

# First record of *Ischnura nursei* Morton, 1907 from Oman (Odonata: Coenagrionidae)

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## Abstract

One female specimen, labeled as "*Ischnura spec.*", was found within the Odonata collection of the Museum für Naturkunde Berlin (MfN). It was collected incidentally on 18-xii-2003 around 60 km southeast of Muscat, Oman. A compilation of available records of this species published within the last six years indicates roughly homogeneous distribution between southeastern Iran and Bangladesh.

## Zusammenfassung

Erstnachweis von *Ischnura nursei* Morton, 1907 für den Oman (Odonata: Coenagrionidae) – In der Libellensammlung des Museum für Naturkunde Berlin (MfN) wurde ein als *Ischnura spec.* etikettiertes Weibchen entdeckt, das als Beifang am 18.12.2003 etwa 60 km südöstlich von Muskat (Oman) gesammelt wurde. Eine Zusammenstellung der Funde, die in den vergangenen sechs Jahren publiziert wurden, zeigt eine in etwa homogene Verteilung der Funde zwischen dem Südosten Irans und Bangladesh.

## Introduction

When MORTON (1907) described a new species from Deera, India, he was not sure about the genus and published it as "*Ischnura? nursei*". LAIDLAW (1919) erected the genus *Rhodischnura* for this single species because it »differs strikingly in appearance« from all the known *Ischnura*. Nevertheless, DUMONT (2013) recently demonstrates in a worldwide DNA analysis of 24 species, that *I. nursei* belongs to the »*pumilio* clade s.l.« and is a real *Ischnura*.

Due to its bright colours in red, yellow and black on the abdomen, and turquoise on the thorax, *I. nursei* is an enigmatic damselfly. This colour pattern is unique among West-Palaearctic odonates, and even Oriental ones. It is hard to believe that this swash of colours can be overlooked for a long time. Until 2011, the known distribution of *I. nursei* was limited to India and Pakistan (NAIR 2011; ZIA et al. 2011). DUMONT et al. (2011) published the first record from Iran in 2011,

followed by FEULNER & JUDAS (2013) with the first record for the United Arab Emirates and BASHAR et al. (2014) with the first record for Bangladesh.

The record of *I. nursei* documented here is the first record for Oman and the southernmost in the Arabian Peninsula.

## Methods

The EoS Project of the Museum für Naturkunde Berlin made it possible, to search through the museum's collection digitally from home. Under <eos.naturkunde-museum-berlin.de/result?DrawerCode=Odo> one can search most of the 750 drawers of Odonata. High-resolution scans made it possible to zoom in closely. In autumn 2014, I searched these drawers one by one for another project, and stumbled over this unidentified *Ischnura*. The museum staff provided additional high-resolution pictures of the specimen and label.

A search through available literature published 2009 onwards revealed 23 papers with faunistic data on *Ischnura nursei*: MITRA & BABU 2009; ZIA 2010; BABU 2011; DUMONT et al. 2011; NAIR 2011; ZIA et al. 2011; MANWAR et al. 2012; SIMA 2012; TIJARE & PATIL 2012; TIPLE 2012; TIPLE et al. 2012; ANDREW 2013; ANDREW et al. 2013; FEULNER & JUDAS 2013; KAWADE 2013; PRASAD et al. 2013; SAHOO et al. 2013; BASHAR et al. 2014; BHATTI et al. 2014; KOLI et al. 2014; MANWAR et al. 2014; KUMAR et al. 2015; SCHNEIDER & DUMONT 2015.

## Results

A single female of *Ischnura nursei* (Fig. 1) was caught at Wadi Dayqah [Dhayqah, Daikah, Diqa] at Al Mazara, Muscat Governorate, Oman (23°05'12.0"N, 58°51'34.8"E; 110 m a.s.l.) 18-xii-2003. The specimen was taken during a field trip to Oman, collecting mainly Hymenoptera and Neuropterida by Dr Michael Ohl, head of the Entomological Collections of the Museum für Naturkunde Berlin. It was deposited in the drawer number ZMB\_Odo\_D0219 in the museum's collection (Fig. 1).

The locality was situated around 800 m after the Wadi Dayqah Dam, within the village Al Mazara (red dot on Fig. 2). No further information was available.

The specimen was identified by its typical colour pattern, form of the pronotum and the laminae mesostigmales (see DUMONT et al. 2011: Fig. 3), visible on high-resolution pictures sent by the MfN Berlin. W. Schneider kindly confirmed the identification.

## Discussion

The Odonate fauna of Oman is relatively well known but poor in species (WATERSTON & PITTAWAY 1991). SCHNEIDER & DUMONT (1997) raised the checklist of Oman to 40 species, and supposed some more would be found in future. REIMER

et al. (2009) added *I. fountaineae*, FRANCOVIC (2012) *Orthetrum abbotti*, and BALL (2014) *Tholymis tillarga* to the Omani fauna. *I. nursei* is the next new entry on the list of Oman Odonata, which now includes 44 species.

This record is not surprising, since *I. nursei* was found in Iran (DUMONT et al. 2011) and the United Arab Emirates (FEULNER & JUDAS 2013). During studies made in southeast Iran in 2014 (SCHNEIDER & DUMONT 2015) and 2015 (Th. Schneider pers. comm.) the species is found to be common (unpublished records not shown on Fig. 2). On the other hand, a growing number of recent papers on the Odonata of Oman (e.g., VAN DER WEIDE & KALKMAN 2008; WILSON 2008; COWAN & COWAN 2013; BOULAABA et al. 2014) did not mention *I. nursei* at all. Even recent field trips of well-equipped odonatologists did not find any (J.-P. Boudot pers. comm.; C. Monnerat pers. comm.; M. Waldhauser pers. comm.).

Since its description in 1907, *I. nursei* was known from Pakistan and from all arid areas of Northwestern, Central, and Eastern India (NAIR 2011; ZIA et al. 2011). It is absent on the less arid Indian Peninsula (SUBRAMANIAN 2005; SUBRAMANIAN et al. 2011). The Pakistani records were updated only recently (ZIA



Figure 1. Female *Ischnura nursei* Morton, 1907 in the collection of the Museum für Naturkunde Berlin, with original label (drawer no. ZMB\_Odo\_D0219). – Abbildung 1: Weibchen von *Ischnura nursei* Morton, 1907 in der Libellensammlung des Museums für Naturkunde Berlin, mit Originaletikett (Kasten Nr.: ZMB\_Odo\_D0219). Maßstab, scale = 1 cm. Photo: Mélanie Turiault, MfN

2010; ZIA et al. 2011). In addition to the westward extension of the known range to Iran and UAE, *I. nursei* was recorded more eastwards too: NAIR (2011: 204) reported it twice from Orisha District (India), and BASHAR et al. (2014) published the first two records from Bangladesh. KUMAR et al. (2015) found it fairly common throughout the year in northeast India (Kapla Beel Wetlands).

With the data gathered from recent publications (papers published 2009 onwards, Fig. 2), the gap between the records in Iran and Pakistan vanished, as it is supposed by DUMONT et al. (2011). Balochistan in particular, on both sides of the border, is an under-recorded and arid to semi-arid area. In a recent field survey in southeast Iran *I. nursei* was »the most frequent damselfly« in western Makran and found »in any freshwater« east of Banda Abbas, but only three localities are given within the species list (SCHNEIDER & DUMONT 2015: 139). A short survey through Iranian Balochistan in spring 2015 revealed *I. nursei* to be common, too (Th. Schneider pers. comm.) The East of India and Bangladesh were areas of minor field activity for many years. The increase of observations in these remote areas led obviously to more records of *I. nursei*.

The Strait of Hormuz, with 100–150 km open sea is no barrier for a tiny damselfly like *I. nursei*. A second tiny Oriental species, *Agriocnemis pygmaea*, is already known from Oman (SCHNEIDER & DUMONT 1997). Nevertheless, this passage is only conceivable with strong winds supporting the damselflies. On the other hand, within the genus *Pseudagrion* this barrier seems to work, restricting

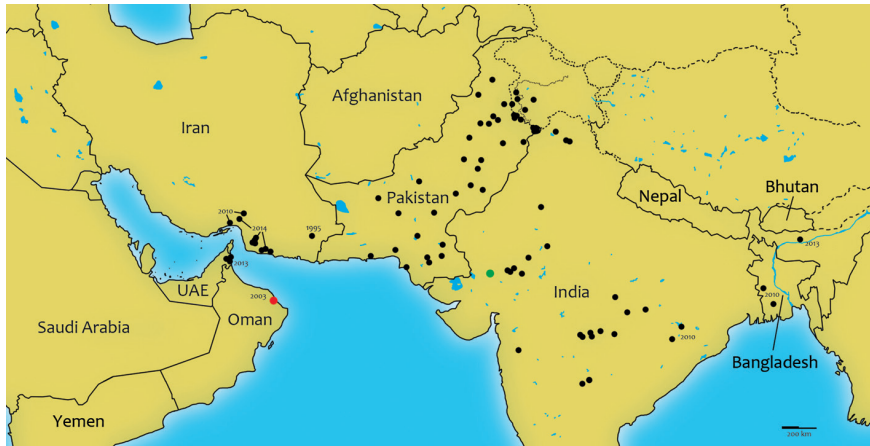


Figure 2. Recently known range of *Ischnura nursei* Morton, 1907, with the year of record off the traditional known range. — Abbildung 2: Aktuelle Verbreitung von *Ischnura nursei* Morton, 1907, mit dem Jahr der Beobachtung außerhalb des bisher bekannten Areals. ● type locality, Locus Typicus; ● record published 2009 onwards, ab 2009 publizierter Fund; ● new record from Oman, neuer Nachweis in Oman.

Oriental species to southern Iran and Afro-tropical species to the Arabian Peninsula (SCHNEIDER & DUMONT 2015).

Besides plain faunistical information of distribution, information about the ecology of *I. nursei* is scarce: It was found so far between 10 and 1,154 m a.s.l. without any preference (ZIA et al. 2011) and throughout the whole year in India (MANWAR et al. 2014; KUMAR et al. 2015), while records from Pakistan are only April to December, with a peak in July and August (KHALIQ & YOUSUF 1993; ZIA 2010; ZIA et al. 2011). Standing and slow moving water bodies are mentioned uniformly as the habitat of *I. nursei*, lined from well vegetated to "extremely little" vegetation (KHALIQ & YOUSUF 1993; DUMONT et al. 2011; ZIA et al. 2011; FEULNER & JUDAS 2013; BHATTI et al. 2014; SCHNEIDER & DUMONT 2015). Imagines were caught mostly within grasses growing near or in the water bodies (KHALIQ & YOUSUF 1993; DUMONT et al. 2011; NAIR 2011; ZIA et al. 2011; BHATTI et al. 2014), where *I. nursei* flies often low and within grassy structures only (NAIR 2011). Rice fields should thus be a suitable habitat, but are mentioned only once by ZIA et al. (2011).

As habitat requirements do not seem to be very restrictive in this species, short-term alterations within water bodies of a landscape may initiate a movement over former boundaries. In Pakistan, KHALIQ & YOUSUF (1993: 336) mentioned *I. nursei* as a species »mainly...of the tropical plains«, and it was found only 25 years later in semi-arid locations and even in the desert (ZIA et al. 2011). MITRA & BABU (2009) published data from museum specimens caught in the early 1930s from semi-arid areas in Pakistan. Maybe expansions into the desert are irregularly driven by floods and vanish soon after.

Artificial habitats like water reservoirs and smaller dam lakes were built up in hundreds along arid and semi-arid areas, and are used by *I. nursei* (NAIR 2011; FEULNER & JUDAS 2013). These kind of habitats are known to support other expanding odonate species as well, like *Selysiothemis nigra* or *Lindenia tetraphylla* (UBONI et al. 2015), although both are well known migrating anisopterans. However, *I. nursei* is found far from water in dry meadows too (NAIR 2011: 204), indicating that at least some individuals stay around far from the breeding habitat. With its suspected short life-cycle, *I. nursei* may also take advantage of drying streams and rivers in territories with high water consumption, using the remaining pools as temporary breeding stepping stones.

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