First record of *Pantala flavescens* for the western Balkans (Odonata: Libellulidae)

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Abstract

In the course of the reorganisation of the Odonata collection of the 'Staatliches Museum für Naturkunde Stuttgart', a male of *Pantala flavescens*, collected in Herceg-Novi in June 1972, was discovered. It marks the first record for Montenegro as well as for the western Balkans. The record from the Adriatic coast is analysed in comparison with the remaining odonate data from Montenegro and possible flight paths to the country are discussed.

Zusammenfassung

Erstnachweis von *Pantala flavescens* für den westlichen Balkan (Odonata: Libellulidae) — Im Zuge der Neuaufstellung der Libellensammlung des Staatlichen Museums für Naturkunde in Stuttgart wurde ein Männchen von *P. flavescens* entdeckt, das im Juni 1972 in Herceg-Novi gesammelt wurde. Dieses Exemplar markiert sowohl den Erstnachweis der Art für Montenegro als auch für den westlichen Balkan. Im Rahmen einer kurzen Übersicht über die Libellen Montenegros wird der Fund eingeordnet und mögliche Einflugwege werden diskutiert.

Introduction

Pantala flavescens, «arguably the most successful odonate in the world» (Dijkstra 2006), is a strong migrant with a circumtropical distribution. The species tends to build travelling aggregations with millions of individuals capable of covering long distances over land and sea (Corbet 1999: 400 ff.). The dispersion of these migratory swarms is closely associated with the Inter-Tropical Convergence Zone. Thus, individuals of *P. flavescens* could also from time to time be transported to temperate latitudes by winds (Corbet 1999: 400 ff., 408). In the Northern Hemisphere, the species has been found in Canada and the USA up to about 50°N, in Japan and Russia up to 55°N (Corbet 1999: 648). In contrast, only a few records are known from Europe, some of which are even dubious (Dijkstra 2006). Laister (2005), who mentioned the first Greek record of *P. flavescens*, was also the first to discuss possible flight paths of the obligate migrant to Europe. Since then, several new records of the species from the eastern Mediterranean and from northern Africa emerged (e.g. Evenden 2006, Hacet & Aktaç 2006). Yet another record from the Mediterranean can be presented here.

Results

In the course of the reorganisation of the Odonata collection of the 'Staatliches Museum für Naturkunde Stuttgart' (SMNS), a specimen of *Pantala flavescens* was discovered that, according to the label, had been collected in Montenegro in June 1972. The pinned specimen is a mature male with the following measurements: total body length 45.4 mm, length of abdomen 26.8 mm, length of left hind wing 35.7 mm. The total length of the right hind wing could not be measured, because the wing tip beyond the distal edge of the pterostigma is missing. Except for the shorter hind wing length, the measurements are at the lower limit of the respective range quoted by Dijkstra (2006). Unfortunately, the specimen was not very carefully preserved. Its eyes are shrunken; four tarsi, two tibiae, and abdominal sternites 1-6 are missing. Moreover, the abdomen, which was strengthened with a straw, is apically twisted about 80°.

There are two labels attached to the specimen. Label 1 (handwritten with blue ball pen on white paper): «Monte-Negro/ Herceg-Novi/ Juni 1972». Vertically, on the left side of the label, the collector's name is written: «Caspers». Label 2 (printed with black ink on white paper): «Coll. Schenk/ (Sigmaringen)/ SMNS 1994». Despite intensive research no further data on the collector could be found, except for a few more arthropod specimens in the Schenk collection. Among these there is also a male *Crocothemis erythraea* with identical locality data. The Schenk collection in the SMNS traces back to senior teacher Eugen Schenk from Sigmaringen, Baden-Württemberg, Germany, and was donated to the SMNS by Rüdiger Jacob in 1994. The collection comprises about 1600 terrestrial arthropods, mainly Lepidoptera (C.L. Häuser pers. comm.). This has been documented in the yearly report of the SMNS in 1995. Under the heading «Sammlungszugänge», «1200 Falter aus der Sammlung Schenk, Sigmaringen (R. Jacob, Wald)» are listed (König & Wirth 1996).

Discussion

Recently, Laister (2005) published the first record of *Pantala flavescens* for Greece. In this context, he also presented a comprehensive overview of the status of the species in the western Palaearctic, including a critical analysis of the West European reports from Great Britain, France, and Spain. He concluded that the British records (e.g. Curtis 1838: sub *Libellula sparshalli* – for further information see also Fraser 1956, Davies 1991) cannot be seen as certain, and that the reports from France and Spain (e.g. Aguesse 1968; Askew 1988, 2004) should not be regarded as proven.

On the other hand, more than two dozen records are known from the eastern Mediterranean region, most of them documented by voucher specimens or photographs. Aside from the already mentioned record from Rhodes (Laister

2005), Blincow (2005) presented another Greek record, one specimen from the Evros delta. In addition, there are 17 records from Turkey (Hacet & Aktaç 2004, 2006; Kalkman & van Pelt 2006), four from Cyprus (Lopau & Adena 2002), one from Lebanon (Selys 1887), two from Israel (Dumont 1991), and several records from Egypt (Andres 1928, Geene 1994, Evenden 2006).

The finding of a male *P. flavescens* at Herceg-Novi on the Montenegrine Adriatic coast, near the border to Croatia and Bosnia and Herzegovina, is the first record of the species for the western Balkans. This is also noteworthy as it is the first documented record from a site in the central Mediterranean region, lying more than 650 km WNW from the previously known records in Thrace (cf. Hacet & Aktaç 2004, 2006; Blincow 2005). This record increases the number of odonate species known from Montenegro to 43 (cf. Bedjanič & Bogdanović 2006). The considerably higher number of dragonfly species in Croatia (73) and Serbia, then including Kosovo (61) (Bedjanič & Bogdanović 2006, Bogdanović & Bedjanič 2006), two of the five neighbouring countries, would suggest that more species can be expected to be found in Montenegro in the near future. The re-latively poor state of odonatological research in Montenegro is also reflected by the low number of scientific publications, mostly dealing with local faunistic aspects (e.g. Bartenev 1912, Dumont 1977, Kemp 1989, Adamović et al. 1996). Reasonably well studied is the dragonfly fauna of Lake Skadar and its tributaries in the south of the country. In this area, «frequently encountered migrating [Anisoptera]» (Corbet 1999: 409) like *Anax ephippiger*, *Lindenia tetraphylla* or *Sympetrum fonscolombii* (Bartenev 1912, Dumont 1977, Adamović 1996) were recorded as well. The only data from the coastal area were provided by Kemp (1989), who examined a small collection of Odonata taken in the vicinity of Petrovac. For an indication of the potential dragonfly fauna around Herceg-Novi, one may consult Adamović (1967), who studied the dragonflies of the Croatian Adriatic coast in the district of Dubrovnik. This study also covered the plain of Konavli not far away from Herceg-Novi.

Pantala flavescens is regarded as a species with a distinctive migration potential (Corbet 1999: 400 ff.). Discussing the origin of the specimen found on Rhodes on 29 August 2001, Laister (2005) deals with possible flight paths to southeastern Europe.

According to Corbet (1999: 404, 650), the migration paths of *P. flavescens* in the tropics and subtropics are correlated with the presence of moisture laden air currents. This led Laister (2005) to the hypothesis that the Nile valley with its enormous evaporation could serve as a flight path from tropical Africa to the eastern Mediterranean.

Due to the long distance from Herceg-Novi to the Nile valley it seems rather unlikely that the specimen from Montenegro came this way, but because of the excellent flying abilities of *P. flavescens* this cannot be ruled out entirely. Dispersal along a shorter route from the Sahara across the Mediterranean is more likely, regardless of whether the origin lay to the southwest or southeast. So far,

this hypothesis is supported by no more than three single records from the northern fringe of the Sahara: two from southern Morocco (SCHRIJVERSHOF 2006) and one from the western part of central Tunisia (JÖDICKE et al. 2000). According to LAISTER (2005), the prevailing winds and the low relative humidity in the Sahara impede the crossing of the desert. In individual cases, however, such a route is conceivable, especially if the flight is supported by the prevailing wind.

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