

Four new alien beetle species in Hungary (Coleoptera)

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Abstract – *Lyctus cavicollis* LeConte, 1866 (Bostrichidae), *Silvanus recticollis* Reitter, 1876 (Silvanidae), *Epuraea (Haptoncus) ocellaris* Fairmaire, 1849 (Nitidulidae) and *Cynaenus angustus* (J. L. LeConte, 1851) (Tenebrionidae) are reported from Hungary for the first time. With 4 figures.

Key words – Bostrichidae, *Cynaenus angustus*, *Epuraea ocellaris*, invasive, *Lyctus cavicollis*, Nitidulidae, Silvanidae, *Silvanus recticollis*, Tenebrionidae

INTRODUCTION

As in most countries of Europe, new alien insects regularly turn up in Hungary. Here, we present first records of four beetle species new to our country. Their appearance was not considered unpredictable, because all of them are known from a number of European countries.

Two species, *Lyctus cavicollis* LeConte, 1866 and *Silvanus recticollis* Reitter, 1876 were already reported as new to Hungary in a book on the beetle fauna of the Soroksár Botanical Garden, Budapest, Hungary (MERKL *et al.* 2019). The book is written in Hungarian, and is not uploaded to the Internet, therefore, the records of these species are repeated here, complemented with data of previously overlooked or misidentified specimens from other localities.

Abbreviations – The voucher specimens have been deposited in the following collections: CDS = private collection of Dezső Szalóki (Budapest, Hungary), HNHM = Hungarian Natural History Museum (Budapest, Hungary).

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THE SPECIES

Lyctus cavicollis LeConte, 1866
(Bostrichidae: Lyctinae)
(Fig. 1)

Records – Budapest: District 11, Árasztó út, side of Danube river, N47.4383°, E19.0483°, swarming at sunset, 27.VI.2019, leg. Tamás Németh (1 specimen, HNHM); District 21, Csepel, Tamariska-domb, N47.4145°, E19.0892°, netted with car, 29.V.2013, leg. Ottó Merkl (1 specimen, HNHM, formerly misidentified as *Lyctus linearis* (Goeze, 1777) in MERKL 2014); District 23, Soroksár Botanical Garden, N47.3994°, E19.1564°, netting with car, 31.V.2018, leg. Ottó Merkl (1 specimen, HNHM). – **Fejér county:** Óbarok, Nagyegyháza, N47.5071°, E18.5653°, hand captured, 3.VI.2020, leg. Aranka Grabant & Ottó Merkl (1 specimen, HNHM). – **Pest county:** Pilisborosjenő, Csíz-hegy, N47.5902°, E18.9874°, 15.VI.2005, leg. Tamás Németh (1 specimen, HNHM); same, but 20.VI.2006 (1 specimen, HNHM); same, but 16.VI.2006 (1 specimen, HNHM); same, but in woodshed, from wood of walnut, 15.II.2011, leg. Tamás Németh (1 specimen, HNHM); Pilisszentlászló, Kopanyica, N47.7198°, E18.9699°, netted with car at sunset, 25.VI.2005, leg. Ottó Merkl (1 specimen, HNHM).

Notes – The western powderpost beetle, *Lyctus cavicollis* originates from North America. Its first occurrence in Europe is impossible to define, but the species was already present here in 1974 (GEIS 1996). At the moment introduced and partly naturalised populations are known from Belgium, France, Germany, Netherlands, Switzerland, Iran and Australia, and the species is still extending its area of invasion, due to climate warming (LIU & GEIS 2019). The introduction has resulted in the decline of its indigenous relative, *Lyctus linearis* (Goeze, 1777) in natural habitats (GEIS 2014). A pest of sapwood timber, it infests wood of a number of unrelated tree species (GEIS & YU 2019).

Lyctus cavicollis in Hungary – Specimens flying at sunset were collected with net attached to the roof of a car. Others were found on processed wood in or near residential areas. The known localities are seemingly concentrated in or near the metropolitan area of Budapest, but this bias is due to higher collecting activity in the region.

Proposed Hungarian name: nyugati falisztbogár.

Figs 1–4. Habitus: 1 = *Lyctus cavicollis* LeConte, 1866, 2 = *Silvanus recticollis* Reitter, 1876, 3 = *Eपुरaea ocularis* Fairmaire, 1849, 4 = *Cynaеus angustus* (J. L. LeConte, 1851).

Not to scale (photos by Tamás Németh)

1



2



3



4



Silvanus recticollis Reitter, 1876
(Silvanidae: Silvaninae)
(Fig. 2)

Records – Budapest: District 23, Soroksár Botanical Garden, N47.3994°, E19.1564°, netting with car, 4.VII.2018, leg. Ottó Merkl (1 specimen, HNHM). – **Heves county:** Kerecsend, Fácános-berek, N47.7768°, E20.3305°, steppic oak woodland on loess, netting with car, 13.VII.2010, leg. Ottó Merkl (1 specimen, HNHM). – **Pest county:** Nagykőrös, around Erdő Bt., N47.0520°, E19.6706°, netting with car at sunset, 22.VI.2008, leg. Ottó Merkl (2 specimens, HNHM, formerly misidentified as *Silvanoprus fagi* (Guérin-Ménéville, 1844) in MERKL *et al.* 2011); Ócsa, Alsópakony, military training area, N47.3231°, E19.3181°, netting with car at sunset, 22.VI.2006, leg. Ottó Merkl (1 specimen, HNHM, formerly misidentified as *Silvanoprus fagi* in MERKL 2018); Vác, Naszály, southern side, N47.8284°, E19.1331°, netting with car at sunset, 14.VII.2007, leg. Ottó Merkl (1 specimen, HNHM, formerly misidentified as *Silvanoprus fagi* in MERKL 2010).

Notes – *Silvanus recticollis* is indigenous in East, South and Southeast Asia. It has been introduced to the United States and Europe, but date of the first record in Europe is unknown (DENUX & ZAGATTI 2010). It is known from Denmark, France, Germany, Italy (DODELIN 2016), Croatia, Czechia (VÁVRA *et al.* 2017) and Britain (LANE 2019). Larvae develop in plant debris, e.g. in compost heaps. Adults fly at sunset.

Silvanus recticollis in Hungary – All Hungarian specimens were collected at sunset with net attached to the roof of a car. The localities are in different regions of Hungary, so the species must be widely distributed in the country.

Proposed Hungarian name: jövevény fogasnyakú-lapbogár.

Epuraea (Haptoncus) ocularis Fairmaire, 1849
(Nitidulidae: Epuraeinae)
(Fig. 3)

Records – Bács-Kiskun county: On 27 September 2020 Tamás Kiss posted a picture of *Epuraea ocularis* on a Hungarian citizen science website (<https://www.izeltlabuak.hu>). The uploader attached the exact date and location of the finding (<https://www.izeltlabuak.hu/talalat/147178>): Kiskunhalas, Hattyú utca 12, N46.4229°, E19.4790°, 14.IX.2020, observed and photographed by Tamás Kiss. – **Budapest:** Budapest, District 16, Pálya utca 44, N47.5176°, E19.1565°, from fermenting persimmon, 30.IX.2020, leg. István Matskási (2 specimens, HNHM); District 21, Csepel-Kertváros, Kolozsvári utca 4, N47.4276°, E19.0786°, from fermenting peach, 22.VII.2019, leg. Ottó Merkl (2 specimens, HNHM); same, but from fermenting apple, 27.VII.2020 (1 specimen,

HNHM). – **Somogy county:** Balatonfenyves, Kócsag utca (= street), N46.7126°, E17.4717°, light trap, 1–2.VII.2015, leg. Dezső Szalóki (1 specimen, CDS); same, but 1–3.VIII.2018 (1 specimen, CDS); same, but 19.X.2019 (1 specimen, CDS); same, but 15–16.IX.2020 (1 specimen, CDS); same, but on fruits of fig, 19.X.2019 (9 specimens, CDS).

Notes – *Epuraea ocularis* is a widely distributed palaeotropical beetle indigenous in the tropical Asia (DENUX & ZAGATTI 2010) and the tropical Africa (JELÍNEK 1977). According to CLINE & AUDISIO (2011), “over the past two decades, this species has become one of the most pervasive sap beetle species in the world, being transported mostly through global agricultural commerce into previously undocumented areas”. The species is now considered cosmopolitan, the countries of occurrence are listed in BIBIN (2017), CLINE & AUDISIO (2011), RITTNER & NIR (2017), JELÍNEK & AUDISIO (2007), TSINKEVICH & SOLODOVNIKOV (2014) and VÁVRA & PRŮDEK (2016). In Europe, the first record is from Italy in 1900 (DENUX & ZAGATTI 2010), and now the species is known from a number of countries in the central and southern parts of Europe.

Larvae of *Epuraea ocularis* develop mainly in fermenting fruits and also in other decaying vegetable matter or in fungal sporocarps. Pupation takes place in the soil. Adults are found on the same substrates, visit flowers or are attracted by artificial light sources (TSINKEVICH & SOLODOVNIKOV 2014). TSUKADA *et al.* (2005) suggested that *Epuraea ocularis* could be used as pollinator of cherimoya (*Annona cherimola*), a beetle-pollinated tropical orchard tree, by mass release in greenhouses.

Epuraea ocularis in Hungary – The specimens collected in Hungary were found in residential areas, on decomposing fallen fruits of apple, fig, peach and persimmon, or collected at light. Based on the known localities it can be stated that the species is widely distributed and naturalised in Hungary. In Budapest, *Epuraea ocularis* was collected from fallen fruits along with strawberry sap beetle, *Stelidota geminata* Say, 1825 and pineapple sap beetle, *Urophorus humeralis* (Fabricius, 1798) – both are invasive beetles recorded in Hungary for the first time in the 2000’s (MERKL *et al.* 2009, NÉMETH *et al.* 2017).

Proposed Hungarian name: szemfoltos fénybogár.

Cynaesus angustus (J. L. LeConte, 1851)
(Tenebrionidae: Diaperinae)
(Fig. 4)

Records – **Budapest:** On 13 December 2020 Márk Lukátsi posted a picture of *Cynaesus angustus* on a Hungarian citizen science website (<https://www.izeltlabuak.hu>). The uploader attached the exact date and location of the finding (<https://www.izeltlabuak.hu/talalat/164092>): Budapest, District 22, Kamaraerdei út 8, N47.4316°, E19.0024°, 10.VII.2020, observed

and photographed by Márk Lukátsi. – **Fejér county:** Sárszentágota, between Sós-tó and Kis-tó, N46.9681°, E18.5545°, light trap, 9.V.2020, leg. Attila Takács (1 specimen, CDS); same, but 11.V.2020 (2 specimens, CDS); same, but 8.VI.2020 (7 specimens, CDS); same, but 17.VIII.2020 (1 specimen, CDS); same, but 31.VIII.2020 (5 specimens, CDS, 2 specimens, HNHM). – **Szabolcs-Szatmár-Bereg county:** Bököny, Szár-hegy, N47.7230°, E21.7097°, at light, 10.V.2020, leg. Norbert Tóth (1 specimen, CDS); same but 20.V.2020 (1 specimen, CDS); same, but 9.VII.2020 (1 specimen, CDS).

Notes – The history of dispersal, life history, economic importance and control of the larger black flour beetle, *Cynaesus angustus* was discussed in detail by KOVALENKO *et al.* (2016, see also references therein), so only a few points are repeated hereunder. Originally the species was endemic in the Sonoran and Chihuahuan Deserts (Southwestern USA and Northwestern Mexico), where it was collected mainly from rotting remains of succulent plants (cactuses, agaves, yuccas etc.). From the 1920's the species expanded its distribution eastwards (to the eastern coast of North America) and northwards (Canadian states). In 1964, it intercepted in Dublin (Ireland), in a shipment of tobacco originating from Georgia (USA), but this was not followed by establishment.

The first record in continental Europe was published in 1989 from Sweden, but it was based on misidentified specimens of *Cynaesus depressus* Horn, 1870, another alien species of North American origin. Records based on correctly identified specimens of *C. angustus*, collected also in Sweden, were published in 2002. Since then, the species was found also in Finland, Germany, France, Latvia, Russia, Ukraine, Poland, Czechia, South Korea, Japan and Thailand (IWAN *et al.* 2020, KOVALENKO *et al.* 2016, NOVÁK *et al.* 2019).

C. angustus is a stored grain pest. It prefers maize, but infests other cereals, cereal products, tobacco, dried fruits and other vegetable matter. It is found sometimes under bark and hay bales, and KRÓLIK (2019) collected it in dry sporocarps of oyster mushroom, *Pleurotus ostreatus*, growing on poplar wood.

Cynaesus angustus in Hungary – The specimens from Bököny were collected at a light bulb in a goose farm. The beetles came most probably from the fodder of the geese. The light trap capturing the specimens from Sárszentágota operated also in a farm area with various livestock and stored grain. The single specimen observed in Budapest was attracted by UV light in a garden of a residential area where poultry and sheep are kept in the neighbouring homes. The three localities are in different regions of Hungary, so the species must be widely distributed in the country.

IWAN *et al.* (2020) mention HU (= Hungary) among the symbols of the countries of occurrence. It is probably based on the citizen science website mentioned above (<https://www.izeltlabuak.hu>), where a photo (<https://www.izeltlabuak.hu/talalat/113418>) of one of the specimens collected at Bököny is found, uploaded by the collector, Norbert Tóth. However, this is not a real publication, this is the reason why the species is recorded here as new to Hungary.

Proposed Hungarian name: kukoricarontó gyászbogár.

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