

Papéis Avulsos de Zoologia

Museu de Zoologia da Universidade de São Paulo

Volume 55(14):211-216, 2015

www.mz.usp.br/publicacoes
www.revistas.usp.br/paz
www.scielo.br/paz

ISSN impresso: 0031-1049

ISSN on-line: 1807-0205

ON THE STATUS OF DUSKY-LEGGED GUAN *PENELOPE OBSCURA* TEMMINCK, 1815 (AVES: CRACIDAE) IN PARAGUAY

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ABSTRACT

*Despite repeated references to the species in Paraguay, the status of the Dusky-legged Guan *Penelope obscura* in the country has been the subject of much debate. In an attempt to clarify the available data, a thorough review of literature records is provided and details of new and previously unpublished records that confirm that the nominate subspecies is present in Paraguay are given. With the species limits in the obscura complex poorly defined, we provide a brief discussion of the potential importance of Paraguayan populations for the conservation of the species.*

KEY-WORDS: Conservation; Distribution; Galliformes.

INTRODUCTION

Despite Azara's (1805) claim that the "Yacuhú" (upon which Temminck's description is based) "no escasea en dicha Provincia" (is not scarce in Paraguay), the presence or absence of the Dusky-legged Guan *Penelope obscura* within the boundaries of modern day Paraguay has long been the subject of debate (Delacour *et al.*, 2004). Hayes (1995) concluded that a lack of details and an absence of verifiable specimen records indicated that further documentation was required before the species could be accepted onto the national list. Consequently he considered the species hypothetical in Paraguay. Clay (2001) provided a brief summary of previous records and Zyskowski & Clay (2001) reported the first modern specimen, though the identity of this specimen was later called into question (Delacour *et al.*, 2004).

From that point on, the status of the species has remained far from clear, with no further national re-

ords until recently. In this note we provide a detailed summary of previous published Paraguayan records and information about a newly discovered and semi-habituated population of the species in the south of the country.

PREVIOUS PUBLISHED RECORDS

Azara (1805) provides a fairly detailed description of his Yacuhú that was used as the basis of Temminck's (1815) *Penelope obscura*. However despite stating that the species is not uncommon in the "Province" of Paraguay he provides no exact details regards its distribution. Though his description is consistent with *P. obscura*, he fails to include the widespread but extremely similar Rusty-margined Guan *Penelope superciliaris* in his treatise. Consequently it is unclear whether Azara distinguished the two species and, with the boundaries of modern day Paraguay much

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<http://dx.doi.org/10.1590/0031-1049.2015.55.14>

reduced, whether or not he recorded true *obscura* in the country at all.

Berlepsch (1887) lists the species for Paraguay with the locality “Rio Vermejo & R. Paraguay (Page)”, presumably based on Page (1859) who notes that “pavo de monte” were shot on May 27th 1854 on the “Rio Vermejo”. However this locality is in modern day Argentina. Similarly Kerr (1892) cites “forests of Rio Bermejo and Rio Pilcomayo near its mouth”, but provided no indication of whether or not he was referring to the Argentine or Paraguayan bank of the latter, or both. These records form the basis of most subsequent published reports that provide no further details (Ihering, 1904; Peters, 1934; Sección Ornitológica del MACN, 1935; Pinto, 1936; Laubmann, 1939).

Hellmayr (1914) listed *P. o. obscura* for “Rio Vermejo” (Page) and “Pilcomayo” (Kerr), examining an adult specimen collected by “Capt. Page” in Paraguay, though from the data provided one must assume that this is also referring to the specimens collected on the Rio Bermejo, Argentina. Hayes (1995) cites two *bona fide* specimens labeled “Paraguay” obtained during the Page expedition during the 1850s (USNM 256875, 58994), which may or may not be the same birds, but the lack of dates and precise localities led him to doubt their provenance.

In his first Catalogue of the Vertebrates of Paraguay, Bertoni (1914) listed *Penelope obscura* without locality data, and in his second (1939) listed two subspecies: *P. o. obscura* for “Asunción” and *P. o. bridgesi* for “Chaco”. Between these two publications Bertoni (1930) listed the species without details based on the observations of Dr Andres Barbero at Estancia Santa Jacinta, Departamento Presidente Hayes on the left bank of the Rio Confuso (Paynter, 1989). Though Bertoni’s publications contain a clearly confused taxonomy for the Cracidae, there are still no known records of *Penelope superciliaris* west of the Paraguay River.

Krieg & Schuhmacher (1936) report the subspecies *obscura* from the “area of Nueva Germania and Mancuello” (Departamento Concepción), listing it amongst species that occur only in humid and gallery forests. However despite providing a relatively thorough review of the gamebirds of Paraguay, they omit the most commonly encountered Paraguayan Cracid *Penelope superciliaris* from their analysis. They mention that a specimen was collected, and though this is presumably deposited in the collection of the Zoologische Staatssammlung München, it was not possible to clarify either the existence or identity of the specimen during the preparation of this paper.

Podtiaguin (1945) follows Bertoni (1939) in listing two subspecies in Paraguay: *obscura* for “Rio Paraguay, Rio Picomayo (sic), Rio Confuso, Asunción <Bertoni> Alto Paraná”; and *bridgesi* for “Chaco <Bertoni> Villazón, Carandayty, Estrella <Chaco> Fortín Orihuella <Chaco Leg. J. Caballero>”. The record from Fortín Orihuella (S23°25’, W58°40’) (Deppto. Presidente Hayes) would represent a considerable extension of the range within the Humid Chaco but is geographically closest to the known range of the subspecies *obscura*. Villazón (S20°35’, W62°16’) and Puesto Estrella (S21°03’, W62°12’) are located in the extreme western Paraguayan Chaco and are closest to the documented range of *P. o. bridgesi* in Bolivia, which is present across the border in Tarija, Chuquisaca and Santa Cruz Departments (Hennessey *et al.*, 2003; Delacour *et al.*, 2004). The location of Carandayty is untraceable.

Storer (1989) reports the mass of a supposed *P. obscura* from Paraguay without reference to specimen. Hayes (1995) concluded that this referred to UMMZ 201975, taken 13.3 km N of Curuguaty (S24°22’, W55°42’), Departamento Canindeyú, which he identified as *P. superciliaris* based on light rufous edges to the wing feathers.

More recently Acevedo *et al.* (1990) mention the species from forest islands in the Lago Ypoá (S25°48’, W57°28’) basin of southwestern Paraguay and Estero Ñeembucú (S27°05’, W57°38’) in the “Ñeembucú eco-region” (Departamento Ñeembucú), as well as possibly Estero Puerto Rosario (listed with ?) (S24°27’, W57°04’) (Departamento San Pedro). *Penelope obscura* features in their appendix of species that are “en peligro crítico” (critically endangered) but they provide no specific details to support any of the locality reports.

Contreras & Acevedo (1997) list the literature-based localities of Kerr (1892) and Bertoni (1930), in addition to an examined specimen from the Colección Ornitológica IADIZA, Mendoza from “Boca del Tebicuary (ÑEE)” (mouth of the Tebicuary River, Departamento Ñeembucú). However no Paraguayan specimens of *Penelope* are currently housed in that collection and the whereabouts of that specimen are unknown (B. Bender, *in litt.*). Furthermore these authors omit the localities provided by Acevedo *et al.*, (1990), despite the fact that both publications share a common author.

Zyskowski & Clay (2001) documented the first confirmed specimen, a male from Estancia San Pedro Mi, Departamento Itapúa (S26°31.4’, W55°48.3’). The skin was deposited at the Museo Nacional de Historia Natural del Paraguay (MA 148) and frozen

tissue samples at the Natural History Museum of the University of Kansas (B 3708). Pearman (*pers. comm.* in Delacour *et al.*, 2004) questioned the identification of the specimen based on the eye colour and weight being a closer match for *P. superciliaris*. Frustratingly this specimen can no longer be located and is considered lost (S. Ríos. *pers. comm.*) and sequencing of the tissue samples is now required to dispel the doubts about the identification of this specimen.

Zyskowski & Clay (2001) provided additional information about possible observations of one and three individuals respectively in late July 1995 in the south of Parque Nacional San Rafael, Departamento Itapúa, that were originally listed in Lowen *et al.* (1996). These were “seen briefly under poor light conditions” (Clay, 2001) and insufficient details were observed to confirm their identity. Lowen *et al.* (1996) do not list *superciliaris* for San Rafael, although that species is common there, but Madroño *et al.*, (1997), which includes some of the same authors, lists only *superciliaris* for the same park.

Fariña & Hostettler (2003) included the species in a checklist of the vertebrates of Reserva Natural Bosque Mbaracayú, Departamento Canindeyú, citing what appears to be an unpublished internal report from the Fundación Moisés Bertoni (who manage the

reserve), as the source (Esquivel, 1996). However this report cannot be traced and despite extensive ornithological fieldwork at RNBM, there is no evidence to suggest that the species occurs in the reserve (Myriam Velázquez & Alberto Madroño-Nieto, *in litt.*).

Delacour *et al.* (2004) list the subspecies *obscura* for Paraguay, but add “perhaps only the forested part east of the Paraguay River”. Clay (2001) earlier provided a more plausible potential distribution of “gallery forest in the south of Oriental Paraguay, and perhaps also in similar habitat in the south-eastern Chaco”.

NEW RECORDS

During December 2011, RD photographed one member of a pair at the Refugio de Vida Silvestre Atinguy, Departamento Misiones (S27°20', W56°41'). A second bird flushed into the surrounding forest, which has an extension of approximately 100ha. The photographed bird can be assigned to the nominate subspecies (Fig. 1) and the reddish iris is indicative of a male. The area around Atinguy consists of altered pasture land with islands of forest, and riparian forest along water courses close to the Paraná and Atinguy Rivers. The Refugio de Vida Silvestre Atinguy, located



FIGURE 1: Dusky-legged Guan *Penelope obscura obscura* male, Refugio de la Vida Silvestre Atinguy, Departamento Misiones, Paraguay (RD, December 2011).

within one of these forest islands, is a small zoo of native wildlife under the auspices of the Entidad Binacional Yacyreta (Yacyreta Dam Company).

Given the questions of origin arising from the sighting so close to a zoological collection, a second expedition was mounted by PS on 10 August 2013 to attempt to relocate the birds and to find out more about their provenance. On this occasion a single female (based on brownish iris) was observed and photographed (Fig. 2). It allowed a fairly close approach (to about 10 m), but flushed when it became nervous and could not be relocated. A keeper working at the zoo confirmed that the birds (which he called Jaku hú) are wild and “arrived” in the forest about five years previous. He estimated the population to be “at least a dozen birds” and confirmed that they breed in the surrounding forest. He added that given the lack of persecution and the ready access to food prepared for the captive animals they had become more accustomed to human presence over time allowing a closer approach. The keeper then showed us two agitated caged birds that they had trapped from this population to form part of the zoo collection, circumstantial

evidence that the free-flying birds did not originate in captivity.

Additional support for the presence of the species in this area of Paraguay is provided by forest guards from the Reserva Natural Yacyreta (S27°25', W56°26') who also claim to know “Jaku hú” from the riparian forest of Isla Yacyreta, which they differentiate from “Mitu” (*Crax fasciolata*) the only other Cracid known to occur in the reserve. However they state that illegal poaching within the reserve means the species is extremely shy and hence difficult to observe.

Contreras & Acevedo (1997) list Refugio Atinguy, Misiones as a locality for the species in Paraguay, though it is unclear whether the reference provided, “Acevedo 1988”, refers to an unpublished sight record by the second author, or an untraceable publication which is not listed in the literature cited. The Refugio Atinguy was founded in 1982, and assuming that the Acevedo (1988) record is reliable, it casts doubt on the keeper’s statement that the birds first arrived five years previously to our records. However it would also confirm the presence of free-ranging birds at the locality for at least a quarter of a century.



FIGURE 2: Dusky-legged Guan *Penelope obscura obscura* female, Refugio de la Vida Silvestre Atinguy, Departamento Misiones, Paraguay (PS, August 2013).

On 9 November 2013 the dog-like barking alarm call of a *Penelope* was heard from gallery forest near the banks of the Tebicuary River south of Villa Florida, Departamento Misiones by PS. Though the calling individual was not seen, the locality falls well within the proposed range of *P. obscura* and outside the range of *P. superciliaris*, which has not been previously recorded from Departamento Misiones.

CONCLUSION

The precise distribution of Dusky-legged Guan in Paraguay remains far from clear but the paucity of recent observations suggests that the species is either rare, localized or occurs in areas not habitually watched by observers.

Illegal hunting is an ongoing issue for Cracids in Paraguay, even in supposedly protected areas, and this has resulted in extremely furtive behavior when the species are encountered in the field (Clay, 2001). Whilst this makes the population at Atinguy particularly remarkable for its approachability, it also means that the species may be under-recorded in Paraguay because of a general assumption that all brief encounters with *Penelope* are referable to *superciliaris*. This is particularly possible at PN San Rafael where the two species may be at least partially sympatric (Zyskowski & Clay, 2001).

The new observations reported here are in riparian habitat in an area of transition from Humid Chaco / Mesopotamian Grassland to what was historically Atlantic Forest. Reports of the species in Departamento Ñeembucú and the Lago Ypoá area (Acevedo *et al.*, 1990) and historical reports from similar habitats in Departamento Presidente Hayes (Kerr, 1892; Bertoni, 1930; Podtiaguin, 1945) seem plausible, though the continued existence of the species there requires confirmation.

The potential presence of the subspecies *bridgesi* in the extreme northwestern Chaco, as reported by Podtiaguin (1945) requires investigation. Pearman (*pers. comm.* in Delacour *et al.*, 2004) considers this subspecies to be tied to montane forest in the Yungas and Chaco-Yungas ecotone (habitats not present in Paraguay), and Mosqueira *et al.* (1995) describe it as preferring humid forest near water over nearby Chaco-type scrub in Provincia Salta, Argentina. There are currently no definite records of this subspecies from the true Chaco in Argentina or Bolivia which suggests that its occurrence in Paraguay may be unlikely (Delacour *et al.*, 2004). Interestingly an individual of *P. o. bridgesi* of unknown origin was photographed in Asunción Zoo on 13 January 2014 by Rob Clay.

Delacour *et al.* (2004) describe the nominate subspecies as “one of the rarer cracid taxa”. The species has declined in Argentina (del Hoyo, 1994) and a similar decline has probably taken place quietly in Paraguay where rates of habitat destruction are comparable. It is currently considered data deficient at the national level (Guyra Paraguay, 2005) but is potentially vulnerable in the country (Brooks & Strahl, 2000). Though *Penelope obscura* is classified as of Least Concern (BirdLife International, 2012), the suggestion that it be a species complex (with much the most abundant taxon *bridgesi* also being the most distinct) (Delacour *et al.*, 2004), means that the identification and protection of known populations at subspecies level takes on a new importance. Consequently the small population of approachable birds at Refugio Atinguy, whatever their origin, may be considered to be of national and perhaps international conservation importance.

RESUMEN

A pesar de repetidas referencias sobre la presencia de la especie en Paraguay, el estado de Penelope obscura sigue siendo debatido. Para aclarar los datos disponibles se provee una revisión de la literatura junto con datos de registros inéditos modernos que comprueban la presencia de la especie en Paraguay. Los límites de especies adentro del complejo obscura no están bien definidos, y por eso incluimos una discusión breve e la importancia potencial de las poblaciones Paraguayas para la conservación de la especie.

PALABRAS-CLAVES: Conservación; Distribución; Galliformes.

ACKNOWLEDGEMENTS

Thanks to the staff at Refugio Atinguy for their willingness to share their knowledge of the birds and the forest guards at Reserva Natural Yacyreta for their input. Don Bland, Alan Cairns, Hugo del Castillo, Val George, Michael Jackson, Jan Kotaska, Rand Rudland, Dani Ruíz Díaz, Liz Savage, Bob Sitter and Arnold Skei accompanied us in the field during August 2013. Hugo del Castillo and Monica Montiel accompanied us during November 2013. Thanks to Dan Brooks for his encouragement to publish the data and Sergio Ríos for helping in the literature search. Benjamin Bender, Mark Robbins and Luís Amarilla (via Sergio Ríos) provided important information

about specimens in the collections for which they are responsible. I am particularly grateful to Kristof Zyskowski and Rob Clay for their frank comments on their recollections of the MNHNP specimen.

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Aceito em: 05/10/2014
Impresso em: 30/06/2015



Publicado com o apoio financeiro do Programa de Apoio às Publicações Científicas Periódicas da USP