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A report of complete albinism in an adult *Pleurodeles waltl* in the wild

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RESUMEN: El albinismo es una de las anomalías pigmentarias más documentadas en los anfibios, aunque en poblaciones naturales se da con poca frecuencia, posiblemente porque los animales con fenotipos albinos presentarían tasas de supervivencia menores que aquellos con fenotipo normal. En esta nota describimos una observación de una hembra adulta albina de gallipato (*Pleurodeles waltl*) en una charca temporal en la Comunidad de Madrid y aportamos documentación gráfica de este caso de albinismo completo.

The abundance and disposition of chromatophores in the amphibian epidermis generate a broad range of coloration patterns that can vary at the individual, population, and species level. Depending on the pigments involved and the composition of granules, chromatophores typically found in the amphibian skin are classified as melanophores (black), xanthophores (yellow), erythrophores

(red), cyanophores (blue), leucophores (white), and iridophores (iridescent reflections) (Duellman & Trueb, 1994; Rivera *et al.*, 2001). Different anomalies in amphibian pigmentation have been described, of which albinism is one of the most studied, characterized by a lack of melanin in the skin caused by alterations in the melanophore synthesis pathway. This anomaly can affect the whole body or, more

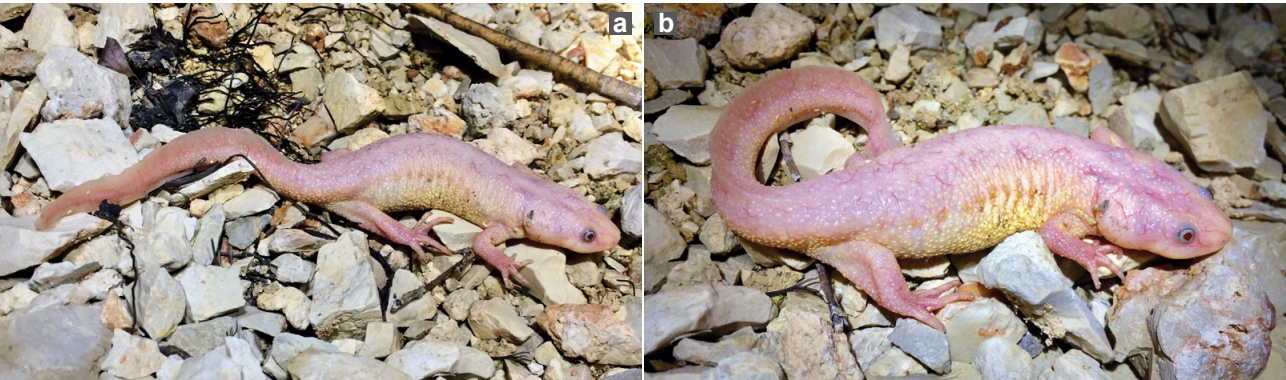


Figure 1: Albino female of *Pleurodeles waltl*, showing pale skin with blood vessels visible and red iris. Note the disperse xanthophores on the lateral side.

Figura 1: Hembra albina de *Pleurodeles waltl*, mostrando la piel translúcida, a través de la cual se observan los vasos sanguíneos, y el iris de color rojo. Se observan también xantóforos dispersos en el lateral del cuerpo.

frequently, different sections (partial albinism). The phenotype is characterized by red iris and pale skin coloration with visibility of blood vessels, and is compatible with the presence of light-colored pigments like xanthophores or iridophores (Rivera *et al.*, 2001).

Observations of albinism in wild amphibians are relatively rare because albino phenotypes are presumably associated with lower survival rates, for instance because they are more conspicuous to predators (Busack & Donaire, 2014). For the same reason, reports of adult albinos in natural popula-

tions are even more exceptional. Villodre *et al.* (2009) documented the first case of true albinism in *Pleurodeles* from a larva of the Iberian ribbed newt (*Pleurodeles waltl*) found in Albacete (Spain), and suggested that previous reports corresponded to partial albino or hypomelanistic individuals. Giner *et al.* (2009) and Busack & Donaire (2014) compiled further evidence of albinism in *P. waltl*, mostly in larval phases, and included reports of an albino female reared in captivity from larva and some cases of albino adults found in natural populations.



Figure 2: a) Ventral and b) dorsal views of albino female of *P. waltl*.

Figura 2: a) Vista ventral y b) dorsal de la hembra albina de *P. waltl*.

However, photographic documentation of these registers (available at both papers and <<http://anfibios-reptiles-andalucia.org/>>) shows that reported adult individuals presented dark iris, melanic dots in dorsal and/or ventral parts of the body, or no visibility of blood vessels through the skin, thus differing from the complete albino phenotype.

Here we report a case of complete albinism in an adult *P. waltl* showing full absence of melanophores and with the dorsal blood vessels clearly visible through the skin (Figures 1-3). During prospections in a temporal pond in the municipality of Morata de Tajuña (Madrid) on October 1st 2019, we found an albino female of *P. waltl*. While it is not possible to infer the age of an individual based on its size (Díaz-Paniagua *et al.*, 2005), this individual was clearly a sexually mature adult (snout-to-vent length = 108 mm; total length = 211 mm; body mass = 34.65 g) and showed normal behavior. The dorsal coloration was pale, clearly allowing the observation of blood vessels (Figures 1-3). The iris was red, and the lateral coloration was mostly pale, with disperse xanthophores (Figure 1). Ventral coloration was also pale, showing no traces of melanic patches (Figure 2). The animal was released after taking pictures and biometric measures. The exceptionality of this report in a natural population suggests that either complete albinism



Figure 3: a) Frontal view of albino female *P. waltl* and b) comparison with an adult male *P. waltl* with normal coloration.

Figura 3: a) Vista frontal de la hembra albina de *P. waltl* y b) comparación con un macho adulto de *P. waltl* con coloración normal.

is an extremely rare phenomenon, or complete albino individuals face a higher risk of mortality compared to normal-colored phenotypes. Further research is required to document the prevalence of this pigmentation anomaly in the wild and its consequences on individual fitness.

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