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NOTES ON THE DISTRIBUTION OF THE MADEIRAN BARN OWL *TYTO ALBA SCHMITZI* (AVES: TYTONIDAE)

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ABSTRACT

This paper discusses the distribution of *Tyto alba* in the Madeiran Archipelago and presents a preliminary typification of the species habitat on the islands of Madeira and Porto Santo. On Madeira, the Barn Owl is found practically from sea level up to the middle zones of the island where, in addition to its apparently preference for the walls of interior gorges situated in cultivated districts, it also occupies remote areas as well as heavily populated ones. However, it appears to be completely absent from the interior of laurel forests, and an observation made at 1,600 m. a.s.l. could well correspond to a case of temporary presence. The observations from Porto Santo tend to indicate that the species is found mainly in the northern half of the island, a fact which appears to be related to the greater abundance of suitable biotopes. As regards to Ilhéu de Baixo and Deserta Grande, islets where the species had been recorded previously, only one observation was made on the latter; on the other hand, the first record is presented for Bugio.

Key words: Madeiran Archipelago, *Tyto alba*, notes on the distribution.

RESUMEN

En este trabajo se aborda la distribución de *Tyto alba* en el archipiélago de Madeira y, de forma preliminar, se tipifica su hábitat en las islas de Madeira y Porto Santo. En la primera aparece desde prácticamente el nivel del mar hasta las medianías, donde además de su aparente predilección por paredes de barrancos interiores con contornos cultivados, también ocupa enclaves tanto aislados como muy antropizados. Parece estar completamente ausente en el interior de los bosques de laurisilva, y una detección a 1.600 *m.s.m.* podría corresponder a un caso de presencia temporal. Las observaciones en Porto Santo dejan entrever que se distribuye principalmente en el sector septentrional, hecho vinculado a la mayor riqueza de biotopos adecuados. Respecto a Ilhéu de Baixo y Deserta Grande, islotes donde había referencias del ave, únicamente fue registrada en el último; sin embargo, se ofrecen los primeros datos para Bugio.

Palabras clave: Archipiélago de Madeira, *Tyto alba*, notas sobre distribución.

1. INTRODUCTION

Information referring to the Barn Owl, *Tyto alba* (Scopoli, 1769), in the Madeiran Archipelago is relatively scarce. Data relating to aspects of the species' distribution, breeding biology and food habits, etc., appear dispersed in various general works published at the end of the 19th Century and the middle of the last (consult HARCOURT [7]; HARTWIG [8], [9]; SCHMITZ [17]; BERNSTRÖM [3]; BANNERMAN & BANNERMAN [2], amongst others). More recently, some specific references have appeared in bird lists (e.g. JEPSON & ZONFRILLO [11]) and in the inventory of Important Bird Areas (BISCOITO & ZINO [4]).

TUCKER & HEATH [24] indicate that the owl's population on Madeira is stable, and ZINO *et al.* [26] and OLIVEIRA [14] consider it to be common; however, a study of the species' chorology giving precise data of observations is lacking. In this short note, we present some sightings of *T. alba* in the Madeiran Archipelago with the aim of offering an initial idea of its present distribution.

2. MATERIAL AND METHODS

Data were obtained from two sources. Firstly, by soliciting unpublished records both from local as well as foreign ornithologists and secondly, as a result of the second and third authors carrying out nocturnal itineraries during short visits paid to the islands (Madeira between 4-10 August 1989; Madeira and Porto Santo between 1-13 April 1996 and 15-18 September 1997). In this latter case, the majority of the records (detection of calls and/or visual contacts) were made fortuitously during the course of fieldwork aimed at detecting bats (TRUJILLO, *in prep.*). All registers were marked on 1: 50,000 scale maps published by the Instituto Geográfico e Cadastral (1970 and 1971). Information referring to aspects of the climate, geomorphology, geology and vegetation were obtained by consulting SJÖGREN [21], [22]; QUINTAL & VIEIRA [15] and GALOPIM de CARVALHO & BRANDÃO [6].

3. RESULTS AND DISCUSSION

3.1. Madeira:

With regard to the number of contacts presented (Appendix), 4 correspond to supposedly established pairs, 1 to a chick (Cabo Girão) and the remainder -with the exception of 2 dead specimens- to single individuals exhibiting, in the majority of cases, territorial behaviour.

The Barn Owl is widely distributed practically throughout the whole of the lower and middle zones of the island, (median altitude of contacts, 275 m; $n = 28$), showing virtually the same habitat preferences (Appendix) as those found in two of the western islands of the Canaries, Tenerife (MARTÍN [12]; SIVERIO & CARRILLO [19]) and La Gomera (SIVERIO *et al.* [20]). Consequently, the statement made by BANNERMAN & BANNERMAN [2], who incidentally only saw a single bird (Pousada dos Vinhaticos, approx. 600 m. a.s.l.), that the species is restricted "to the upper parts of the island", would appear to be unfounded.

The species is found regularly in the southern half of the island from Ponta de São Lourenço (E) to the westernmost localities of Fajã da Ovelha (Appendix) and Ponta do

Pargo (F. Zino, *in litt.*). The absence of records from the northern part of the island between Porto Moniz and Faial could well be the result of the random character of our sampling, since the bird's presence has been confirmed at various localities (consult BANNERMAN & BANNERMAN [2]; JEPSON & ZONFRILLO [11]; BISCOITO & ZINO [4]) and furthermore, there is fossil material (environs of São Vicente, leg. D. Erber) that probably corresponds to the present subspecies (H. Pieper, *in litt.*). However, when one compares the north and south coasts in terms of richness of the most suitable biotopes, these are less available in certain sectors of the former, where the cliffs are very high (with thermophile and mesophile vegetation) and lack cultivated areas on the plateaus. Judging by what has been observed in other regions (SIVERIO [18]), this type of biotope is generally rejected.

In spite of the fact that *T. alba* appears to be very common at low altitudes in and around Funchal (F. Zino, *in litt.*), our observations *-a priori-* tend to reveal a certain tendency of the species to occupy the walls of ravines ("ribeiras") located inland (mean relative altitude, 410 m; $n = 15$) (Appendix) but becoming scarce above 600 m. a.s.l., an altitude which coincides with the appearance of dense stands of laurel forest (SJÖGREN [22]; QUINTAL & VIEIRA [15]), a habitat from which it is apparently absent (F. Zino, *in litt.*; pers. obs.). The owl's presence at 1,600 m (Appendix; see also SIVERIO [18]), one of the highest altitudes recorded in the Western Palearctic (e.g. RIDONDELLI [16]; ALONSO [1]), could well refer to a case of temporary presence governed by climatic conditions. However, the abundance of potential prey (*Rattus rattus* and *Mus musculus*) (ZINO & BISCOITO [25]; F. Zino, *in litt.*) and the absence of forests, tend to imply a permanent presence at this altitude.

The isolation of birds on the islets, as well as at Ponta de São Lourenço (Appendix), a locality which -judging by fossil evidence (*T. a. schmitzi*)- also formed part of its past distribution (H. Pieper, *in litt.*), contrasts markedly with the owls assiduity in eminently anthropogenic environments (F. Zino, *in litt.*).

3.2. Deserta Grande:

The species was recorded on the 23 September 1988 (H. Pieper, *in litt.*). However, for this islet we have found two earlier records, one very old referring to nesting (SCHMITZ [17]) and the other to a skeleton found in August 1981 (SWASH [23]). According to OLIVEIRA [14], at present *T. alba* has disappeared from Deserta Grande due to the massive poisoning of rabbits carried out in 1996 as part of the campaign for the erradication of introduced herbivores.

3.3. Bugio:

The only known record refers to an individual captured with a net during September 1989 (F. Zino, *in litt.*). Although one cannot rule out the nesting of the Barn Owl on this islet, the most southerly point of the Archipelago, the species presence could well correspond to local movements undertaken by individuals established on Deserta Grande in response to the nesting of pelagic seabirds as similarly suspected for some islets in the Canaries (DELGADO *et al.* [5]) and the Cape Verdes (HAZEVOET [10]).

3.4. Porto Santo:

All the visual contacts, (8-9 April 1996, $n = 2$; 15-16 September 1997, $n = 4$), as well as the finding of a possible nesting cavity (September 1997), correspond to the north-eastern (Serra de Dentro) and eastern (Serra de Fora, Calhâu and Penedo) parts of the island.

These sectors, together with virtually all the coast from the North to the Southwest, harbour a greater abundance of biotopes suitable for the establishment of owls (fig. 1), judging by the species' preferences in other Macaronesian island environments (BANNERMAN & BANNERMAN [2]; NAUROIS [13]; DELGADO *et al.* [5]; SIVERIO & CARRILLO [19]; present study). Furthermore, in October 1997, F. Zino (pers. comm.) localized 2 dead specimens, one in the West and the other in Serra de Dentro, and at the beginning of 1998, detected a minimum of 8 birds at the latter locality.

In areas where birds have been observed, the habitat is characterized by eroded sea cliffs (20 m. a.s.l., occupied cavity), cliff faces of interior ravines close to grass pastures (75 m. a.s.l., two birds strongly attached to the area) and shallow valleys relatively populated (30-120 m. a.s.l., birds apparently hunting [fig. 2]) in the environs of which there exist ravines and rock faces ideal for nesting.

Up to now, the mentions of *T. alba* on Porto Santo were practically non-existent, there being only a single breeding record remitted at the beginning of the last century (SCHMITZ, 1908 [*in* NAUROIS [13]]).

3.5. Ilhéu de Baixo:

We have not been able to obtain any unpublished information for this islet. In the bibliography, there only exists an observation of an individual bird and the finding of a cranium in September 1984 (ZONFRILLO *et al.* [27]).

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Figure 1.- Pico do Concelho, close to Serra de Fora (Porto Santo). In the E and N versants of the island the best habitats for the establishment of the Barn Owls are represented (Photo: R. Barone).

Figure 2.- Apparently young Madeiran Barn Owl (*Tyto alba schmitzi*) at Calhâu, Porto Santo, in September 1997 (Photo: D. Trujillo).

APPENDIX

Number and other characteristics of some contacts of *Tyto alba* made on the island of Madeira. Habitat: a) sea cliffs (cliff/thermophile vegetation) with cultivations closeby; b) sea cliffs (with xerophytic vegetation); c) slopes and/or supralittoral rock faces (thermophile/mesophile vegetation) with anthropogenic environs; d) interior ravines (thermophile/mesophile vegetation) with anthropogenic environs; e) slopes and/or interior rock faces (subalpine vegetation). *Specimens found dead. P: H. Pieper, *in litt.*; Z: F. Zino, *in litt.*

Locality	Month/Year	Birds (n)	Altitude (m)	Habitat
Camacha (SE)	9/1982 P	1*	?	?
Caniço de Baixo (SE)	9/1988 P	1	150	d
Santa Madalena (NW)	8/1989	1	480	d
Environs of Porto Moniz (NW)	8/1989	1	550	d
Loreto (SW)	8/1989	2	360	d
Calheta (SW)	8/1989	1	250	d
Tabua (SW)	8/1989	1	200	d
Estreito da Calheta (SW)	8/1989	1	480	d
Ribeira do Faial (NE)	8/1989	2	130	c
Achada do Cedro Gordo (NE)	8/1989	1	650	d
Monte (Funchal), S.	8/1989	1	700	d
Praínha (Ponta de São Lourenço), E.	9/1989 P	1*	?	b
Road Porto da Cruz-Portela (E)	9/1994	1	300	d
Confidential	7/1995 Z	1	1,600	e
Faial	4/1996	1	130	c
Margaça (E)	4/1996	1	390	d
Ribeira de Machico (E)	4/1996	1	20	c
Praínha (Pta. de São Lourenço)	4/1996	1	60	b
Porto da Abra (Pta. de São Lourenço)	4/1996	1	80	b
Environs of Aeroporto do Funchal (E)	4/1996	1	80	c
São Gonçalo (S)	4/1996	1	200	d
Cabo Girão (S)	4/1996	1	650	a
Porto Moniz	4/1996	2	440	d
Jardim do Mar (SW)	4/1996	1	30	c
Tabua (SW)	4/1996	1	150	c
Quinta Leopoldina (Campanario), S.	4/1996	1	490	d
Environs of Ponta do Sol (SW)	4/1996	2	50	c
Anjos (SW)	4/1996	1	30	c
Environs of Cabo Girão	9/1997	1	500	a
Fajã da Ovelha (W)	9/1997	1	520	d