, and some small spots of this color on the breast. The tail is barred with semi-circular grey and brown bands. The tarsus is yellow; and in males the red is brighter and the grey darker". It is added that the bill is very thick and grey to the hook, which is very small. Although I may be wrong in my guess as to its identity, I think I am right in believing that Aldrobando's bird is not a falcon, but a hawk from this family."

Table 1. Comparative measurements in mm taken from Azara's descriptions (One inch = 25.6 mm; One line = 2.21 mm). In parentheses below some of the major measurements provided by Azara are range measurements for the species given in the modern literature, taken from the following sources: Total Length (Thiollay 1994); Tail (Ferguson-Lees & Christie 2001); Wingspan (Bierregaard & Kirwan 2020a,b, Bierregaard et al. 2020); Tarsus (Ferguson-Lees & Christie 2001).

	No. 11 Gavilán de estero acanelado (<i>Buteogallus meridionalis</i> ; adult)	No. 12 Gavilán de estero chorreado (<i>Buteogallus meridionalis</i> ; juvenile)	No. 14 Gavilán de estero roxo obscuro (<i>Buteogallus meridionalis</i> ; adult)	No. 31 Gavilán de campo alilargo (<i>Circus buffoni</i> ; adult)	No. 13 Gavilán de estero de cabeza blanca (<i>Busarellus nigricollis</i> ; adult)
Total length	512 (460-600)	473.6	448	486.4 (480-560)	499.2 (455-495)
Tail	204.8 (196-233)	211.2	192	230.4 (245-290)	179.2 (157-182)
Wingspan	1331.2 (1210-1400) (Bierregaard & Kirwan 2020b)	1292.8	1173.3	1228.8 (1190-1550) (Bierregaard & Kirwan 2020a)	1292.8 (1150-1430) (Bierregaard et al. 2020)
Leg	132.6	132.6	119.3	112.7	NA
Tarsus	119.3 (90-113)	119.3	110.5	88.4 (85-92)	99.5 (72-99)
Mid-Toe	44.2	46.3	37.6	39.8	53.0
Nail	19.9	18.8	24.3	19.9	28.7
Bill	33.2	35.4	33.2	30.9	35.4

Azara's No. 12 can in fact be convincingly identified as the juvenile plumage of the Savannah Hawk, an identity that Azara himself postulated and then discarded. *Circus albicollis* Vieillot, 1816 is thus a junior synonym of *Buteogallus meridionalis* (Latham, 1790).

Azara (1802) begins his description by noting that the similarity in form to his previous species, No. 11 Gavilán de estero acanelado, was enough to make him question whether they were distinct species at all. No. 11 refers to the adult Savannah Hawk *Buteogallus meridionalis* (Latham, 1790), but on comparing specimens of the two he noted differences in proportions and in the scale morphology of the tarsi. Azara was being over meticulous in considering these characters of diagnostic value, and minor differences in proportion can be easily explained by differences in age. No. 12 Gavilán de estero chorreado is in fact a rather well-described juvenile of this same species, as Azara had himself first suspected.

Whilst the simple fact that Azara describes his species as similar to a Savannah Hawk should be more than sufficient to rule out the quite differently-shaped Long-winged Harrier, that species can also be immediately disqualified by obvious characters such as the color of the flight feathers (red in No. 12; grey banded with black at all ages in Long-winged Harrier), the shape of the tarsus (sharply pointed at the front in No. 12; slightly pointed at the rear in Long-winged Harrier) and the description of the tail pattern. Furthermore, the measurements provided are not consistent with Long-winged Harrier, which has a much shorter tarsus than Savannah Hawk. Indeed, nor are the measurements consistent with Azara's (1802) own later description of the adult male of the Long-winged Harrier No. 31 Gavilán de campo alilargo. They are however a very convincingly close match for his measurements of No. 11 Gavilán de estero acanelado (Savannah Hawk) (Table 1).

There are only two raptors in Paraguay with notably reddish flight feathers, a key diagnostic character mentioned in the description: the Savannah Hawk, and the otherwise quite different Black-collared Hawk *Busarellus nigricollis*

(Latham, 1790). The latter shows a contrasting white head and black breast patch at all ages, and is thus otherwise completely inconsistent with the description provided by Azara. This species was also described separately by him as his No. 13 Gavilán de estero de cabeza blanca. Whilst this species is rather closer in shape to the Savannah Hawk, it again lacks the characteristically long tarsi of that species, which gives it its distinctive upright posture in the field.

Azara's (1802) No. 14 Gavilán de estero roxo obscuro (Appendix 2) can also be confirmed to be an adult Savannah Hawk for the same reasons (Table 1). In this case the specimen upon which the description was based was not seen by Azara and was provided by his friend the Jesuit priest Padre Blás Nosedá. The perceived differences with No. 11 Gavilán de estero acanelado are due merely to the differences in descriptive styles, whilst the diagnostic characters of Savannah Hawk (such as the coloration of the flight feathers and the tarsal length) are still present. The smaller size compared to the other two specimens is explicable either by differences in measuring style between the two authors, or perhaps by this specimen being a male and the others being female. Despite the improbability, this description has been previously associated invariably with the extralimital Rufous Crab Hawk *Buteogallus aequinoctialis* (Gmelin, 1788) (Sonnini in Azara 1809, Kaup 1847, Hartlaub 1847, Berlepsch 1887, Bertoni 1901, Laubmann 1939, Pereyra 1945), though later authors have dismissed the credibility of this identification (Hayes 1995, Smith 2016).

Circus albicollis Vieillot, 1816 (p.456) is based entirely on Azara's (1802) description of No. 12 Gavilán de estero chorreado and is thus a junior synonym of *Buteogallus meridionalis* (Latham 1790), and not of *Circus buffoni* (Gmelin, 1788) as it has long been misunderstood to be. The name is available for application for Paraguayan populations of the Savannah Hawk and has page priority over *Circus rufulus* Vieillot, 1816 (p.466) (type locality "Paraguay") and date priority over *Heterospizias meridionalis australis* Swann, 1921 (type locality "Laguna de Malima, Tucumán, Argentina") both of

which have in the past been applied to populations in the Southern Cone of South America. The Savannah Hawk is currently considered to be monotypic, with size variation understood to be clinal (Bierregaard & Kirwan 2020b).

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References

- Azara, F. de. (1802): Apuntamientos para la historia natural de los páxaros del Paraguay y Rio de la Plata Tomo 1. Imprenta de la Viuda Ibarra, Madrid, Spain.
- Azara, F. de. (1805a): Apuntamientos para la historia natural de los páxaros del Paraguay y Rio de la Plata Tomo 2. Imprenta de la Viuda Ibarra, Madrid, Spain.
- Azara, F. de. (1805b): Apuntamientos para la historia natural de los páxaros del Paraguay y Rio de la Plata Tomo 3. Imprenta de la Viuda Ibarra, Madrid, Spain.
- Azara, F. de (1809): Voyages dans l'Amérique Méridionale, 3. Oiseaux. Dentu, Paris, France.
- Berlepsch, H. von. (1887): Appendix. Systematisches Verzeichniss in der Republik Paraguay bisher beobachteten Vogelarten. Journal für Ornithologie 35: 113-134.
- Bertoni, A. de W. (1901): Aves nuevas del Paraguay. Continuación a Azara. Anales Científicos Paraguayos 1: 1-216.
- Bierregaard, R. O., Kirwan, G. M. (2020a): Long-winged Harrier (*Circus buffoni*), version 1.0. In: Hoyo, J. del, Elliott, A., Sargatal, J., Christie, D.A., Juana, E. de (Eds), Birds of the World. Cornell Lab of Ornithology, Ithaca, New York, USA. <<https://doi.org/10.2173/bow.lowhar1.01>>, accessed 29 June 2020.
- Bierregaard, R. O., Kirwan, G. M. (2020b): Savannah Hawk (*Buteo meridionalis*), version 1.0. In: Hoyo, J. del, Elliott, A., Sargatal, J., Christie, D.A., Juana, E. de (Eds), Birds of the World. Cornell Lab of Ornithology, Ithaca, New York, USA. <<https://doi.org/10.2173/bow.savhaw1.01>>, accessed 29 June 2020.
- Bierregaard, R.O., Kirwan, G.M., Boesman, P.F.D. (2020): Black-collared Hawk (*Buteogallus nigricollis*), version 1.0. In: Hoyo, J. del, Elliott, A., Sargatal, J., Christie, D.A., Juana, E. de (Eds), Birds of the World. Cornell Lab of Ornithology, Ithaca, New York, USA. <<https://doi.org/10.2173/bow.blchaw1.01>>, accessed 29 June 2020.
- Ferguson-Lees, J., Christie, D.A. (2001): Raptors of the world. Houghton Mifflin, Boston, USA.
- Gmelin, J.F. (1788): Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species, characteribus, differentiis, synonymis, locis. Tomus 1 Pars 1. Georg Emanuel Beer, Lipsiae, Sweden.
- Hartlaub, C.J.G. (1847): Systematischer Index zu Don Félix du Azara's Apuntamientos para la Historia Natural de los Páxaros del Paraguay y Rio de la Plata. Schünemann, Bremen, Germany.
- Hayes, F. (1995): Status, distribution and biogeography of the birds of Paraguay. American Birding Association, Monographs in Field Ornithology 1, Albany, New York, USA.
- Kaup, J.J. (1847): Monographien der Genera der Falconidae Tafel 1. Isis 40: 325-383.
- Latham, J. (1790): Index ornithologicus sive sistema ornithologiae complectens avium divisionem in Clases, Ordines, Genera, Species, ipsarumque Varietates: Adjectis synonymis, locis, descriptionibus & c. Volumen 1. Leigh et Sotheby, London, UK.
- Laubmann, A. (1939): Die Vögel von Paraguay Erster Band. Strecker und Schröder, Stuttgart, Germany.
- Pereyra, J.A. (1945): La obra ornitológica de Don Félix de Azara. Biblioteca Americana, Buenos Aires, Argentina.
- Smith, P. (2016): More comments and recommendations on Paraguayan "hypothetical" species: *Rhea pennata* (Rheidae), *Buteogallus aequinoctialis* (Accipitridae), *Columbina passerina* (Columbidae), *Caprimulgus hirundinaceus* (Caprimulgidae) and *Atlapetes citrinellus* (Emberizidae). Boletín del Museo Nacional de Historia Natural del Paraguay 20: 53-56.
- Smith, P. (2017): The identity of Azara's No. 315 "Ibiyau de cola extraña" and No. 316 "Ibiyau anónimo" (Aves: Caprimulgidae). Zootaxa 4337: 555-559.
- Smith, P. (2018a): Azara's spinetails (Aves: Furnariidae). The identity of No. 236 Chicli and No. 237 Cógogo. Bonn Zoological Journal 67: 171-174.
- Smith, P. (2018b): The identity of *Sylvia ruficollis* Vieillot, 1817 and Azara's No. 240 "Cola aguda cola de canela obscura" (Aves; Furnariidae). Ardea 106: 79-83.
- Smith, P. (2018c): The identity of the mysterious "Azara's Parakeet" *Sittace flaviventris* Wagler, 1832. Anais Academia Brasileira de Ciencias 90: 2851-2854.
- Smith, P. (2018d): The identity of two of Azara's "mystery" waterbirds. Caldasia 40: 383-389.
- Smith, P., Pacheco, J.F., Bencke, G.A., Aleixo, A. (2018): Senior synonyms for three Neotropical birds described by Vieillot based on Azara (Passeriformes: Thraupidae, Tyrannidae, Tityridae). Zootaxa 4433: 141-150.
- Smith, P. (2020a): Azara's no. 243 'Trepador de pico corto' is a Lesser Woodcreeper *Xiphorhynchus fuscus*. Bulletin of the British Ornithologists' Club 140: 47-51.
- Smith, P. (2020b): The identity of Azara's (1805) No. 246 Trepador remos y cola roxos (Aves: Furnariidae). Zootaxa 4766: 594-598.
- Swann, H.K. (1921): Notes on a collection of Accipitres from the Mérida district, W. Venezuela. Auk 38: 357-364.
- Thiollay, J.M. (1994): Family Accipitridae. pp. 52-205. In: del Hoyo, J., Elliott, A., Sargatal, J. (eds.), Handbook of the Birds of the World Volume 2: New World Vultures to Guineafowl. Lynx Edicions, Barcelona, Spain.
- Vieillot, L.P. (1816): Nouveau dictionnaire d'histoire naturelle, appliquée aux arts, à l'agriculture, à l'économie rurale et domestique, à la médecine, etc. par una société de naturalistes et d'agriculteurs. Nouvelle Édition. Tome 4. Deterville, Paris, France.

Appendix 1. Azara original text

No. XII (GAVILÁN DE ESTERO) CHORREADO

He tenido y observado varios individuos idénticos; y aunque no le he visto cazar, como tiene las garras muy puercas del cieno, y se parece en todo al precedente, es para mí indudable que subsisten del mismo modo. Al principio malicié que fuesen de la misma especie; pero me desengañé cotejándolos juntos, porque encontré que el volumen, pico y braza del *Acanelado* son algo mayores á proporción. Además el dicho tiene el tarso mucho mas vestido delante en lo superior, de figura triangular mas notable, con escamas muy diversas, pequeñas delante, y quando mucho medianas; quando las del *Chorreado* son quádruplamente mayores, á tablas, y de muy diversa figura.

Longitud 20 pulgadas: cola 8: braza 52. Una mancha blanquizca va desde el pico sobre el ojo al colodrillo; pero los centros de las plumas son oscuros. De este color son las de sobre la cabeza, ribeteadas de poquísimos blanquizcos, y los centros oscuros. De allí á la cola, escapulario, y los tres ó quatro órdenes de cobijas mayores en los trozos internos, son también oscuros, ribeteados de poco blanquizco. Los remos rojos con faxas festoneadas y las puntas oscuras, y las cobijas menores de canela amarillaza con picos oscuros. Baxo de la cabeza blanco: la garganta oscura, con pinceladas á lo largo blancas: el pecho blanco acanelado, y los costados del cuerpo oscuros, con ribetes blancos. Los timoneles inferiores blancos, con raras tintas oscuras: el vientre vario por igual de blanco y oscuro, y las piernas á faxitas al través oscuras y de canela. Los remos debaxo y las tapadas blancas acaneladas con raras tiritas oscuras. La cola oscura con la puntita blanca, y variada en los dos tercios de la raíz por faxas y manchitas oscuras y blancas, poco sensibles encima estando plegada; pero abierta, y por debaxo son muy notables.

Remos 25, el quarto mayor: cola 12 plumas iguales. Pierna 60 líneas. Tarso 54, prismático triangular con filo delante, amarillo con escamas grandes detras y en el costado exterior. Dedo medio 20, uña 9. Pico 15, turquí, su membrana amarilla, que incluye el respiradero circular. Iris acanelado débil.

A primera vista me figuré pudiese ser la *Harpaye* de Buffon 1; pues su estampa 460 le señala la propia longitud, y le viste de los mismos colores; pero con tan diferente distribución, que no me atrevo á creer la identidad, aunque pertenecen á la misma familia, pues ambos son de estero; esto es, de lugares llenos de agua y de plantas acuáticas.

El *Alcon de la India Oriental* de Aldrobando tiene la cabeza plana y ancha, iris pardo, y la membrana del pico amarilla; que son caracteres de muchos Gavilanes, mas bien que de Alcon. Sus colores parecen libra de estero; y ¿quien sabe si no es mi especie presente? á quien quando no ajusten las tintas con exactitud, por lo menos la distribución es la misma. Para que se forme juicio las copiaré. "La cabeza, cuello, todo encima y las alas son de un ceniciento tirante á pardo. El pecho y la parte superior de lo de debaxo del ala, vientre, rabadilla y piernas, es un naranjado casi roxo.

Encima del pecho baxo de la barba hay una mancha larga cenicienta, y alguna pequeña mancha de este color sobre el pecho. La cola rayada de faxas en medio círculo cenicientas y pardas. El tarso amarillo; y en el macho dichos rojos son mas vivos y los cenicientos mas oscuros." Añade que el pico es muy grueso y ceniciento hasta el gancho, que es muy chico. Quando me equivoque en la conjetura de la identidad, creo que acertaré en creer que el de Aldrobando no es Alcon, sino Gavilán de esta familia.

Appendix 2. Azara original text with my translation below

No. XII (GAVILÁN DE ESTERO) DEL ROJO OSCURO

No lo he visto, y Noséda tampoco ha encontrado sino el presente, que mató por diciembre junto á una alberca; por cuyo motivo, y por sus colores y proporciones infiero que subsiste de Ranas, &c., y que pertenece á la familia. Dicho Noséda dice así.

"Longitud 17 1/2 pulgadas: cola 7 1/2: braza 45 5/6. Sobre la cabeza hasta el cogote, sus costados y la horqueta, con todo lo que incluye la quixada por debaxo, tienen plumas rojas con los centros oscuros, y las que cubren el oido son negras. Parte del cuello por detras, todo él por delante y hasta la cola, los costados, tapadas, piernas y el trozo externo del ala encima, es roxo con rayas delgadas frecuentes al través. Los remos son de este color, con las puntas negras; y las menores cobijas casi del todo rojas. El resto del cuello por detras, la espalda, las mayores cobijas de los trozos internos y los timoneles superiores oscuros con las bórrelas rojas. Lomo y rabadilla oscuros: también la cola con la punta blanca, y á dos pulgadas de su extremo una faxa ancha 7 líneas de este mismo color.

Remos 18, el tercero mayor. Cola 12 plumas casi iguales. Pierna 54 líneas. Tarso 50, naranjado, áspero y prismático triangular. Dedo medio 17, su uña 11 unido al exterior por membrana hasta la primera coyuntura. Pico 15, negro: su membrana naranjada, y al fin de ella el respiradero. Iris de canela viva".

My translation:

I have not seen it, and Noséda has only found the described individual, which he killed in December next to a pool; for which reason, and because of its color and proportion I infer that it subsists on frogs and the like, and that it belongs to this family. The aforementioned Noséda describes it as follows.

"Length 17 1/2 inches: tail 7 1/2: wingspan 45 5/6. The top of the head to the nape, its sides and the chin, as well as everything that is included below the jaw, has red feathers with dark centers, and those that cover the ear are black. Part of the hind neck, all of the front and to the tail, the sides, underwing coverts, legs and the outer half of the upperwing is red, with frequent thin black banding. The flight feathers are this color, with the tips black, and the lesser coverts almost entirely red. The rest of the hind neck, the back, the inner greater coverts and the upper-tail coverts are dark with red patterns. Mantle and rump dark: also the tail has a white tip, and two inches from the end there is a wide band of 7 lines of this same color.

Flight feathers 18, the third longest. Tail 12 feathers of near equal length. Leg 54 lines. Tarsus 50, orange, rough and a triangular prism. Mid-toe 17, its nail 11 united with the outer by a membrane reaching the first joint. Bill 15, black: its membrane orange, and at the end is the nostril. Iris bright cinnamon".