

## ***Limnephilus pati* O'Connor, 1980 (Trichoptera: Limnephilidae) new for Poland**

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With 3 figures and 1 table

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**Schlagwörter:** *Limnephilus*, Trichoptera, Insecta, Polen, Erstfund, Verbreitung, Faunistik

In a survey of Trichoptera in a mineral-rich ground water fed fen near Luboń in northwest Poland the caddisfly *Limnephilus pati* was collected at 6 July 2011. The species has never before been reported from Poland. The species was originally described in 1980 from England. It is known from a very limited number of locations which are far apart: the UK (Isle of Man), Ireland, Germany, Denmark and Poland.

### **1 Methods**

Caddisflies were collected in a 11 ha fen, positioned between the village of Luboń and Lake Kielskie, northwest Poland (54°01'19.8" N, 17°29'49.3" E), as part of a larger study on the effects of mowing on the vegetation, structure and entomofauna of fens in stream valleys (Aggenbach et al. in press). A 6W 12V Portable Heath Moth Trap (F6T5-BL lamp) was used to trap both caddisflies and moths. Traps were placed in duplo at dusk on 5 July 2011 in the centre of the fen and retrieved to next morning around 9:00 am. The trapped caddisflies were conserved in ethanol upon collection.

### **2 Description of study area**

The study site is a fen fed by mineral-rich ground water with a typical hummock-hollow microstructure, with the hummocks formed mainly by *Sphagnum*-mosses and the hollows dominated by brown mosses and small sedges (Fig. 1). The fen is very wet, with the water table in the hollows permanently at ground level. Open water is present in low lying areas as scattered puddles (Fig. 2). Furthermore, in the proximity of the study site a small creek runs through the fen.

### **3 Results**

*Limnephilus pati* was found in both traps. Other species at Luboń included *Limnephilus elegans* and *L. luridus*. These species are known to occur in fens, however they are not restricted to this habitat (Higler 2008). Table 1 gives an overview of the Trichoptera found at Luboń.

### **4 Identification**

Males of *L. pati* can be identified by the distinct shape of the intermedial appendages. There are two of these structures, which are rather large, dark and pointing upwards. Also the parameres show remarkable shapes (fig. 3). The female specimens were in poor condition but matched the structures as depicted in O'Connor & Barnard (1981), which has been reproduced in Malicky (2004).



Fig. 1: Overview of the fen near Luboń. Fig. 2: Aquatic habitat in the fen near Luboń, Poland. Photos J. P. Dijkstra, © University of Antwerp

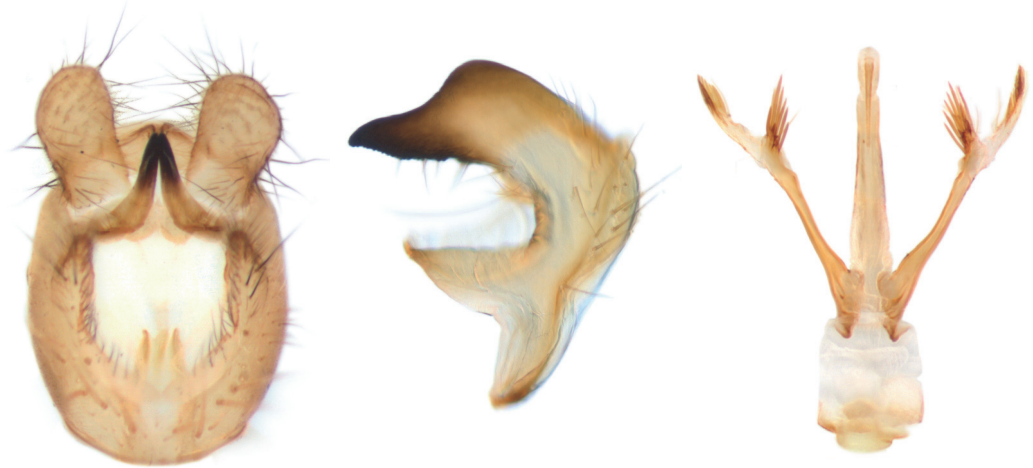
Tab. 1: Trichoptera species found at Luboń (Poland)

Location	Luboń
N	54°01'19.8
E	17°29'49.3
Altitude above sealevel (m)	149
Date	06-07-2011
<b>LEPTOCERIDAE</b>	
<i>Erotesis baltica</i> McLachlan	1 ♂
<b>HYDROPTILIDAE</b>	
<i>Oxyethira flavicornis</i> (Pictet)	1 ♂, 1 ♀
<b>LIMNEPHILIDAE</b>	
<i>Limnephilus pati</i> O'Connor	3 ♂, 4 ♀
<i>Limnephilus elegans</i> Curtis	1 ♀
<i>Limnephilus luridus</i> Curtis	1 ♂
<b>PHRYGANEIDAE</b>	
<i>Phryganea grandis</i> Linnaeus	2 ♂
<b>POLYCENTROPODIDAE</b>	
<i>Plectrocnemia conspersa</i> (Curtis)	1 ♂
<b>HYDROPSYCHIDAE</b>	
<i>Hydropsyche pellucidula</i> (Curtis)	1 ♀

## 5 Discussion

The first known specimens of *L. pati* have been collected from Coxtown near Donegal in Ireland in July 1894 (O'Connor 1980). It took nearly a century before the species was described by O'Connor in 1980 (O'Connor 1980). The species first was known only from Ireland and the British Isles, with a population on the island of Man (where it had been found in 1987), two localities in southeast England (last records dating back to 1915) and three in Ireland (O'Connor 1980; O'Connor & Bond 1995). In June 1994, the species was re-discovered in the Cabragh Wetlands in Tipperary district in Ireland (O'Connor & Bond 1995).

In 1993, the species was first recorded outside of the British Isles. It was reported from Germany three times: from Brandenburg (in the northeast of the country) (Klima & Weidlich



**Fig. 3:** Male genital structures of *Limnephilus pati*. Luboń (Poland), 6 July 2011. Left: caudal view. The dark structures are the intermediate appendages. Central: intermediate appendage (dissected). Right: aedeagus (in the centre) and parameres (to the sides). Photos D. Tempelman

1993), from Baden-Württemberg (in the south), where it was found at Wurzacher Ried, a prealpine raised bog (Tham et al. 1996), and (under the synonym *L. eideli*) from Mindelsee (Tobias 1981). More recently, the species was found new for Denmark (Wiberg-Larsen 2006).

The larva of *L. pati* has not been found to date and with that the specific habitat requirements of the species are not known. Given that all adult records are restricted to areas containing mires, in most cases fens, it appears to be restricted to this habitat type.

The species is regarded as an endangered species in the British Isles and classified as an RDB1 species, which is a species in danger of extinction (O'Connor & Bond 1995).

With the latest Polish record, *Limnephilus pati* now is known from five countries, with known locations which are wide very distant from each other. Moreover, at several locations the species has not been recorded since it was collected, as the southeast England examples show. The species is probably indeed extremely rare. On the other hand, it may be more widespread than currently realised, though it is no doubt restricted by being confined to fenland or similar habitats. It is probable that some records, especially historical ones, have been confused with *L. hirsutus* (and even *L. tauricus*).

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