

On the occurrence of *Ischnura pumilio* in Egypt (Odonata: Coenagrionidae)

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Abstract

On 18 November 2005, a male of *Ischnura pumilio* was found at an ephemeral water body in the south-west of Dahab, Sinai Peninsula. A reconsideration of literature references from the mid- and late 19th century leads to the conclusion that the recent finding represents the first unequivocal record of *I. pumilio* for Egypt.

Zusammenfassung

Zum Vorkommen von *Ischnura pumilio* in Ägypten (Odonata: Coenagrionidae) – Am 18. November 2005 wurde ein Männchen von *Ischnura pumilio* an einem ephemeren Gewässer im Südwesten von Dahab, Sinai-Halbinsel, gefunden. Eine Überprüfung von Literaturangaben des mittleren und späten 19. Jahrhunderts lässt den Schluss zu, dass der jüngste Fund den ersten zweifelsfreien Nachweis von *I. pumilio* für Ägypten darstellt.

Introduction

Ischnura pumilio is an effective coloniser which rapidly occupies newly created habitats (JÖDICKE 2020). The species has a wide but generally scattered distribution in the western Palaearctic. It ranges from the Azores and Madeira through Europe and Central Asia to north-east China. In the north it reaches parts of the British Isles, Denmark, and the south of Fennoscandia. The southern limit is marked by the northern Maghreb, the southern Levant, and the south-east of Iran (BOUDOT & ŠALAMUN 2015; SCHNEIDER et al. 2018). From the southern Levant, only a few records of single specimens are known (MORTON 1924; SCHNEIDER 1986; KATBEH-BADER et al. 2002). In the case of Egypt, there is inconsistent information on the presence of the species for the country. The first reference of *I. pumilio* for Egypt derives from SELYS & HAGEN (1850: 184): under “Patrie” they list “*Egypte* ? Museum de Paris”. The placement of a question mark behind “*Egypte*” makes this statement dubious since its inception. In the forthcoming years this continued. HAGEN (1863) as well as SELYS (1887), in both the text and the checklist, add a question mark, whereas ROSTER (1886) mentions the country

without a question mark. In contrast to that are the distribution data in the ‘Synopsis des Agrionines’ (SELYS 1876), in which Egypt as locality is missing. Based on Selys’ checklist, RIS (1912) again quotes *I. pumilio* with a question mark and explicitly expresses his doubts on an occurrence in Egypt. ANDRES (1928) is following ROSTER (1886) and lists the species in table no. 1 as well as in the text. Also, in the recent literature there is still no consensus. *Ischnura pumilio* is listed for Egypt by DUMONT (1980, 2009) but omitted by BOUDOT et al. (2009), BOUDOT (2014), and DIJKSTRA (2020). Now, a recent record from the Sinai Peninsula provides certainty.

Material and methods

During a ten-day trip to the south of the Sinai Peninsula between 15 and 24 November 2005 three excursions focusing on Odonata were made. Species were documented through observation. Of each species at least one specimen was collected. These specimens are preserved in pure ethanol ($\geq 99.8\%$) and are stored at the ‘Staatliche Naturwissenschaftliche Sammlungen Bayern - Zoologische Staatssammlung München’. Geographic coordinates of the collecting sites were recorded with a handheld GPS receiver (Garmin eTrex Summit®) and expressed as decimal degrees in the WGS 84 geodetic system. The elevation is given in metres above sea level.

To clarify if voucher specimens of *I. pumilio* substantiate the mention of Egypt as locality in the publications of the 19th century, the Odonata collections of the following institutions were checked:

- MCZ Harvard University, Museum of Comparative Zoology, Cambridge, United States of America
- MNHN Muséum national d’Histoire naturelle, Paris, France
- MZUF Università degli Studi di Firenze, Sistema Museale di Ateneo, Museo di Storia Naturale ‘La Specola’, Collezione di Zoologia, Florence, Italy
- RBINS Royal Belgian Institute of Natural Sciences, Brussels, Belgium

Results

On 18 November 2005 a mature male of *I. pumilio* was spotted. The individual, which was then collected, rested on a blade of grass of a flooded lawn caused by a leak in an irrigation system installed for watering a nearby public green. The green was located opposite to the entrance of the hotel ‘Swiss Inn Resort Dahab’ in the south-west of Dahab, a small town on the coast of the Gulf of Aqaba, Governorate Janūb Sīnā’, Sinai Peninsula, Egypt. At the flooded lawn (28.48138° N, 34.49333° E, 5–15 m a.s.l.) two males and a tandem of *Sympetrum fonscolombii*

were observed, too. A few metres away there was a small wastewater pond (28.48166° N, 34.49305° E, 5–15 m a.s.l.) at which at least two specimens of *Pantala flavescens* and more than twenty males of *S. fonscolombii* (1 ♂ collected) were on the wing.

In addition to this record, attempts were undertaken to find voucher specimens of *I. pumilio* in order to verify the citation of Egypt as locality for the species in SELYS & HAGEN (1850), HAGEN (1863), ROSTER (1886), and SELYS (1887). The first citation refers to material stored at the MNHN (SELYS & HAGEN 1850), but no specimen with suitable label data could be found (J. Legrand pers. comm.). Also, a search for Egyptian specimens of *I. pumilio* in the dragonfly collections of Hermann August Hagen (MCZ) (C.A. Maier pers. comm.) and Michel Edmond de Selys-Longchamps (RBINS) failed. For the Florentine entomologist Dante Alesandro Roster, only a little information, without any indication of the presence of a collection, could be traced (cf. ROSTER 1886; BUCCIARELLI & MATTIONI 1975; CONCI 1975; BRIDGES 1994). There was hope to find a collection at the MZUF, but only a few specimens preserved in ethanol were detected, among them none of *I. pumilio* (see also DEL CENTINA & TERZANI 1986).

Discussion

The finding of a single male of *I. pumilio* in the south-west of the Sinai Peninsula now removes doubt and confirms the occurrence of the species for Egypt. This is all the more important as the 19th century records (SELYS & HAGEN 1850; HAGEN 1863; ROSTER 1886; SELYS 1887) cannot be verified by voucher specimens. From a zoogeographical point of view this record extends the known distribution of this widespread Palearctic species in the Middle East much further to the south. Currently, this is one of only a few specimens of *I. pumilio* found in the southern Levant (MORTON 1924; SCHNEIDER 1986; KATBEH-BADER et al. 2002; C. Monnerat pers. comm.). Together with records from south-western Morocco (JACQUEMIN & BOUDOT 1999; BOUDOT & DE KNIJF 2012) and south-eastern Iran (SCHNEIDER et al. 2018) these are the southernmost of the species.

The presence of a single individual at a temporary water body seems to attest to the nomadic behaviour of *I. pumilio*, which results in the rapid colonisation of recently created habitats with shallow water and sparse vegetation (BOUDOT & ŠALAMUN 2015; JÖDICKE 2020). The appearance far away from its main range supports its strong migration potential. Interestingly in this connection is the association with two further well-known migrants: *P. flavescens* and *S. fonscolombii* (cf. Corbet 1999: 408ff).

Finally, the record date of 18 November 2005, in the middle of November, is also noteworthy. According to BOUDOT & ŠALAMUN (2015) the flight season in southern France, Bulgaria, and Greece ends in October and also JÖDICKE (2020), less detailed, indicates a flight period ending in the south of its range in October. Further south it seems that the flight season lasts much longer. This is documented by the

record of the present specimen with bright colours and clear wings, as well as by a record of a male from “Ghawr Kabid”, Jordan, collected on 12 November 1994 (KATBEH-BADER et al. 2002).

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