Short note

First record of soprano pipistrelle (*Pipistrellus pygmaeus* Leach, 1825; Chiroptera: Vespertilionidae) in Wallonia (Belgium)

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The soprano pipistrelle, *Pipistrellus pygmaeus*, is a cryptic species that highly resembles the common pipistrelle, *Pipistrellus pipistrellus* (Barrett et al. 1997). Jones & Parijs (1993) show that standard measurements of the animal itself are of little use for distinguishing between both; the soprano pipistrelle is generally smaller than the common pipistrelle, but the overlap is too large to allow an unambiguous identification. Although the most useful method for determining the two species remains genetic analysis and the analysis of echolocation calls (Mayer & Helversen 2001), several authors mention reliable morphological characteristics to discriminate between the two species. The most important of these are the internarial ridge, the penial morphology and the wing membrane cell pattern (Häusler et al. 2000, Ziegler et al. 2001, Sendor et al. 2002, Dietz et al. 2007).

Figure 1. Internarnial ridge of the Wallonian soprano pipistrelle. *Photograph: Johannes Regelink.*

The soprano pipistrelle has a wide geographical distribution in Europe (Mayer & Helversen 2001). It lives in sympatry with its sibling species, the common pipistrelle, over most of its range. From Belgium there are only a few records of soprano pipistrelle, all of which are based on echolocation sound analyses (Kapfer et al. 2007). All observations come from Flanders (Provinces of West-Vlaanderen, Antwerp and Limburg) and Brussels, and they were mainly made in spring. In recent years, the species has been recorded annually in Brussels (Herr 2010).

On the 6th of August, 2009, between 9 pm and 2 am, bats were captured with mist nets

Figure 2. Wing cell membrane of the Wallonian soprano pipistrelle. *Photograph: Johannes Regelink.*

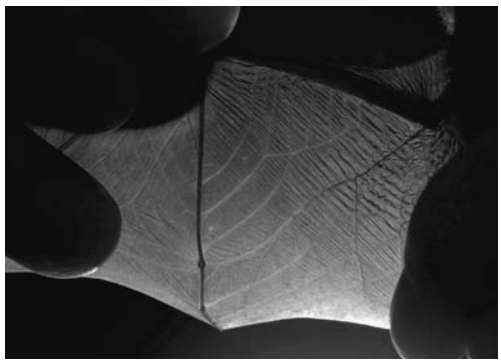

Figure 3. Wing cell membrane of the common pipistrelle (*Pipistrellus pipistrellus*). *Photograph: Jeroen van der Kooij*.

Figure 4. Soprano pipistrelle in the hand. *Photograph: Daan Dekeukeleire*.

at the northern entrance of an old railway tunnel (50°04'51" N 4°34'22" E) in Viroinval (Namur, Belgium). Various species were caught: the greater mouse-eared bat (*Myotis myotis*), Daubenton's bat (*M. daubentonii*), Bechstein's bat (*M. bechsteini*), and, with 42 individuals the most abundant species, the common pipistrelle. Of the latter species, swarming behaviour could be observed. The common pipistrelle also uses the aforementioned tunnel as a hibernaculum.

A small *Pipistrellus*, captured at 11.40 p.m., turned out to be a soprano pipistrelle. The animal showed the typical internarial ridge (figure 1) and the characteristic wing membrane cell pattern (figure 2) was present on both wings. Like in the common pipistrelle (figure 3), this soprano pipistrelle showed only one cell in the wing membrane between the first joint of the fifth finger and the elbow, but in contrast, the next cell above (closer to the wrist) was not divided, but connected the forearm and the fifth finger. The face (figure 4), moreover, was paler than that of common pipistrelle. The mass of the animal was 4.9 g and the forearm length was 30.9 mm. The epiphyses in the bones of the fingers were closed, and the nipple was entirely covered in fur, indicating that the bat was an adult and had not reproduced in the past season (Haarsma 2008). A second individual, an adult male, also showed the internarial ridge and the wing membrane cell pattern, but was released before it could be measured.

The habitat surrounding the capture site, an old riparian woodland near the Viroin river, corresponds well with the typical habitat of the soprano pipistrelle as descibed by Davidson-Watts et al. (2006), Nicholls & Racey (2006) and Sattler et al. (2007).

In 2002, in the immediate surroundings of the capture site, two independent observations were made using bat detectors of a *Pipistrellus* bat with an end frequency of 55 kHz (B. Vandendriessche & B. Van der Wijden, personal communication). But as no recordings were made, and thus no additional sound analyses could be performed, these could not be confirmed as soprano pipistrelle.

Our finding represents the first confirmed record of the soprano pipistrelle in Wallonia, and the first identification based on morphological characteristics of this species in Belgium.

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Samenvatting

Eerste waarneming van de kleine dwergvleermuis (*Pipistrellus pygmaeus*) in Wallonië

Tijdens een mistnetonderzoek in Viroinval (provincie Namen, België) werd op 6 augustus 2009 een kleine dwergvleermuis (*Pipistrellus pygmaeus*) gevangen. Het exemplaar, een adult vrouwtje, werd gedetermineerd op basis van morfologische kenmerken. Deze vangst is de eerste zekere waarneming voor Wallonië. Het is de eerste maal dat deze soort op morfologische kenmerken kon worden gedetermineerd in België.

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