

A RECORD OF MELANISM IN *VIPERA LATASTI*

J.C. BRITO

Centro de Biologia Ambiental, Faculdade de Ciências da Universidade de Lisboa. 1749-016 Lisboa. Portugal. E-mail: jose.brito@fc.ul.pt

LATASTE'S viper (*Vipera latasti* Boscá, 1878) is a Mediterranean snake occurring in all of the Iberian peninsula, except in the extreme north, and in northwestern Africa (Morocco, Algeria and Tunisia). It is a small species with a snout-vent length usually not larger than 60 cm. Two subspecies are currently recognised: *Vipera l. latasti*, found in most of the Iberian peninsula and Portugal above Mondego River, and *Vipera l. gaditana*, found in the south and southeastern area of the Iberian peninsula and northern Africa (Bea & Braña, 1997; Gasc et al., 1997). The two subspecies are differentiated by the number of ventral scales, higher in the former subspecies (135-147) and lower in the latter (122-138) (Saint-Girons, 1977).

It is a viper with reduced polymorphism in the body colour and pattern. The background body colour is commonly grey, or grey-yellowish with yellow, light brown, orange or reddish spots according to the various populations (Bea & Braña, 1997; Barbadillo et al., 1999). The dorsal colour pattern is a dark stripe, with contrasted margins. The stripe can be either a zig-zag with sharp angles or a succession of inter-connected rhomboidal spots in the shape of rosary (Bea & Braña, 1997; Barbadillo et al., 1999). To our knowledge, melanism in this species has never been reported.

On 23 April 1997 a melanistic *Vipera latasti* (Figure 1) was found dead on a road in the Mata de Albergaria, Parque-Nacional da Peneda-Gerês, north of Portugal (UTM 29TNG7127). The specimen was at 680 m a.s.l. on a mountainside subjected to heavy rainfall (>3000 mm/yr.), and the surrounding habitat was a dense oak forest (*Quercus robur*) with heath (*Erica* sp.), brooms (*Cytisus* sp.) and brambles (*Rubus* sp.). The specimen was an adult male and its biometry is presented in Table 1.

In other European viper species melanism is quite frequent, especially in *Vipera berus* and *Vipera aspis*. In some populations of these two species, melanic individuals can represent more than 50% of the population (Nauelleau, 1973). For *Vipera seoanei* it has been described for 38.8% of melanic individuals in the mountains of northern Spain (Bea et al., 1984). Since 1998, more than 100 vipers have been captured in this area, either live or dead on the roads, and this was the only record of a melanistic specimen. This presupposes a very low abundance of melanism and/or that melanism is quite rare in this species. Inquiries among local people inhabiting this mountain revealed that some are aware of the existence of these 'black vipers' but stated that they are very rare.

Snout-vent length	50.0 cm
Total body length	59.0 cm
Head length	2.40 cm
Head width	1.24 cm
Head height	1.07 cm
Body weight	64.0 gr
Number of ventral scales	146
Number of pairs of sub-caudal scales	42
Number of loreal scales	9
Number of canthal scales	2
Number of apical scales	5
Number of peri-ocular scales	9
Number of intercanthal and interupperocular scales	30
Number of upper-labial scales	9
Number of lower-labial scales	10
Number of scale rows between the eye and the upper labials	2
Number of dorsal rows of keel scales	19
Entire dorsal head scales	2 parietals

Table 1. Biometric data for melanistic specimen of *Vipera l. latasti*.

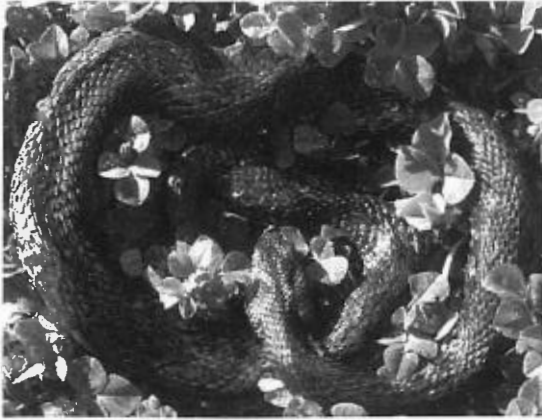


Plate 1. Melanic specimen of *Vipera latasti* from Parque-Nacional da Peneda-Gerês, Portugal. Photograph by I. Catalão.

Several theories regarding the evolutionary advantages of melanism have been suggested, and some data point to an advantage of melanic individuals of *Vipera berus* in faster heating rates, especially in mountain and cold regions (Andrén & Nilson, 1981), higher growth rates and body sizes (Madsen & Stille, 1988), higher fecundity in the females (Capula & Luiselli, 1994), and lower mortality rates after parturition (Luiselli, 1992). However, higher risk of predation (Andrén & Nilson, 1981) and considerable susceptibility to low food abundance (Madsen & Stille, 1988) has been reported as well. The evolutionary role of melanism in this species is yet to be determined, but it seems to be of less importance due to the extreme low frequency of occurrence.

ACKNOWLEDGEMENTS

This work was financially supported by a PhD grant from Fundação para a Ciência e Tecnologia (PRAXIS XXI/BD/16093/98) and by the Peneda-Gerês National Park (PNPG). Thanks are extended to José Ferreira and Francisco Neto for collecting the specimen.

REFERENCES

- Andrén, C. & Nilson, G. (1981). Reproductive success and risk of predation in normal and melanistic colour morphs of the adder, *Vipera berus*. *Biol. J. Linn. Soc.* **15**, 235-246.
- Barbadillo, L.J., Lacomba, J.I., Pérez-Mellado, V., Sancho, V. & López-Jurado, L.F. (1999). *Anfibios y Reptiles de la Península Ibérica, Baleares y Canarias*. Barcelona: GeoPlaneta.
- Bea, A., Bas, S., Braña, F. & Saint-Girons, H. (1984). Morphologie comparée et répartition de *Vipera seoanei* Lataste, 1879, en Espagne. *Amphibia -Reptilia* **5**, 395-410.
- Bea, A. & Braña, F. (1997). *Vipera latasti* (Boscá, 1878). In *Reptiles*, pp.480-488. Ramos et al. (Eds.). *Fauna Ibérica*, 10. Madrid: Museu Nacional de Ciencias Naturales, CSIC.
- Capula, M. & Luiselli, L. (1994). Reproductive strategies in alpine adders, *Vipera berus*. The black females bear more often. *Acta Oecol.* **15**, 207-214.
- Gasc, J-P, Cabela, A., Crnobrnja-Isailovic, J., Dolmen, D., Grossenbacher, K., Haffner, P., Lescure, J., Martens, H., Martinez-Rica, J.P., Maurin, H., Oliveira, M.E., Sofianidou, T.S., Veith, M. & Zuiderwijk, A. (Eds.) (1997). *Atlas of amphibians and reptiles in Europe. Societas Europaea*. Paris: Herpetologica & Muséum National d'Historie Naturelle (IEGB/SPN).
- Luiselli, L. (1992). Reproductive success in melanistic adders: a new hypothesis and some considerations on Andrén and Nilson (1981) suggestions. *Oikos* **64**, 601-604.
- Madsen, T. & Stille, B. (1988). The effect of size dependent mortality on colour morphs in male adders, *Vipera berus*. *Oikos* **52**, 73-78.
- Nauelleau, G. (1973). Le melanism chez *Vipera aspis* et *Vipera berus*. *Bull. Soc. zool. Fr.* **98**, 595-596.
- Saint-Girons, H. (1977). Systématique de *Vipera latastei latastei* Boscá, 1878 et description de *Vipera latastei gaditana*, subsp. n. (Reptilia, Viperidae). *Rev. Suisse Zool.* **84**, 599-607.