Individual recognition is of the utmost importance for the estimation of key population features such as population size, site fidelity and movement patterns that are essential for the development of effective conservation strategies (Nichols, 1992). Lizard studies have traditionally addressed this issue by using natural marks or via the application of artificial marking techniques, such as toe-clipping (Jesus, 2012), dorsal painting (Simon and Bissinger, 1983; Salvaidio and Oneto, 2008), removal of subdigital lamellae (Atzori et al., 2007) or the use of passive integrated transponder tags (Shanbhag, Karegouder, Saidapur, 2000). However, some artificial markings have been criticized for being too intrusive and for potentially affecting the welfare, behaviour and even survival of the marked individuals (Bloch and Irschick, 2004; Reisser et al., 2008).

In the presence of naturally occurring variegated markings allowing individual identification, photo-identification (photo-ID) can be used as an effective alternative to the use of artificial marks (Sacchi et al., 2010). Yet, for a large number of species of the most diverse group of lizards, the geckos, individual identification based on photographs was not possible because no such naturally occurring markings had yet been identified. Recently however, a study demonstrated the possibility of using the individual iris pattern to photo-identify nocturnal geckos of the genus Tarentola (Rocha, Carriilho and Rebelo, 2013).

The suitability of the iris pattern as a reliable identifier is conditioned to its stability throughout the animals’ lifetime or at least during a long enough period suitable for mark-recapture studies (Hastings, Hiby and Small, 2008; Paterson et al., 2013). Although iris pattern life-long stability has been confirmed for humans (Daugman and Downing, 2013), to date no evidence of long-term stability in the iris pattern of geckos is available. As such, we provide evidence by reporting the recapture of a naturally marked piebald leucistic Selvagens gecko Tarentola boettgeri bischoffii Joger, 1984 four years after its initial capture with no noticeable change in the iris pattern.

Leucism is a rare type of hypo-pigmentation that results from an integumentary pigmentation deficiency usually related to developmental anomalies in the differentiation of the pigment cells (Acevedo, Torres, Aguayo-Lobo, 2009). Unlike albinism, the condition is not necessarily a result of genetic mutations and the affected individuals still preserve normally pigmented eyes. Leucism may affect the whole body or be restricted to certain areas, producing a piebald phenotype that is characterized by the absence of pigment in irregular patches on individuals that apart from that are normally pigmented (Treitler et al., 2013).

The recaptured piebald T. b. bischoffii gecko was initially captured on 16 June 2009, during a population monitoring study on the Selvagem Grande, Madeira, Portugal (Rocha and Rebelo, 2010). The affected individual presented a clearly distinctive white patch that extended from behind the right jaw to the right forelimb (Fig. 1). This color abnormality is so rare that during the length of the monitoring study, which started in 2005 and includes more than 5000 captures, this was the only individual where hypo-pigmentism was observed. It was also the first documented record of this condition in the Tarentola genus.

The recapture occurred on 5 August 2013 near the area where the animal had been captured four years before. The individual, an adult male, was immediately recognized by the very distinctive area with no

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**Evidence of long-term stability in the iris pattern of Tarentola geckos**

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pigmentation. We carefully compared the iris photos of the gecko captured in 2009 with the pattern presented at the time of recapture and there was no noticeable change: the iris of both eyes perfectly matched the pattern of the iris presented four years ago (Fig. 2).

No information regarding the longevity of *T. b. bischoffi* geckos is currently available; however, the longevity of *Tarentola mauritanica*, a closely related species, was estimated to be eight years (Barbadillo et al., 1999). The four year interval between captures reported in this study therefore represents a very significant proportion of specimens lifespan.

To the best of our knowledge, this is the first documented record of iris long-term stability in non-human vertebrates and provides essential evidence of long standing iris pattern stability in *Tarentola* geckos.

Figure 1. Lateral view of the piebald *Tarentola boettgeri bischoffi*. Photo a) corresponds to the first capture in June 2009 and b) to the recapture in August 2013.

Figure 2. Iris pattern of the *Tarentola boettgeri bischoffi* captured in June 2009 and recaptured in June 2013. Images a) and b) correspond respectively to the photos of the right and left head profiles on June 2009 and images c) and d) to the photos of the same animal, recaptured four years later.
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