The Herpetological Bulletin 147, 2019: 28-29
NATURAL HISTORY NOTE

https://doi.org/10.33256/hb147.2829

Persian horned viper (*Pseudocerastes persicus*): a record at unusually low elevation from the United Arab Emirates

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Pseudocerastes persicus (Duméril, Bibron & Duméril, 1854) is a medium sized, thick bodied snake. Above the eyes it has prominent horn-like structures composed of a series of small scales (Fig. 1), which contrast with the single elongated scale above each eye of *Cerastes* spp (Mallow et al., 2003). *Pseudoscerates persicus* is the most widely distributed species of its genus, ranging from Arabia eastwards to Pakistan. In Arabia, the species is found in northern Oman and the United Arab Emirates (UAE) where its range is limited to the Musandam peninsula and the Hajar mountains (Cunningham 2002; Gardner 2013). While listed as 'Least Concern' for its global range by the IUCN, in Arabia it is classified as 'Vulnerable' (Cox et al., 2012).

Figure 1. The head of the *P. persicus* individual encountered, with the horn structures visible

The current lowest elevational records of this species range from 460-487 m a.s.l. (de Pous et al., 2016) but all other published records suggest that this species is restricted to higher elevations (Cunningham 2002; Mallow et al., 2003; Helliyer & Aspinall 2005; Cox et al., 2012; Feulner 2014). Egan (2007) states more specifically that the snake is found above 600 m. Here I report an encounter with *P. persicus* at much lower altitude.

On 12 January 2019 at 11:10 h in the UAE, a *P. persicus* (Fig. 1) was observed in a small, shaded rock formation in a north-west facing, steep sided tributary of Wadi Qada'a, Ras Al Khaimah (Fig. 2) at 25˚77' 69'' N, 56˚08'45'' E as determined by the HerpMapper app. This location is at an altitude of only 195 m a.s.l., roughly 200 m lower in altitude than any previous record. The habitat was composed largely of sharp, small to medium sized limestone boulders with either a hard mud or gravel substrate. A small number of Acacia trees were present in the wadi, as well as other thinly distributed small shrubs and grasses. When found, the snake immediately began defensive displays including loud hissing and coiling into a strike position. The snake was left alone but then on return at 17:36 h, just before dusk, it was observed moving from its shelter directly towards a collection of larger boulders. Next, it entered a burrow with an aperture of approximately 15 cm in diameter and coiled up just inside the entrance. Upon returning to the location again at 20:26 h, the snake was still in the burrow. The combination of directed movement towards the burrow and snake's persistence at this location suggests that it was using an established den. The snake displayed a combination of concertina, rectilinear, and sidewinding movements when outside of the burrow.

There is a paucity of information on the ecology, distribution, and natural history of *P. persicus* (de Pous et al., 2016, Cunningham 2002). New records of locations such as this are important for assessing the conservation status and potential distribution of this species which currently appears to be outside any protected areas in Arabia (Cox et al., 2012). Many environmental variables are altered markedly with changing elevation (Körner 2007). The tolerance of *P. persicus* to greater extremes of temperature and desiccation at lower altitudes in Arabia may be underestimated when data on elevational distribution is incomplete. Nevertheless, the location where this observation was made is within an area identified by Cox et al. (2012) as having the highest reptile species richness (36-52 species) in Arabia suggesting that its environment is actually particularly favourable for reptiles. The collection of additional information on the species distribution and associated environmental variables, especially in Arabia, where the species is Vulnerable, would allow more accurate estimates of the species distribution and a greater understanding of its ecology and potential for conservation.

ACKNOWLEDGEMENTS

I'd like to thank André Gaspar and Sean Laughlin for accompanying me when we found the snake and when returning in the evening. Thanks also to Chris Michaels and

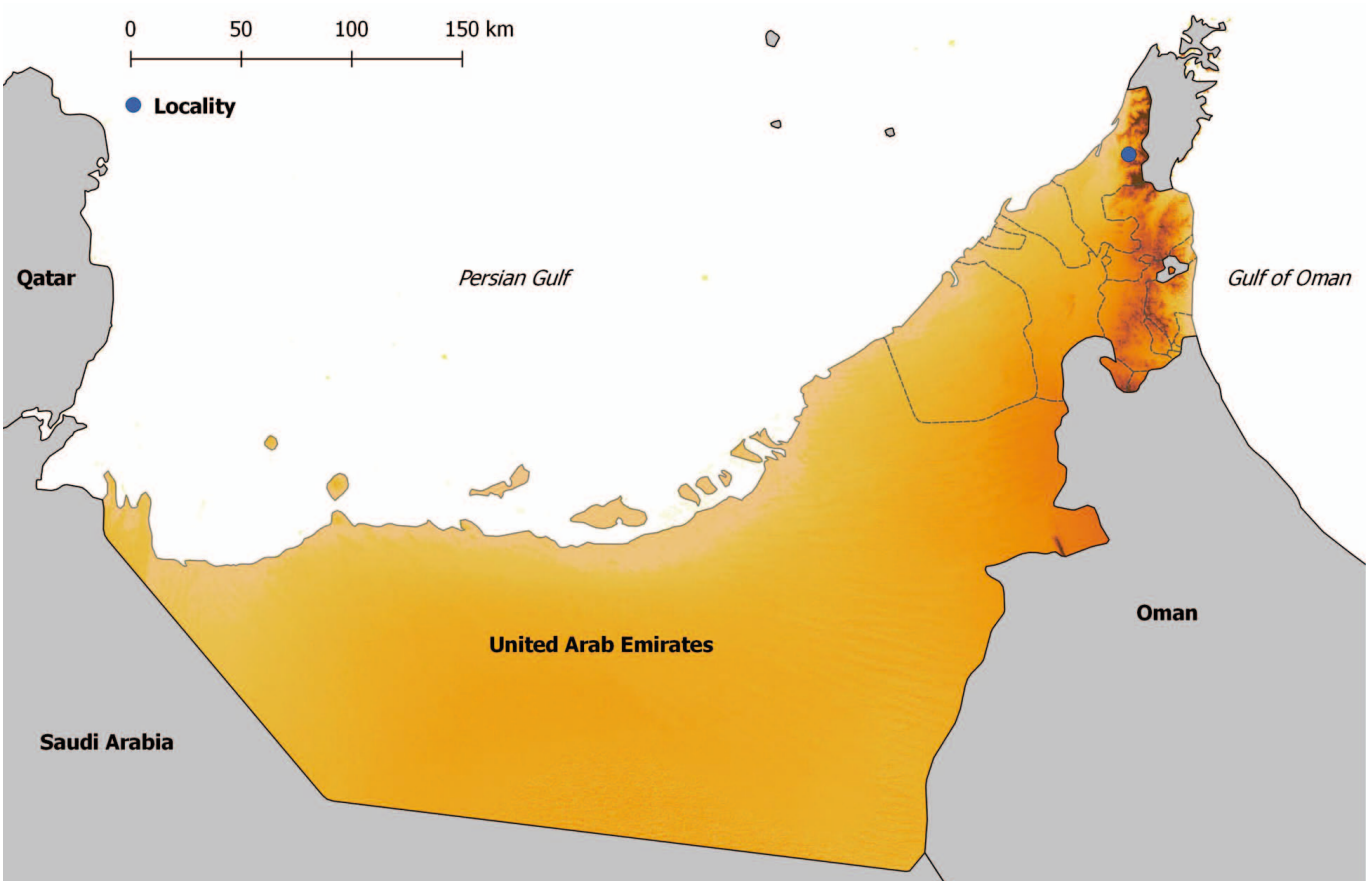

Figure 2. Map depicting the observation locality in the emirate of Ras Al Khaimah, UAE. Darker areas show higher elevation.

Steven Allain for their advice with the manuscript and Rick Hodges for his detailed review and comments.

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Accepted: 15 February 2019