

**First record of the smallest European beetle *Baranowskiella ehnstromi*
(Coleoptera: Ptiliidae) from the Czech Republic**

**První náález nejmenšího evropského brouka *Baranowskiella ehnstromi*
(Coleoptera: Ptiliidae) v České republice**

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Abstract. *Baranowskiella ehnstromi* Sörensson, 1997 (Coleoptera: Ptiliidae), is reported for the first time from the Czech Republic (South Moravia). The species is associated with the polypore *Phellinopsis conchata* (Pers.) Dai (Hymenochaetaceae) growing on *Salix* spp.

INTRODUCTION

The family Ptiliidae, distributed worldwide (except Antarctica), contains more than 70 genera and over 550 described species (Hall 1999, 2005). In Europe, 21 genera and more than 130 species of subfamilies Acrotrichinae and Ptiliinae are documented (Johnson 2004). The tribe Nanosellini (Ptiliidae: Ptiliinae) includes more than 20 genera distributed predominantly in North, Central and South America, Papua New Guinea and New Zealand, with some taxa from Africa and India awaiting description (Sörensson 1997). In the Palaearctic region several Nanosellini occur: apart from the European *Baranowskiella ehnstromi* Sörensson, 1997 also *Mikado japonicus* Matthews, 1889 (Japan, Taiwan), *Nepalumpia markusi* Hall, 1999 (Nepal) and a further 3 genera and 8 recently described species from the Russian Far East (Johnson 2004, Polilov 2008a). Nanosellini includes the smallest beetles in the world, such as the tiniest described species *Scydosella musawasensis* Hall, 1999 (Nicaragua) and *Vitusella fijiensis* Hall, 1999 (Fiji) at around 0.3 mm long (Hall 1999, Polilov 2008b).

In 1997, *Baranowskiella ehnstromi* was described from Sweden and Finland (Sörensson 1997) and later recorded from other European countries (see Distribution below). It is believed that *B. ehnstromi* is, with body length 0.49–0.56 mm (Sörensson 1997), the smallest European beetle.

RESULTS

Ptiliidae: Ptiliinae: Nanosellini

Baranowskiella ehnstromi Sörensson, 1997

Material examined. Moravia mer. or., Veselí nad Moravou (7070), 48°57'16.236"N, 17°25'46.308"E, 19.iv.2015, 61 spec., R. Maňák et J. Bezděk leg. (10 spec. in Jan Růžička

(Prague) collection, 10 spec. in National Museum in Prague, 10 spec. in Moravian Museum Brno, 10 spec. in Ostrava Museum, 21 spec. in Jan Bezděk collection).

Biotope. *Phellinopsis conchata* was growing on a fallen decaying branch of *Salix alba* L. (Figs 2–3) in the fringe community of a soft floodplain forest along the Svodnice stream.

Distribution. Austria (Coray & Siede 2014), Belgium (Coray & Siede 2014, Schultheis et al. 2014), Denmark (ScienceNordic 2012), Finland (Clayhills 1993, Sörensson 1997), France (Coray & Siede 2014, Schultheis et al. 2014, Dodelin et al. 2015), Germany (Coray & Siede 2014, Schultheis et al. 2014, Wachtel & Hendrich 2014), Luxembourg (Coray & Siede 2014, Schultheis et al. 2014), Norway (Andersen et al. 2003), Sweden (Sörensson 1997, 2000), Switzerland (Coray & Siede 2014). New species for the Czech Republic.

Differential diagnosis. *Baranowskiella ehnstromi* (Fig. 1) can be distinguished from all other European Ptiliidae by the following combination of characters: extremely small (length 0.49–0.56 mm) and slender (3.3–3.7 times longer than wide); body pale but head more or less dark brown; antennae with 10 antennomeres, IX and X forming a club. All other European Ptiliidae are less than 3.0 times longer than wide and antennae have 11 antennomeres (Andersen et al. 2003, Sörensson 1997).

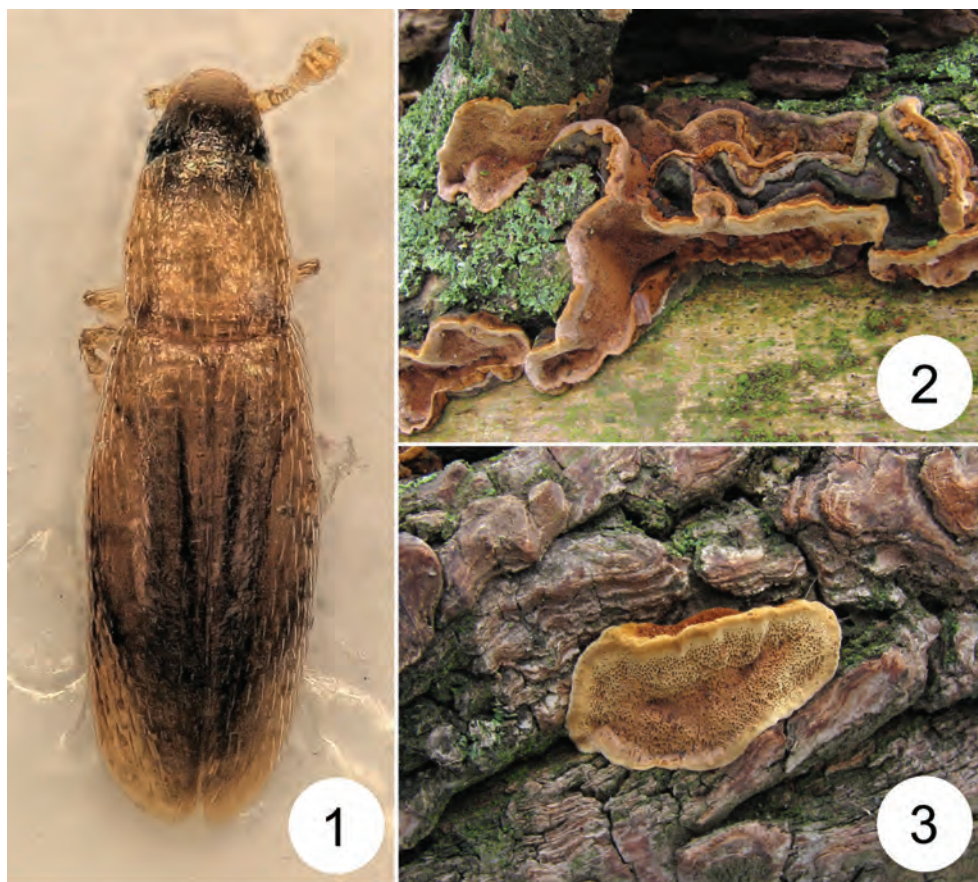
Biology. Nanosellini is a specialized group of ptiliids whose life history is generally associated with fruiting bodies of polypore fungi. Both adults and larvae of Nanosellini occupy the undersurface of polypores, feeding on spores and hyphae, and can be seen running in and out of the spore tubes (Hall 2005). The extremely slender body shape of Nanosellini species is an adaptation to life in the tubes of fruiting bodies of polypores (Sörensson 1997).

Baranowskiella ehnstromi is associated with saproxylic polypores of the former genus *Phellinus* Quél. (Hymenochaetaceae) which was recently divided into several genera (e.g. Dai 2010). Throughout Europe, the majority of specimens of *B. ehnstromi* was collected from basidiocarps (sometimes on resupinate forms) of *Phellinopsis conchata* growing on various *Salix* spp. (usually on *Salix caprea*, less frequently also on *S. alba* or *S. fragilis*). Only once, in Norway, it was collected on a different polypore species, *Fomitiporia punctata* (Fr.) Murrill (formerly *Phellinus punctatus*), growing on standing dead stem of *Corylus avellana* L. (Andersen et al. 2003).

The former genus *Phellinus* comprises polypores with a poroid hymenophore and perennial, resupinate to effuse-reflexed or pileate basidiocarps of yellowish, rusty, brown or grey colour. The surface of the basidiocarps is tomentose, hispid, glabrous or deeply cracked. Basidiocarps turn black in KOH (Tomšovský 2002). Slightly fewer than 30 of the former *Phellinus* species are known from the Czech Republic (Kotlaba & Pouzar 1998, Tomšovský 2002).

Phellinopsis conchata (Figs 2–3) is widely distributed throughout the Holarctic Region, but is also known from Australia and New Zealand. In the Czech Republic it is a rare species (Kotlaba 1984, Kotlaba & Pouzar 1998). About 70% of Czech *Phellinopsis conchata* grow on various *Salix*, predominantly on *S. caprea*. However, the host spectrum is much wider, as this polypore can be found also on *Populus* spp., *Cerasus mahaleb*, *Cornus mas*, etc. Fruit bodies of *Phellinopsis conchata* are usually resupinate to effuse-reflexed (Kotlaba 1984).

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Figs 1–3. 1 – *Baranowskiella ehnstromi* Sörensson, 1997, habitus dorsally; 2–3 – polypore *Phellinopsis conchata* (author of photographs 2 and 3 Roman Maňák).

Obr. 1–3. 1 – *Baranowskiella ehnstromi* Sörensson, 1997, habitus dorzálně; 2–3 – choroš *Phellinopsis conchata* (autor fotografií 2 a 3 Roman Maňák).

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SOUHRN

Nejmenší evropský brouk, *Baranowskiella ehnstromi* Sörensson, 1997 (Coleoptera: Ptiliidae: Ptiliinae: Nanosellini), je poprvé uveden z území České republiky. 61 exemplář byl nasbírán 19.IV.2015 na choroši *Phellinopsis conchata* rostoucím na odumřelé větvi *Salix alba* v lemovém společenstvu podél říčky Svodnice u Veselí nad Moravou (7070) (48°57'16.236"N, 17°25'46.308"E).

Rozšíření. Belgie, Dánsko, Finsko, Francie, Německo, Lucembursko, Norsko, Rakousko, Švédsko a Švýcarsko. Nový druh pro Českou republiku.

Zástupci tribu Nanosellini jsou považováni za nejmenší brouky na světě vůbec, neboť druhy *Scydosella musawasensis* Hall, 1999 (Nikaragua) a *Vitusella fijiensis* Hall, 1999 (Fiji) měří 0,3 mm. *Baranowskiella ehnstromi* dosahuje délky 0,49–0,56 mm (Sörensson 1997).

Od ostatních evropských zástupců čeledi Ptiliidae se liší extrémně malou délkou a šířkou (tělo je 3,3–3,7 krát delší než široké), světlým tělem, pouze hlava bývá více či méně tmavší, 10-článekovými tykadly, články IX a X tvoří paličku. Všechny ostatní evropské druhy Ptiliidae jsou výrazně širší (tělo je méně než 3,0 krát delší než široké) a mají tykadla 11-článeková.

Baranowskiella ehnstromi je svým vývojem vázaná na choroš *Phellinopsis conchata*. Téměř všechny evropské nálezy *B. ehnstromi* pocházejí z *P. conchata* rostoucích na různých vrších (vesměs na *Salix caprea*, méně často na *S. alba* nebo *S. fragilis*). Pouze jediný

údaj z Norska se týká příbuzného choroše *Fomitiporia punctata* rostoucího na lísce obecné (*Corylus avellana*). Jak dospělci, tak larvy všech zástupců tribu Nanosellini se vyskytují na a uvnitř hymenoforu, kde se živí výtrusy a hyfami. Extrémně štíhlé tělo je adaptací na život v rourkách plodnic chorošů.

Choroš *Phellinopsis conchata* má velmi široké rozšíření v holarktickém regionu, ale je také známý např. z Austrálie či Nového Zélandu. V České republice se však jedná o poměrně vzácný choroš s ostrůvkovitým rozšířením. Plodnice bývají obvykle rozlité či polorozlité a vesměs se vyskytují na různých vrbách (často na *Salix caprea*), vzácně také na topolech (*Populus* spp.) a dalších dřevinách.