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Nota editorial

Puxando a brasa à minha sardinha

Os leitores mais assíduos devem ter notado que, embora eu esteja a trabalhar com répteis terrestres, somente um estudo, indirectamente relacionado com este assunto, foi publicado no primeiro número desta revista desde que aceitei ser editora-chefe. E isto porque estava anteriormente envolvida com o trabalho. Tal explica-se principalmente por questões éticas; para evitar conflitos de interesses. No entanto, neste número, os leitores encontrarão duas das três publicações relacionadas com répteis terrestres. Duas boas surpresas; ambas resultado da formação em herpetologia que tenho vindo a realizar a pedido de várias ONGs cabo-verdianas que trabalham com biodiversidade no país.

A primeira publicação intitula-se "*Risco de predação após a translocação para a ilha de Santa Luzia da calhandra-do-ilhéu-Raso* Alauda razae *Criticamente Em Perigo – uma experiência com ninhos artificiais de aves*". Os autores utilizaram armadilhas Sherman e ovos artificiais para identificar potenciais predadores presentes em diferentes locais de translocação em Santa Luzia para avaliar o impacto dos mesmos no sucesso da nidificação. Este estudo mostra que o rato-caseiro *Mus musculus* está disperso por toda Santa Luzia. Sugere também um forte impacto predatório nos ovos por um predador diurno, provavelmente o corvo do deserto *Corvus ruficollis*, para além do acima mencionado. A boa notícia é que as taxas de sucesso de nidificação foram semelhantes às da população do Raso, onde os ratos estão ausentes, e que as calhandras-do-Raso adultas compensam as elevadas perdas de ninhos através de uma nova postura rápida. Outro lado positivo é que não foram detectados ratos nem gatos durante o período de amostragem. É importante salientar que este estudo foi novamente financiado pelo Fundo SCVZ Desertas, graças a quem comprou o livro sobre a História Natural das Ilhas Desertas.

A segunda publicação é uma breve nota sobre as "*Representações bióticas na igreja de Nossa Senhora da Luz, ilha de Santiago, Cabo Verde*". Este é um trabalho único que funde a Arquitectura com a Biologia. Um animal esculpido foi encontrado num capitel de uma igreja emblemática. Após a formação herpetológica, a autora identificou-o como um réptil e tentou neste trabalho explicar as razões da presença deste como um elemento arquitectónico. Faltou apenas explicar porque é que este só pode ser visto do altar…

A terceira e última publicação é uma nota breve que descreve, pela primeira vez, a presença de uma população de osgas num ilhéu da ilha do Sal. Os autores começam a reparar nas osgas após a formação acima referida. A nota "*Primeiro registo de* Tarentola *para a ilha do Sal, Cabo Verde*" desafia a designação de registo duvidoso para o relato de 1934 de um exemplar de *Tarentola delalandii* na ilha. Com base nas características morfológicas, estes indivíduos parecem ser diferentes das espécies endémicas que ocorrem nas ilhas vizinhas. Assim, é necessário um estudo genético para verificar se estes pertencem a uma espécie de outros arquipélagos ou a uma ainda por descrever.

Estou contente por, após 16 anos de trabalho em Cabo Verde, não precisar de puxar a brasa à minha sardinha, pois as sementes estão a brotar por si próprias à frente dos meus olhos. Obrigado a todos vós por me darem a oportunidade de testemunhar isso.

Doutora Raquel Vasconcelos
Editora-chefe da *Zoologia Caboverdiana*

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Editorial note

Tooting my own horn

The most frequent readers might have noticed that, even though I am working with terrestrial reptiles, only one study, indirectly related to this subject, was published in the first number of this journal since I have accepted to be editor-in-chief. And that was because I was previously involved with the work. This is mainly explained by ethical issues; to avoid conflicts of interests. However, in this number, readers will find two of the three publications related to terrestrial reptiles. Two good surprises; both result of the training in herpetology that I have been carrying out as request from several Cabo Verde NGOs working with biodiversity in the country.

The first publication is entitled "*Predation risk of the Critically Endangered Raso lark* Alauda razae *after its translocation to Santa Luzia Island – an artificial bird nest experiment*". The authors used Sherman traps and fake eggs to identify potential predators present in different translocation sites on Santa Luzia, and to assess their impact on nest success. This study shows that the house mouse *Mus musculus* is widespread on Santa Luzia. It also suggests a heavy predatory impact on eggs by a diurnal predator, probably the brown-necked raven *Corvus ruficollis*, in addition to the above mentioned one. The good news is that nesting success rates were similar to the Raso population, where mice are absent, and that adult Raso larks compensate high nest losses by rapid re-laying. Another bright side is that no rats or cats were detected during the sampling period. It is important to highlight that this study was again financed by the SCVZ Desertas Fund grants, thanks to who bought the book on the Natural History of the Desertas Islands.

The second publication is a short note on the "*Biotic representations in the church of Nossa Senhora da Luz, Santiago Island, Cabo Verde"*. This is a unique work merging Architecture with Biology. One carved animal was found in a chapiter of an emblematic church. After the herpetological training, the author identified it as a reptile and tried to explain the reasons of its presence as an architectural element in this work. It only lacked to explain why this can only be seen from the altar.

The third and last publication is a short note that describes, for the first time, the presence of a gecko population on an islet of Sal Island. The authors start noticing the geckos after the above-mentioned training. The note "*First record of* Tarentola *for the Island of Sal, Cabo Verde*" challenges the designation of doubtful record the report of one *Tarentola delalandii* specimen on the island in 1934. Based on the morphological features, those individuals seem different from the endemic species occurring on the neighbouring islands. Thus, a genetic study is needed to check if those belong to a species from other archipelagos, or to one still to be described.

I am glad that, after 16 years working in Cabo Verde, I do not need tooting my own horn, as seedlings are sprouting by themselves in front of my eyes. Thank you all for providing me the opportunity to witness that.

Raquel Vasconcelos, PhD
Editor-in-chief of *Zoologia Caboverdiana*

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Artigo original | Original article

Predation risk of the Critically Endangered Raso lark *Alauda razae* after its translocation to Santa Luzia Island – an artificial bird nest experiment

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RESUMO

A calhandra-do-ilhéu-Raso *Alauda razae* é uma das aves mais raras e ameaçadas do mundo. Esta espécie esteve confinada ao Raso até à translocação em 2018 para a ilha vizinha Santa Luzia. A sobrevivência desta está altamente dependente do tempo de incubação bem-sucedido e de riscos baixos de predação. Neste estudo, primeiramente identificámos potenciais predadores por meio de armadilhas de isco em Santa Luzia. Posteriormente, avaliámos o impacto relativo das espécies de predadores na sobrevivência com ninhos experimentais. O rato-doméstico *Mus musculus* foi capturado em todos os locais em densidade duas vezes superior no sul. As experiências com ninhos artificiais sugeriram um forte impacto predatório sobre os ovos. Identificámos pelo menos dois tipos diferentes de provável predação de ninhos: nocturno (atribuído a ratos), afectando 25–50% dos ovos, e diurno (atribuído provavelmente ao corvo-do-deserto *Corvus ruficollis*), afectando até 100% dos ovos. Actualmente, as taxas de sucesso de nidificação das calhandras do Raso permanecem pouco estudadas, mas é considerado naturalmente muito baixo no Raso, sem mamíferos introduzidos, devido à forte predação pela osga gigante *Tarentola gigas*, ela própria uma espécie ameaçada. A adaptação desta ave a diferentes ecossistemas e à pressão de predação será crucial para a sobrevivência a longo prazo.

Palavras-chave: conservação de ilhas, erradicação, ilhas Desertas, roedores invasores

ABSTRACT

The Raso lark *Alauda razae* is one of the rarest and most threatened birds worldwide. This species was confined to Raso until its translocation in 2018 to the nearby Santa Luzia Island. Its survival is high dependent on successful incubation time and minimal predation risk. In this study, we firstly identified potential predators through bait trapping on Santa Luzia. Secondly, we assessed the relative impact of predator species on experimental nest survival. The house mouse *Mus musculus* was captured at all sites with a density two-fold higher in the southern area. The artificial nest experiments suggested a heavy predatory impact on eggs. We identified at least two different types of likely predation of nests: nocturnal (assigned to mice), affecting 25–50% of eggs, and diurnal (assigned probably to brown-necked raven *Corvus ruficollis*), affecting up to 100% of eggs. Currently, the Raso lark nest success rates remain poorly studied but it is considered to be very naturally low on Raso, which is free of any introduced mammals, owing to heavy predation by the giant gecko *Tarentola gigas*, itself a threatened species. The adaptation of this bird to different ecosystems and predation pressure will be crucial for its long-term survival.

Keywords: Desertas Islands, eradication, invasive rodents, island conservation

INTRODUCTION

Introduced mammals have become widespread on islands with breeding bird colonies, using them as food source (Atkinson 1985, Robertson *et al.* 1998, Stapp 2002, Towns *et al*. 2006). Because of the naivety of many island birds to predation and the consequential lack of behavioural, morphological and other life history anti-predator responses, the impact of introduced mammals has been devastating, often leading to local or even global extinction (Atkinson 2001, Courchamp *et al.* 2003, Towns *et al.* 2006). Birds are particularly sensitive to predators during their reproduction stage, as predators may affect eggs, chicks and adults (Sanders & Maloney 2002). Nest success monitoring can help evaluate these short-term effects (Jones *et al*. 2008). However, this has many limitations, such as the high number of nests to be monitored to obtain accurate results and the possible perturbation during nest checking (Duron *et al*. 2017). Thus, researchers prefer assessing artificial nests instead (Major & Kendal 1996, Latorre *et al*. 2013), with the advantage of being able to control the influence of many parameters on the predation rate (shell resistance, egg size, colour, location, smell; Stirnemann *et al*. 2015; Duron *et al*. 2017), to test different hypothesis and predator strategies.

In 2003, the Cabo Verde government created the Desertas marine protected area (MPA) that comprises Santa Luzia, Raso (7 km^2), Branco (3 km^2), and the surrounding sea (594 km^2). This internationally recognized MPA holds the entire population of the Critically Endangered Raso lark *Alauda razae* (Fig. 1). In 2018, a translocation project of Raso larks from Raso to Santa Luzia started (Brooke *et al*. 2020). In this work, we studied the predation risk of *A. razae* on Santa Luzia. We aimed to (i) identify potential predators present in this new ecosystem, and assess their impact using artificial nest experiments; (ii) estimate more precisely the presence of introduced rodents, especially *Mus musculus*, on the different translocation sites with bait trapping.

Fig. 1. The Critically Endangered Raso lark on Santa Luzia (photo by S. Caut).

MATERIAL AND METHODS

The experiments were conducted on Santa Luzia the 12–19 November 2021, at the start of the likely reproduction period for the Raso lark (Donald & Brooke 2006). Santa Luzia is presently uninhabited but holds introduced mammal species (cats, mice, and possibly rats) due to historical (Lopes & Monteiro 2015) anthropogenic activities. The domestic cat had a significant impact on the local fauna until its recent eradication in 2020 (Medina & Nogales 2009, Medina *et al.* 2012, 2021). Early indications are encouraging with the released breeding birds, as their annual survival seems similar to the Raso population (Brooke *et al.* 2020).

We estimated the rodent population size using 20 Sherman traps (34x13x13 cm) baited with peanut butter. Trap stations were set for one or two consecutive nights every 10 m along two perpendicular line transects (with the first trap in common) in three translocation sites of *A. razae* (Fig. 2A, B). Traps were opened in the late afternoon and checked and closed each morning. We collected general information for each trap: whether or not it sprung, the presence of bait, and captures of rodents and non-target species. We calculated an index of abundance (IA) taking into account the number of corrected trap-nights (Nelson & Clark 1973). Captured individuals were killed to collect tissue samples and we recorded the sex, sexual maturity and biometric parameters (body length, BL, and weight without viscera, W).

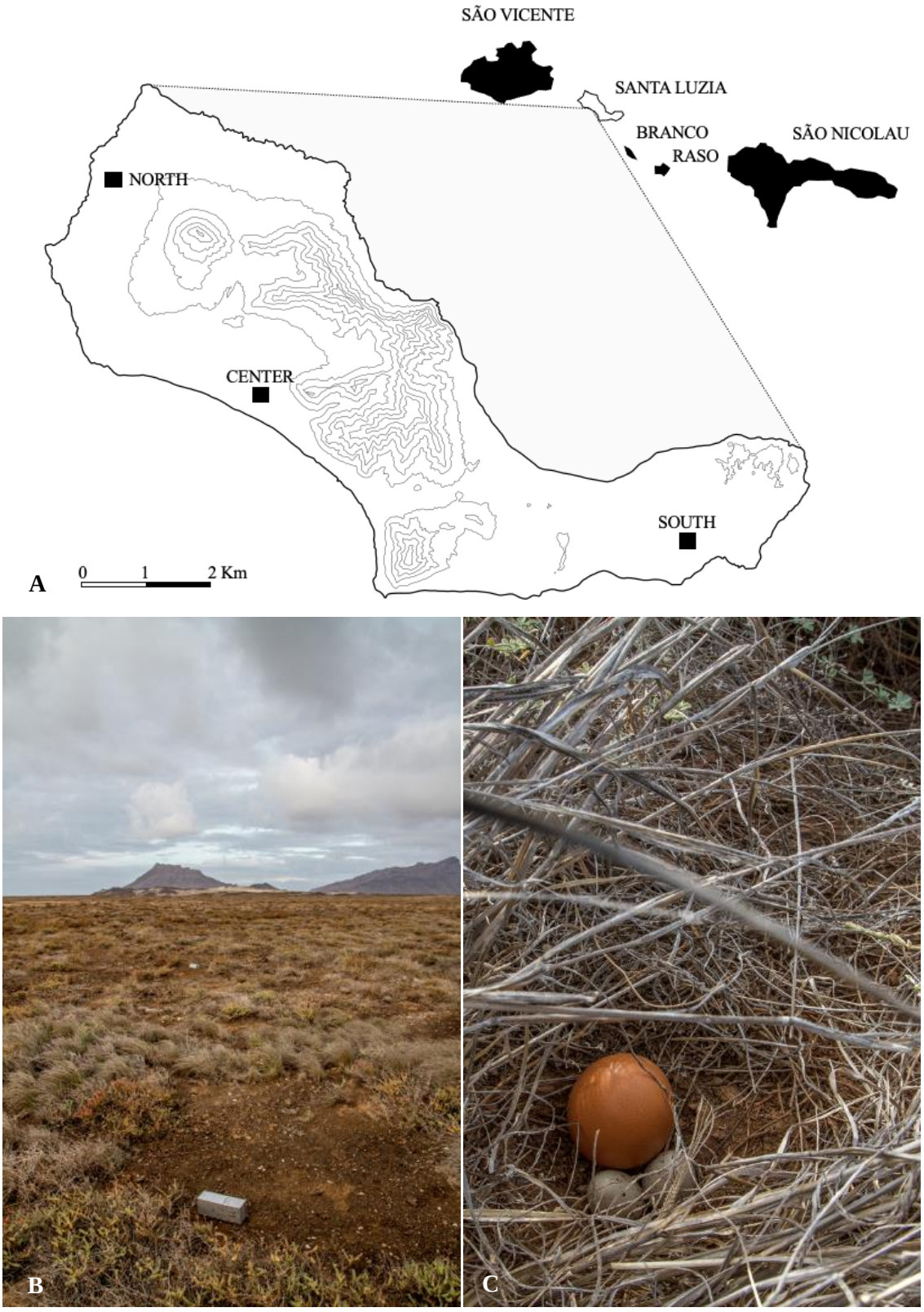

Fig. 2. Study area and study sites (photos by S. Caut). **A)** The geographical position of the Desertas Islands of the Cabo Verde Archipelago (Santa Luzia, Branco and Raso) and the tree selected study sites (mouse trapping and artificial bird-nest predation experiment) in the north, centre and south of the study area, Santa Luzia. **B)** Picture of trapping line in the characteristic ecosystem of Santa Luzia. **C)** Picture of one of artificial bird-nests containing two Raso lark artificial small eggs and one large hen egg.

An artificial bird-nest predation experiment was conducted at the same tree sites (Fig. 2C), located at minimum 4 km apart. Artificial nests with tree eggs were placed on the ground, directly in the vegetation, as natural Raso lark nests. Two different egg sizes were used: large hen eggs (*Gallus gallus*, 55x42 mm) and small weighted plastic eggs (30x20 mm) similar to Raso lark's. Each nest was checked at sunrise and sunset, to distinguish nocturnal from diurnal predation events. If any egg was pierced, nibbled, or had disappeared, the nest was considered to be depredated (Martin & Joron 2003).

Due to the small sample sizes, rodent capture comparisons between study sites were made using chi-square nonparametric statistics (Siegel & Castellan 1988). We tested differences between sexes and body condition among study sites with factorial ANOVAs (STATISTICA, https://www.statistica.com/).

RESULTS

Rodent trapping confirmed only the presence of *Mus musculus* across the island. The mean IA of mice was 50.64% (Fig. 3A). We observed mice abundance twice as high in the south than in the north ($\chi 2$; $P< 0.001$). The southern mice had significantly larger BL and heavier W (Fig. 3B) [$(F(BL)_{2,36}= 296.00$, $P< 0.001$; $F(W)_{2,36}= 74.79$, $P< 0.001$] independently of the sex [$F(BL)_{1,36}= 7.1$, $P= 0.484$, $F(W)_{1,36}= 0.04$, $P= 0.853$]; but in the north and central sites they were identical [P Posthoc (BL)= 0.347, P Posthoc (W)= 0.954]. We observed no lactating/ pregnant females or males in the reproductive phase.

In our artificial bird nest experiment, we found two different types of predation: diurnal, present in the centre and south of the island with values of 100% of large egg pierced and sometimes moved several meters from the nest – a signature of an avian predator; and nocturnal, corresponding to a movement of small eggs up to 50 cm from the nest in > 25% of nests in the north and centre and up to 60% in the south– a signature of rodents (Fig. 3C).

DISCUSSION

We observed many Raso larks during our stay (morning and evening) at all study sites, some in courtship, confirming the good choice of the areas for both experiments. Fortunately, no rat capture was made during our mission, which seems very surprising given the ability of rats to disperse and adapt to oceanic islands (Courchamp *et al.* 2003, Towns *et al.* 2006). However, we found high densities of mice. A possible explanation for their high densities would be the recent eradication of cats from the island and absence of other rodents. Indeed, we found no evidence of cats, neither in rodent trapping or night transects, just old droppings. In fact, where mice co-occur with other introduced mammals, their density is suppressed (Courchamp *et al.* 1999). Meso-predator release is an issue which needs consideration as may lead prey endemics to extinction (Courchamp *et al.* 1999, Caut *et al.* 2007, Angel *et al.* 2009). Many studies have shown that cats heavily predate mice on Santa Luzia both in the dry and in the rainy period (Donald *et al.* 2005, Medina *et al.* 2012, 2021). Thus, the removal of cats could lead to an increase in mice numbers. From an ecosystem point of view, all the trophic relationships could be modified directly or indirectly by changes in predation competition (Courchamp & Caut 2006, Caut *et al.* 2007).

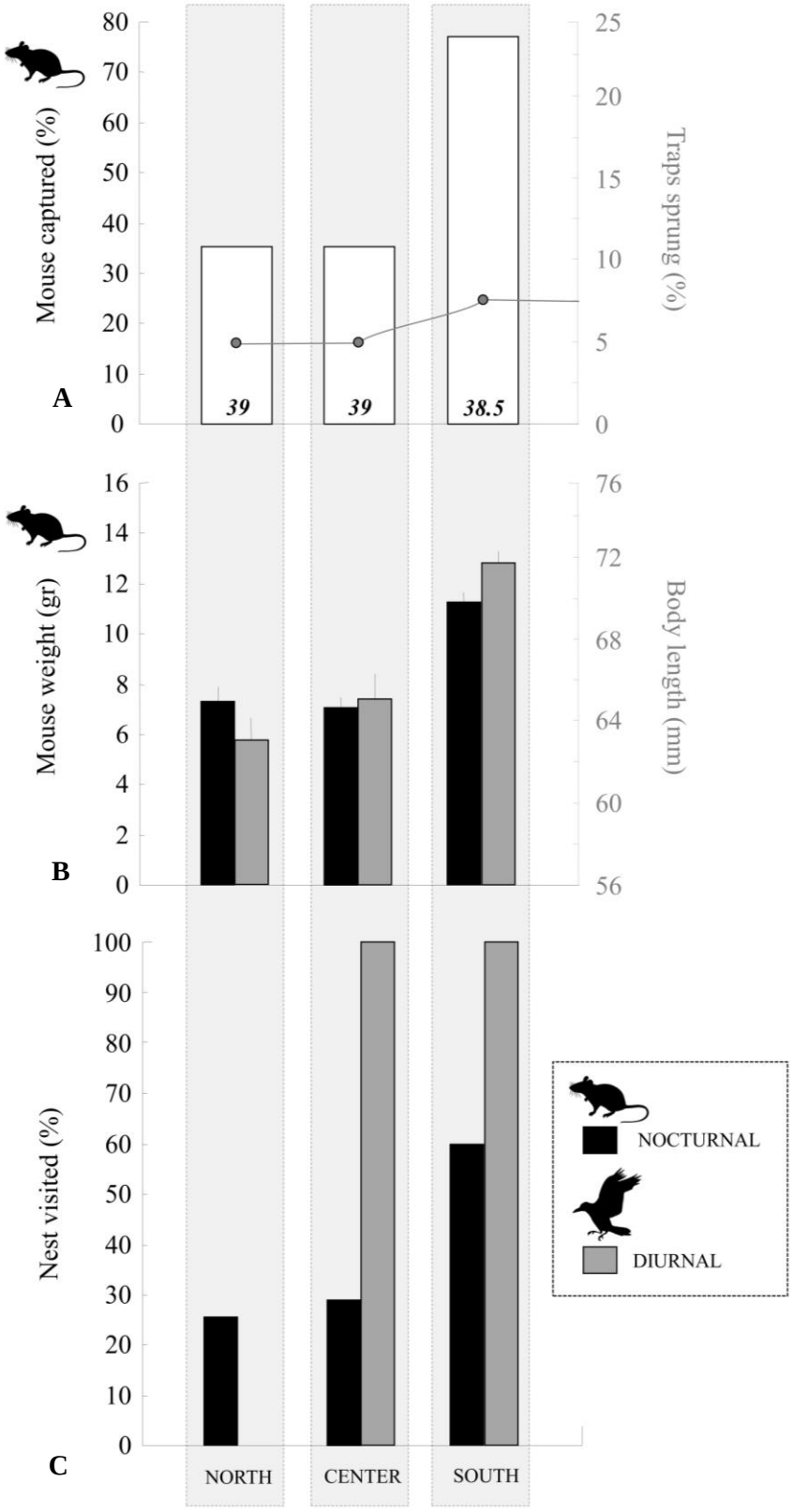

Fig. 3. Results of the bait-trapping and artificial nest predation experiments. **A**) Proportion of mice captures during the study in the three study sites (north, centre and south). Bars represent the percentage of corrected trap-nights containing at least one mouse. The number of corrected trap-nights is marked in italics inside each bar (see text for correction factor). Grey circles represent the percentage of traps that sprung. **B**) Biometrics data (weight in the black bar and body length in the grey bar; mean ± standard deviation) for the mice captured and dissected in the tree stations (N_{north}= 14, N_{centre}= 14, N_{south}= 14). **C**) Proportion of diurnal and nocturnal nest predation over two nights and one day (north site) and one night and one day (centre and south sites).

Ground nesting birds experience high nest predation, especially those that breed in shrub and grassland habitats (Yanes & Suarez 1995). Despite the absence of terrestrial mammals and the paucity of avian predators, a high proportion (reaching 95%) of *A. razae* nests fail on Raso, their original ecosystem (Castell 1999, Donald & Brooke 2006). This is especially due to the endemic giant gecko *Tarentola gigas* (Lopes *et al.* 2019). This species is also thought to feed on seabird eggs and chicks (Hazevoet 1995, Pinho *et al.* 2018). Notably, the giant gecko is absent from Santa Luzia and nest survival rates seem similar to the ones on Raso.

Of the potential avian predators on Santa Luzia, only the brown-necked raven *Corvus ruficollis* or neglected kestrel *Falco tinnunculus neglectus* were likely to predate eggs. Both species breed in small numbers (one to three pairs) on Santa Luzia, but are probably well established on the island and are enough to predate 100% of the nests in the centre and south of the island. We observed a group of five individuals of brown-necked raven in the centre and south. They actively searched on the ground in the morning and in the evening in the bushes and were most likely responsible for nest predation. Corvids are well known to be a major predator of nests (Ekanayake *et al.* 2015, Madden *et al.* 2015, Duron *et al.* 2017). This species has already been mentioned to have a possible impact on lark's nests on Raso, where they are also in small groups (Castell 1999, Brooke *et al.* 2020). Similarly, neglected kestrel can be a major predator, but more on juveniles and adults than eggs. During the translocation programs, several predation events were observed on adult larks (e.g., kestrels killed at least six of the 12 birds released on the first two days, even if events were favoured by the presence of the black protruding antennae of *A. razae* tags, Brooke *et al.* 2020).

The results of nocturnal predation are directly related to our mice trapping capture results. Captures at the north and centre were almost identical, and, in the south, it was twice as high for both IA and nest night predation. Mice are omnivorous and can impact a range of taxa including plants, invertebrates and birds (Jones *et al.* 2008, Angel *et al.* 2009), including in Cabo Verde (Pinho *et al.* 2022). Small eggs represent a potential resource for mice, as their shell strength is weak enough to break. In our study, we used plastic eggs that were much more resistant than real eggs, a reason behind why mice moved them, possibly through an attempt to break them. The use of commercial quail eggs *Coturnix japonica* would be better but they were not available during our experiment. We did not observe any traces of teeth or displacements on the large eggs, probably too heavy and resistant for mice. In a review study about the impacts of mice on flora and fauna on islands, mice predation on seabird eggs and chicks was higher on islands where mice were the only introduced mammal (Angel *et al.* 2009). On islands where mice are one of several introduced mammals, the effects of dominance, competition and predation by larger species may render them less of a threat to native vertebrates (Courchamp *et al.* 2003, Caut *et al.* 2007, Angel *et al.* 2009). Unfortunately, there are no studies on the impact of mice on the biodiversity of Santa Luzia and this is an important point for future research.

CONCLUDING REMARKS

Translocating a portion of a threatened population to a new locality is a common practice for conservation purposes (Fischer & Lindenmayer, 2000, Parker *et al.* 2013) and is the most obvious measure in the case of the Raso lark. However, effective post-release monitoring of bird translocations is vital for improving overall translocation success (Parker *et al.* 2013). It seems that the presence of avian predators and a new mammalian

predator can have a harmful impact. This artificial experiment is a first step to study the nest success in Santa Luzia. There is still insufficient evidence to state whether the Raso lark will be able to cope with mice predation, as they can partially compensate high nest losses by rapid re-laying (Brooke *et al.* 2020). Further studies on real bird nests may be needed to corroborate this result. A study on two lark species showed they are capable of producing three clutches per season as an adaptation to predation pressure to increase chances of successful fledging (Yañes & Onate 1996). This study showed that nest lost was not as disastrous as compared to female lost, and mice are not expected to predate on adult females. Thus, the evolution of the mice population after cat eradication and its predation upon Raso larks should be monitored. The same is true for the predation pressure exerted by avian predators, specifically of eggs by crows, and of juveniles and adults by kestrels. In addition, the possibility of standardizing studies on Raso and Santa Luzia could be a major asset for a better understanding of predator-prey relationship and adaptation to their environment.

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Nota breve | Short note

Biotic representations in the church of Nossa Senhora da Luz, Santiago Island, Cabo Verde

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Keywords: chapiter motifs, knowledge transfer, Portuguese Late Gothic, religious architecture, *Tarentola*

The representation of animals in Gothic architecture is frequent (e.g., bestiaries) and authors mention their allegorical sense with symbolic and narrative meanings, representing vices, virtues and guardians, contrasting the physical and spiritual worlds (Marques 2007, Dilnes 2021).

The church of Nossa Senhora da Luz, in Alcatrazes Bay, southeast of Santiago Island, was built circa 1495–1510s (Teixeira & Fernandes 2012). Alcatrazes was formerly the name of the church's village and the capital of one of the two captaincies of Santiago (the northern one), ruled by Diogo Afonso, navigator that discovered Santiago together with the António de Noli between 1456–1460 (Pires 2012). Alcatrazes and Ribeira Grande (the southern captaincy capital city, currently Cidade Velha) started to be populated with southern Portuguese in 1462 by order of Prince Henry. In 1527, the northern captaincy's capital changed to Vila da Praia (currently Cidade da Praia), and Alcatrazes lost its inhabitants (Pires 2012).

The building is rectangular and facing East (Fig. 1A), with a nave ended by a pointed limestone arch with columns with carved chapiter friezes followed by the chancel with a round limestone arch (Fig. 1B). The pointed arch is an example of stone craftsmanship; the chapiters have biotic motifs: *Acanthus* leafs, a shell (Fig. 1C), and one *sui generis* reptile in the northern chapiter (Fig. 1D). The latter is anatomically well represented, differing from the schematic ones represented in southern Gothic Portuguese religious buildings (Silva 1989, Marques 2010).

Six native reptile species occur on Santiago; three of geckos (two *Tarentola* and one *Hemidactylus*), and three of *Chioninia* skinks (Vasconcelos *et al.* 2013). The goal of this work was to identify the reptile of the chapiter and discuss its presence as an element of this church. For that, photos of the motif and reptile species occurring in the area, and training with a herpetologist were taken.

Fig. 1. Pictures of the church of Nossa Senhora da Luz and details of its architectural and biotic elements (photos by M. Pacheco). **A)** Surroundings of the church in Alcatrazes Bay, southeast of Santiago Island. **B)** Unhewn limestone pointed arch in the transition of the nave to the chancel with square, recessed columns with biotic representations in the chapiters. **C)** The northern chapiter with *Acanthus* leafs, a shell on the edge, and **D)** a gecko facing the altar. **D)** Photo of an individual of an endemic *Tarentola* species of Santiago.

The reptile was identified as a gecko due to its morphology (well-defined neck), body proportions (shorter truck length/ wider head than skinks), and limb position (Miralles *et al.* 2011, Vasconcelos *et al.* 2012). Between the two possible genera, it was identified as *Tarentola* due to its wider head and orbits than *Hemidactylus* (Arnold *et al.* 2008, Vasconcelos *et al.* 2012).

It was impossible to distinguish it between *Tarentola darwini* and *Tarentola rudis*, the two Santiago endemics, as both occur in rocky areas in the southeast (Vasconcelos *et al.* 2013).

Gecko representation in chapiters of religious buildings can be found in Portugal and former Portuguese colonies, with several morphologies. The representation of this gecko shows the craftsman's sensitivity to nature, and its ability to adapt artistic and literary traditions and technical knowledge from the kingdom to the new African context to which he became familiar. The study of geckos' symbolic importance may help reduce the general aversion of human populations towards them (Ceríaco & Marques 2013), which is an obstacle to conservation plans (Vasconcelos 2013).

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Nota breve | Short note

First record of *Tarentola* for the Island of Sal, Cabo Verde

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Keywords: reptile, Phillodactylidae, gecko, islet, Macaronesia, distribution

Although numerous terrestrial reptile studies have been carried out in the past decade on the main islands of Cabo Verde, some of the islets have not yet been studied. Fieldwork is urgently needed to reduce the Wallace shortfall in the smaller and more remote islands (Vasconcelos *et al*. 2013). Three different genera (*Chioninia*, *Hemidactylus* and *Tarentola*) are represented by endemic species on the islands (Vasconcelos *et al.* 2013). *Tarentola* is a genus of the family Phyllodactylidae with around 30 species. The genus is distributed across the Mediterranean region, mainland Africa and on West Indies and Macaronesian islands (Uetz *et al.* 2022). All species have robust bodies, non-divided digital lamellae and claws on the third and fourth digits (Arnold & Ovenden 2002).

In Cabo Verde, *Tarentola* has been reported on Santo Antão, São Vicente, Santa Luzia, São Nicolau, Boavista, Santiago, Fogo, Brava and on Branco, Raso and Rombos islets (Vasconcelos *et al*. 2013). Its occurrence on Sal (Angel, 1935, 1937) is doubtful and based on only one specimen from 1934 (Vasconcelos *et al.* 2013). Sal is a relatively accessible and easy to sample island, but subsequently, no specimens were found there (Vasconcelos *et al.* 2013). The goal of this work was to clarify the presence of native *Tarentola* on Sal.

The search for *Tarentola* individuals was opportunistic while carrying seabirds monitoring on Rabo de Junco Islet, Baía da Murdeira Marine Natural Reserve, west of Sal (Fig. 1A), during 10–11 of June 2019 nights by two observers. Dorsal, ventral, and lateral photos of each individual on top of millimetric paper and of the toe lamellae were taken with a digital camera (https://figshare.com/articles/figure/Tarentola_SalIsland_Cabo Verde_jpg/20753086). Records were GPS-located (3m precision). Taxa identification was based on diagnostic characters described in Vasconcelos *et al.* (2012).

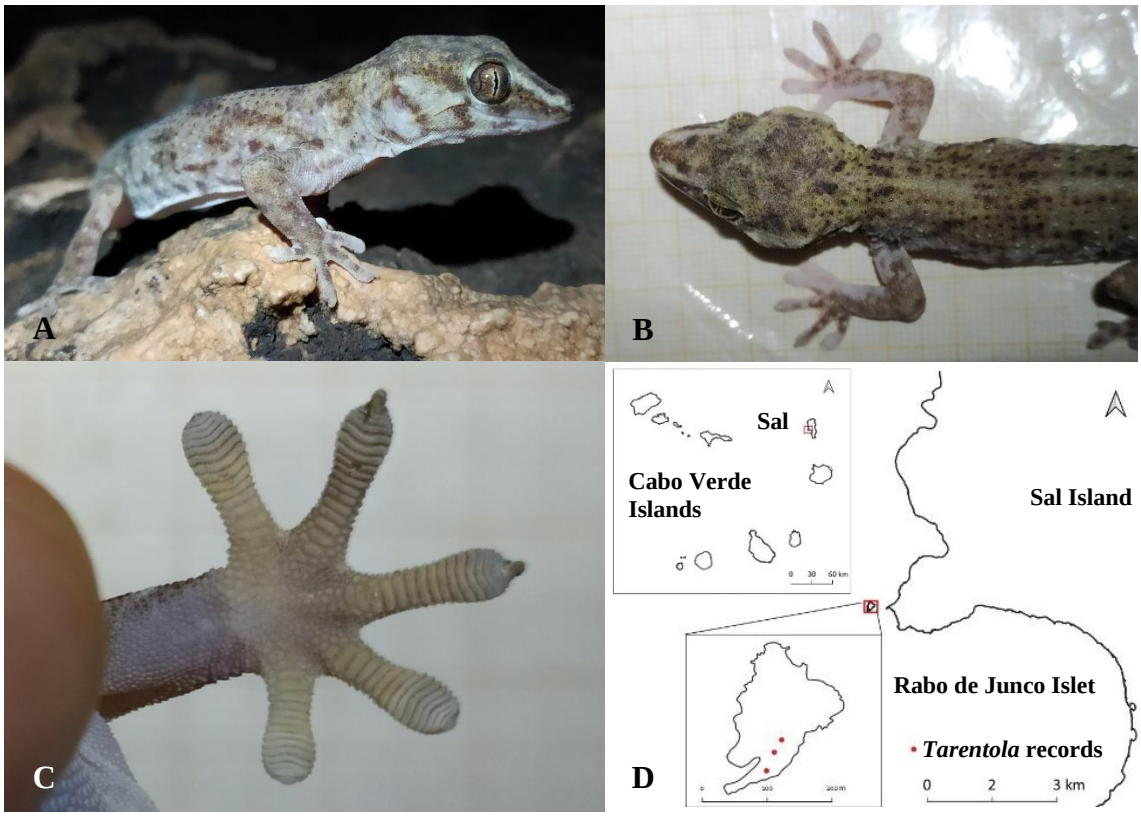

Fig.1. Sample site and study object. **A)** Lateral, **B)** dorsal view of a *Tarentola* specimen and **C)** detail of its non-divided lamellas (photos by M. Hernández-Montero). **D)** Location of Sal Island and Rabo de Junco Islet, the site where the *Tarentola* individuals were found.

Seven individuals were found in the central and southeast part of the islet (Fig. 1A). All presented rounded to oval, smooth dorsal tubercles and no enlarged tubercles between the eye and ear opening. The dorsal pattern was not with butterfly- or X-shaped dark crossbands but with dark-brown lines or stains along a whitish vertebral line (Fig. 1B, C, D).

Based on the absence of enlarged tubercles referred above, we can exclude that the geckos are *Tarentola boavistensis* or *Tarentola maioensis* introduced from the neighbour Boavista or Maio islands, respectively (Vasconcelos *et al.* 2012). They are not *Tarentola gigas* or *Tarentola protogigas* from the Desertas Islands or Fogo, Brava and Rombos, respectively, due to the small size of adults. They also present different dorsal pattern to *Tarentola* from the north-western islands (Vasconcelos *et al.* 2012). A genetic study of these individuals is urgently needed to determine whether it is a species found on other islands, an introduced species, or even a new undescribed species.

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Capa | Front cover

Osga-de-muros *Tarentola sp.* fotografada no ilhéu Rabo de Junco, ilha do Sal, 10 de Junho 2019 | Wall gecko *Tarentola sp.* photographed on Rabo de Junco Islet, Sal Island, 10 June 2019 (fotografia de | photo by Marcos Hernández-Montero)

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