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**THE BARBARY PARTRIDGE *ALECTORIS BARBARA*  
ON PORTO SANTO:  
A BRIEF HISTORY OF A SHORT-LIVED INTRODUCTION  
AND POSSIBLE CAUSES FOR EXTINCTION**

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With 2 figures

*RESUMO.* A informação relativa à introdução e permanência da Perdiz-mourisca *Alectoris barbara* na ilha do Porto Santo (Madeira) é bastante escassa, sendo aqui feita a compilação do conhecimento existente. A espécie foi introduzida em 1900 e extinguiu-se possivelmente durante ou antes da década de 1920. Algumas hipóteses explicativas para a sua extinção são a caça e colheita de ovos excessivas e recursos alimentares inadequados. Alguns detalhes relativos aos poucos espécimes de museu ainda existentes são apresentados.

*PALAVRAS-CHAVE:* *Alectoris barbara*, Padre Ernesto Schmitz, introduções, extinções, caça, espécimes.

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*ABSTRACT.* Information regarding the introduction and occurrence of the Barbary Partridge *Alectoris barbara* on Porto Santo (Archipelago of Madeira) is scarce and is reviewed. The species was introduced in 1900 and became extinct possibly over the 1920s or before. Some possible causes for its extinction are excessive hunting pressure, egg collecting, and inadequate feeding resources. Some information regarding the few museum specimens that are still in existence is presented.

**KEY WORDS:** *Alectoris barbara*, Padre Ernesto Schmitz, introductions, extinctions, hunting, museum specimens.

The Barbary Partridge *Alectoris barbara* is a resident bird of Northwest Africa (from Western Sahara to northwestern Egypt), with additional populations on the Canary islands, Sardinia and Gibraltar where it is considered to have been introduced (CRAMP & SIMMONS, 1980; LEVER, 2005; SCANDURA *et al.*, 2010).

This partridge was introduced to Porto Santo (Archipelago of Madeira, Portugal) in October 1900 (SCHMITZ, 1905a), probably in consequence of the temporary extinction of the Red-legged Partridge *Alectoris rufa* from this island by the end of the 19<sup>th</sup> century, apparently due to excessive hunting pressure and egg collecting (see SARMENTO, 1936). After some time (at an uncertain date), the Barbary Partridge became extinct from Porto Santo for reasons that are not clear (BANNERMAN & BANNERMAN, 1965).

According to SCHMITZ (1905a, 1905b) the original stock (apparently one single pair) came from Mazagan (northwestern Morocco, today El Jadida), within the range presently attributed to the subspecies *A. b. koenigi* (CRAMP & SIMMONS, 1980; DEL HOYO *et al.*, 1994). However, BANNERMAN & BANNERMAN (1965) refer to the birds of Porto Santo as belonging to the nominal subspecies (occurs from northeastern Morocco to northern Tunisia; CRAMP & SIMMONS, 1980) which does not seem to be correct given the provenance of the original stock.

In March 1905, Padre Ernesto SCHMITZ (1905a, b, c) confirms this species as a new breeding bird for the region, mentioning the rapid population increase, and later on (SCHMITZ, 1907) states that this partridge had been introduced with “considerable success”, which indicates that reproduction and population growth were taking place normally. However, less than 10 years after its introduction, SCHMITZ (1908) wrote that the Barbary Partridge would most likely disappear from Porto Santo. His writings suggest that an excess of hunting pressure (again, as happened with the Red-legged Partridge) was taking place in such a small island as Porto Santo, where there is no vegetation that could be used effectively for cover by the partridge. This was possibly one of the most important causes for the extinction of this introduced species.

References to this partridge and to its ecology during the short period it inhabited Porto Santo are particularly scarce. SCHMITZ (1905a) describes a clutch of 9 eggs he received on 14<sup>th</sup> March 1903: they were smaller and darker than those of the Red-legged Partridge and measured, presumably on average,  $39.1 \times 29.8$  mm (also, he adds the distance of the blunt egg pole to the wide axis, the “Dopphöhe” or *dopp*, which was 17.2 mm on average, and the mean weight of the egg shell = 1.87 g; see also MAURER *et al.*, 2010); he further reports that in the year before (1904) three clutches were found not far from each other that were collected by people for consumption. Another clutch of 8 eggs described by SCHMITZ (1905c) in his “diary notes” to have been collected on the 12<sup>th</sup> April 1903 seems to be the same mentioned above, where an inaccuracy in the collection date (and number of eggs) was made, as the egg measurements are the same in both cases. Two other clutches are mentioned by SCHMITZ (1905c), both obtained on 23<sup>rd</sup> May 1905: one of 10 eggs (mean dimensions:  $39.5 \times 30.5$  mm; max.:  $41.5 \times 31.5$  mm; min.:  $38.5 \times 29.0$  mm; mean *dopp* = 19 mm; mean weight of the egg shell = 1.95 g) and another of 7 (max.:  $42 \times 32$  mm, min.:  $39 \times 29.5$  mm). The fact that in the above mentioned cases the clutch size was close to the lower end of the interval attributed to this species (10-14 eggs, exceptionally 8-18; CRAMP & SIMMONS, 1980) might suggest the food resources were not abundant or adequate for this species on Porto Santo (e.g. MARTIN, 1987); on the other hand the egg size was well within the range for the species (CRAMP & SIMMONS, 1980). SCHMITZ (1909) also received two very young live chicks on 5<sup>th</sup> July 1907, a fact that indicates the presence of incubating birds extending up to at least the end of June. The less than optimal food resources in Porto Santo might have been exacerbated by the regime of severe droughts and irregular precipitation the island was submitted to before the water enclosures of the present were built. Some of these periods of drought (namely the winters of 1938-1939 and 1940-1941) are described by COSTA (1946) illustrating well a situation that must have taken place before. With little vegetation for food and for shelter (besides the lack of water) there was the additional problem of the increased exposure to predators, such as Common Buzzards *Buteo buteo*.

Sometime during the 1920s the Red-legged Partridge was re-introduced to Porto Santo (2 pairs from the Algarve) (BANNERMAN & BANNERMAN, 1965). Although the date of extinction of the Barbary Partridge is not known, this suggests the species was either already extinct or was quite scarce by then, which motivated the re-introduction of its relative. One other possibility is that the re-introduction of the latter might have accelerated the extinction of the former. BERNSTRÖM (1951) mentions the Barbary Partridge as if it was still present in Porto Santo by 1949 (there is no mention to any population decline or extinction), but this is probably not correct. As this author was not aware of the more recent re-introduction of the Red-legged Partridge (he only mentions its extinction around 1850) it seems that there was a confusion regarding which partridge species was present on Porto Santo by then. Still, BERNSTRÖM (1951) mentions eggs having been found from March to June, but this information probably results from bibliographic research (of Schmitz’s papers) and not from personal

observations. SARMENTO (1936) gives some breeding details for the Barbary Partridge, but it is not clear whether that information is general or if it relates to the Porto Santo population (and thus is not reproduced here). Although not the focus of this short note, it can be added that it is known that Red-legged Partridges were introduced on other subsequent occasions to Porto Santo, probably after falling victim to similar causes that extirpated the Barbary Partridge; the species is now common, probably benefiting from the existence of reliable sources of water and of adequate protection on the island.

Padre Ernesto Schmitz, who was in charge of the closed Museu do Seminário do Funchal from 1882 to 1908, received several specimens of this species (under the synonym *Caccabis petrosa*), from Porto Santo. Of those, only three mounted specimens from the original Schmitz collection (which belongs today to the Diocese do Funchal) remain, and are presently on display at the Museu do Jardim Botânico do Funchal (Madeira), and are as follows:

- specimen MADS-a050: juvenile female, 24.07.1907 (Fig. 1);
- specimen MADS-a068: adult female, 16.02.1907; this specimen is one of two females mentioned by SCHMITZ (1908) to have been shot on the same day;
- specimen MADS-a319: adult male, 15.05.1907 (Fig. 2).

Further specimens mentioned by Schmitz to have been collected are a female on 23.03.1905 (SCHMITZ, 1905b) and another female on 25.07.1905 (SCHMITZ, 1908), both not present in the remaining collection.



Fig. 1 - Juvenile female, Porto Santo, 24.07.1907 (MADS-a050).



Fig. 2 - Adult male, Porto Santo, 15.05.1907 (MADS-a319).

Curiously, the only reference to this species for mainland Portugal also dates from the early 20<sup>th</sup> century, with two specimens sent in 1912 to the Museu Zoológico da Universidade de Coimbra that belonged to the personal collection of King D. Carlos; those were a male and a female, collected at Vila Viçosa on the 20<sup>th</sup> and 24<sup>th</sup> December 1906 respectively, bearing no further notes on the specimen labels (THEMIDO, 1944). A population of this species has never been recorded in mainland Portugal (despite the short mention of this species by TAIT, 1924) and the probabilities are that either these specimens were imported from elsewhere and then released for hunting purposes or that they were kept alive and died in captivity; it is not impossible that these birds originally came from Porto Santo.

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