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***ISCHNURA FOUNTAINEAE* (INSECTA: ODONATA: ZYGOPTERA) IN OMAN, EASTERN ARABIA**

Elaine Mary Cowan¹  & Peter John Cowan² 

¹School of Education, University of Aberdeen, AB24 3FX, Scotland, UK

²Department of Biological Sciences and Chemistry, University of Nizwa, Birkat Al Mawz, Sultanate of Oman

¹e.m.cowan@abdn.ac.uk, ²desertmammal@yahoo.com (corresponding author)

We considered *Ischnura fountaineae* Morton, 1905 to occur, in Oman, only in the western Hajar mountains of northern Oman (fairly close to the United Arab Emirates) based on records in the Mahadah area by the late Bob Reimer (Cowan & Cowan 2017; Reimer et al. 2009). We had not knowingly recorded the species at that time, however, the author Elaine M. Cowan (EMC) remembered that she had photographed a very blue eyed individual with pale blue thorax, without a hint of green, at ‘Hoota’ Wadi (Arabic: valley) pool (Cowan & Cowan 2013, 2015). This pool (23.071°N & 57.368°E, elevation 680m) is near the Al Hoota cave tourist complex in the southern foothills of the Jebel Akhdar range (the central and highest part of the Hajar mountains). In February 2018, EMC submitted the photograph (Image 1) to the expert-moderated All Odonata website gallery (www.allodonata.com) for an ID opinion. The moderator replied that it was indeed *I. fountaineae* and the photo is on display there as such.

Confident identification of *Ischnura fountaineae* from photographs had seemed a challenge. Grunwell (2010) felt the best distinguishing feature for males from a male *I. evansi* (the commonest *Ischnura* in Oman,

Cowan & Cowan 2017) was the downwards sloping to the front of the lower edge of the black on the upperside of segment 2 of the abdomen. Dijkstra & Lewington (2006) considered the diagnostic field characters of mature male *I. fountaineae* to be the sky blue ground colour of the thorax and abdomen base, without a hint of green, and their shining black markings. The postocular spots are small. In the hand, males are reliably identified by the anal appendages (Dijkstra & Lewington 2006; contra Reimer et al. 2009). The best gallery of online photos of *I. fountaineae* is perhaps that on the Fons Peels website (www.dragonflypix.com). Immature males do not have any trace of green but are whitish with black markings (Galliani et al. 2017). Reimer et al. (2009) stated that *I. evansi* and *I. fountaineae* can be most easily distinguished in the field by the colouration of the thorax and first few segments of the abdomen and the antehumeral stripes on the thorax. In *I. evansi* the colour is greenish-blue and there are always clearly visible stripes of the same colour on the shoulders. *Ischnura fountaineae* is sky-blue without a hint of green, the same colour as the blue that occurs on the eighth abdominal segment (i.e., the ‘tail-light’). The antehumeral stripe may be missing, interrupted or very narrow. Our understanding of the diagnostic field characters (i.e., visible on a digital photograph) is that male *I. fountaineae* have a pale blue thorax, the same colour as the tail-light, and blue eyes (the anterior of the eyes can sometimes appear greenish). The positive identification of females may be difficult under field



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Image 1. *Ischnura fountaineae*, 19 January 2016, at the Hoota Wadi pool in the southern foothills of the Jebel Akhdar range, northern Oman. Note the pale blue thorax and blue eyes.



Image 2. *Ischnura fountaineae*, 11 April 2014, Wadi Qtm, Saiq plateau, Jebel Akhdar mountain range, northern Oman. Small blue postocular spots.



Image 3. *Ischnura fountaineae*, 25 August 2014, Wadi Qtm, Saiq plateau, Jebel Akhdar mountain range, northern Oman. Small blue postocular spots.



Image 4. *Ischnura fountaineae*, 25 August 2014, Wadi Qtm, Saiq plateau, Jebel Akhdar mountain range, northern Oman, showing green anteriorly on eyes and pale blue thorax.

conditions (Dijkstra & Lewington 2006).

Boudot et al. (2015) presented a map of the world distribution of *I. fountaineae*. According to them, the species occurs across northern Africa from eastern Morocco to Egypt, east to Kazakhstan and westernmost China. They show a southern outlier, in eastern Saudi Arabia, Qatar, United Arab Emirates and northern Oman south to about 22.5°N. Reimer et al. (2009) presented the occurrence of *I. fountaineae* in the United Arab Emirates, the Mahadah area of the western Hajar, Oman and interestingly mentioned that photographs by Gary

Feulner of *Ischnura* males and females along irrigation channels among cultivation on the Saiq plateau at c. 2000m elevation in the Jebel Akhdar range of Oman appeared to show *I. fountaineae*. The species has not been reported by other observers in Oman (Cowan & Cowan 2017, 2018; Lambret et al. 2017).

Reviewing our archive of photographs from Oman, we now have eight records of *I. fountaineae* at Hoota Wadi pool. These are: 11 September 2013, 11, 19 January, 19 August, 9, 16 September 2015 and 19 (Image



Image 5. *Ischnura evansi*, 3 October 2016 at the Hoota Wadi pool in the southern foothills of the Jebel Akhdar mountain range, Oman. Note the green eyes and green thorax.

1), 25 January 2016. We also have three records from Wadi Qtm (23.072°N & 57.627°E, 1,970m), which is on the Saiq plateau of Jebel Akhdar and has an irrigation channel (falaj) and pools. These three records are: 11 April (Image 2), 25 August (Images 3, 4) 2014 and 18 April 2016. The records of 11 April 2014 and 18 April 2016, at Wadi Qtm, were erroneously reported as *I. evansi* in Cowan & Cowan (2017). The apparent status of *I. fountaineae* in Oman should be “uncommon Western Hajar and Jebel Akhdar regions” (see Cowan & Cowan 2017 for further information about these regions and sites).

Ischnura evansi (Image 5) which is clearly differentiated by green eyes and greenish thorax was photographed at the Hoota Wadi pool on most visits there (including the 8 dates when *I. fountaineae* was recorded). *Ischnura senegalensis* is found elsewhere in Oman but is mainly coastal. *Ischnura senegalensis* has a deep black ‘saddle’ on S2 of the abdomen separating two patches of surrounding colour (Image 6).



Image 6. *Ischnura senegalensis*, Khor Taqa, Dhofar governorate, southern Oman, 17 October 2013 (Cowan & Cowan 2018). Note the green eyes and green thorax, black ‘saddle’ on S2 of abdomen separating two patches of surrounding green colour, and bicoloured pterostigma.

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