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

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The author dissociates himself from Russian politics

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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 usually 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
taxonomy is still in dispute (Nie et al., 2021). The subfamily comprises about 160 species distributed mainly in the Palaearctic, Nearctic, Neotropical, and Afrotopical 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 longhorn 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, Zołubas, 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 systematic 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), Özdıkmeng (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, Mehli (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 (_PRINTF). 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 (_PRINTF). 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–Alūtis; Anyk–Anykščiai; B–Birštonas; Bir–Biržai; Drus–Druskininkai; El–Elektrėnai; Ign–Ignalina (including Visaginas); Jona–Jonava; Jon–Joniškis; Jurb–Jurbarkas; Kaiš–Kašiadorys; Kau–Kaunas; Kel–Kelmė; 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; Pri–Prienai; R–Radžiūnai; Ras–Raseiniai; Rie–Rietavas; Rok–Rokiškis; Šia–Šiauliai; Šil–Šilutė; Šir–Švenčionys; Tau–Tauragė; Tel–Telšiai; Tr–Trakai; Uk–Ukmergė; Ut–Utena; Var–Varėna; Vil–Vilnius; Zar–Zarasai; KR: Bagr–Bagrationovsk; Balt–Baltiysk; Cher–Cherniakhovsk; Gur–Gur’evsk (including Kaliningrad); Gvar–Gvardiysk; Kras–Krasnoznamensk; Nem–Neman (including Sovetsk); Nest–Nesterov; O–Ozersk; Pol–Pol’eisk; 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 Saproxylic beetles (Cálix 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), †Alfonas Palionis (AP), Anita Pikčė (APi), Artūras Gedminas (AG), Arūnas Juknevicius (AJu), Anna Smirnova (AS), Anatolii Shapoval (ASh), Boris Belchev (BB); †Bronislaw Houwald (BH), †Bronius Jakaitis (Bj), Brigita Nauburiene (BN), Darius Baužys (DB), Darius Gransbergis (DG), Daria Gurevich (DGu), Deividas Makavičius (DM), Donatas Stanionis (DSt), †Elena Gaidienė (EG), Elvyra Mikišytė (EMi), Gaudas Morkūnas (GMr), Giedrimas Petkus (GPé), Giedrius Švitra (GŠ), Gintaras Pečiukonis (GPè), Gintautas Steiblys (GS), †Henrikas Ostrauskas (HO), Ina Unčiurienė (IU), Indrė Gudelytė (IG), Justina Jankevičienė (JJ), Jolanta Řadevič–Sakalauskienė (JRS), Jozefas Dūda (JD), Jurgis Žižys (JŽ), Karolina Krištopainytė (KKr), Kazimieras Martinaitis
(KM), Kęstutis Jarmalavičius (KJ), Kęstutis Kišonas (KK), Ksenia Parfenenko (KP), Kristina Valinčiienė (KV), Lina Mitkevičiūnė (LMi), Lina Straigytė (LSi), Lukas Rekevičius (LRe), Mantas Jancevičius (MJ), Michail Fedoruk (MF), Maria Pustovaia (MP), Mantas Ružauskas (MR), Nida Asad (NA), Nijolė Jasonienė (NJ), Nikolai Mavrov (NM), Oskaras Venckus (OV), Paulius Zolubas (PZ), Povilas Ivinskis (PI), †Povilas Réklaitis (PRė), Radvilė Kuodytė (RKu), Ramunė Pallakaitė (RPa), Rasa Pečulionytė (RPe), Rimantas Butvila (RB), Rimantas Pankevičius (RP), Rimantas Stankūnas (RSt), Rimvydas Gaïdys (RG), Romas Ferenca (RF), Rytis Arbaciauskas (RA); Samanta Šopytė (SŠo), Saulius Karalius (SK), Žygimantas Obelevičius (ŽO), Žilvinas Pūtys (ŽP); Žygimantas Obelevičius (ŽO), 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.0120FD7BCFCF/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/TASI.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.
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; Nemunaicių miškas, 26.09.2021, 1 (dead specimen) ♂♂, Aju; Anyk: Katlıerá, 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: Gažiūnų 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; Juodeikiai, 24.07.1998, 1, RB; Skakai, 02.08.2004, 1, JD; Skilvionių, 05.08.2019, 1, RSt; Jurb: Liepągių 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; Brazų 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, PRė; ibidem, 01.08.1935, 1, PRė; 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; Kampos miškas, 12.07.1996, 1, VT; Karmėlavos miškas, 08.06.2008, 1, VI; Karmėlavos miškas, 03.08.2008, 1, VI; Kaunas (Centras), 30.06.2017, 1 ♂♂, RF; Kaunas (Kleboniškio miškas), –.07.1955, 1, SP; Kaunas (Panemunė), 17.06.1937, 1, AP; Kaunas (Žaliakalnis), 03.08.2015, 1, VI; Kulautuva, 05.06.1936, 1, PRė; Kuras, 12.07.1963, 1, EG; Neverony, 19.07.2010, 1, VI; Papiškinės miškas,
10.07.2018, 2, VT; Turženų 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, ––0.1961, 1, SP; *Klai*: Kairiai, 06.10.1993, 1, SK; Kliaipėda, 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, ––0.1958, 1, SP; *Simonių* miškas, 20.07.1991, 1, RP; *Laz*: Kalniškės miškas, 10.08.1963, 1, SP; *Mol*: Moletai district, ––0.1963, 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, ––0.1958, 1, SP; *Rad*: Baisogala, ––0.1963, 1, SP; *Sak*: Lekčiai, 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* Jūskinė, 14.07.2006, 1, RF; ibidem, 07.08.2015, 1, RF; ibidem, 09.07.2017, 1, RF; *miškas* Rūdišlis, 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, GM; *ŽP*: ibidem, 03.09.2019, 1, Aju; *Prūdiškė*, 04.08.2016, 1, GM; Sariai, 24.06.2021, 1, SP, obs. unknown; *Vilkaslastis*, 08.07.2020, 1, GS; *Tau*: Eičių miškas, 12.09.2021, 1, GM; *RPa*: Pasalupis, 20.06.2011, 1, GS; *Sakalynės miškas*, 21.06.2011, 1, RF; *Višvišės valstybinis gamtinis rezervatas*, 31.07.2006, 1, RF; ibidem, 20.06.2011, 1, RF; *Višvišės valstybinis gamtinis rezervatas*, Titnagų kalnai, 10.07.2008, 1, RF; *Ukm*: Verškainių miškas, 23.07.2020, 1, RF; *KJ*: ibidem, 30.08.2021, 1, RF; *KJ*: *Var*: Biniūnai I, 22.06.1939, 1, A; *Ap*: Ėkipelių 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; *Lavysos miškas*, 14.07.2021, 1, RF, obs. unknown; *Genkinė*, 09.07.2011, 1, RF; *Razumnos miškas*, 1, MJ; *Užuojėrės miškas*, 24.08.2016, 1, RF; ibidem, 01.06.2017, 1, RF; *Viln*: Maišiagala (Kalniškės), 04.08.2007, 1, PI; ibidem, 15.08.2009, 1, PI; ibidem, 27.08.2011, 1, PI; *Pikelniškių miškas*, 19.06.1983, 1, ZP; *Vyteniškių miškas*, 09.08.2018, 1, ŽP; *Zar*: Vaikučiai, 28.06.2020, 1, LRe. *KR*: *Bagr*: Uljanovka, 11.07.2017, 1, VA; *Kras*: Dolzhanskoe, 04.07.1997, 2, VA; ibidem, 08.07.1997, 1, VA; ibidem, 06.07.1999, 1, NM; *Pok*: Saranskoe, 18.07.2021, 1, MP; *Nest*: Pugachevo, ––0.1985, 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 (Schwarzot) by Lentz (1879) (*Criocephalus*). The species was ranked as very common and noted as distributed throughout the country by Pieleckis, 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 (Pieleckis, 1958), Alytus (Zajačkauskas, Pieleckis, 1968), Elektrenai, 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.** This 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 Morocco (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.

**Notes on biology.** The life cycle and host plants of this species are regarded to be very similar to the species described above. However, Bíly, 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 Gur’evsk (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.

**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 (Syktvykar). 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).

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Genus Asemum Eschscholtz, 1830

A. striatum (Linnaeus, 1758)

Examined actual data. Alyt: Alytus, 07.07.1964, 1, SP; Jonė: Bariūnai, 05–08.05.2000, 2, RB; Plikškių, 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; Jurba: Smalininkai, 07.05.1970, 1, BJ; ibidem, 26–28.05.1970, 2, BJ; ibidem, 11.06.1970, 1, BJ; K.R.: Brazyliukų miškas, 20.04.2017, 1, VT; Kazliūnų miškas, 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, DT; Šiaulių rūšis, 08.06.1929, 1, BH; Verkšnionių miškas, 27.05.2006, 2, PI; Paberžė (Mediokriūnų rūšis), 19.05.2016, 1, AP; Čepkelių valstybinis gamtinis rezervatas, 25.06.1985, 1, RF; Vilni: Kairėnai, 25.05.2021, 1, D, GP; Mašiagala (Kalinškės), 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 (Mediokriūnų rūšis), 09.06.1916, 1, BH; ibidem, 08.06.1929, 1, BH; ibidem, 02.06.1938, 1, BH; Verkšnionių miškas, 27.04.2019, 1, A, Au; Vilnius, 10.04.1938, 1, AP.

KR: Cher: 9 km NE Chernihkovsk, 15.06.1995, 1, VA; Kras: Dzolzhansko, 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 (Staniulisowá, 1939), Kaukas (Pileckis, 1958), Alytus (Tamutis, Zolubas, 2001), Neringa (Aleksnev, 2008), and Lazdijai (Ostrauska, Tamutis, 2012) districts. KR: Bercio, Folwaczny, 1979; Aleksnev, 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 European Russia. It was introduced in North and Central Americas (Bousquet 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
Examine 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 fragmentically distributed mainly in central and southern Europe (Spain, Italy, Greece, Ukraina, the southern part of European Russia), and A. t. claricostulatum Özdikmen, Aytar, 2012 occurs in southern Turkey. The northernmost records come from Sweden (Gotska Sandön) and Poland (Białowieza 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 bu-prestoides, Tetropium castaneum, and Tetropium fuscum (Coleoptera: Cerambycidae: Spondylidinae) in south-eastern Baltic Region
A faunistic review of Spondylidinae Audinet-Serville, 1832 (Coleoptera: Cerambycidae)...

(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) = muri- (Dalman, 1817)

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

Published local records. LT: A single record (as Notorhina 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, LAAs; Gečialaukis, 28.06.2021, 1 Aju; Anyk: Nūronys, 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, LAAs; Drus: Ašarėlis lake environment, 01.08.2020, 1 KV; Druskininkai, 12-14.07.1967, 2, EG; Grūto miškas, 28.06.2018, 1 GP; Randamonų miškas, –.07.1962, 1, SP; Viečiūnų miškas, 03.07.2015, 1, VI; ibidem, 09.08.2017, 1, VI; ibidem, 28.06.2018, 1, VI; EI: Vievininkai, 16.08.2021, 1 APl; Ign: Ažušilės kraštovaizdžio draustinis, 07.09.2017, 1, RF; Jon: Gaiziūnų miškas, 11.08.2015, 1, VI; Joni: Bariūnai, 27.07.2005, 1, RB; Jurb: Smalininkai, 12.06.1962, 1, LAAs; Raudonė, 16.07.2002, 1, LAAs; K.R.: Griešių miškas, 14.06.2016, 1, RF; Jūrės miškas, 10.08.1956, 1, SP; Kazlų Rūda, 05-18.08.1965, 5, EG; Kurkampio miškas, 18.06.2016, 1, VT; Višakio Rūda, –.08.1957, 1, SP; Kaiš: Kruonis, 24.07.1976, 1, AM; Stošiūnų miškas, 02.08.2007, 1, DST; ibidem, 13.07.2008, 1, DST; Tarpumäkiškis, 31.07.2008, 1, VB; Triliškės, 18.07.2007, 1, DST; Žiežmariai, –.07.1963, 1, LAAs; 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, PRē; ibidem, 09.08.1935, 1, PRē; ibidem, 26.06.1936, 1, PRē; ibidem, 02.07.1936, 1, PRē; 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, LAAs; Kaunas, 18.09.1929, 1, AP; Kulautuva, –07.1956, 1, LAAs; Lampėdžiai, 03.07.2020, 1, JZ; miškas Papiškinė, 10.07.2018, 9, VT; Raundondvaris, 04.07.1963, 1, LAAs; Kėda: Lančiūnava, –09.1961, 1, SP; Kliai: Klaiptėda, 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; Moleitai, 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, VKL; Rudesos miškas, 10–20.08.1966, 10, EG; Siesarčio miškas, 17.06.2018, 1, GM; Ner: Alksnyšio 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, LAAs; Pal: Palanga, –06.1926, 1, AP; Pan: Beržynė, 03.08.2020, 1, RKU; Raguvos miškas, –09.1961, 1, LAAs; Pas: Pasvalys, 20.07.1962, 1, LAAs; Rinkūnių miškas, 17.07.2006, 1, VB; Plu: Plateliai, –07.1963, 1, LAAs; Prie: Druskų miškas, –07.1962, LAAs; Norkūnai, 28.06.2020, 1, T Po; Stakliškės, –08.1960, 1, LAAs; Sundakų miškas, 25.06.2019, 1, KVa; Rad: Baisogala, –07.1962, 1, LAAs; Ras: Paliepių miškas, –07.1963, 1, LAAs; Rok: Juodupė, 03.07.1966, 1, AP; Šak: Baltkų miškas, 10.06.1960, 1, SP; Jadagoniai, 22.06.1999, 1, LAAs; 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; Lekėciai, 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: Jakubony, 28.08.2001, 1, LAAs; 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, RF; miškas Baranava, 03–09.08.2020, 2, GM; Sariai, 14.06.2021, 1, obs. unknown; Šliūžai, 24.07.2020, col. unknown; Žukaučižna, 29.06.2020, 1, GPč; Taur: Laumenų miškas, –07.1963, 1, LAAs; Pasalupis, 25.07.2013, 1, SS; Trak: Aukštadvaris, –09.1961, LAAs; ibidem, –07.1963, 1, LAAs; Ropejų miškas, 03.07.2005, 1, TT; Spindžiaus miškas, 26.07.2021, 1, ŠP; U: Paeisėtė II miškas, 04.07.2020, 1, EM; Rūgštežiškis, 17.07.2021, 1, IG; Var: Biekšios, 02.08.2020, 1, T Po; Biniūnai I (Baudzieriškis), 24.06.1938, 1, AP; ibidem, 07.07.1938, 6, AP; Čepkelių valstynis gamtinis rezervatas, 25.06.1985, 1, RF; Darželių miškas, 20.07.2019, 1, RGa; Gybaučios miškas, 07.08.2011, 1, RF; Kabeliai, 27.07.2020, 1, KK; Latežeris, 01–10.08.1964, 15, EG; Marcinkony, 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; Užuozoės miškas, 22.08.2020, 1, AS; Vainabilio miškas, 03.09.2018, 1, TG; Varėna, 05.08.1975, 1, EG; Žiūrai, 15.07.2020, 1, AS; Viln: Bezdony, 29.07.2020, 1, JRS; Mašiagala (Kalniškės), 14.06.2002, 1, PI; Kiemelai, 26.07.2015, 1, AN; Lavoriškės (Paežeriai), 22.07.2016, 1, RA; Pikeliškių miškas, 10.07.1983, 1, ZP; Raundondvario miškas, 19.08.2020, 1, Verkių miškas, 25.07.2016, 1, TT; NA; Vyteniškių miškas, 18.08.2017, 1, ŽP; Zūjūnai (Geležiai), 24.07.2020, 1, SS; Zor: Antazavė, 20.07.2021, 1, GPc; Maniliškiškės, 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,
It is widely distributed throughout the Palearctic region, from southern Iberia to Great Britain, and extends as far east as 63°N in Scandinavia and 62°N in the Russian Far East. 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.

**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 common and numerous in the environs of Vilnius during the period of 1922–1938 by Jawadzki (1937); Staniulisówka (1939). However, the actual faunistic information was given on the occurrence of this species only in Švenčionys (Mazurowa, Mazur, 1939), Varena (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 three, rarely four years. Adults emerge 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 species is common in the *Pinus sylvestris*-dominated forests in LT, but it is relatively rare in western 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:** Anykščiai, 25.06.1959, 1, SK; Gečionų miškas, 01.06.2013, 1, KD; Druskininkai, 20.04.1996, 1, VE; Jona: Užusaliai, 26.05.2002, 2, RF; Jonai: Bariūnai, 21-30.05.1999, 2, RB; ibidem, 19.06.1995, 1, BS; ibidem, 08.06.1986, 1, RF; ibidem, 30.06.1991, 1, RF; ibidem, 26.05.1985, 1, RF; ibidem, 08.06.1986, 1, RF; ibidem, 30.06.1991, 1, RF; ibidem, 28.04.1997, 1, RF; ibidem, 19.06.1979, 14, BJ; Girdžiūnai, 28.05.2002, 1, RB; Plikiškiai, 10.06.1999, 1, RB; ibidem, 16.05.2000, 3, RB; Šatkūnai, 28.05.1999, 1, RB; Skakai, 01.06.2004, 1, JD; ibidem, 12.06.2004, 1, RB; Jurbė: 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.: Braziukų miškas, 07.04.2020, in wood of dead *Picea abies*, 10 (larvae), VT; Kais: Kruonis, 09.07.1979, 1, AM; Pravieniškės, 20.06.2006, 1, AM; Kau: Dubravos miškas, –06.1955, 1, SP; ibidem, 06.07.2021, 1, SP; ibidem, 05.07.2016, 1, SP, 06.07.2017, 1, SP; ibidem, 05.06.2016, 1, SP; ibidem, 12.09.2017, 1, MF.

**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 shallow 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.
This 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 DM, GS; Ign: Ažvinčių giria, 22.05–12.06.2020, ‘window’ trap, 1, VT; Joni: Bariūnai, 10.06.2006, 1, RB; Girdžiūnai, 09.06.2021, 1, VR; Nem: Šaltupio miškas, 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; Sosniki environs, 17.06.2015, 1, AD; Mokhosvoe 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 Alytus, Kaunas (Tamutis, Zolubas, 2001, Ferenca, 2006), Klaipėda, Lazdijai (Ostrauskas, Tamutis, 2012) and Vilnius (Staniulišovona, 1939) districts. KR: Lentz, 1879 (luridum L.); Bercio, Fołwaczny, 1979; Alekseev, 2007.
The distributional range of the species is considered as important secondary pests 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: Kėdė: Laivelių 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*, *Tetropium fuscum*.

### Table 1. List of Spondylidinae species and characteristics of its distribution in the south-eastern Baltic region and neighbouring regions according to: Dunskis, 2019; Mapa Bioróżnorodności, 2020; Bíly, 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, BY – 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-Europeo-Far Eastern (SIE-FE), TransEuropean – Temperate (TEA-T), European (EUR), Transpalaearctic (PAL), Holarctic (OLA)

| No. | Species                          | Distribution in neighbouring regions | Status of distribution and rarity | Horotypes (for species) |
|-----|----------------------------------|-------------------------------------|----------------------------------|------------------------|
|     |                                  | PL | BY | LV | SV | KR | LT |
| 1.  | *Arhopalus ferus* (Mulsant)      | +  | +  | +  | +  | ?  | l-r| PAL |
| 2.  | *Arhopalus rusticus* (L.)        | +  | +  | +  | +  | w-a| w-a| PAL |
| 3.  | *Asemum striatum* (L.)          | +  | +  | +  | +  | w-r| w-a| OLA |
| 4.  | *Asemum t. tenuicornae* Kraatz   | +  | -  | -  | +  | †  | †  | EUR |
| 5.  | *Nothorhina punctata* (E.)       | +  | +  | +  | +  | †  | †  | TEA-T |
| 6.  | *Spondylis buprestoides* (L.)    | +  | +  | +  | +  | w-a| w-a| PAL |
| 7.  | *Tetropium castaneum* (L.)       | +  | +  | +  | +  | w-a| w-a| SIE-FE |
| 8.  | *Tetropium fuscum* (L.)          | +  | +  | +  | +  | w-a| w-a| OLA |
| 9.  | *Tetropium gabrieli* (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 ferus* 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. ferus* 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 recognize 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 Białowieza Primeval Forest in Poland (Gutowski, Kurzawa, 2019).

The possible reasons of the mentioned faunal differences could be the lack of systematic 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.

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

Santrauka

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

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