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First Hungarian record of the smallest beetle in Europe, Baranowskiella ehnstromi, and a national checklist of featherwing beetles (Coleoptera: Ptiliidae)

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Abstract – *Baranowskiella ehnstromi* Sörensson, 1997 (Coleoptera: Ptiliidae) is recorded from Hungary for the first time. It was found on the lignicolous polypore species *Phellinopsis conchata* (Pers.) Y. C. Dai (Basidiomycota, Hymenochaetaceae) in the Pilis Mts (Central Hungary). A checklist of the 54 species of Ptiliidae recorded from Hungary is given. With 5 figures.

Key words – fungivorous, Hymenochaetaceae, Nanosellini, new record, *Phellinopsis conchata*, Pilis Mts, polypore

INTRODUCTION

The worldwidely distributed featherwing beetles (Ptiliidae Erichson, 1845) contain the smallest species of the order Coleoptera (Hall 2016). The tiniest species of Ptiliidae belong to the tribe Nanosellini Barber, 1924. They are usually niche specific, inhabiting the spore tubes of different polypore fungi (Hall 1999, Polilov 2008). Currently, the smallest beetle in the world seems to be *Scydosella musawasensis* Hall, 1999, which was described from Nicaragua and collected on the basidiocarp of the common tropical polypore, *Rigidoporus lineatus* (Pers.) Ryvarden (formerly *Polyporus zonalis*) (Polilov 2015). Among the Palaearctic species of Ptiliidae, *Baranowskiella ehnstromi* Sörensson, 1997 is the only known representative of Nanosellini in Europe, and considered to be the smallest beetle on the continent, with an approximate body length of 0.5 millimetres (Sörensson 1997,

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2016). The adults of this peculiar species are characterised by slender body (about 3.27–3.73× longer than wide), yellowish colour (elytra, pronotum) with darker head and evenly pubescent, distinctly microreticulated surface (SÖRENSSON 1997).

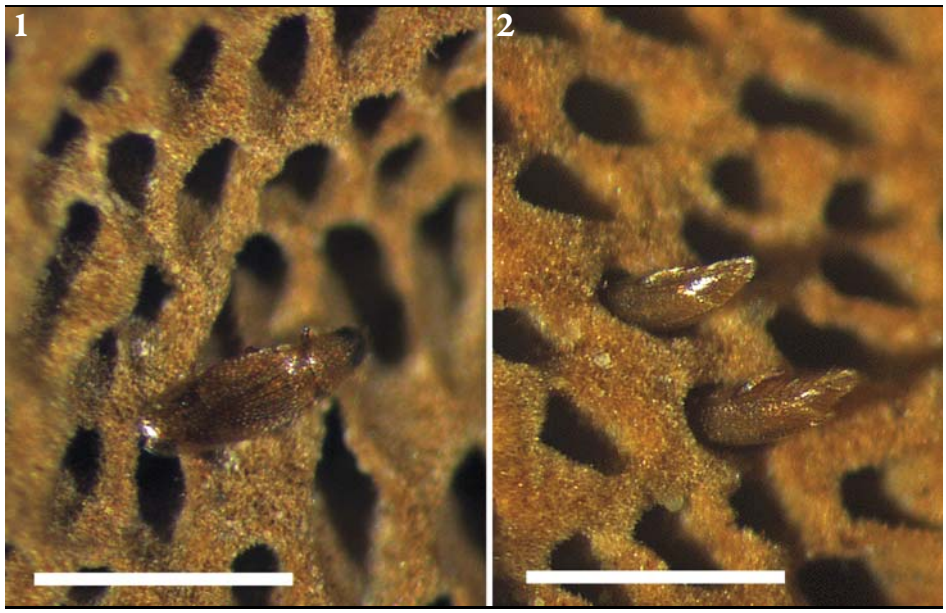
Abbreviation – HNHM = Hungarian Natural History Museum, Coleoptera Collection, Budapest (curator: Ottó Merkl).

THE NEW RECORD

Baranowskiella ehnstromi Sörensson, 1997
(Figs 1–2)

Material examined – Hungary: Pest county, Pilis Mts, near Pilisszentkereszt (Dera-szurdok), 47.68455° N, 18.91698° E, collected on the basidiocarp of *Phellinopsis conchata*, 3.II.2017, leg. et det. Viktor Papp. Eleven specimens are deposited in the Coleoptera Collection of HNHM.

Habitat – The beetles were collected on the pore surface and in the tubes of the polypore *Phellinopsis conchata* (Pers.) Y. C. Dai (Basidiomycota: Hymenochaetaceae), which was growing on a fallen dead trunk of goat willow (*Salix caprea* L.) in humid environment (Figs 3–5). Like other Nanosellini,



Figs 1–2. *Baranowskiella ehnstromi* Sörensson, 1997 on the basidiocarp of *Phellinopsis conchata* (Pers.) Y.C. Dai growing on *Salix caprea* L. log at Pilis Mts (Hungary): 1 = adult on the pore surface of the fungus, 2 = adult in the tubes of the fungus. Scale bar 500 μm (photos V. Papp)

Baranowskiella ehnstromi is associated with lignicolous polypores during its whole life cycle. It has almost exclusively been found on basidiocarps of *Phellinopsis con-*

Figs 3–5. The habitat of *Baranowskiella ehnstromi* Sörensson, 1997 in the Pilis Mts (Hungary): 3 = collecting site at Dera-szurdok; 4–5 = the host polypore, *Phellinopsis conchata* (Pers.) Y. C. Dai on *Salix caprea* L. (photos V. Papp)

chata (e.g. Bezděk & Purchart 2015, Schultheis *et al.* 2014, Sörensson 1997), the exception being one Norwegian collection reported from *Fomitiporia punctata* (Fr.) Murrill (formerly *Phellinus punctatus*) (Andersen *et al.* 2003). However, this unique observation has not been repeated during subsequent studies (e.g. Schultheis *et al.* 2014).

Distribution – *Baranowskiella ehnstromi* was described from Sweden and also reported from Finland (Sörensson 1997). Later, it was found in Norway (Andersen *et al.* 2003) and Denmark (Hansen & Jørum 2014) in North Europe. Recently, several new localities were published from western and Central Europe, viz. Austria, Belgium, Czechia, France, Germany, Luxembourg and Switzerland (Bezděk & Purchart 2015, Coray & Siede 2014, Dodelin *et al.* 2015, Schultheis *et al.* 2014). Here, the first record from Hungary is reported. It is also the most southeastern locality known of this species. Sörensson (2016) noted that *B. ehnstromi* is restricted to the boreonemoral and nemoral regions of North and Central Europe; however, its host species, *Phellinopsis conchata* is considered as a circumpolar species in the boreotemperate zone (Ryvarden & Melo 2014).

CHECKLIST OF PTILIIDAE OF HUNGARY

Data sources – Although "HU" (the geographical symbol meaning Hungary) was given under the distribution of many species in the Ptiliidae chapters of the two recent editions of the Catalogue of the Palaearctic Coleoptera (Johnson 2004, Sörensson 2015), the last comprehensive species account of the Hungarian ptiliid fauna with specified localities is very old. It was provided by Kuthy (1897), who listed 23 species from present-day Hungary (and several others from certain areas of the former Hungarian Kingdom that now form parts of adjacent countries). Further species were added by Besuchet (1976), Besuchet & Merkl (1993), Breit (1911), Csiki (1941), Kaszab (1983), Kaszab & Székessy (1953), Kaufmann (1914), Merkl (1987, 1991, 2006), Merkl & Németh (2008), Pillich (1910), Sörensson (2016) and Sörensson & Merkl (1999).

Data presentation – In this checklist, every species name is followed by the reference of the first record (publications prior to Kuthy (1897) have not been taken into consideration). Many ptiliids are difficult to identify, and misidentifications are common. For example, ten of 17 species listed by Kaszab & Székessy (1953) were at least partly misidentified (Merkl 1991). Therefore, under "Subsequent record(s)" further references are mentioned, which are based on Hungarian specimens reliably identified or checked for by experts. Their names are indicated by the monograms CB (Claude Besuchet), CJ (Colin Johnson) and MS (Mikael Sörensson). These monograms also appear by the references of the first records if these are based on specimens identified by CB, CJ or MS. In cases

when reliably identified specimens were not published after the first record, MS checked the vouchers of the first record if available. Synonymy is restricted to names mentioned in the Hungarian literature. Hungarian vernacular names are proposed for all species and subfamilies.

In Hungary, the family of Ptiliidae is currently represented by 54 species belonging to 19 genera of 2 subfamilies. The present checklist should, however, be regarded as preliminary since the majority of the material of Ptiliidae collected during the last 200 years in Hungary, and housed in the HNHM, has not been identified. Therefore, several further species are expected to occur in the country. This may also be inferred from checklists and species accounts of neighbouring countries; cfr. Sörensson (2016: 279, Fig. 1).

Species deleted from the Hungarian fauna – Hungarian records of the following species have been mentioned in various literature sources, but the voucher specimens proved to be either misidentified (checked by MS) or lost. Kaufmann (1914) listed species from Baranya county, without providing exact localities, and parts of the former Baranya county now belong to Croatia. However, his voucher specimens often provide specified label texts, so that the "true" Hungarian localities can be identified. These widely distributed species most likely occur in Hungary, but for the moment there are no reliably identified specimens in the HNHM. Their presence in Hungary needs confirmation.

Acrotrichis (Acrotrichis) cephalotes (Allibert, 1844) (= *chevrolatii* of authors [incl. Kuthy (1897)], not Allibert, 1844) – Whereabouts of Kuthy's (1897: 86) voucher specimens from Budapest and Putnok are unknown.

Acrotrichis (Acrotrichis) rugulosa Rosskothen, 1935 – The specimen from Újszentmargita (Kaszab (1983: 199) is a misidentified *Acrotrichis (Acrotrichis) brevipennis* (Erichson, 1845).

Euryptilium saxonicum (Gillmeister, 1845) (= *marginatum* of authors, not Aubé, 1850) – The specimen from Mohács (Kaufmann 1914: 20) is a misidentified *Ptiliola kunzei* (Heer, 1841).

Ptiliolum (Ptiliolum) fuscum (Erichson, 1845) – The specimens from Mohács and Pécs (Kaufmann 1914: 20) are misidentified *Ptiliolum (Ptiliolum) marginatum* (Aubé, 1850) or an undescribed species of *Ptiliolum*.

Ptinella tenella (Erichson, 1845) – Whereabouts of Kuthy's (1897: 85) voucher specimens from Budapest, Kecskemét and Putnok are unknown.

Acrotrichinae Reitter, 1909 – Laposparánybogár-formák

Acrotrichis Motschulsky, 1848
(= *Trichopteryx* Kirby et Spence, 1826, not Hübner, 1825)
Acrotrichis Motschulsky, 1848

Acrotrichis (Acrotrichis) arnoldi Rosskothen, 1935 – First record: Merkl (1991: 426, MS). Subsequent record: Besuchet & Merkl (1993: 100, CB). – Arnold-paránybogár

Acrotrichis (Acrotrichis) atomaria (DeGeer, 1774) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1991: 397, 426, MS), Besuchet & Merkl (1993: 100, CB), Sörensson & Merkl (1999: 184, MS). – Suta paránybogár

Acrotrichis (Acrotrichis) brevipennis (Erichson, 1845) – First record: Kuthy (1897: 86). Subsequent record: Merkl (1991: 397, 426, MS). – Nádi paránybogár

Acrotrichis (Acrotrichis) dispar (A. Matthews, 1865) – First record: Merkl (1991: 397, MS). Subsequent record: Besuchet & Merkl (1993: 100, CB). – Bronzos paránybogár

Acrotrichis (Acrotrichis) fascicularis (Herbst, 1793) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1991: 426, 2010: 554, MS), Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 183, MS). – Keskeny paránybogár

Acrotrichis (Acrotrichis) intermedia (Gillmeister, 1845) (= *suffocata* Haliday, 1855) – First record: Kuthy (1897: 85). Subsequent records: Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 183, MS). – Közönséges paránybogár

Acrotrichis (Acrotrichis) montandonii (Allibert, 1844) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1987: 113, 1991: 397, 426, MS), Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 183, MS). – Montandon-paránybogár

Acrotrichis (Acrotrichis) norvegica A. Strand, 1941 – First record: Merkl (1991: 397, MS). No subsequent published record. – Norvég paránybogár

Acrotrichis (Acrotrichis) pumila (Erichson, 1845) – First record: Sörensson (2016: 267, MS). No subsequent published record. –Ráncostorú paránybogár

Acrotrichis (Acrotrichis) rosskotheni Sundt, 1971 – First record: Sörensson & Merkl (1999: 183, MS). No subsequent published record. – Rosskothen-paránybogár

Acrotrichis (Acrotrichis) sericans (Heer, 1841) (= *chevrolatii* Allibert, 1844) – First record: Kuthy (1897: 86). Subsequent records: Merkl (1991: 397, MS), Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 183, MS). – Változó paránybogár

Acrotrichis (Acrotrichis) sitkaensis (Motschulsky, 1845) – First record: Merkl (1991: 397, 426, MS). Subsequent records: Merkl (2010: 554, MS), Sörensson & Merkl (1999: 184, MS). – Alaszkai paránybogár

Acrotrichis (Acrotrichis) thoracica (Waltl, 1838) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1991: 397, MS), Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999). – Szélestorú paránybogár

Ctenopteryx Flach, 1889

Acrotrichis (Ctenopteryx) grandicollis (Mannerheim, 1844) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1987: 113, CB, 1991: 397, 426, MS), Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 182). – Hatsörtés paránybogár

Baeocrara Thomson, 1859

Baeocrara japonica (A. Matthews, 1885) – First record: Sörensson & Merkl (1999: 182, MS). No subsequent published record. – Japán paránybogár

Nephanes Thomson, 1859

Nephanes titan (Newman, 1834) – First record: Kaszab (1983: 199). Subsequent records: Merkl (1987: 113, CB), Sörensson & Merkl (1999: 182, MS). – Titán-paránybogár

Smicrus A. Matthews, 1872

Smicrus filicornis (Fairmaire et Laboulbène, 1855) – First record: Merkl (2006: 31, CJ). No subsequent published record. – Fonalascsápú paránybogár

Ptiliinae Erichson, 1845 – Domborúparánybogár-formák

Actidium A. Matthews, 1868

Actidium boudieri (Allibert, 1844) – First record: Pillich (1910: 156). Subsequent record: Merkl (1987: 113, CB). – Parti paránybogár

Astatopteryx Perris, 1862

Astatopteryx laticollis Perris, 1862 (= *hungarica* Reitter, 1885) – First record: Kuthy (1897: 85). No subsequent published record. The voucher specimen from Pécs (Kuthy 1897: 85) is unavailable, but six specimens from Isaszeg (collected by Kuthy) are available and correctly identified (MS). The type locality ("Franzdorf", now Văliug) (Reitter 1885: 376) of *Astatopteryx hungarica* is now in Romania. – Lóhangya-paránybogár

Baranowskiella Sörensson, 1997

Baranowskiella ehnstromi Sörensson, 1997 – First record: present paper. – Európai taplóparánybogár

Euryptilium A. Matthews, 1872

Euryptilium gillmeisteri Flach, 1889 – First record: Besuchet (1976: 64, CB). Subsequent record: Sörensson & Merkl (1999: 182, MS). – Gillmeister-paránybogár

Micridium Motschulsky, 1869

Micridium vittatum (Motschulsky, 1845) – First record: Breit (1911: 115). Subsequent records: Merkl (1987: 113, CB, 1991: 426, MS). – Sápadt parány-bogár

Microptilium A. Matthews, 1872

Microptilium palustre Kuntzen, 1914 – First record: Kuntzen & Hubenthal (1914: 163). Subsequent record: Merkl (1987: 113, CB). – Sötét mocsári-paránybogár

Microptilium pulchellum (Allibert, 1844) – First record: Kaszab & Székessy (1953: 237). Subsequent record: Merkl (1991: 426, MS). – Világos mocsári-paránybogár – *Microptilium pulchellum* was first mentioned from Hungary by Csiki (1899: 210) and Ganglbauer (1899), but the voucher specimens belong to the type series of *Microptilium palustre* Kuntzen, 1914 described later. *Microptilium palustre* was erroneously reported as new to Hungary by Merkl (1987). In fact, this species was previously mentioned from Hungary by Kuntzen & Hubenthal (1914).

Millidium Motschulsky, 1855

Millidium minutissimum (Weber et Mohr, 1804) – First record: Kuthy (1897: 85). Subsequent record: Kaufmann (1914: 33, MS). – Mélybarázdás paránybogár

Nossidium Erichson, 1845

Nossidium pilosellum (Marsham, 1802) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1987: 113, CB, 1991: 425, MS, 2010: 554, MS), Besuchet & Merkl (1993: 101, CB). – Nagy paránybogár

Oligella Motschulsky**,** 1869

Oligella foveolata (Allibert, 1844) – First record: Kuthy (1897: 85). Subsequent record: Sörensson (2016: 263, MS). – Gödörkéstorú paránybogár

Oligella nana (A. Strand, 1946) – First record: Sörensson (2016: 263, MS). No subsequent published record. – Barázdástorú paránybogár

Ptenidium Erichson, 1845

Gillmeisterium Flach, 1889

Ptenidium (Gillmeisterium) nitidum (Heer, 1841) – First record: Csiki (1941: 163). Subsequent record: Merkl (1987: 113, CB). – Négypontos paránybogár

Gressnerium Ganglbauer, 1899

Ptenidium (Gressnerium) gressneri Erichson, 1845 – First record: Kuthy (1897: 85). Subsequent records: Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 181, MS). – Gressner-paránybogár

Matthewsium Flach, 1889

Ptenidium (Matthewsium) laevigatum Erichson, 1845 – First record: Besuchet & Merkl (1993: 101, CB). No subsequent published record. – Balga paránybogár

Ptenidium (Matthewsium) turgidum C. G. Thomson, 1855 – First record: Merkl (1991: 397, MS). No subsequent published record. – Rövidszőrű paránybogár

Ptenidium Erichson, 1845

Ptenidium (Ptenidium) fuscicorne Erichson, 1845 – First record: Kuthy (1897: 85). Subsequent records: Merkl (1987: 113, CB, 1991: 425, MS). – Hosszúszőrű paránybogár

Ptenidium (Ptenidium) longicorne Fuss, 1868 (= *brisoutii* A. Matthews, 1872) – First record: Kaufmann (1914: 33). Subsequent records: Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 181, MS). – Ritkaszőrű paránybogár

Ptenidium (Ptenidium) myrmicophilum (Motschulsky, 1845) (= *formicetorum* Kraatz, 1851) – First record: Pillich (1910: 156). Subsequent records: Merkl (1991: 425, MS, 2010: 555, MS), Sörensson & Merkl (1999: 182, MS). – Hangyász paránybogár

Ptenidium (Ptenidium) pusillum (Gyllenhal, 1808) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1987: 113, CB, 1991: 425, MS, 2010: 555, MS), Besuchet & Merkl (1993: 101, CB). – Sárgacsápú paránybogár

Wankowizium Flach, 1889

Ptenidium (Wankowizium) intermedium Wankowicz, 1869 – First record: Merkl (1991: 425, MS). Subsequent record: Besuchet & Merkl (1993: 101, CB). – Sokpontos paránybogár

Pteryx A. Matthews, 1858 (= *Aderces* Thomson, 1859)

Pteryx suturalis (Heer, 1841) – First record: Kuthy (1897: 85). Subsequent records: Merkl (1987: 113, CB, 1991: 426, MS), Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 182, MS). – Vállas paránybogár

Ptiliola Haldeman, 1848 (= *Nanoptilium* Flach, 1889)

Ptiliola brevicollis (A. Matthews, 1860) – First record: Sörensson & Merkl (1999: 182, MS). No subsequent published record. – Recés trágyaparánybogár

Ptiliola kunzei (Heer, 1841) (= *rugulosa* Allibert, 1844) – First record: Kuthy (1897: 85) No subsequent published record, but Kuthy's identification of a specimen from Pécel is correct (MS). Vouchers from Putnok are unavailable; the voucher from Budapest is a misidentified *Ptiliola brevicollis* (A. Matthews, 1860). – Szemecskés trágyaparánybogár

Ptiliolum Flach, 1888

Euptilium Flach, 1889

Ptiliolum (Euptilium) schwarzi (Flach, 1887) – First record: Merkl (1987: 113, CB). No subsequent published record. – Schwarz-paránybogár

Ptiliolum Flach, 1888

Ptiliolum (Ptiliolum) marginatum (Aubé, 1850) – First record: Kaufmann (1914). Sebsequent records: Merkl (1987: 113, CB, 1991: 396, MS). – Sertéscombú paránybogár

Ptiliolum (Ptiliolum) spencei (Allibert, 1844) (= *angustatum* Erichson, 1845; = *oblongum* Gillmeister, 1845) – First record: Kuthy (1897: 85). Subsequent record: Besuchet & Merkl (1993: 101, CB). – Spence-paránybogár

Ptilium Gyllenhal, 1827

Ptilium affine Erichson, 1845 – First record: Kaufmann (1914: 20). Subsequent record: Kaszab & Székessy (1953: 237, CB). – Vastagszegélyű paránybogár

Ptilium caesum Erichson, 1845 – First record: Kuthy (1897: 85). Subsequent record: Merkl (1987: 113, CB). – Gödröshasú paránybogár

Ptilium exaratum (Allibert, 1844) – First record: Kuthy (1897: 85). Subsequent records: Besuchet & Merkl (1993: 101, CB), Sörensson & Merkl (1999: 182, MS). – Vonalastorú paránybogár

Ptilium horioni Rosskothen, 1934 – First record: Merkl & Németh (2008: 169, MS). Subsequent record: Sörensson (2016: 265, MS). – Horion-paránybogár

Ptilium modestum Wankowicz, 1869 – First record: Merkl (1991: 426). Subsequent record: Besuchet & Merkl (1993: 101, CB). – Sekélybarázdás paránybogár

Ptilium myrmecophilum (Allibert, 1844) – First record: Kaufmann (1914: 33). Subsequent record: Merkl (1987: 113, CB). – Vöröshangya-paránybogár

Ptilium tenue Kraatz, 1851 – First record: Merkl & Németh (2008: 169, MS). Subsequent record: Sörensson (2016: 265, MS). – Karcsú paránybogár

Ptinella Motschulsky, 1844 (= *Neuglenes* Thomson, 1859)

Ptinella aptera (Guérin-Méneville, 1839) (= *ratisbonensis* Gillmeister, 1845) – First record: Kuthy (1897: 85). Subsequent record: Merkl (1987:113, CB). – Simatorú vakparánybogár

Ptinella britannica A. Matthews, 1858 – First record: Merkl (1987:113). Subsequent record: Merkl (1987:113, CB, 1991: 426, MS). – Vakondvendég vakparánybogár

Ptinella limbata (Heer, 1841) (= *biimpressa* Reitter, 1878) – First record: Kuthy (1897: 85) repeats Bakony Mts mentioned in the original description of *Ptinella biimpressa* by Reitter (1878: 49), so the identification is regarded reliable. – Kétgödrös vakparánybogár

Ptinella microscopica (Gillmeister, 1845) – First record: Sörensson (2016: 266, MS). No subsequent published record. – Finomrecés vakparánybogár

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