

A faunistic review of Spondylidinae Audinet-Serville, 1832 (Coleoptera: Cerambycidae) of the south-eastern Baltic region (Lithuania and the Kaliningrad Region)

Vytautas Tamutis^{1,2*},

Vitalii Alekseev³

The author dissociates himself
from Russian politics

^{1*} Kaunas Tadas Ivanauskas
Zoological Museum, Laisvės al. 106,
Kaunas 44253, Lithuania

² Vytautas Magnus University,
Kaunas Botanical Garden, Ž. E. Žiliberio g. 6,
Kaunas 46324, Lithuania

³ Kaliningrad Regional Amber Museum,
Marshal Vasilevskii Square 1,
236016 Kaliningrad, Russia

The paper presents, for the first time, a review of species composition and distribution of the Spondylidinae Audinet-Serville, 1832 subfamily (Coleoptera: Cerambycidae) in the south-eastern Baltic region. A total of more than 600 records were analyzed and more than 800 specimens were examined. In this region, the subfamily is confirmed to be represented by four tribes, five genera, and seven species. Previous records (published notifications) of *Nothorhina punctata* (F.) were not confirmed in the region. The information on the occurrence, natural history, and zoogeography for nine species found and expected to be found in the region is presented in the paper. Local distribution of six species is mapped.

Keywords: Spondylidinae, Cerambycidae, Lithuania, Kaliningrad Region, annotated catalogue, faunistic review

INTRODUCTION

The longhorn beetles of the Spondylidinae subfamily possess a specific lifestyle and morphological features. The adults of the European species are externally characterised by the following combination of characters: (1) head in most cases is not constricted posteriorly, without prominent temples; (2) antennal sockets broadly separated, antennae relatively short, never reach the apex of elytra; (3) elytra with parallel lateral sides, apices rounded; (4) fourth tarsal segment usually very small, (5) when present, the stridulatory apparatus of mesonotum usu-

ally possesses a medial furrow (*Spondylis*), and (6) the pronotum is in most cases barrel-shaped, with rounded lateral sides (Bily, Mehl, 1989; Danilevski, 2014; Monné et al., 2017). Although the majority of Spondylidinae are nocturnal or active in dusk, they are rarely attracted by artificial light. The larvae develop mainly in dead wood, rarely in sick or freshly fallen coniferous trees (Sama, 2002; Monné et al., 2017). Some species are considered important secondary pests of *Picea* spp. and *Pinus* spp. trees, making this group of beetles important for forestry and management of harvested wood products (Izhevskii et al., 2005; Haack, 2017).

The subfamily Spondylidinae is a comparatively small group of longhorn beetles, but its

* Corresponding author. Email: dromius@yahoo.com

taxonomy is still in dispute (Nie et al., 2021). The subfamily comprises about 160 species distributed mainly in the Palaearctic, Nearctic, Neotropical, and Afrotropical realms (Monné, 2006; Tavakilian, Chevillotte, 2018; Bezark, 2020; Danilevski, 2022a), which are grouped in seven tribes worldwide in modern classification (Danilevsky, 2022a). The representatives of four tribes (Asemini, Nothorhinini, Spondylidini, and Tetropini) inhabit the studied area.

The studies devoted to this group of long-horn beetles are not numerous. Before, no special attention was paid to these longhorns, except some *Tetropium* species (Lynikienė et al., 2021), in the south-eastern Baltic region [Lithuania (LT) and Kaliningrad Region (KR)]. Some scarce faunistic information is scattered in several papers (Zawadzki, 1937; Staniulisówna, 1939; Mazurowa, Mazur, 1939; Pileckis, 1958, 1963; Pileckis, Monsevičius, 1997; Tamutis, Zolubas, 2001; Ivinskis et al., 2009; Alekseev, 2007; Ostrauskas, Tamutis, 2012; Alekseev, Shapoval, 2016; etc.). Eight species (seven species for LT and eight for KR) of the subfamily are listed as representatives of the local fauna in checklists of the species (Alekseev, Sakhnov, 2002; Alekseev, 2007; Tamutis et al., 2011) according to the local data and the information catalogued by Bercio and Folwaczny (1979). However, the actual faunistic data and specifics of the distribution of the species in the region have been insufficiently published or not published at all.

The aim of our study was a critical summarization of all published and unpublished faunistic information, with a compilation of an annotated catalogue and distribution maps of the species of Spondylidinae that occur in the south-eastern Baltic region. Also, we considered it useful to include brief information on the biology and the general distribution of the subfamily and to comment on some of the faunistic peculiarities of the taxa.

MATERIALS AND METHODS

All the available data on the records of Spondylidinae from Lithuania and the Kaliningrad Region are included in the study. The system-

atic names and classification follow Danilevsky (2022a). The tribes, genera, and species are arranged alphabetically. The data concerning the geographical distribution were deduced from Danilevsky (2014, 2022a), Peña et al. (2007), Sama, Rapuzzi (2011), Özdikmen (2007), Rassi et al. (2015), Cherepanov (1979), Lindhe et al. (2010), Duff (2016), Aleksandrowicz et al. (1996), Sama (2002), Ilić, Ćurčić (2015), Dunskis, Barševskis (2018), Bezark (2021), Tatarinova et al. (2007), and others cited respectively in the text below. The data concerning the biology were deduced particularly from Demelt (1966), Cherepanov (1979), Švácha (1989), Bily, Mehl (1989), Burakowski et al. (1990), Ehnström, Axelsson (2002), Sláma (1998), and Danilevsky (2014).

The species found (based on reliable records confirmed according to voucher material) in the region are listed herein without qualifying marks; the species that were mentioned in published sources but still lack actual information on their occurrence in the region are marked with a question mark (?); the species that still do not occur in the region but are expected (possible) in the territory are marked with a special symbol (⊕). The actual faunistic information is presented by: district names (acronyms, which are explained in Fig. 1), the geographic name of the locality of collection or observation, the date of collection or observation (day, month, and year), collecting peculiarities (if present), the number of collected or observed specimens, and the initials of collectors (col.) or observers (obs.). The examined material is deposited in the collections of Kaunas Tadas Ivanauskas Zoological Museum (KZM), Viešvilė Strict Nature Reserve (administration), the Institute of Forestry of the Lithuanian Research Centre for Agriculture and Forestry, the private collection of Rimantas Butvila, and the private collection of Vitalii I. Alekseev. The annotated photographs of the specimens, including those posted on the websites <https://www.inaturalist.org/> and <https://macrogamta.lt/lt>, were examined and observations were used herein as faunistic data and are marked with a special symbol (Ⓞ). The threatened category (EU) of species

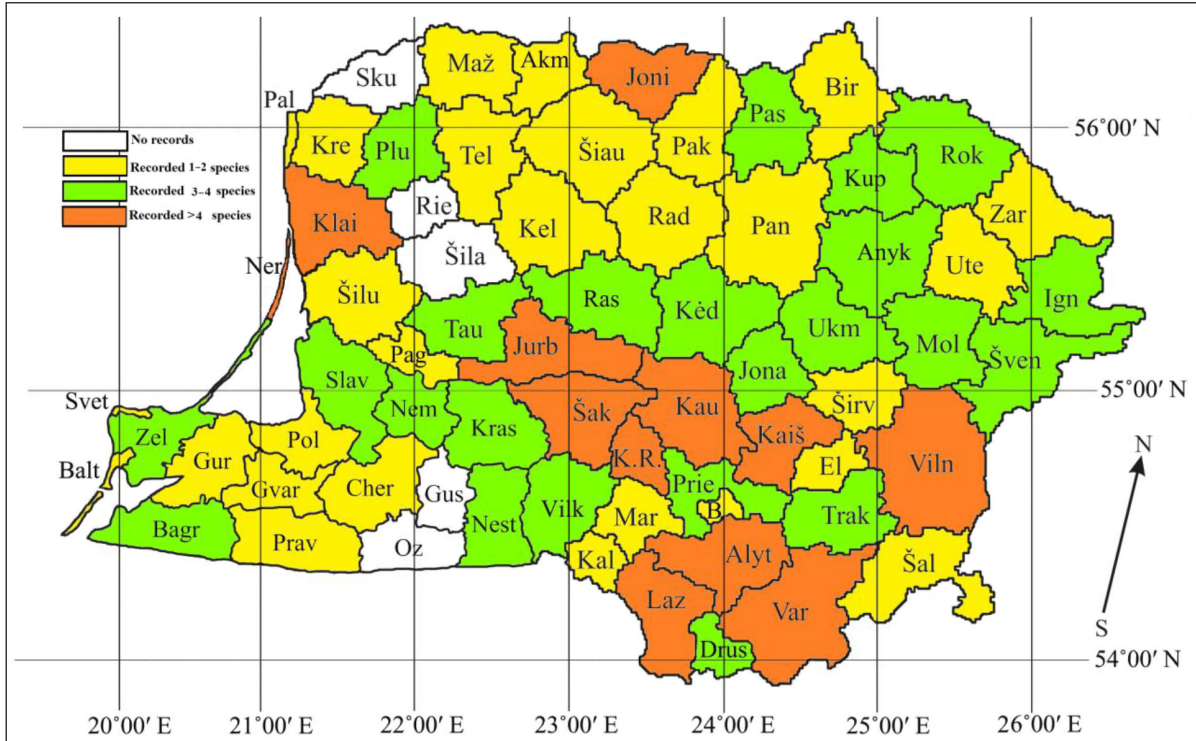


Fig. 1. Map of Lithuania (LT) and Kaliningrad region, Russia (KR) with grid of administrative districts; LT: Akm–Akmenė; Alyt–Alytus; Anyk–Anykščiai; B–Birštonas; Bir–Biržai; Drus–Druskininkai; El–Elektrėnai; Ign–Ignalina (including Visaginas); Jona–Jonava; Joni–Joniškis; Jurb–Jurbarkas; Kaiš–Kašiadorys; Kal–Kalvarija; Kau–Kaunas; Kel–Kelmė; Kėd–Kėdainiai; Klai–Klaipėda; K.R.–Kazlų Rūda; Kre–Kretinga, Kup–Kupiškis; Laz–Lazdijai; Mar–Marijampolė; Maž–Mažeikiai; Mol–Molėtai; Ner–Neringa; Pag–Pagėgiai; Pak–Pakruojis; Pal–Palanga; Pan–Panevėžys; Pas–Pasvalys; Plu–Plungė; Prie–Prienai; Rad–Radviliškis; Ras–Raseiniai; Rie–Rietavas; Rok–Rokiškis; Sku–Skuodas; Šak–Šakiai; Šal–Šalčininkai; Šiau–Šiauliai; Šila–Šilalė, Šilu–Šilutė; Širv–Širvintos; Šven–Švenčionys; Tau–Tauragė; Tel–Telšiai; Trak–Trakai; Ukm–Ukmergė; Ut–Utena; Var–Varėna; Vil–Vilnius; Zar–Zarasai; KR: Bagr–Bagrationovsk; Balt–Baltiysk; Cher–Cherniakhovsk; Gur–Gur’evsk (including Kaliningrad); Gus–Gusev; Gvar–Gvardeysk; Kras–Krasnoznamensk; Nem–Neman (including Sovetsk); Nest–Nesterov; Oz–Ozersk; Pol–Polessk; Prav–Pravdinsk; Slav–Slavsk; Svet–Svetlogorsk; Zel–Zelenogradsk (including Svetly). The areas where the species of Spondylidinae were recorded are coloured

included in the IUNC Red List of Saproxyllic beetles (Cáliz et al., 2018) is indicated by the same acronyms in the subchapter paragraphs.

The examined material was collected or observed by: Anna Drotikova (AD), Agnė Našlėnienė (AN), Aleksandras Meržijevskis (AM), †Alfonsas Palionis (AP), Anita Pikčė (APi), Artūras Gedminas (AG), Arūnas Juknevičius (AJu), Anna Smirnova (AS), Anatolii Shapoval (ASh), Boris Belchev (BB); †Bronislaw Houwald (BH), †Bronius Jakaitis (BJ), Brigita Nauburienė (BN), Darius Baužys (DB),

Darius Gransbergis (DG), Daria Gurevich (DGu), Deividas Makavičius (DM), Donatas Stanionis (DSt), †Elena Gaidienė (EG), Elvyra Mikšytė (EMi), Gaudas Morkūnas (GMr), Gediminas Petkus (GPe), Giedrius Markevičius (GM), Giedrius Švitra (GŠ), Gintaras Pečiukonis (GPč), Gintautas Steiblys (GS), †Henrikas Ostrauskas (HO), Ina Unčiurienė (IU), Indrė Gudelytė (IG), Justina Jankevičienė (JJ), Jolanta Radevič-Sakalauskienė (JRS), Juozas Dūda (JD), Jurgis Žižys (JŽ), Karolina Krištopaitytė (KKr), Kazimieras Martinaitis

(KM), Kęstutis Jarmalavičius (KJ), Kęstutis Kišonas (KK), Ksenia Parfenenko (KP), Kristina Valinčienė (KV), Lina Mitkevičienė (LMi), Lina Straigyte (LSt), Lukas Rekevičius (LRe), Mantas Jancevičius (MJ), Michail Fedoruk (MF), Maria Pustovaia (MP), Modestas Ružauskas (MR), Nida Asad (NA), Nijolė Jasonienė (NJ), Nikolai Mavrov (NM), Oskaras Venckus (OV), Paulius Zolubas (PZ), Povilas Ivinskis (PI), †Povilas Rėklaitis (PRė), Radvilė Kuodytė (RKu), Ramunė Paliakaitė (RPa), Rasa Pečiulionytė (RPe), Rimantas Butvila (RB), Rimantas Pankevičius (RP), Rimantas Stankūnas (RSt), Rimvydas Gaidys (RG), Romas Ferencas (RF), Rytis Arbačiauskas (RA); Samanta Šopytė (SŠo), Saulius Karalius (SK), †Simonas Pileckis (SP), the students of the former Lithuanian Agricultural Academy (LAAst), the students of Vytautas Magnus University (VMUst), Tadas Petrikas (TP), Tomas Pocius (TPo), Tomas Tarvainis (TT), Vaidas Abakas (VAb), Viktorija Kalinauskienė (VKl), Vitalii Alekseev (VA), Vitalijus Bačianskas (VB), Vytautas Inokaitis (VI), Viktorija Rozhina (VR), Vytautas Tamutis (VT), Vytautas Uselis (VU), Zina Jokšienė (ZJ), Zita Pajaujytė (ZP); Žygimantas Obelevičius (ŽO), and Žilvinas Pūtys (ŽP).

Examined or reviewed materials were collected in the territories of 50 administrative districts of LT and 13 administrative districts of KR (Fig. 1).

The gridding of the maps of Lithuania is based on the borders of administrative districts according to the 'Law of the Republic of Lithuania on the Administrative Units and Their Borders', No. I-558, 19 July 1994 (<https://www.e-tar.lt/portal/lt/legalAct/TAR.0120FD7BCFFC/ZhxPsGFEBL>). The municipality of Visaginas is marked as Ignalina district. The municipalities of the cities of Alytus, Kaunas, Klaipėda, Panevėžys, and Vilnius are treated together with corresponding districts. Geographical names follow those listed in the document of the National Land Service under the Ministry of Agriculture of the Republic of Lithuania 'Regulation on the Usage of Geographical Names in Maps', No. 1P-15, 3

February 2004 (<https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/TAIS.227707>). The names of reserves follow those listed in the regulations of the State Service for Protected Areas under the Ministry of Environment of the Republic of Lithuania (<http://www.vstt.lt/VI/index.php#r/57>).

The following information, divided into seven paragraphs, is given for each species: (1) the scientific name; (2) actual faunistic information (3) faunistic data published in scientific papers, monographs and check-lists (the taxonomic names another that accepted here, but mentioned in previous publications are listed in brackets); (4) a brief review the general distribution; (5) a brief review of the biology; (6) detailed local occurrence and phenology; (7) comments, including details of species distribution, taxonomic interpretation, listing in IUCN Red Lists.

The comparative estimation scale was used for species distribution (widely or locally distributed) and species abundance (abundant or rare) in the countries that individually follow the scheme suggested by Gutowski (1995) and adapted by Tamutis and Alekseev (2020). The values of thresholds numbers of districts and records for categorisation of the species have been identified according to the formulas

$$V_d = N \geq 3/2;$$

$$V_r = V_d \times 2,$$

where V_d – value of threshold number of districts; V_r – value of threshold number of records; $N \geq 3$ – number of districts where three or more species of Spondylidinae were detected.

In the case of this study, the value of threshold number of districts was detected 14 for LT and six for KR, the value of threshold number of records 28 and six, respectively (Fig. 2). All kinds of actual records (published, photographed, or detected from collections) were used in this estimation. The records made from the same place (locality) within five days or with use of single trap were regarded as a single record.

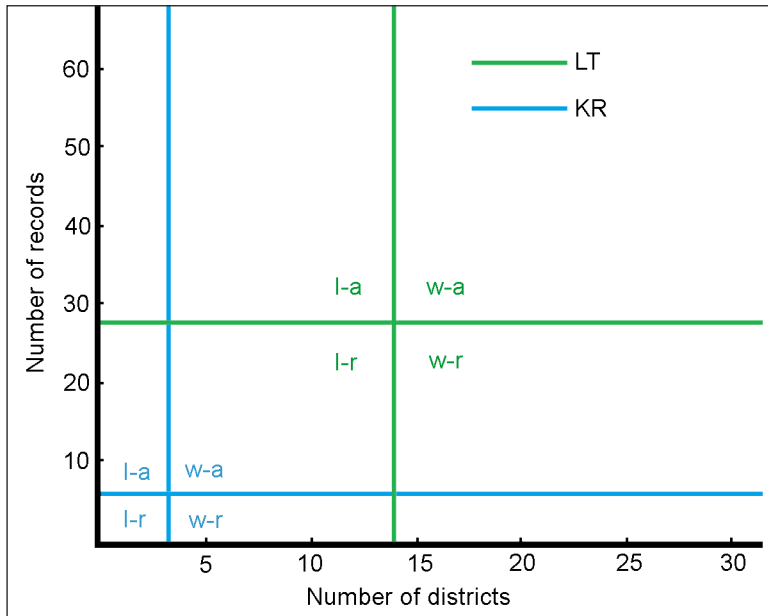


Fig. 2. Graphic interpretation of the distribution and abundance of Spondylidinae (Cerambycidae) in the south-eastern Baltic region: w-a – widely distributed, abundant; w-r – widely distributed, rare; l-a – locally distributed, abundant; l-r – locally distributed, rare

RESULTS

Annotated checklist of Spondylidinae (Cerambycidae) of the territory of south-eastern Baltic region

Family CERAMBYCIDAE Latreille, 1802

Subfamily Spondylidinae Audinet-Serville, 1832

Tribe Asemini Thomson, 1861

Genus *Arhopalus* Audinet-Serville, 1834 = *Criocephalus* Dejean, 1835

A. rusticus (Linnaeus, 1758) = *tristis* (Fabricius, 1787)

Examined actual data. **LT:** *Akm:* Akmenė district, 17.07.1961, 1, SP; *Alyt:* Žuvinto biosferos rezervatas, 19.06.2021, 1 (♂), TPo; Nemunaičio miškas, 26.09.2021, 1 (dead specimen) (♂), AJu; *Anyk:* Katlėriai, 07.07.1984, 1, SK; ibidem, 22.07.1992, 1, SK; ibidem, 08.07.1996, 1, SK; *Drus:* Gerdašiai, 13.07.1999, 1, RF; Viečiūnų miškas, 03.07.2015, 1, VI; ibidem, 05.08.2016, 2, VI; ibidem, 10.07.2017, 1, VI; ibidem, 02.08.2017, 1, VI; *Jona:* Gaižiūnų miškas, 11.08.2015, 1, VI; Jonava, 25.07.2021, 1 (♂), IU; *Joni:* Bariūnai, 25.07.2001, 1, RB; ibidem, 26.07.2004, 1, RB; ibidem, 03.08.2005, 1, RB; Darginiai, 19.07.2010, 1, RB; Girdžiūnai, 08.08.2004, 1, RB; ibidem, 01.07.2009, 1, RB; Ju-

odeikiai, 24.07.1998, 1, RB; Skakai, 02.08.2004, 1, JD; Skilvioniai, 05.08.2019, 1, RSt; *Jurb:* Liepgirių miškas, 26.07.1977, 1, RJ; ibidem, 01.08.1979, 1, BJ; ibidem, 21.08.1979, 1, BJ; Pašaltuonio miškas, 17.07.2010, 1, VB; Viešvilė, 01.08.2000, 1, RF; *K.R.:* Agurkiškė forest directorate, –.08.1961, 1, SP; Braziūkų miškas, 20.07.2014, 1 (♂), GS; Jūrės miškas, 20.07.1956, 3, SP; *Kaiš:* Aviliai, 07.09.2012, 1, NJ; Kruonis, 28.08.1976, 1, AM; ibidem, 16.07.2021, 1 (♂), RPe; Pašuliai, 20.07.2020, 1 (♂), MR; Pravieniškės, 07.07.2015, 1, VB; Strošiūnų miškas, 06.09.2009, 1, DSt; Triliškės, 03.08.2008, 1, DSt; Triliškių miškas, 15.07.2007, 2, VB; *Kau:* Braziūkai, 03.07.2015, 1, VT; ibidem, 27.07.2015, 1, VT; ibidem, 17.08.2016, 1, VT; ibidem, 22-27.06.2018, 2, VT; ibidem, 11.06.2019, 1, VT; Dievogala (Palankiai), 09.07.1934, 1, PRè; ibidem, 01.08.1935, 1, PRè; Dubravos miškas, 14.08.1981, 1, RF; ibidem, 26.06.1999, 1, RF; Ežerėlis, 06.08.1982, 1, RF; Kačerginė, 04.08.1969, 1, EG; Kamšos miškas, 12.07.1996, 1, VT; Karmėlava, 28.06.2008, 1, VI; Karmėlavos miškas, 03.08.2008, 1, VI; Kaunas (Centras), 30.06.2017, 1 (♂), RF; Kaunas (Kleboniškių miškas), –.07.1955, 1, SP; Kaunas (Panemunė), 17.06.1937, 1, AP; Kaunas (Žaliakalnis), 03.08.2015, 1, VI; Kulautuva, 05.06.1936, 1, PRè; Kuras, 12.07.1963, 1, EG; Neveronyš, 19.07.2010, 1, VI; Papiškinės miškas,

10.07.2018, 2, VT; Turžėnų miškas, 26.07.2012, 1, VI; Zapyškio miškas, 2001.07.15, reared from *Pinus sylvestris* log, 1, VT; *Kel*: Šonos miškas, 24.07.2011, 2, VT; *Kėd*: Kėdainiai district, –.1961, 1, SP; *Klai*: Kairiai, 06.10.1993, 1, SK; Klaipėda, 20.07.1991, 1, SK; Pėžaičiai, 08.07.1995, 1, SK; *Kre*: Mažučių miškas, 30.09.2021, stem of *Pinus sylvestris* 3 (larvae), VT; *Kup*: Subačius, –.07.1958, 1, SP; Šimonių miškas, 20.07.1991, 1, RP; *Laz*: Kalniškės miškas, 10.08.1963, 1, SP; *Mol*: Molėtai district, –.07.1963, 1, SP; *Ner*: Juodkrantė, 23.06.2012, 1 ☉, TT; ibidem, 03.08.2015, 1, RF; *Pak*: Lauksodis, 24.08.1960, 1, SP; *Pas*: Krikliniai, 14.07.2007, 1, VB; *Prie*: Prienų šilas, –.08.1958, 1, SP; *Rad*: Baisogala, –.06.1963, 1, SP; *Šak*: Lekėčiai, 12–18.07.1999, light trap, 1, RF; ibidem, 19–25.07.1999, light trap, 2, RF; ibidem, 26.07.–23.08.1999, light trap, 4, RF; miškas Juškinė, 14.07.2006, 1, RF; ibidem, 07.08.2015, 1 ☉, RF; ibidem, 09.07.2017, 1, RF; miškas Rūdšilis, 13.07.1996, 3, VT; Tervydoniai, 05.08.2015, 1, RF; ibidem, 28.08.2017, 1, RF; *Šiau*: Paširvio miškas, 16.02.2020, under bark of *Pinus sylvestris*, 2 (dead specimens), VT; *Šven*: Budriai, 19.07.2014, 1 ☉, GM; Pakretuonės miškas, 13.08.2017, 1 ☉, ŽP; ibidem, 03.09.2019, 1 ☉, AJu; Prūdiškė, 04.08.2016, 1 ☉, GM; Sariai, 24.06.2021, 1 ☉, obs. unknown; Vilkaslastis, 02.08.2020, 1 ☉, GS; *Tau*: Eičių miškas, 12.09.2021, 1 ☉, RPa; Pasalupis, 20.06.2011, 1 ☉, GS; Sakalynės miškas, 21.06.2011, 1 ☉, RF; Viešvilės valstybinis gamtinis rezervatas, 31.07.2006, 1, RF; ibidem, 20.06.2011, 1, RF; Viešvilės valstybinis gamtinis rezervatas, Titnagų kalnai, 10.07.2008, 1, RF; *Ukm*: Verškainių miškas, 23.07.2020, 1 ☉, KJ; ibidem, 30.08.2021, 1 ☉, KJ; *Var*: Biniūnai I, 22.06.1939, 1, AP; Čepkelių valstybinis gamtinis rezervatas, 05.06.1984, 1, RF; ibidem, 25.06.1985, 1, RF; ibidem, 13.07.1985, 1, FR; Grybaulio miškas, 03.07.2019, 1 ☉, KM; Gudų giria, 25.08.2016, 1 ☉, KM; Karaviškės, 17.08.2017, 1, VI; Lavyso miškas, 14.07.2021, 1 ☉, obs. unknown; Merkinė, 09.07.2011, 1, RF; Razumnos miškas, 1 ☉, MJ; Užuožerės miškas, 24.08.2016, 1, RF; ibidem, 01.06.2017, 1, RF; *Viln*: Maišiagalą (Kalniškės), 04.08.2007, 1, PI; ibidem, 15.08.2009, 1, PI; ibidem, 15.–25.07.2010,

2, PI; ibidem, 27.08.2011, 1, PI; Pikeliškių miškas, 19.06.1983, 1, ZP; Vyteniškių miškas, 09.08.2018, 1 ☉, ŽP; *Zar*: Vaikučiai, 28.06.2020, 1 ☉, LRe. **KR**: *Bagr*: Uľianovka, 11.07.2017, 1, VA; *Kras*: Dolzhanskoe, 04.07.1997, 2, VA; ibidem, 08.07.1997, 1, VA; ibidem, 06.07.1999, 1, NM; *Pol*: Saranskoe, 18.07.2021, 1 ☉, MP; *Nest*: Pugachevo, –.08.1995, 1, VA (observed); *Slav*: Gastellovo, 24.07.2015, 2, AD; *Zel*: 3 km NE Zelenogradsk, 13.06.2009, 1, VA; ibidem, 06.07–31.08.2009, pitfall trap near *Pinus sylvestris*, 3, VA; Rybachii, 13.07.2010, 1, VA; 23 km of the Curonian Spit, 07.07–21.08.2009, light trap, 8, ASH; ibidem, 12.07–12.08.2010, light trap, 10, ASH; ibidem, 10.07.2011, light trap, 1, ASH.; ibidem, 26.07–17.09.2012, 10, ASH; ibidem, 06.07–17.09.2015, light trap, 17, ASH; Riabinovka, 25.07.2021, 2, VR.

Published local records. **LT**: This species was reported as common and numerous in the environs of Vilnius in the period of 1922–1934 by Zawadzki (1937) (*Criocephalus*). It was listed as found in the Curonian Spit (Schwarzort) by Lentz (1879) (*Criocephalus*). The species was ranked as very common and noted as distributed throughout the country by Pileckis, Monsevičius (1997). However, the actual faunistic information was given on the occurrence of this species only in Kaunas, Palanga, Rokiškis (Ferenca, 2006), Kazlų Ruda, Trakai (Pileckis, 1958), Alytus (Zajančkauskas, Pileckis, 1968), Elektrėnai, Ignalina, Švenčionys, and Vilnius (Ostrauskas, 2020) districts. **KR**: This species was reported by Bercio, Folwaczny (1979) as frequent in *Pinus* dominated forests in the territory (*Criocephalus*); Alekseev, Sakhnov, 2002 (*Criocephalus*); Alekseev, 2007; Alekseev, Shapoval, 2011; 2012; 2016; 2019.

General distribution. The species is distributed throughout the Palaearctic region from Iberia and Great Britain to the Far East, Korean peninsula, eastern provinces of China, and Japan. The species is widely distributed in Europe, from the coast of Mediterranean Sea to 68° N in Scandinavia and 63° N in European Russia. Also, it was discovered in Marocco (Sama, 2002), introduced in North America (Bousquet et al., 2017), Argentina (López et al., 2008),

and Australia (Wang, Leschen, 2003). The beetle belongs to one of the most widespread species of the longhorn beetles (Rossa, Goczał, 2021) and, being distributed in five biogeographic realms, is single cosmopolitan representative of the subfamily in the present-day world.

Notes on biology. The species is polyphagous on coniferous trees, but prefers pines (*Pinus*) and rarely inhabits *Picea*, *Larix*, *Abies* and *Juniperus* trees. The larvae develop in dead wood, most often stumps, stems, or shallow roots during a period of at least three years. They make galleries deep in the wood, occasionally can also damage structural woods; pupation in wood in May–July. Adults usually appear in June–August, they are nocturnal, frequently attracted to light, do not feed additionally. *Arhopalus rusticus* was recently identified as a potential carrier of pine wood nematode, *Bursaphelenchus xylophilus*, in China (Wang et al., 2021).

Local occurrence and phenology. This species is widely distributed in the region and is trustworthy recorded from 39 districts (Fig. 3). The maximum of recorded adults was in July–August, the earliest record on 20 May, the latest on 6 October.

Comments. IUCN Red List Category (EU) – LC.

A. ferus (Mulsant, 1839)

Examined actual data. **LT:** *Drus:* Druskininkai, –.07.1959, 1, SP (KZM); *Var:* Varėna district, 12–22.08.1936, 5, AP (KZM); *ibidem* –.06–08.1959, 2, SP (KZM). **KR:** No material is available.

Published local records. **LT:** This species was reported as frequent in the environs of Vilnius in the period of 1922–1934 by Zawadzki (1937) (*Criocephalus polonicus* Motsch.). The actual faunistic information is given on the occurrence of this species in Vilnius (Staniulisówna, 1939), Druskininkai, Kazlų Rūda, Varėna (Pileckis, 1963), and Palanga (Ferenca, 2006) districts. **KR:** Lentz, 1879 (*ferus* Kraatz *epibata* Schiödt); this species was reported by Bercio, Folwaczny (1979) as infrequent in *Pinus* dominated forests in the territory ((*Criocephalus tristis* F. (*ferus* Muls.)).

General distribution. The species is distributed in western Palaearctic region from Iberia and Great Britain to eastern Siberia. The northern border of the distribution range goes to southern Sweden (Upsala environs), Finland (South Savo), Estonia, Leningrad region, Komi Republic (Syktyvkar). It is widely distributed in central and southern Europe, Caucasus, Anatolia, the Near East, is also known in northern Africa, northern China, introduced in Australia, New Zealand, and probably in South America (posted data in Inaturalist.org: <https://www.inaturalist.org/observations/67580946>).

Notes on biology. The life cycle and host plants of this species are regarded to be very similar to the species described above. However, Bily, Mehl (1989) pointed to the preference of this species for stumps and thick shallow roots; it often lives together with *Asemum striatum* in the same habitat. Moreover, *A. ferus* has a higher preference to pines damaged by fire (Suckling et al., 2001). The larvae make galleries deep in the wood; pupation usually takes place in the wood of roots, in May–July. Adults usually appear in June–August, they are nocturnal, frequently are attracted to light, do not feed additionally. The life span is two years in southern regions and up to four years in the northern part of the distribution range of this species.

Local occurrence and phenology. It appears to be very rare; although it is still recorded in five districts (Fig. 3), all records are more than 50 years old. We could not confirm the records from Palanga, Vilnius (LT), and Gurėvsk (KR) districts, because there was no voucher material. The maximum of recorded adults was in July–August, the earliest record on 20 June, the latest on 22 September.

Comments. The last few decades have seen the decline of this species in northern Europe, with no recent records in Sweden (Lindhe et al., 2010), Latvia (Dunskis, 2019) and Lithuania. The species is endangered in Finland and Estonia. An earlier report of this species from Kazlų Rūda district (Agurkiškė forest directorate) (Pileckis, 1963) was based on misidentifications and related to *A. rusticus* in this paper. IUCN Red List Category (EU) – LC.

Genus *Asemum* Eschscholtz, 1830***A. striatum* (Linnaeus, 1758)**

Examined actual data. *Alyt*: Alytus, 07.07.1964, 1, SP; *Joni*: Bariūnai, 05–08.05.2000, 2, RB; Plikiškiai, 08.06.1999, 1, RB; Satkūnai, 27.05.1998, 1, RB; ibidem, 01.06.1999, 1, RB; ibidem, 15.05.2000, 1, RB; Skakai, 13.05.2003, 1, RB; ibidem, 05.05.2004, 1, RB; *Jurb*: Smalininkai, 07.05.1970, 1, BJ; ibidem, 26–28.05.1970, 2, BJ; ibidem, 11.06.1970, 1, BJ; *K.R.*: Braziūkų miškas, 20.04.2017, 1, VT; Kazlų Rūda, 04.06.1959, 1, SP; *Kaiš*: Bačkonys, 10.05.2008, 1, VB; Kruonis, –.07.1968, 1, AM; Pravieniškės, 04.06.1989, 1, AM; Strėvininkų miškas, 18.05.2006, 1, RF; Strošiūnų miškas, 26.05.2009, 1, DSt; *Kau*: Braziūkai, 15.07.2017, 1, VT; ibidem, 06.05.2019, on flower of *Taraxacum* ssp., 1, VT; ibidem, 08–18.05.2019, on cutted wood of *Pinus sylvestris*, 9, VT; ibidem, 04.06.2019, 4, VT; Dievogala (Palankiai), 28.05.1935, 1, PRé; ibidem, 15.06.1936, 1, PRé; Dubravos miškas, 09.06.1955, 4, SP; ibidem, 09.07.1956, 1, SP; ibidem, 26.05.1985, 2, RF; ibidem, 01.06.1985, 1, FR; ibidem, 25.05.1986, 1, RF; ibidem, 08.06.1986, 1, RF; ibidem, 20.05.2017, 1 ☉, GS; Kačerginė, 10.08.1966, 1, EG; Lomankos miškas, 26.04.2014, 1, VI; *Klai*: Giruliai, 12.06.1990, 1, SK; Smiltynė, 12.06.1998, 1, SK; *Kup*: Drulėnai, –.–.1992, RP; *Lazd*: Šeštokai, 04.07.2005, 1, HO; *Mol*: Pabiržė, –.06.1963, 1, SP; *Ner*: Juodkrantė, 29.05.2011, 2, VMUst; ibidem, 02.06.2011, 1, RF; ibidem, 16.05.2014, 1 ☉, TT; ibidem, 25.05.2015, 1 ☉, TT; ibidem, 19.05.2016, 1 ☉, TT; ibidem, 18.05.2017, 1 ☉, TT; ibidem, 21.05.2018, 1 ☉, TT; ibidem, 19–20.05.2019, 2 ☉, TT; Nida, 19.05.1993, 1, SK; Pervalka, 04.06.2007, 1, VA; *Pas*: Butniūnų miškas, 13.06.2006, 2, VB; Rinkūnų miškas, 18.05.2006, 2, VB; Žalioji giria, 14.05.2007, 1, VB; *Plu*: Stirbaičiai, 09.06.2021, 1 ☉, ZJ; *Prie*: Bačkininkų miškas, 23.06.1984, 1, RF; *Rok*: Juodupė, 13.06.2020, 1 ☉, GS; 14.06.2020, on *Pinus sylvestris*, 2, VT; Rokiškis, 16.06.1964, 1, SP; *Šak*: Kriūkai, 15.05.1993, 1, RF; miškas Juškinė, 21.06.2003, 1, RF; ibidem, 13.05.2006, 1, RF; Šakiai, 10.06.1963, 1, SP; *Ukm*: Šaltupio miškas, 10–16.05.2008, 3, TP; Vytinėlis miškas, 18.05.2008, 1, TP; *Var*: Biniūnai (Baudieriškis),

01.06.1939, 1, AP; Čepkelių valstybinis gamtinis rezervatas, 25.06.1985, 1, RF; *Viln*: Kairėnai, 25.05.2021, 1 ☉, GPe; Maišiagala (Kalniškės), 13.05.2006, 4, PI; ibidem, 27.05.2006, 2, PI; ibidem, 19–26.05.2007, 6, PI; ibidem, 11–18.05.2008, 2, PI; ibidem, 08–24.05.2011, 2, PI; ibidem, 19.06.2011, 1, PI; ibidem, 11.05.2012, 1, PI; ibidem, 16–17.05.2014, 2, PI; Paberžė (Medina), 09.06.1916, 1, BH; ibidem, 08.06.1929, 1, BH; ibidem, 02.06.1938, 1, BH; Verkšnionių miškas, 27.04.2019, 1 ☉, AJu; Vilnius, 10.04.1938, 1, AP. **KR**: *Cher*: 9 km NE Cherniakhovsk, 15.06.1995, 1, VA; *Kras*: Dolzhanskoe, 19.05.2014, 2, AD; *Svet*: 1 km S Donskoe, 24.05.2010, 1, VA; *Zel*: 2 km NE Kostrovo, 30.05.2016, 1, VA.

Published local records. **LT**: This species was reported as very common in the environs of Vilnius in the period of 1922–1934 by Zawadzki (1937). The actual faunistic information is given on the occurrence of this species in Vilnius, Trakai (Staniulisówna, 1939), Kaunas (Pileckis, 1958), Alytus (Tamutis, Zolubas, 2001), Neringa (Alekseev, 2008), and Lazdijai (Ostrauskas, Tamutis, 2012) districts. **KR**: Berccio, Folwaczny, 1979; Alekseev, 2007.

General distribution. The species is distributed throughout the Palaearctic region from Iberia and Ireland to the Far East, Korean peninsula, eastern provinces of China, and Japan. The species is widely distributed in Europe, from the coast of Mediterranean Sea to 69° N in Scandinavia and 66° N in European Russia. It was introduced in North and Central Americas (Bousquet et al., 2017; Bezark, 2021).

Notes on biology. The species prefers pines for its development; the larvae rarely inhabit spruce, fir, or larch. Females insert eggs in the bark crevices at the base of recently dead or freshly cut stems and stumps. Young larvae tunnel under bark, later penetrate into the wood and make galleries downward, in most cases into the shallow roots. Pupation takes place in April–May. Adults usually appear in May–June; they are active in late afternoon and at night, sometimes are attracted to light. The life cycle lasts usually two, sometimes one or three years. The species is regarded as strongly attracted to burnt pine forests (Lundberg, 1984).

Local occurrence and phenology. The species is quite common in the *Pinus sylvestris*-dominated forests in LT. Recorded from 24 districts in the region (Fig. 3); the maximum of observed adults was in May–June, the earliest observation on 10 April, the latest on 10 August.

Comments. IUCN Red List Category (EU) – LC.

⚡ *A. tenuicorne tenuicorne* Kraatz, 1879

Examined actual data. Absent. No material is available from LT and KR.

Published local records. LT: Tamutis et al., 2011, as expected. KR: No records.

General distribution. It is a rare and insufficiently known species. Nominative subspecies are fragmentally distributed mainly in central and southern Europe (Spain, Italy, Greece, Ukraina, the southern part of European Russia), and *A. t. claricostulatum* Özdikmen, Aytaç, 2012 occurs in southern Turkey. The northernmost records come from Sweden (Gotska Sandön) and Poland (Białowieża Primeval Forest) (Gutowski, Kurzawa, 2019).

Notes on biology. The life cycle and host plants are regarded to be very similar to *A. striatum*; however, most likely the species develops only in pines (*Pinus nigra* and *P. sylvestris*)

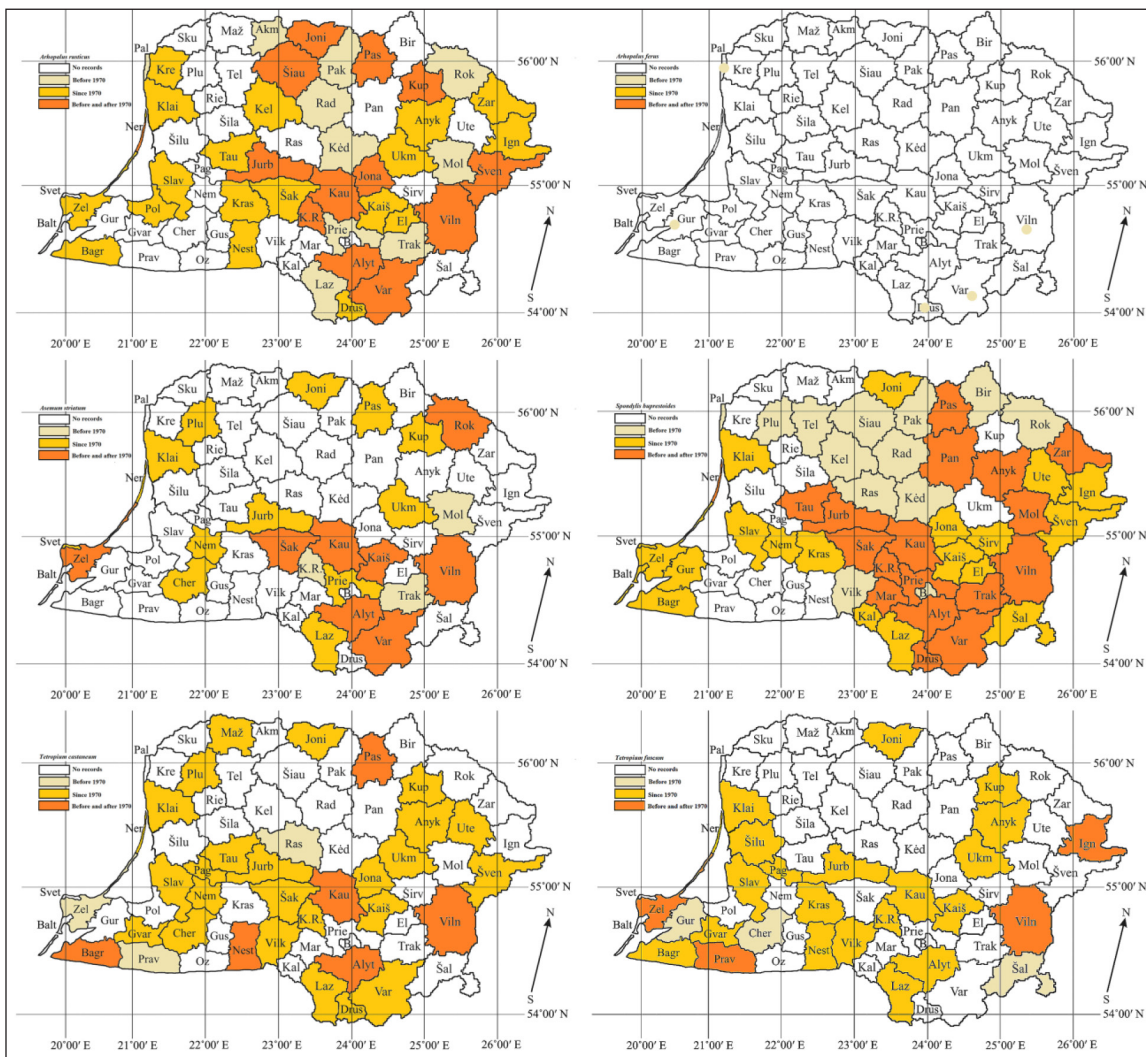


Fig. 3. The distribution maps of *Arhopalus rusticus*, *Arhopalus ferus*, *Asemum striatum*, *Spondylis buprestoides*, *Tetropium castaneum*, and *Tetropium fuscum* (Coleoptera: Cerambycidae: Spondylidinae) in south-eastern Baltic Region

(Sama, Bocchini, 1992; Gutowski, Kurzawa, 2019). Possibly, it is also prefers burnt forest (Gutowski, Kurzawa, 2019). The larvae, which inhabit stems of freshly dead pines, take two years to develop.

Local occurrence and phenology. Absent.

Comments. The species was relatively recently found in Puszcza Białowieska (Gutowski, Kurzawa, 2019) and is known in Sweden (Lindhe et al., 2010), so its presence in the forests dominated by pines in the region is quite possible. IUCN Red List Category (EU) – NT.

Tribe Nothorhinini Zagaikevich, 1991

Genus *Nothorhina* Redtenbacher, 1845

(?) *N. punctata* (Fabricius, 1798) = *muricata* (Dalman, 1817)

Examined actual data. Absent. No material is available from LT and KR.

Published local records. LT: A single record (as *Nothorhina muricata* Schh.) from Juodkrantė (Schwarzort), July 1864, was published by Lentz (1879) and later cited by Bercio, Folwaczny (1979). **KR:** No records, Alekseev (2007) supposed it could 'occur in south parts of KR on the Baltic coast' only.

General distribution. The species is widespread in Europe from Iberia to the Urals, but is rarely observed and local. Its distribution range reaches 68° N in Scandinavia and 57° N in European Russia; southwards, the species is known from southern Italy and Greece. Also, it was found in the southern part of west Siberia, northern Kazakhstan, Anatolia, some islands of Japan (Honshu, Kyushu, Shikoku), and South Korea.

Notes on biology. The larvae of this species tunnel the bark of old, solitary-growing and sun-exposed pines without any harm to the trees. They pupate in May–June in pupal chamber in the bark excavated 0.5–1.5 cm from surface. Adults emerge usually in June–July, they are cryptic, usually crawl in the bark cracks, predominantly nocturnal, rarely observed in flying. The life cycle lasts one to two years. It is a sedentary species: usually, several generations develop in the same tree.

Local occurrence and phenology. The species is insufficiently known and probably very rare in the region, actual data from LT and KR are absent.

Comments. IUCN Red List Category (EU) – VU.

Tribe Spondylidini Audinet-Serville, 1832.

Genus *Spondylis* Fabricius, 1775

***S. buprestoides* (Linnaeus, 1758)**

Examined actual data. LT: *Alyt:* Alytus district, –.08.1963, 1, LAAst; Gečialaukis, 28.06.2021, 1 ☉, AJu; *Anyk:* Niūronys, 25.07.2020, 1, VT; ibidem, 05.07.2021, 1 ☉, RGA; Traupis, 12.09.2021, 1 ☉, ŽO; *B:* Birštonas, 20.07.1938, 1, AP; *Bir:* Biržų giria, –.07.1963, 1, LAAst; *Drus:* Ašarėlis lake environs, 01.08.2020, 1 ☉, KVA; Druskininkai, 12-14.07.1967, 2, EG; Grūto miškas, 28.06.2018, 1 ☉, GPe; Randamonių miškas, –.07.1962, 1, SP; Viečiūnų miškas, 03.07.2015, 1, VI; ibidem, 09.08.2017, 1, VI; ibidem, 28.06.2018, 1, VI; *El:* Vievininkai, 16.08.2021, 1 ☉, APi; *Ign:* Ažušilės kraštovaizdžio draustinis, 07.09.2017, 1, RF; *Jona:* Gaižiūnų miškas, 11.08.2015, 1, VI; *Joni:* Bariūnai, 27.07.2005, 1, RB; *Jurb:* Smalininkai, 12.06.1962, 1, LAAst; Raudonė, 16.07.2002, 1, LAAst; *K.R.:* Griešių miškas, 14.06.2016, 1, RF; Jūrės miškas, 10.08.1956, 1, SP; Kazlų Rūda, 05-18.08.1965, 5, EG; Kurakampio miškas, 18.06.2016, 1, VT; Višakio Rūda, –.08.1957, 1, SP; *Kaiš:* Kruonis, 24.07.1976, 1, AM; Strošiūnų miškas, 02.08.2007, 1, DSt; ibidem, 13.07.2008, 1, DSt; Tarpumiškis, 31.07.2008, 1, VB; Triliškės, 18.07.2007, 1, DSt; Žiezmariai, –.07.1963, 1, LAAst; *Kal:* Orija, 28.06.2020, 1, VP; *Kau:* Kaunas (Aukštoji Panemunė), 08.07.1925, 3, AP; Braziūkai, 15.07.2017, 1, VT; ibidem, 17.06.2019, 20, VT; ibidem, 03–20.07.2019, 3, VT; ibidem, 18.08.2019, 1, VT; ibidem, 03.09.2020, 1, VT; ibidem, 11.09.2021, 1, VT; Dievogala (Palankiai), 11.07.1934, 1, PRè; ibidem, 09.08.1935, 1, PRè; ibidem, 26.06.1936, 1, PRè; ibidem, 02.07.1936, 1, PRè; Dubravos miškas, 23.06.1954, 1, SP; ibidem, 10.07.1983, 1, RF; ibidem, 01.08.1984, 1, RF; ibidem, 29.06.1992, 1, RF; ibidem, 14.07.1998,

- 1, RF; *ibidem*, 03.07.1999, 1 RF; Ežerėlis, 09–20.07.1929, 2, AP; Jiesios kraštovaizdžio draustinis, 08.07.1983, 1, RF; Karmėlavos miškas, –.06.1961, LAAst; Kaunas, 18.09.1929, 1, AP; Kulautuva, –.07.1956, 1, LAAst; Lampėdžiai, 03.07.2020, 1 ☉, JŽ; miškas Papiškinė, 10.07.2018, 9, VT; Raudondvaris, 04.07.1963, 1, LAAst; *Kėd*: Lančiūnava, –.09.1961, 1, SP; *Klai*: Klaipėda, 11.06.2007, 1, DSt; *ibidem*, 19.08.2020, 1 ☉, VAB; Smiltynė, 09–11.07.1984, 3, SK; *ibidem*, 06–12.07.1985, 3, SK; *ibidem*, 29–30.06.2007, 2, DSt; *ibidem*, 30.07.2007, 1, VA; *Mar*: Marijampolė, 13.07.1985, 1, RF; *Mol*: Braškiškės, 04.08.2020, 1 ☉, IS; miškas Gojus, 30–31.07.1969, 5, EG; *ibidem*, 03–10.08.1969, 5, EG; Molėtai, 30.07.1963, 1, EG; *ibidem*, 06.08.1964, 1, EG; *ibidem*, 10–16.08.1973, 3, EG; *ibidem*, 22–25.07.1977, 3, EG; *ibidem*, 19.07.1979, 1, EG; *ibidem*, 16.08.1980, 2, EG; *ibidem*, 15.08.1981, 2, EG; Pušynai, 08.08.2020, 1 ☉, VKI; Rudesos miškas, 10–20.08.1966, 10, EG; Siesarčio miškas, 17.06.2018, 1 ☉, GM; *Ner*: Alksnynės kraštovaizdžio draustinis, 23.07.2013, 1, RF; Juodkrantė, 07–12.08.1986, 6, RF; *ibidem*, 06.07.2005, 1, RF; *ibidem*, 23.06.2016, 1 ☉, TT; *ibidem*, 11.09.2016, 1 ☉, TT; *ibidem*, 10–14.06.2018, 2 ☉, TT; *ibidem*, 30.07.2021, 1, VT; Karvaičiai, 19.07.2020, 1 ☉, BB; Nida, –.06.1982, 1, RF; Preila, 17.07.2021, 1 ☉, KK; *Pak*: Lauksodis, –.08.1960, 1, LAAst; *Pal*: Palanga, –.06.1926, 1, AP; *Pan*: Beržynė, 03.08.2020, 1 ☉, RKu; Raguvos miškas, –.09.1961, 1, LAAst; *Pas*: Pasvalys, 20.07.1962, 1, LAAst; Rinkūnų miškas, 17.07.2006, 1, VB; *Plu*: Platečiai, –.07.1963, 1 LAAst; *Prie*: Druskų miškas, –.07.1962, LAAst; Norkūnai, 28.06.2020, 1 ☉, TPo; Stakliškės, –.08.1960, 1, LAAst; Sundakų miškas, 25.06.2019, 1 ☉, KV; *Rad*: Baisogala, –.07.1962, 1, LAAst; *Ras*: Paliepių miškas, –.07.1963, 1, LAAst; *Rok*: Juodupė, 03.07.1926, 1, AP; *Šak*: Baltkojų miškas, 10.06.1960, 1, SP; Jadagoniai, 22.06.1999, 1, LAAst; miškas Juškinė, 12.07.2008, 1, RF; *ibidem*, 17.07.2009, 1, RF; *ibidem*, 17.07.2013, 1, RF; *ibidem*, 27.06.2021, 7 imago, 4 pupae, RF; Lekėčiai, 08–14.06.1998, 1, RF; *ibidem*, 28.06–04.07.1999, 1, RF; Sudargo miškas, 19.07.2020, 1 ☉, LSt; Šakiai, 10.07.1971, 1, EG; *Šal*: Paupis, 10.08.19, 1 ☉, DG; *Širv*: Jakubonys, 28.08.2001, 1, LAAst; Kernavės miškas, 26.07.2020, 1 ☉, LMi; Pajuodžiai, 29.08.2019, 1 ☉, AJu; Puorių miškas, 25.06.2021, 1 ☉, JJ; *Šven*: Labanoras, 12.07.1994, RP; Labanoro giria, 29.06.2020, 1 ☉, miškas Baranava, 03–09.08.2020, 2 ☉, GMr; Sariai, 14.06.2021, 1 ☉, obs. unknown; Sliūzai, 24.07.2020, ☉, col. unknown; Žukaučižna, 29.06.2020, 1 ☉, GPč; *Tau*: Laumenų miškas, –.07.1963, 1, LAAst; Pasalupis, 25.07.2013, 1 ☉, GS; *Trak*: Aukštadvaris, –.09.1961, LAAst; *ibidem*, –.07.1963, 1 LAAst; Ropėjų miškas, 03.07.2005, 1 ☉, TT; Spindžiaus miškas, 26.07.2021, 1 ☉, ŠP; *Ute*: Paeisetės II miškas, 04.07.2020, 1 ☉, EMi; Rūgšteliškis, 17.07.2021, 1 ☉, IG; *Var*: Biekšios, 02.08.2020, 1 ☉, TPo; Biniūnai I (Baudzieriškis), 24.06.1938, 1, AP; *ibidem*, 07.07.1938, 6, AP; Čepkelių valstybinis gamtinis rezervatas, 25.06.1985, 1, RF; Darželių miškas, 20.07.2019, 1 ☉, RGA; Grybaulios miškas, 07.08.2011, 1, RF; Kabeliai, 27.07.2020, 1 ☉, KK; Latežeris, 01–10.08.1964, 15, EG; Marcinkonys, 30.06.2019, 1 ☉, GM; *ibidem*, 25.07.2021, 1 ☉, MA; Margionys, 10–13.08.1971, 4, EG; *ibidem*, 27–29.07.1978, 4, EG; Paskroblio miškas, 24.08.2017, 1, RF; Purplių miškas, 22.06.2019, 1 ☉, MR; Puvočiai, 25.07.2019, 1, VI; Razumnos miškas, 16.07.2020, 1 ☉, MJ; Užuožerės miškas, 22.08.2020, 1 ☉, AS; Vainabalio miškas, 03.09.2018, 1 ☉, TG; Varėna, 05.08.1975, 1, EG; Žiūrai, 15.07.2020, 1, AS; *Viln*: Bezdonys, 29.07.2020, 1 ☉, JRS; Maišiagala (Kalniškės), 14.06.2002, 1, PI; Kiemeliai, 26.07.2015, 1 ☉, AN; Lavoriškės (Paežeriai), 22.07.2016, 1 ☉, RA; Pikeliškių miškas, 10.07.1983, 1, ZP; Raudondvario miškas, 19.08.2020, 1 ☉, Verkių miškas, 25.07.2016, 1 ☉, TT; NA; Vyteniškių miškas, 18.08.2017, 1 ☉, ŽP; Zujūnai (Geležiai), 24.07.2020, 1 ☉, SSo; *Zar*: Antazavė, 20.07.2021, 1 ☉, GPe; Maniuliškės, 06.07.2021, 1 ☉, obs. unknown; Zarasai, –.07.1962, 1, SP; **KR**: *Bagr*: 3 km N Mamonovo, 01.08.1993, 1, VA; Ladygino, 16.08.2011, 1 ☉, VA; 1 km W Kamenka, 15.06.2019, 1 ☉, VA; Ladushkin, 18.07.2020, 1 ☉, AS; *Balt*: 10 km SW Kosa,

01.08.2021, 1 ☉, KP; *Gur*: 2 km W Kalinin-grad, 11.08.2021, 1 ☉, DGu; *Kras*: Dolzhan-skoe, 28.06.1997, 1, VA; ibidem, 07.07.1999, 1, NM; ibidem, 14.06.2018, 2, VR; *Slav*: Gastellovo, 29.06–13.07.2015, 2, DA; *Svet*: Svetlogorsk, 01.09.2020, 1 ☉, MF; *Zel*: 23 km of the Curo-nian Spit, 30.07.2010, light trap, 1, ASh; ibi-dem, 06.07.2011, 1, ASh; 2 km NE Kostrovo, 05.07.2016, 1 ☉, VA; ibidem, 12.09.2017, 1 ☉, VA; 1 km E Vzmorė, 07.07.2017, 1 ☉, VA; Rybachii, 12.07.2019, 1 ☉, VA; 2 km NE Les-noe, 28.07.2020, 1 ☉, MF; 1 km N Kremnevo, 12.07.2020, 1 ☉, VA; 5 km NE Zelenogradsk, 12.07.2021, 1 ☉, MF.

Published local records. LT: This species is ranked as very common and noted as distributed throughout the country by Pileckis, Monsevičius (1997). It was reported as com-mon and numerous in the environs of Vilnius during the period of 1922–1938 by Zawadzki (1937); Staniulisówna (1939). However, the ac-tual faunistic information was given on the oc-currence of this species only in Švenčionys (Mazurowa, Mazur, 1939), Varėna (Pileckis, 1958); Rokiškis, Kaunas (Ferenca 2006), Klaipėda, Vilnius (Ostrauskas, Tamutis, 2012), Elektrėnai, Ignalina and Jurbarkas (Ostrauskas, 2020) districts. **KR:** this species was reported by Bercio, Folwaczny (1979) as frequent in *Pinus*-dominated forests in the territory; Alekseev, 2006; Alekseev, 2007.

General distribution. It is widely distrib-uted throughout the Palearctic region from southern Iberia and Great Britain to the Far East, Korea, Japan; northwards, it goes as far as 63°N in Scandinavia and 62°N (Pomoz) in European Russia. The southernmost records of this species are known in Morocco, Greece, Turkey, Caucasus, Kazakhstan, Mongolia, and China.

Notes on biology. The main host plant for the species is the pine; the larvae rarely inhabit *Picea*, *Abies* or *Larix*. According to Bily, Mehl (1989), females lay their eggs in older stumps or basal part of dead trees. However, Cherepanov (1979) observed females laying eggs in shal-low roots under ground surface. Larvae feed in the moist sapwood tunnelling their galleries

along tissues and pupate in May–June after two or three hibernations. Adults emerge in June–July and are active till the second decade of September. They are preferably nocturnal, but can be active in daytime, after midday; they are attracted to artificial light and especially by the smell of pine resin. The life cycle lasts two to three, rarely four years.

Local occurrence and phenology. The spe-cies is common in the *Pinus sylvestris*-dominat-ed forests in LT, but it is relatively rare in west-ern part of LT. Recorded from 50 districts in the region (Fig. 3); the maximum of observed adults was in July, the earliest observation on 10 June, the latest on 18 September.

Comments. IUCN Red List Category (EU) – LC.

Tribe Tetropiini Seidlitz, 1891

Genus *Tetropium* Kirby, 1837

T. castaneum (Linnaeus, 1758)

Examined actual data. LT: *Anyk*: Burbiškis, 16.07.1985, 6, SK; Gečionių miškas, 01.06.2013, 1 ☉, GS; *Drus*: Druskininkai, 15.06.1995, 1, VT; *Jona*: Užusaliai, 29.05.2016, 1, GS; *Joni*: Bariūnai, 21–30.05.1999, 2, RB; ibidem, 31.05.2003, 1, RB; ibidem, 10.06.2004, 1, RB; Daunoravos miškas, 20.08.2021, 1 ☉, KKr; Girdžiūnai, 28.05.2002, 1, RB; Plikiškiai, 10.06.1999, 1, RB; ibidem, 16.05.2000, 3, RB; Satkūnai, 28.05.1999, 1, RB; Skakai, 01.06.2004, 1, JD; ibidem, 12.06.2004, 1, RB; *Jurb*: Leipgirių miškas (Kalveliai forest directorate), 28.05.1978, 1, BJ; ibidem, 15–28.05. 1979, 9, BJ; ibidem, 19.06.1979, 14, BJ; *K.R.*: Braziūku miškas, 07.04.2020, in wood of dead *Picea abies*, 10 (larvae), VT; *Kaiš*: Kruonis, 09.07.1979, 1, AM; Pravieniškės, 20.06.2006, 1, AM; *Kau*: Dubravos miškas, –.06.1955, 1, SP; ibidem, 25.06.1959, 1, SP; ibidem, 29.06.1969, 1, EG; ibidem, 19.06.1982, 2, RF; ibidem, 11.07.1982, RF; ibidem, 26.05.1985, 1, RF; ibidem, 08.06.1986, 1, RF; ibidem, 30.06.1991, 1, RF; ibidem, 28.04.1997, 1, VT; ibidem, 09.01.2020, under bark of dead *Picea abies*, 10 (larvae), VT; Kačerginės miškas, 09.01.2022, numerous gal-leries in *Picea abies*, VT; Karmėlava, 13.05.2008, 1, VI; Kaunas, 14.03.1959, 1, SP; ibidem,

03.06.1971, 1, RG; *ibidem*, 14.05.1983, 2, RF; Kaunas (Klebonišio miškas), –.07.1955, 1, SP; Kaunas (Panemunės šilo parkas), 01.07.1982, 1, RF; Lomankos miškas, 31.05.2014, 1, VI; Novaraistis, 06.06.2000, 1, RF; Pajiesio miškas, 14.05.1999, 1, VI; Pilėnų miškas, 19.05.2015, 1, VI; *Kup*: Mirabelio miškas, 23.06.1991, 1, RP; *Maž*: Plinkšių miškas, 10.06.2009, 1 ☉, DM; *Ner*: Juodkrantė, 31.05.2016, 1 ☉, TT; *Pag*: Pagėgių miškas, 24.05.2008, VU; *Pas*: miškas Didieji Grūžiai, 15.06.2005, 1, VB; *ibidem*, 02.06.2006, 3, VB; Joniškėlis, –.07.1963, 1, SP; *Plu*: Plateliai, 15.06.2006, 1, GŠ; *Ras*: Viduklė forest directorate, –.06.1962, 1, SP; *Šak*: miškas Juškinė, 27.05.2006, 2, RF; *ibidem*, 17.05.2008, 1, RF; *ibidem*, 24.05.2015, 1, RF; Šakiai, 04.07.1970, 1, RG; *Šven*: Laukagalis, 16.06.2018, 1 ☉, GM; Žaliašilio miškas, 25.05.2001, 1, PI; *Tau*: Eičių miškas, 20–21.05.1993, 3, RF; Šilinės miškas, 15.06.2021, 1 ☉, BN; *Ukm*: miškas Trakas, 01.06.2021, 1 ☉, JK; Šaltupio miškas, 27.05.2008, 1, TP; *Ute*: Minčios miškas, 29.05.–19.06.2013, ‘window’ trap, 1, VT; *ibidem*, 19.06.–25.07.2013, ‘window’ trap, 1, VT; *Var*: Jablana-vas, 31.07.1998, 1, AG; *Vilk*: Vištytgirio miškas, 30.05.2002, 1, RF; *Viln*: Maišiagala (Kalniškės), 13.05.2006, 1, PI; *ibidem*, 17.06.2006, 1, PI; *ibidem*, 15.06.2007, 1, PI; *ibidem*, 15.04.2014, 1, PI; *ibidem*, 17.05.2014, 1, PI; *ibidem*, 25.05.2015, 1, PI; Vilnius, 10.04.1938, 1, AP. **KR**: *Bagr*: 1 km W Bogatovo, 24.05.1998, 1, VA; Novoselovo environs, 24.05.2018, 1, VR; 2 km S Novomoskovskoe, 01.06.2019, 1, VA; 3 km S Medovoe, 29.05.2020, 2, VA; *Cher*: 10 km NE Chenriakhovsk, 11.06.1994, 2, VA; *ibidem*, 09.06.2021, 3, AD; *Gvar*: 4 km SE Ozerki, 10.06.2021, 5, AD; *Nem*: Shepetovka environs, 09.06.2021, 1, VR; *Nest*: 1 km NE Krasnolesė, 08.06.2008, 1, VA (observed); Krasnolesė environs, 24.06.2013, 2, VR; *Slav*: Gastellovo, 15.06.2015, 1, AD; Sosniaki environs, 17.06.2015, 1, AD; Mokhovoe environs, 16.06.2016, 2, AD; *Svet*: 1 km W Svetlogorsk, 02.06.2003, 1, VA.

Published local records. **LT**: This species was reported as common in the environs of Vilnius in the period of 1922–1934 by Zawadzki (1937). The actual faunistic information is given on the occurrence of this species in Aly-

tus, Kaunas (Tamutis, Zolubas, 2001, Ferenc, 2006), Klaipėda, Lazdijai (Ostrauskas, Tamutis, 2012) and Vilnius (Staniulisová, 1939) districts. **KR**: Lentz, 1879 (*luridum* L.); Bercio, Folwaczny, 1979; Alekseev, 2007.

General distribution. The species is distributed throughout the Palaearctic region from Iberia and Great Britain to the Far East, Korean peninsula, Mongolia, the eastern provinces of China, and Japan. The species is widely distributed in Europe, from the coast of the Mediterranean Sea to 69° N in Scandinavia and 64° N in European Russia. It is also known in Anatolia and Caucasus.

Notes on biology. The larvae of this species develop in a bark of weakened, dying, and recently dead, rarely in fallen stems of coniferous. Most preferred hosts plants are spruce and fir, but also can inhabit pine and larch. Usually, ingrown larvae penetrate into the wood and pupate in spring in longitudinal pupal cells, rarely in bark. Adults usually emerge in May and June; they are usually nocturnal. The life cycle lasts one or two years.

Local occurrence and phenology. The species is widely distributed and common in the *Picea abies*-dominated forests in the region; however, the adults are not frequently observed. Recorded from 35 districts in the region (Fig. 3); the maximum of observed adults was in May–June, the earliest observation on 10 April, the latest on 20 August.

Comments. This species is considered important secondary pests of *Picea* spp. and *Pinus* spp. across their distribution range (Kolk, 1996; Evans et al., 2004; Izhevskii et al., 2005; Haack, 2017). IUCN Red List Category (EU) – LC.

T. fuscum (Fabricius, 1787).

Examined actual data. **LT**: *Anyk*: Gečionių miškas, 01.06.2013, 1 ☉, GS; *Ign*: Ažvinčių giria, 22.05–12.06.2020, ‘window’ trap, 1, VT; *Joni*: Bariūnai, 10.06.2006, 1, RB; Girdžiūnai, 28.07.2003, 1, RB; *Jurb*: Leipgirių miškas (Kalveliai forest directorate), 19.06.1979, 3, BJ; *ibidem*, 03.07.1979, 2, BJ; *ibidem*, 31.07.1979, 2, BJ; *ibidem*, 01.08.1079, 1, BJ; *Kaiš*: Kruonis,

–.1998, 1, AM; *K.R.*: Braziūkų miškas, 15.07.2020, 1, VT; *Kau.*: Dubravos miškas, 20.06.1982, 1, RF; *ibidem*, 25.07.1982, 1, RF; *ibidem*, 01.05.1990, 1, RF; *ibidem*, 28.04.1997, 1, PZ; Gervėnupis, 20.06.2017, 1 GS; Kamšos miškas, –.05.2008, 1, LAast; Neveronys, 24.05.2001, 1, VI; Pajiesio miškas, 14.05.1999, 1, RF; Pakarklės miškas, 12.04.2021, under bark of *Picea abies*, 1 larva (adult was reared in 22.04.2021), RF; *Klai.*: Melnragė, 25.06.1994, 1, SK; *Kup.*: Vosniūnų miškas, 26.05.1995, 1, RP; *Ner.*: Juodkrantė, 09.06.2017, 1, RF; *Pag.*: Pagėgių miškas, 24.05.2008, 1, VU; *Šalč.*: Šalčininkai, 24.08.1965, 1, SP; *Šilu.*: Šilutė, 10.05.2014, 1 ☉, OV; *Ukm.*: Lėno miškas, 04.06.1996, 1, RF; *Vilk.*: miškas Vištytgiris, 31.05.2002, 1, RF; *Viln.*: Vilnius (Pašilaičiai), 10.06.2009, 1 ☉, DB. **KR.**: *Bagr.*: 3 km S Medovoe, 29.05.2020, 1, VA; *Gvar.*: 4 km SE Ozerki, 10.06.2021, 2, AD; *Kras.*: Dolzhanskoe environs, 09.06.2015, 2, VR; *Nest.*: Krasnolesė environs, 24.06.2013, 1, VR; *Pravd.*: Novobobruiskoe environs, 13.06.2016, 4, AD; *Slav.*: Gastellovo environs, 15.06.2015, 3, AD; *Zapovednoe*, 16.06.2016, 1, AD; *Zel.*: Riabinovka, 20.03.2001, under bark of *Picea abies*, 2 larvae (adult was reared 05.04.2001), 2, VA; 4 km NE Zelenogradsk, 21.05–13.06.2012, pitfall trap near *Picea abies*, 1, VA; Pereslavskoe environs (Galtgarben), 03.06.2015, 1, VA; 2 km NE Kostrovo, 30.05.2016, 1, VA; Kremnevo, 27.06.2021, 1 ☉, VA.

Published local records. **LT:** This species was reported as rare in the environs of Vilnius in the period of 1922–1934 by Zawadzki (1937). The eastern part of LT as distribution area of *T. fuscum* in the country was noted also by Pileckis, Monsevičius (1997). The actual faunistic information is given on the occurrence of this species in Alytus (Tamutis, Zolubas, 2001; Ivinskis et al., 2009), Kaunas (Tamutis, Zolubas, 2001), Klaipėda, Lazdijai (Ostrauskas, Tamutis, 2012), Ignalina (Pileckis, 1963), and Vilnius (Staniulisówna, 1939; Ivinskis et al., 2009) districts. **KR:** Lentz, 1879; Bercio, Folwaczny, 1979; Alekseev, 2007.

General distribution. The species is distributed mainly in Europe, from Great Britain to the Urals; northwards, its distribution range

reaches 68° N in Scandinavia and 63° N in European Russia. The southern border of its distribution range goes through northern France, Italy, Slovenia, Croatia, Serbia, Bulgaria, and southern part of European Russia; also, this species is known from Turkey, the Caucasus (Sakartvelo) and the European part of Kazakhstan; introduced in North America (Canada).

Notes on biology. The life cycle of this species is similar to *T. castaneum*. Larvae develop in the inner side of bark of recently dead, or weakened, rarely still living coniferous trees. The spruce is the most preferred host. Pupation takes place in spring, usually in wood, rarely in the inner side of thick bark. Adults emerge mostly in May and June; they are usually nocturnal. The life cycle lasts one or two years.

Local occurrence and phenology. It is widely distributed, but much less frequently than *T. castaneus*. Recorded from 27 districts in the region (Fig. 3); the maximum of observed adults was in May–June, the earliest observation on 28 April, the latest on 24 August.

Comments. So far, there is no firm opinion on the status of *Tetropium aquilonium* Plavilstshikov 1940 as a valid species, the distribution range of which overlaps with that of *T. fuscum* in north-eastern Europe. As noted by Danilevsky (2014), the taxon most probably is only a variation of highly varied *T. fuscum*. This species is considered as important secondary pests of *Picea* spp. and *Pinus* spp. across their distribution range (Kolk, 1996; Evans et al., 2004; Izhevskii et al., 2005; Haack, 2017). IUCN Red List Category (EU) – LC.

T. gabrieli Weise, 1905

Examined actual data. **LT:** *Kėd.*: Laivėlių miškas, 10.05–05.06.2020, sticky trap on larch stem, 1, AG; *Ras.*: miškas Barsukynė 10.05–05.06.2020, sticky trap on larch stem, 1, AG (KZM). **KR:** No material is available.

Published local records. **LT:** Recently recorded in Kėdainiai and Raseiniai districts (Lynikienė et al. 2021). **KR:** No records, Alekseev (2007) supposed ‘findings are possible’.

General distribution. The distributional range of *T. gabrieli* expands from Ireland in

the west to Belarus (Aleksandrowicz, Tsinkiewich, 2006) and Ukraine in the east and from Sweden (58°) (Lindelöw et al., 2015) in the north to south-eastern France (Fuchs, 2010), Switzerland, Austria, and Hungary.

Notes on biology. This species is regarded as nearly exclusively monophagous on *Larix* spp. trees, but occasionally it can inhabit *Pinus* and *Picea*. The larvae make galleries in the inner side of bark of recently dead trees. They pupate in spring, usually in the chambers made in the bark, rarely in shallow wood. Generally, the generation lasts one year, but Crawshay (1907) and Duffy (1953) stated that high temperatures can lead to a shorter generation time and the emergence of a second generation in the same year. However, this statement was not proved by Sláma (1998) who investigated the larvae in laboratory. Adults emerge usually in May and June; they are usually nocturnal (Sláma 1998).

Local occurrence and phenology. The species is insufficiently known and probably rare

in the region; it was found in two districts in LT. The occurrence in KR is not confirmed by actual data, but the species is registered (Gutowski et al., 2011) in the Romincka Forest in northernmost Poland on the boarder with KR.

Comments. The morphological identity between *T. gabrieli* and *T. gracilicorne* Reitter, 1889 is a very weak, therefore the specificity (taxonomical status) of these species (names) is still questionable (Danilevsky, 2022b). Moreover, some authors tend to propose synonymy *T. gracilicorne* = *T. gabrieli* (Jeniš, 2001; Tatarinova et al., 2007; Danilevsky, 2014).

DISCUSSION

More than 600 actual records (542 in LT and 66 in KR) of Spondylidinae were analysed altogether and the reliable presence of seven (seven for LT and five for KR) species in the fauna of the region was confirmed (Table). We recognised five species: *Arhopalus rusticus*, *Asemum striatum*, *Spondylis buprestoides*, *Tetropium castaneum*,

Table 1. List of Spondylidinae species and characteristics of its distribution in the south-eastern Baltic region and neighbouring regions according to: Dunksis, 2019; Mapa Bioróżnorodności, 2020; Bílý, Mehl, 1989. PL – northeastern (southwards to 52°N, westwards to 18°E) part of Poland, BY – western (southwards to 52°N, eastwards to 30°E) part of Belarus, LV – Latvia, SV – southern (northwards to 60°N) part of Sweden, KR – Kaliningrad Region, LT – Lithuania; status of distribution and rarity: w-a – widely distributed, abundant; w-r – widely distributed, rare; l-r – locally distributed, rare; (?) – unconfirmed data; ♣ – possible in the territory. Horotypes are designated following Gorodkov (1984, 1992) and partly modified by Tatarinova et al. (2016): Sibero-European-Far Eastern (SIE-FE), TransEurasian – Temperate (TEA-T), European (EUR), Transpalaeartic (PAL), Holarctic (OLA)

No.	Species	Distribution in neighbouring regions				Status of distribution and rarity		Horotypes (for species)
		PL	BY	LV	SV	KR	LT	
1.	<i>Arhopalus fesus</i> (Mulsant)	+	+	+	+	?	l-r	PAL
2.	<i>Arhopalus rusticus</i> (L.)	+	+	+	+	w-a	w-a	PAL
3.	<i>Asemum striatum</i> (L.)	+	+	+	+	w-r	w-a	OLA
4.	<i>Asemum t. tenuicorne</i> Kraatz	+	-	-	+	♣	♣	EUR
5.	<i>Nothorhina punctata</i> (F.)	+	+	+	+	♣	?	TEA-T
6.	<i>Spondylis buprestoides</i> (L.)	+	+	+	+	w-a	w-a	PAL
7.	<i>Tetropium castaneum</i> (L.)	+	+	+	+	w-a	w-a	SIE -FE
8.	<i>Tetropium fuscum</i> (L.)	+	+	+	+	w-a	w-a	OLA
9.	<i>Tetropium gabrieli</i> (F.)	+	+	+	+	♣	l-r	EUR
		9	8	8	9	5	7	

and *T. fuscum* as widely distributed in the region. However, *Asemum striatum* occurs more sporadically in KR, probably due to higher fragmentation of *Pinus*-dominated forests in this region. This species is widely distributed in neighbouring countries, but not evenly frequent. For example, it is considered common and sometimes appears in large numbers in pine forests in Poland (Gutowski, Kurzawa, 2019), however, it declined and is listed among protected species in Voronezh region (Russia) (Negrobov 2011). We recognized two species, *Arhopalus fesus* and *Tetropium gabrieli*, as locally distributed and rare species in LT. These species were not confirmed for KR yet. The propositions in previous papers, that *A. fesus* was quite common in the region in the past (Zawadzki, 1937; Bercio, Folwaczny, 1979), suggest a sufficient decline of populations of this species at present. The same trend was observed in Sweden by Lindhe et al. (2010).

The situation on the general distribution of *T. gabrieli* in the region remains unclear. Recently, this species was registered in LT, but this fact does not yet prove the initial invasion of this beetle. *T. gabrieli* is monophagous on larch and, apparently, host-limited in distribution. The isolated occurrence in the central part of LT needs to be studied in detail and the search of the species in suitable habitats in the region should be continued.

Additional interesting subject of study can be the species status of *T. gabrieli* and the probable synonymy of this species with *T. gracilicorne*. Essential morphological or natural history differences between these species are apparently absent (Jeniš, 2001; Tatarinova et al., 2007; Danilevski, 2014). Taking into account the separate species status of the 'Russian' larch (*Larix archangelica*, distributed in the north-eastern part of eastern Europe, the Urals, and a part of west Siberia) and the larch from central European mountains (*Larix decidua*) (Kozhin, Sennikov, 2016), different host trees can be suggested for these geographically isolated sibling species or subspecies. The Holocene fragmentation of the larch distribution range in Europe led to the fragmentation of *T. gracilicorne-gabrieli* distribution; however, the larch distribution range

was also not stable in postglacial period and varied in response to climate changes (Këppen, 1885; Wagner et al., 2015). Modern genetic or molecular studies could resolve the intriguing question of the actual position and relationship within *T. gracilicorne-gabrieli* species and the origin of the populations in the south-eastern Baltic region.

The actual presence of *Nothorhina punctata* in the studied territory previously reported in the literature remains dubious in the region due to the lack of voucher material. This species is considered the rarest longhorn beetle in Poland (Miłkowski, Tatur-Dytkowski, 2021), and as endangered species is included in the Polish Red Data Book (Gutowski, 2004). At the same time, increased attention to this species and the ability to recognise the traces of its activity resulted in a numerous record in Latvia in last two decades (Dunskis, 2019).

The presence of one additional species, *Asemum t. tenuicorne*, is quite reliable in the region, geographically situated between two known localities of this species in northern Europe, Gotska Sandön in Sweden and Białowieża Primeval Forest in Poland (Gutowski, Kurzawa, 2019).

The possible reasons of the mentioned faunal differences could be the lack of systemic and careful collecting activity in the eastern and south-eastern parts of KR and different practices of the forest management and usage in the studied territories (a forest with old coniferous trees is extremely rare in KR).

The decline of the entomofauna has dramatic rates in present time and may lead to the extinction of 40% of the world's insect species over the next few decades (Sánchez-Bayo, Wyckhuys, 2019). The affected insect groups include not only specialists that occupy particular ecological niches, but also many common and generalist species. Concurrently, the abundance of a small number of species is increasing; these are all adaptable, generalist species that are occupying the vacant niches left by the declining ones (Sánchez-Bayo, Wyckhuys, 2019). Further monitoring of the occurrence and status of species populations of longhorn beetles (first of all Spondylidinae)

in conifer forests of the south-eastern Baltic region are important in order to observe and note faunal and ecological changes in the habitats. The provided data shows the actual faunal composition of the discussed beetle group and can be used as primary basis for further observations, comparisons, and recommendations concerning strategies of forest management and nature protection in the region.

ACKNOWLEDGEMENTS

We are grateful to Dr Mikhail L. Danilevsky, Dr Dmitry Telnov, and Mr Jacek Kurszawa for constructive discussions, assistance with identifications of beetles, literature, and useful comments on this study. We would like to thank Dr Povilas Ivinskis, Mr Rimantas Butvila, Aleksandras Meržijevskis, Anna Drotikova and Viktorija Rozhina, who loaned their material for examination. We are grateful to all collectors and observers who shared their material and observations for analysis.

Received 27 December 2021

Accepted 23 January 2022

References

1. Aleksandrowicz OR, Lopatin IK, Pisanenko AD, Tsinkewich VA, Snitko SM. A catalogue of Coleoptera (Insecta) of Belarus. Minsk: Fund of Fundamental Investigations of the Republic of Belarus: Minsk; 1996.
2. Aleksandrowicz O, Tsinkewich V. Aktualny stan poznania chrząszczy (Insecta: Coleoptera) białoruskiej części Puszczy Białowieskiej. In: Krzyściak-Kosińska R, editor. Nauka – Przyroda – Człowiek. Konferencja Jubileuszowa z okazji 85-lecia Białowieskiego Parku Narodowego. 9–10 czerwca 2006; Białowieża, Poland; 2006. p. 83–103. Polish.
3. Alekseev VI, Sakhnov NI. Fauna i nekotorye ekologicheskie osobennosti zhukov-drovosekov (Coleoptera: Cerambycidae) Kaliningradskoi oblasti. In: Bryushinkin VN, Dedkov VP, Beloglazov SM, Funtikov VA, Rybakova GA, editors. Problemy biologicheskikh i khimicheskikh nauk: materialy postojannykh nauchnykh seminarov. Kaliningrad: Kaliningradskij Gosudarstvennyj universitet; 2002. p. 6–10. Russian.
4. Alekseev VI. Materialy po faune zhestkokrylykh xilo-micetobiontov (Coleoptera) Kurshskoi kosy. In: Rylkov OV, Zhukovskaja IP, editors. Problemy izychenija i ohrany prirodnogo i kulturnogo parka 'Kurshskaia kosa' Vypusk 4. Kaliningrad: Rossijskij Gosudarstvennyj universitet imeni I. Kanta; 2006. p. 28–47. Russian.
5. Alekseev VI. Longhorn beetles (Coleoptera: Cerambycidae) of Kaliningrad region. Acta Biol Univ Daugavpiliensis. 2007; 7: 37–62.
6. Alekseev VI. Novye materialy po faune otriada zhestkokrylykh (Coleoptera) Kurshskoi kosy. In: Rylkov OV, Zhukovskaja IP, editors. Problemy izychenija i ohrany prirodnogo i kulturnogo parka 'Kurshskaia kosa' Vypusk 6. Kaliningrad: Rossijski gosudarstvenny universitet imeni I. Kanta; 2008. p. 34–61. Russian.
7. Alekseev VI. Bazovy spisok vidov zhukov (Insecta: Coleoptera) Kurshskoj kosy. In: Rylkov OV, Zhukovskaja IP, editors. Problemy izychenija i ohrany prirodnogo i kulturnogo parka 'Kurshskaia kosa' Vypusk 10. Kaliningrad: Baltijskij Federalny universitet imeni I. Kanta; 2014. p. 53–78. Russian.
8. Alekseev VI, Shapoval AP. Vidovoi i kolichestvenny sostav zhestkokrylykh (Coleoptera), poimannykh na svet v 2019 g. v natsional'nom parke 'Kurshskaia kosa' (Rossia). Zapovidna sprava v Ukraini. 2011; 17: 76–84.
9. Alekseev VI, Shapoval AP. Vidovoi i kolichestvenny sostav zhestkokrylykh (Coleoptera), poimannykh svetovoi lovushkoi na Kurshskoi kose v 2011 godu. In: Rylkov OV, Zhukovskaja IP, editors. Problemy izychenija i ohrany prirodnogo i kulturnogo parka 'Kurshskaia kosa' Vypusk 8. Kaliningrad: Baltijskij Federalny universitet imeni I. Kanta; 2012. p. 37–55. Russian.
10. Alekseev VI, Shapoval AP. Beetles (Insecta, Coleoptera), sampled with use of light trap on

- the Curonian Spit: the materials of the sixth season. *Acta Biol Sibirica*. 2019; 5: 68–82.
11. Alekseev VI, Shapoval AP. Materialy po otriadu zhestkokrylykh (Coleoptera) iz svetlovushki na Kurshskoi kose (2015 g.). In: Rylkov OV, Zhukovskaja IP, editors. Problemy izycheniya i ohrany prirodnoho i kulturnogo parka 'Kurshskaia kosa' Vypusk 12. Kaliningrad: Baltijskij Federalny universitet imeni I. Kanta; 2016. p. 64–83. Russian.
 12. Bercio H, Folwaczny B. Verzeichnis der Käfer Preussens. Fulda: Parzeller & Co; 1979. German.
 13. Bezark LG. Checklist of the Oxypeltidae, Vesperidae, Disteniidae and Cerambycidae (Coleoptera) of the Western Hemisphere. 2021 Edition. Updated through 31 December 2020. Available from: <http://bezbycids.com/bycid-db/wdefault.asp?w=n/> (accessed)
 14. Bily B, Mehl O. Longhorn Beetles (Coleoptera, Cerambycidae) of Fennoscandia and Denmark. (Fauna Entomologica Scandinavica 22). Leiden, New York, København, Köln: E. J. Brill/Scandinavian Science Press Ltd.; 1989.
 15. Bousquet Y, Laplante S, Hammond HEJ, Langor DW. Cerambycidae (Coleoptera) of Canada and Alaska: Identification guide with nomenclatural, taxonomic, distributional, host-plant, and ecological data. Prague: Jan Farkac; 2017.
 16. Burakowski B, Mroczkowski M, Stefańska J. Katalog fauny Polski, Tom 15: Chrząszcze – Coleoptera. Cerambycidae i Bruchidae. Warszawa: Państwowe wydawnictwo naukowe; 1990. Polish.
 17. Cáliz M, Alexander KNA, Nieto A, Dodelin B, Soldati F, Telnov D, Vazquez-Albalade X, Aleksandrowicz O, Audisio P, Istrate P, Jansson N, Legakis A, Liberto A, Makris C, Merkl O, Mugerwa Pettersson R, Schlaghamersky J, Bologna MA, Brustel H, Buse J, Novák V, Purchart L. European Red List of Saproxylid Beetles. IUCN: Belgium; 2018. Available at: <https://portals.iucn.org/library/node/47296>
 18. Cherepanov AI. Usachi Severnoi Azii, tom 1 (Prioninae, Disteniinae, Lepturinae, Asemiinae). Novosibirsk: Izdatel'svo 'Nauka'; 1979. Russian.
 19. Crawshay GA, XI. The Life History of *Tetropium gabrieli*, Ws. = *T. fuscum*, Sharp = *T. crawshayi*, Sharp, etc. *Ecol Entomol*. 1907; 55: 183–212.
 20. Danilevsky ML. Zhuki – usachi (Coleoptera, Cerambycoidea) Rossii i sosednikh stran Chast' 1. Moscow: HSC; 2014. Russian.
 21. Danilevsky ML. Catalogue of Palaearctic Chrysomeloidea (Vesperidae, Disteniidae, Cerambycidae). Version [04/02/2022]. 2022a. Available at: <http://www.cerambycidae.net>
 22. Danilevsky ML. A check-list of Longicorn Beetles (Coleoptera, Cerambycoidea) of Europe. Version [04/02/2022]. Remarks. 2022b. Available at: <http://www.cerambycidae.net>
 23. Demelt v C. Bockkäfer oder Cerambycidae. 1: Biologie mitteleuropäischer Bockkäfer (Col. Cerambycidae) unter besonderer Berücksichtigung der Larven. In: Dahl M, Peus F, editors. Die Tierwelt Deutschlands und der angrenzenden Meeresteile, 52. Jena: Gustav Fisher; 1966. p. 1–115. German.
 24. Duff AG. Beetles of Britain and Ireland, Volume 4. Cerambycidae to Curculionidae. Norfolk: AG Duff Publishing; 2016.
 25. Duffy EAJ. A Monograph of the Immature Stages of British and Imported Timber Beetles (Cerambycidae), First edition. London: the British Museum; 1953.
 26. Dunska A, Barševskis A. Catalogue of longhorn beetles (Coleoptera: Cerambycidae) of Latvia. *Acta Biol Univ Daugavpiliensis*. 2018; 18: 165–98.
 27. Dunska A. Koksngraužu dzimtas (Coleoptera: Cerambycidae) fauna un izplatība Latvijā. Koksngraužu sugu atradņu katalogs [bakalaura darba pielikums]. Daugavpils: Daugavpils University; 2019. Latvian.
 28. Ehnström B, Axelsson R. Insekts gnag i bark och ved. Uppsala: ArtDatabanken, SLU; 2002. Swedish.

29. Evans HF, Moraal LG, Pajares JA. Biology, ecology and economic importance of Buprestidae and Cerambycidae. In: Lieutier K, Day R, Battisti A, Grégoire JC, Evans HF, editors. Bark and Wood Boring Insects in Living Trees in Europe, a Synthesis. Dordrecht: Kluwer Academic; 2004. p. 447–75.
30. Ferenc R. A. Palionio vabalų rinkiniai. In: Ivinskis P, Rimšaitė J, sudarytojai. Entomologas Alfonsas Palionis (1905–1957). Vilnius: Vilniaus Universiteto, Ekologijos institutas; 2006. p. 162–216.
31. Fuchs L. Découverte en Alsace de *Tetropium gabrieli* Weise, 1905 (Coleoptera, Cerambycidae). L'Entomologiste. 2010; 66: 109–10. French.
32. Gutowski JM. Kózkowate (Coleoptera: Cerambycidae) wschodniej części Polski [praca habilitacyjna]. In: Szujecka G, editor. Prace Instytutu Badawczego Leśnictwa, seria A., 811. Warszawa: Instytut Badawczego Leśnictwa; 1995. p. 1–190. Polish.
33. Gutowski JM. *Nothorhina punctata* (Fabricius, 1798). In: Głowianski Z, Nowacki J, editors. Polska Czerwona Księga Zwierząt – Bezkręgowce. Kraków-Poznań: Instytut Ochrony Przyrody PAN, Academia Rolnica im. A. Cieszkowskiego; 2004. p. 144–5. Polish.
34. Gutowski JM, Kurzawa J. New data on the distribution, biology and morphology of *Asemum tenuicorne* Kraatz, 1879 (Coleoptera: Cerambycidae), with new records from Poland. Entomol Fenn. 2019; 30: 57–71.
35. Gutowski JM, Zieliński S, Biwo T. 2011. Longhorn beetles (Coleoptera: Cerambycidae) of Romincka forest. Nat J (Opole). 2011; 44: 145–71.
36. Haack RA. Cerambycid pest in forests and urban trees. In: Wang Q, editor. Cerambycidae of the World Biology and pest management. Boca Raton: CRC Press Taylor & Francis Group; 2017. p. 352–407.
37. Ilić N, Ćurčić S. A checklist of longhorn beetles (Coleoptera: Cerambycidae) of Serbia. Zootaxa. 2015; 4026: 1–97.
38. Ivinskis P, Meržijevskis A, Rimšaitė J. Data on new and rare for the Lithuanian fauna species of Coleoptera. New and rare for Lithuania insect species. 2009; 21: 45–63.
39. Izhevskii SS, Nikitskii NB, Volkov OG, Dolgin MM. Illustrirovannyi spravocnik zhukov-ksilofagov-vreditel'ei lesa i lesomaterialov Rossiiskoi Federatsii. Tula: Grif; 2005. Russian.
40. Jeniš I. Tesarici/Long-horned beetles: Distenidae, Oxypeltidae, Vesperidae, Anioplodermatidae & Cerambycidae I: Vesperidae & Cerambycidae of Europe 1. Zlin: Ateliér Regulus. 2001.
41. Këppen FP. Geograficheskoe raspostranenie hvoinyh dereviev v Evropeiskoi Rossii i na Kavkaze. St Petersburg: Imp. Akademija nauk, 1885. Russian.
42. Kolk A, Starzyk JR. Atlas szkodliwych owadów lesnych. Warsaw: Multico; 1996. Polish.
43. Kozhin MN, Sennikov AN. The Russian larch (*Larix archangelica*, Pinaceae) in the Kola Peninsula. Memo Soc Fauna Flora Fenn. 2016; 92: 79–91.
44. Lentz FL. Catalog der Preussischen Käfer neu bearbeitet. Beiträge zur Naturkunde Preussens. 1879; 4: 1–64. German.
45. Lindelöw Å, Isacson G, Ravn HP, Schroeder M. *Tetropium gabrieli* and *Ips cembrae* (Coleoptera; Cerambycidae and Curculionidae) – invasion of two potential pest species on larch in Sweden. Entomol Tidskr. 2015; 136: 103–12.
46. Lindhe A, Jeppsson T, Ehnström B. Longhorn beetles in Sweden – changes in distribution and abundance over the last two hundred years. Entomol Tidskrift. 2010; 131: 241–508.
47. López A, García J, Demaestri M, Di Iorio O, Magris R. The genus *Arhopalus* Serville, 1834 (Insecta: Coleoptera: Cerambycidae: Asemiinae) in association to *Sirex noctilio* in Argentina. Bol San Veg Plagas. 2008; 34: 529–31.
48. Lundberg S. Den brända skogens skalbaggsfauna i Sverige. Entomol Tidskrift. 1984; 105: 129–41. Swedish.

49. Lynikienė J, Tamutis V, Gedminas A, Marčiulynas A, Menkis A. First report of the larch longhorn (*Tetropium gabrieli* Weise, Coleoptera: Cerambycidae: Spondylidinae) on *Larix* ssp. in Lithuania. *Insects*. 2021; 12: 911. <https://doi.org/10.3390/insects1200911>
50. Mazurowa G, Mazur E. Sprawozdanie z wycieczki koleopterologicznej do województwa wileńskiego w lipcu 1937. Przyczynek do znajomości fauny północnej Polski, Sprawozdanie Komisji Fizjograficznej. 1939; 72: 463–76. Polish.
51. Miłkowski M, Tatur-Dytkowski J. Nowe stonowisko *Nothorhina punctata* (Fabricius, 1798) (Coleoptera: Cerambycidae) w okolicach Radomia. *Wiad Entomol*. 2021; 40: 5–7. Polish.
52. Monné MA. Catalogue of the Cerambycidae (Coleoptera) of the Neotropical Region. Part III. Subfamilies Parandrinae, Prioninae, Anoplodermatinae, Aseminae, Spondylidinae, Lepturinae, Oxypeltinae, and addenda to the Cerambycinae and Lamiinae. *Zootaxa*. 2006; 1212: 1–244.
53. Monné ML, Monné MA, Wang Q. General morphology, classification and biology of Cerambycidae. In Wang Q. editor. *Cerambycidae of the World Biology and pest management*. Boca Raton: CRC Press Taylor & Francis Group; 2017. p. 1–70.
54. Negrobov SO. Drovosek rebristyj *Asemum striatum* (Linnaeus, 1758). In Negrobov OP *Krasnaja Kniga Voronezhskoi oblasti*, Tom. 2. Zhivotnye. Boronezh: MODEK; 2011. p. 211–2.
55. Nie R, Vogler AP, Yang X-K, Lin M. Higher-level phylogeny of longhorn beetles (Coleoptera: Chrysomeloidea) inferred from mitochondrial genomes. *Syst Entomol*. 2021; 46: 56–70. DOI: 10.1111/syen.12447
56. Ösdikmen H. The longicorn beetles of Turkey (Coleoptera: Cerambycidae) Part I – Black Sea Region. *Mun Ent Zool*. 2007; 2: 179–422.
57. Ostrauskas H. *Entomologiniai tyrimai 1986–1998 metais*. Vilnius: Baltijos kopija; 2020. Lithuanian.
58. Ostrauskas H, Tamutis V. Bark and longhorn beetles (Coleoptera: Curculionidae, Scolytinae et Cerambycidae) caught by multiple funnel traps at the temporary storages of timbers and wood in Lithuania. *Bal For*. 2012; 18: 263–9.
59. Peña CFG, Noguera EV, de Sousa Zuzarte AJ. Nuevo catálogo de los Cerambycidae (Coleoptera) de la Península Ibérica, islas Baleares e islas atlánticas: Canarias, Açores y Madeira. *Monografías SEA*. 2007; 12: 1–211. Spanish.
60. Pileckis S. Blizgiai (Buprestidae Leach.) ir ūsuočiai (Cerambycidae Latr.) pastebėti Lietuvos TSR. Lietuvos Žemės Ūkio akademijos mokslo darbai. 1958; 4: 175–81. Lithuanian.
61. Pileckis S. Naujos vabalų (Coleoptera) rūšys Lietuvos TSR. LŽŪA mokslo darbai. 1963; 10: 53–64. Lithuanian.
62. Pileckis S, Monsevičius V. Lietuvos fauna. Vabalai. II d. Vilnius: Mokslo ir enciklopedijų leidykla; 1997. Lithuanian.
63. Rassi P, Karjalainen S, Clayhills T, Helve E, Hyvärinen E, Laurinjarju E, Malmberg S, Mannerkoski I, Martikainen P, Mattila J, Muona J, Pentinsaari M, Rutanen I, Salokannel J, Siitonen J, Silfverberg H. Provincial list of Finnish Coleoptera 2015. *Sahlbergia*, Supplement 1. 2015; 21: 1–164.
64. Rossa R, Goczał J. Global diversity and distribution of longhorn beetles (Coleoptera: Cerambycidae). *Eur Zool J*. 2021; 88: 289–302.
65. Sama G. Atlas of the Cerambycidae of Europe the Mediterranean Area. Volume 1: Northern, Western, Central, Eastern Europe, British Isles, Continental Europe from France (excl. Corsica) to Scandinavia and Urals. Zlín: Kabourek; 2002.
66. Sama G, Bocchini R. *Asemum tenuicorne* Kraatz, 1879 specie nuova per la Romagna e per la fauna Italiana (Coleoptera: Cerambycidae). *Quad studi not stor nat Romagna*. 1992; 1: 19–25. Italian.
67. Sánchez-Bayo F, Wyckhuys KAG. Worldwide decline of the entomofauna: A review of its drivers. *Biol Conserv*. 2019; 232: 8–27.

68. Sláma MEF, Tesaričkoviti – Cerambycidae České republiky a Slovenské republiky (Brouci – Coleoptera). Krhanice: Milan Sláma. 1998. Czech.
69. Staniulisówna K. Przyczynek do znajomości kózek (Cerambycidae) Wileńszczyzny. Prace Towarzystwa Przyjaciół Nauk w Wilnie. 1939; 13: 374–86. Polish.
70. Suckling DM, Gibb AR, Daly JM, Chen X, Brockerhoff EG. Behavioral and electrophysiological responses of *Arhopalus tristi* to burnt pine and other stimuli. *J Chem Ecol.* 2001; 27: 1091–104.
71. Švácha P. 1989. Cerambycoid larvae of Europe and Soviet Union (Coleoptera, Ceamrambycoidea). Part III. In Švácha P, Danilevsky ML, editors. *Acta Univ Carolinae – Biol.* 1989; 32: 1–205.
72. Tamutis V, Alekseev V. A survey of Lepturinae Latreille, 1802 (Coleoptera: Cerambycidae) of the south-eastern Baltic region (Lithuania and the Kaliningrad Region). *Biologija.* 2020; 66: 169–235.
73. Tamutis V, Tamutė B, Ferenc R. A catalogue of Lithuanina beetles (Insecta: Coleoptera). *ZooKeys.* 2011; 121: 1–494.
74. Tamutis V, Zolubas P. Non-target beetles trapped in *Ips typographus* L. pheromone traps. *Balt J Coleopterol.* 2001; 1: 65–70.
75. Tatarinova AF, Nikitskii NB, Dolgin MM. Fauna Evropeiskogo Severo-Vostoka Rossii. Usachi, ili drovoseki (Coleoptera, Cerambycidae). T. VIII, ch. 2. S.-Peterburg: Nauka; 2007. Russian.
76. Tavakilian G (Author), Chevillotte H (Software). Titan: base de données internationales sur les Cerambycidae ou Longicornes. Version 4.0, [15/10/2018]. 2018. <http://titan.gbif.fr/index.html>
77. Wagner S, Litt T, Sánchez-Goñi MF, Petit RJ. History of *Larix decidua* Mill. (European larch) since 130 ka. *Quat Sci Rev.* 2015; 124: 224–47.
78. Wang Q, Leschen RAB. Identification and distribution of *Arhopalus* species (Coleoptera: Cerambycidae: Aseminae) in Australia and New Zealand. *New Zealand Entomol.* 2003; 26: 53–9.
79. Wang Y, Chen F, Wang L, Li M. Investigation of beetle species that carry the pine wood nematode *Bursaphelenchus xylophilus* (Steiner and Buhner) Nickle, in China. *J Forest Res.* 2021; 32: 1745–51.
80. Zajančkauskas P, Pileckis S. Zhestkokrylye (Coleoptera) zapovednika Zhuvintas. In Zajančkauskas P, editor. *Zapovednik Zhuvintas.* Vilnius: Mintis; 1968. p. 264–82. Russian.
81. Zawadzki Ż. Kózki ziemi Wileńskiej. Spozstrzeżenia i notaty. *Polskie Pismo Ent.* 1937; 14–15: 281–305. Polish.

Vytautas Tamutis, Vitalii Alekseev

PIETRYČIŲ BALTIJOS REGIONO (LIETUVOS IR KALININGRADO SRITIES) MEDKIRTĖNŲ (SPONDYLIDINAE AUDINET-SERVILLE, 1832; COLEOPTERA: CERAMBYCIDAE) APŽVALGA

Santrauka

Straipsnyje pateikiama pirmoji medkirtėnų (Spondylidinae Audinet-Serville, 1832) šeimos rūšinės sudėties ir paplitimo Pietryčių Baltijos regione analizė. Iš viso buvo išanalizuota daugiau kaip 600 aptikimo faktų ir daugiau kaip 800 individų. Nustatyta, kad minėtame regione pošeimui atstovauja keturioms triboms, penkioms gentims priklausančios septynios medkirtėnų rūšys. Faktinės medžiagos, patvirtinančios ankstesnėse publikacijose nurodomo taškuotojo sakininko (*Nothorhina punctata* F.) buvimą regione, rasti nepavyko. Straipsnyje taip pat pateikiama informacija apie regione aptiktų ir tikėtinų medkirtėnų (9 rūšių) paplitimo arealus, išplitimo ir biologijos ypatumus, komentuojami kai kurių rūšių istoriniai tyrimų aspektai. Lokalus šešių rūšių paplitimas laiko ir geografinėse skalėse yra iliustruotas specialiais žemėlapiais.

Raktažodžiai: Spondylidinae, medkirtėnai, Cerambycidae, Lietuva, Kaliningrado sritis, anotuotas katalogas