West African Ornithological Society
Société d'Ornithologie de l'Ouest Africain

Join the WAOS and support the future availability of free pdfs on this website.

http://malimbus.free.fr/member.htm

If this link does not work, please copy it to your browser and try again.

Devenez membre de la SOOA et soutenez la disponibilité future des pdfs gratuits sur ce site.

http://malimbus.free.fr/adhesion.htm

Si ce lien ne fonctionne pas, veuillez le copier pour votre navigateur et réessayer.

May/mai 2014

Is there an undiscovered endemic scops owl *Otus* sp. on Príncipe Island?

by Martim Melo[1] and Martin Dallimer[2]

[1]Percy FitzPatrick Institute of African Ornithology, DST/NRF Centre of Excellence, University of Cape Town, 7701 Rondebosch, South Africa. <melo.martim@gmail.com>
[2]BIOME, Department of Animal and Plant Sciences, University of Sheffield, Sheffield S10 2TN, U.K.

Received 12 February 2009; revised 2 April 2009.

Summary

Reports of an unknown owl on Príncipe Island in the Gulf of Guinea date back to 1928 but no owl has been seen there by ornithologists. We summarise known reports, together with our own recent observations of the putative species. We collected reports from parrot harvesters that corroborate previous anecdotes of "owl-like" birds in tree holes. Owl-like calls were heard every night at two sites in low altitude (< 250 m) primary forest and at a third site during the day, and were recorded. The call notes were in the frequency range of scops owls *Otus* and distinct from known non-avian calls from the same locations, but note structure differed from that of the calls of known *Otus* species. Available evidence suggests the existence of a new *Otus* species endemic to Príncipe.

Resumo

Será que existe uma espécie de mocho do género *Otus* na ilha do Príncipe? A suspeita de que possa existir um mocho na ilha do Príncipe remonta a 1928, sem que no entanto algum naturalista o tenha conseguido observar. Resumimos as informações existentes e apresentamos novos dados sobre esta possível espécie. Recolhemos registos de apanhadores de papagaios que corroboram registos anteriores de aves em buracos de árvores, cuja descrição é coincidente com um mocho. Vocalizações similares às de mochos foram registadas todas as noites em dois locais de floresta primária de baixa altitude (< 250 m) e num terceiro local durante o dia. A frequência das notas é idêntica à das de mochos do género *Otus* e distinta das vocalizações de outros organismos dos mesmos locais, mas a estrutura das notas é distinta da de espécies de mochos conhecidas. Este conjunto de dados sugere que existe uma nova espécie de mocho-pequeno endémica da ilha do Príncipe.

Introduction

The Gulf of Guinea islands constitute a spectacular centre of endemism (Jones 1994, Gascoigne 2004) comprising three oceanic islands (Príncipe, São Tomé, Annobón) and one land-bridge island (Bioko), all part of the Cameroon line of volcanoes. Up to 33 endemic bird species are present, with the highest levels of endemism on São Tomé and Príncipe, the two largest oceanic islands, where up to 28 endemics have been recognised (Stattersfield *et al.* 1998, Jones & Tye 2006).

Príncipe has six currently recognised single-island endemic species together with five species shared with São Tomé and Annobón (Jones & Tye 2006). In addition, the existence of a species of scops owl has been suspected by ornithologists, based on reports by local people (Correia 1928, Naurois 1975, Jones & Tye 2006), but there have been no confirmed sightings.

The most recent evidence that such an owl may indeed occur is based on two reports from parrot harvesters who saw, in tree holes, a bird whose description suggested a small scops owl *Otus* sp. On a 1998 field trip, MM identified an area where calls that sounded like an owl could be heard every night. This call was recorded, and had the same frequency as the calls of other scops owls, while being distinct from any known species. Here we summarise the accounts from forest guides and former parrot hunters about the existence of a small, undescribed forest owl on Príncipe. We also present sonograms of what we believe are Príncipe scops owls.

Methods

Large parts of the primary forest of Príncipe were visited during a 2007 bird survey (Fig. 1). In total, 21 nights were spent camping in primary forest during November and December. Each night, any occurrences of owl-like vocalisations were noted and recordings attempted. Calls were recorded with a Marantz PMD222 tape recorder with Type II 60 min. tapes and a Sennheiser ME66K6 directional microphone. We analysed the recordings on a PC using AVISOFT-SASLAB PRO version 4.3 (R. Specht, Berlin). In addition we collected oral reports from local parrot harvesters.

Results and Discussion

The first indication of an owl on Príncipe was in a letter from J. Correia dated 3 Oct 1928 to F. Murphy, on file at the American Museum of Natural History, where he wrote “Wols I never saw any here; some the residents here told me that there as few in the wild forests but it may can taking ten years before they can find one” (*sic*). Naurois (1975) also mentioned reports of an owl on the island. More recently, J. Baillie (http://www.ggcg.st/jon_principe.htm, accessed 5 Jan 2009) did not hear any

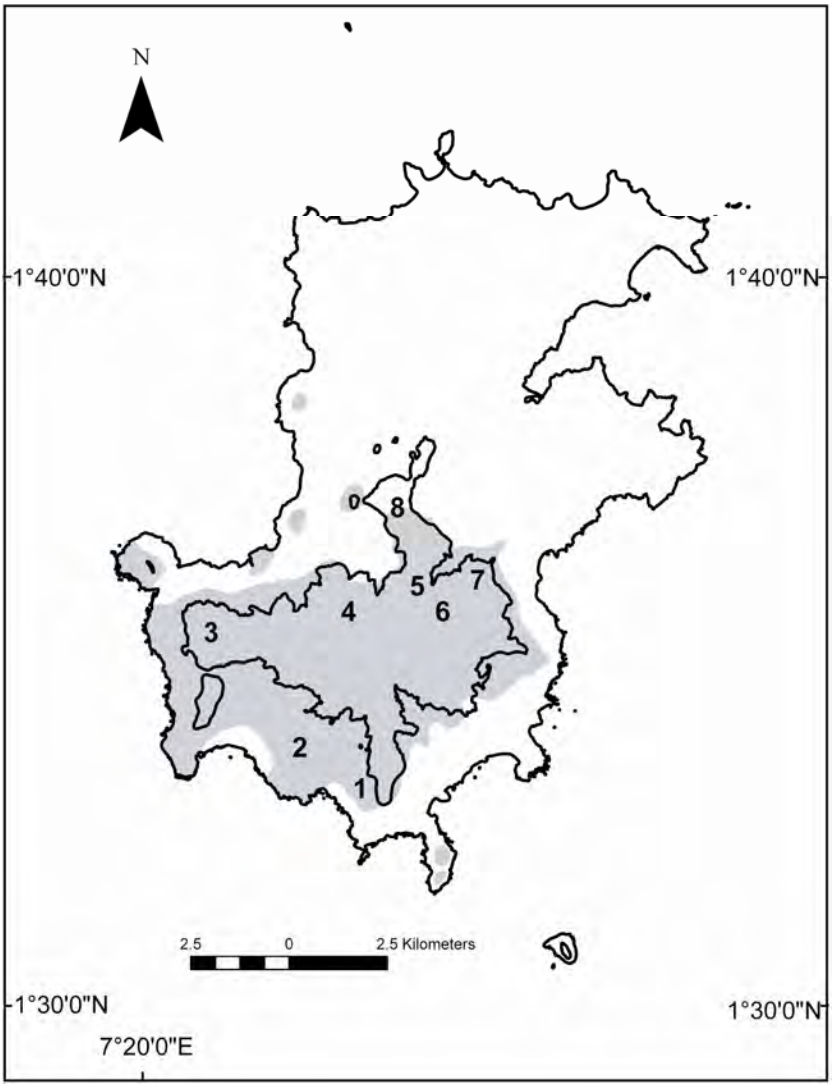

Figure 1. The location of areas surveyed on Príncipe Island, Gulf of Guinea. The shaded area represents primary rainforest. The contour line is 250 m. Sites are: 1 Ribeira Porco; 2 Camp Tomé; 3 A Mesa; 4 Pico do Príncipe; 5 Boca do Inferno; 6 O Que Pipi; 7 São Joaquim; 8 Pico Papagaio.

owl calling during over a month spent camping in primary and secondary forest on Príncipe around September 1999, but mentioned a guide who said he had seen a small owl in the primary forest in the early 1990s.

In 1998, a parrot harvester reported to MM two instances where fellow harvesters had found a bird unknown to them in tree holes that they were searching for parrot nests. The descriptions fitted a scops owl. The narrator was present at the foot of the tree in one case (the actual observer had died), whereas the harvester responsible for the second observation was living on São Tomé and could not be located. In 2007 we were able to meet him on Príncipe; he is apparently the same person as Baillie's guide mentioned above. When presented with the colour plates of the endemic birds of the Gulf of Guinea islands (from Borrow & Demey 2001), he immediately pointed to the São Tomé Scops Owl. He further said that the elders told him that it was a *Kitóli*, the São Toméan name for the São Tomé Scops. He also remarked that the elders said that the owl destroys parrot eggs in order to occupy the nesting cavity.

In 2007, we heard the putative owl calling only in primary forest below 250 m altitude (Fig. 1: sites 1, 2 and foothills of site 5). Previously, vocalisations had only been recorded in the Ribeira Porco area (site 1). Although restricted to lowland primary forest, the calls were heard every night and from several different directions each evening. On one occasion, we heard vocalisations during the daytime (site 5). Calls were often performed in duets and mostly comprised a repeated undulated note, sometimes interspersed with a cat-like "*kee-a-u*" (Fig. 2).

The São Tomé Scops Owl *Otus hartlaubi* also calls during the day (Jones & Tye 2006). Notes of the Príncipe calls were in the same frequency range as notes of scops owls, including the São Tomé Scops, African Scops *O. senegalensis* (Fig. 2) and Eurasian Scops *O. scops* (Galeotti & Sachi 2001). This frequency range is distinct from the calls emitted by frogs, as exemplified in the sonogram of the common Príncipe endemic frog *Phrynobatrachus leveleve* (Fig. 2). Repetition rate was about one note per second, higher than the typical repetition rates of the Eurasian Scops (one note every 2–3 s: Galeotti & Sachi 2001), the African Scops (one note every 5–8 s: Kemp 1988) and especially the São Tomé Scops (one note every 12–15 s: pers. obs.). Some other scops owls have higher rates however; for example, the Madagascar Scops *O. rutilus* calls at three notes per second (König *et al.* 1999). Because synchronized duetting was common in the putative owl, the high repetition rate may have been an overestimate if notes of two duetting birds were included. We believe that the use of a directional microphone minimized this confounding factor. A slower repetition rate would put the putative owl rate close to that of the Eurasian Scops, raising the possibility of rare vagrants to Príncipe of this migrant species. Nevertheless this is unlikely for three reasons: Eurasian Scops rarely vocalizes on the wintering grounds (Kemp 1988), it only performs duets during the breeding season and with male and female emitting differently pitched notes (König *et al.* 1999), and its note structure (shape of the notes in the sonogram: see Fig. 2) is different from that of the Príncipe calls and this can be detected by the human ear.

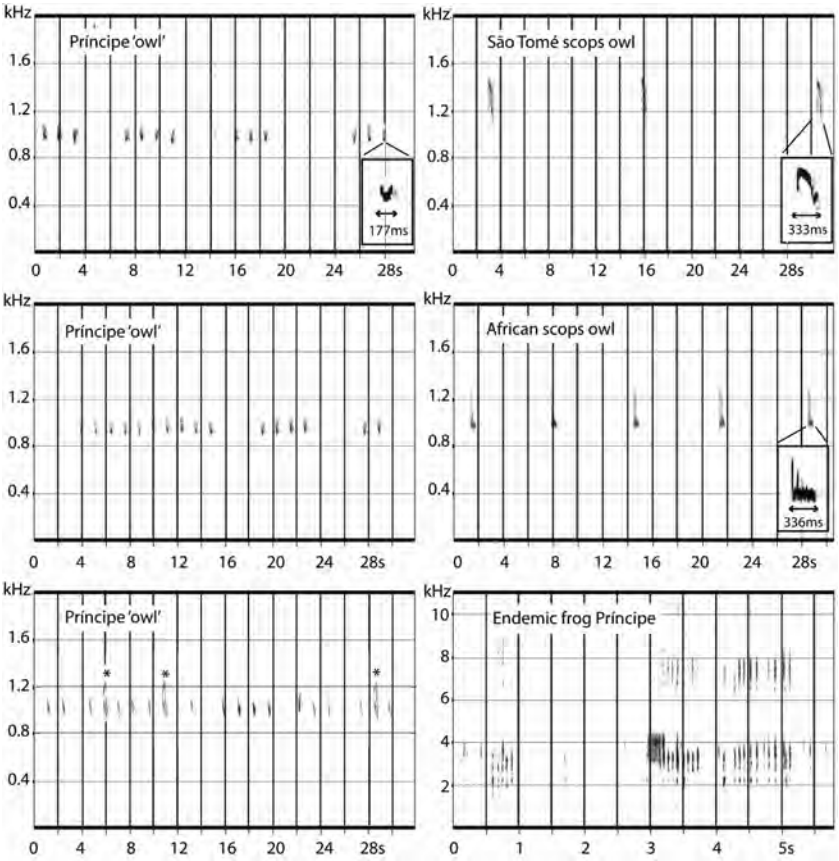

Figure 2. Left: sonograms of the single typical scops note and cat-like *kee-a-u* (indicated by * on bottom graph) of the putative Príncipe scops owl. Right, top two graphs: sonograms from the São Tomé Scops and African Scops. For each species one of the notes is depicted at a larger scale for detailed shape comparison. Right, bottom: sonogram from the Príncipe endemic frog *Phrynobatrachus leveleve* (note the different time and frequency scales).

The notes of the putative owl are U-shaped, with a duration of 177 ms (n = 10 notes from one individual), being clearly distinct from the notes of the Eurasian Scops (250 ms, n = 20 notes from 20 birds; Galeotti & Sachi 2001). The notes of the São Tomé Scops are ∩-shaped and their duration (333 ms, n = 10 notes from one bird) is very similar to the L-shaped notes of the African Scops (336 ms, n = 10 notes from

one bird). Note structure is a phylogenetic signal, as it is constrained by the genetics controlling the morphology of the vocal apparatus, whereas repetition rates are more plastic and related to the sound transmission properties of the environment (Buskirk 1997). The synchronized duetting noted on Príncipe is rare in Old World scops owls but common in the New World species (van der Weyden 1975).

Overall, this evidence suggests that, if the organism emitting the calls on Príncipe is indeed an owl, it will very likely be a new species.

Scops owls can remain undetected for long periods. The Anjouan Scops Owl *O. capnodes* was rediscovered in 1992 after 106 years of being unrecorded (Safford 1993) in an area of primary forest that is smaller and more regularly visited than that on Príncipe. Similarly, the Flores Scops Owl *O. alfredi* was rediscovered in 1994, 98 years after the last report (Widodo *et al.* 1999). The available evidence for an owl on Príncipe is solid enough to warrant further efforts to search for the species. It should also be noted that of the four Gulf of Guinea islands, only Príncipe lacks a scops owl (Jones & Tye 2006).

The area of primary forest on Príncipe is small (30 km^2). The extent of suitable habitat available for the putative owl is likely to be substantially less than this if, as we suspect, it is restricted to lowland sites. For instance, less than a third of the remaining forest occurs below 250 m, the altitude of our highest record (Fig. 1). Based on our observations, the owl may be numerous where it does occur but would likely qualify as threatened due to the small area of habitat that it occupies. We urge ornithologists to discover and describe this species as soon as possible as it will further support the urgent conservation efforts required for the forests of Príncipe and their unique birdlife.

Acknowledgments

This work was supported by the São Tomé and Príncipe Director of Protected Areas, Eng. Salvador Sousa Pontes. The Society for Conservation and Development provided logistical support and we thank Ricus Delport and Pietro Bosman of the Bom-Bom Island Resort. António and Karen Salvaterra provided us with a base in Santo António. We thank Bikegila, our guide and field assistant, and Sátiro who provided the help needed for long periods in the forest. The expedition was funded by the Davis Expedition Fund (University of Edinburgh), a British Ecological Society Small Project Grant, and a British Ornithologists' Union Research Grant. This paper was improved with comments by Jérôme Fuchs, Peter Jones and Alan Tye.

References

BORROW, N. & DEMEY, R. (2001) *Birds of Western Africa.* Christopher Helm, London.

BUSKIRK, J. VAN (1997) Independent evolution of song structure and note structure in American wood warblers. *Proc. Roy. Soc. Lond.* B 264: 755–761.

GALEOTTI, P. & SACCHI, R. (2001) Turnover of territorial Scops Owls *Otus scops* as estimated by spectrographic analyses of male hoots. *J. Avian Biol.* 32: 256–262.

GASCOIGNE, A. (2004) São Tomé, Príncipe, and Annobón moist lowland forests. Pp. 236–238 *in* BURGESS, N., D'AMICO HALES, J., UNDERWOOD, E., DINERSTEIN, E., OLSON, D., ITOUA, I., SCHIPPER, J., RICKETTS, T. & NEWMAN, K. (eds) *Terrestrial Ecoregions of Africa and Madagascar: a Conservation Assessment*. Island Press, Washington.

JONES, P.J. (1994) Biodiversity in the Gulf of Guinea: an overview. *Biodiv. Cons.* 3: 772–784.

JONES, P.J. & TYE, A. (2006) *The Birds of São Tomé and Príncipe with Annobón: Islands of the Gulf of Guinea.* British Ornithologists Union, Oxford.

KEMP, A. (1988) Order Strigiformes: Strigidae, typical owls. Pp. 110–155 *in* FRY, C.H., KEITH, S. & URBAN, E.K. (eds) *The Birds of Africa*, vol. 3. Academic Press, London.

KÖNIG, C., WEICK, F. & BECKING, J-H. (1999). *Owls, a Guide to the Owls of the World*. Pica Press, Sussex.

NAUROIS, R. DE (1975) Le 'Scops' de l'Ile de São Tomé *Otus hartlaubi* (Giebel). *Bonn. zool. Beitr.* 26: 319–355.

SAFFORD, R.J. (1993) Rediscovery, taxonomy and conservation of the Anjouan Scops Owl *Otus capnodes* (Gurney 1889). *Bird Cons. Internat.* 3: 57–74.

STATTERSFIELD, A.J., CROSBY, M.J., LONG, A.J. & WEDGE, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation.* BirdLife International, Cambridge.

WEYDEN, W.J. VAN DER (1975) Scops and screech owls: vocal evidence for a basic subdivision in the genus *Otus*. *Ardea* 63: 65–77.

WIDODO, W., COX, J.H. & RASMUSSEN, P.C. (1999) Rediscovery of the Flores Scops Owl *Otus alfredi* on Flores, Lesser Sunda Islands, Indonesia, and reaffirmation of its specific status. *Forktail* 15: 15–23.