

NEW RECORDS OF *BOROS SCHNEIDERI* (PANZER, 1796) (COLEOPTERA, BORIDAE) IN LITHUANIA IN 2007

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Introduction

Boros schneideri (Coleoptera, Boridae) is an endangered insect species listed in the Red Data Book of Lithuania (Monsevičius & Pileckis, 1992) and in the Annex 2 of the European Union Habitat Directive. It occurs in Palearctic coniferous and mixed forests under the bark of dead coniferous, rarely deciduous trees. As a result of cultivation and intense exploitation of forests, this beetle has become extinct in Western Europe. Till now, *B. schneideri* has survived only in the following countries of the EU: Slovakia (Lokality Natura, 2000), the Czech Republic (Evropsky významně locality v České republice, 2000), Poland (Kubisz, 2004), Lithuania, Latvia (Vilks & Telnov, 2003), Estonia (European rarities in Estonia: *Boros schneideri*, 2007), Sweden (Bevarandeplan för Natura 2000-området Trollskogen, 2005) and Finland (*Boros schneideri* – a beetle living under a dead pine's bark, 2007). Almost in all of these countries *B. schneideri* is defined as a very rare and endangered species.

The situation of *B. schneideri* in Lithuania at present is more favourable. There have been 57 records of the species since its first detection in 1972: 13 records in Jurbarkas (Monsevičius & Pileckis, 1992; Ferenca, 2003; Karalius *et al.*, 2006), 4 in Tauragė (Karalius *et al.*, 2006), 15 in Varėna (Ivinskis *et al.*, 1984; Karalius *et al.*, 2006), 1 in Šalčininkai (Ferenca, 2004), 1 in Kaišiadorys (Meržijevskis, 2004), 15 in Švenčionys (Šablevičius, 1994, 1998, 2003; Karalius *et al.*, 2006), 1 in Molėtai, 6 in Ignalina and 1 in Utena district (Šablevičius, 2003).

The presence of this species was checked in several areas of Lithuania in 2007. We present the results in this paper.

Material and Methods

Dead standing *Pinus sylvestris* trees and *Betula sp.* trees were inspected. The presence of *B. schneideri* larvae and adults was checked by temporarily removing up to ½ of the trunk bark from the ground level to the height of 2 m. Inspection was stopped when at least one *B. schneideri* specimen had been found. After *B. schneideri* detection, the temporarily removed bark was refixed to the trunk with small nails. The diameter of the host-tree trunk at the altitude of 120 cm above the ground level was measured. *B. schneideri* adults and larvae were identified by analysis of their external morphology (Bei-Bienko, 1965; Saalas, 1937).

Biotopes were classified according to the types proposed by J. Balevičienė (1991). The biotopes known as favoured by *B. schneideri*, namely *Cladonio-Pinetum*, *Vaccinio vitis-idaea-Pinetum*, *Vaccinio myrtilli-Pinetum*, *Vaccinio uliginosi-Pinetum*, *Ledo-Pinetum* and single pine trees left in clear cuttings were used as test localities (Karalius *et al.*, 2006).

A total of 923 dead trees were examined. *B. schneideri* was detected on 120 trees in 31 localities.

List of localities

Tauragė district	Sakalinė environs	55°09'11"N 22°24'26"E
	Viešvilė Strict Nature Reserve	55°07'31"N, 22°24'34"E
Jurbarkas district	Viešvilė Strict Nature Reserve, Lake Glitis environs	55°08'09"N, 22°29'14"E
	Antšvenčių Miškas f.	55°07'38"N, 22°30'04"E
Kaunas district	Lemantiškių Miškas f.	55°05'43"N, 22°37'38"E
	Papiškinės Miškas f.	54°56'04"N, 23°35'18"E
Kazlų Rūda municipality	Braziūkų Miškas f.	54°55'10"N, 23°30'19"E
	Viliūšiai	54°53'44"N, 23°24'06"E
Jonava district	Jūrė	54°45'38"N, 23°31'29"E
Anykščiai district	Gegužinės Miškas f.	54°59'20"N, 24°28'04"E
	Duobulės Miškas f.	55°36'25"N, 25°05'58"E
Lazdijai district	Magylų Miškas f.	55°38'11"N, 25°07'35"E
	Šimonių Giria f.	55°39'55"N, 25°08'00"E
Varėna district	Kapčiamiestis	53°57'51"N, 23°37'38"E
	Maskauka, Paručių Miškas f.	54°17'13"N, 24°35'46"E
Druskininkai municipality	Subartonys	54°13'36"N, 24°09'55"E
	Lake Dėlinis environs	54°07'40"N, 24°23'06"E
Šalčininkai district	Musteika	53°56'23"N, 24°24'29"E
	Bakanauskai	54°02'20"N, 24°16'49"E
Trakai district	Valkininkai railway station, Stirnabalės Miškas f.	54°20'27"N, 24°43'15"E
	Pirčiupiai, Dargužių Miškas f.	54°22'17"N, 24°54'27"E
Švenčionys district	Grūtas environs	54°02'30"N, 24°05'31"E
	Rūdninkai, Rūdninkų Giria f.	54°25'03"N, 25°08'50"E
Padubingė	Paluknys, Ropėjos Miškas f.	54°31'36"N, 25°01'28"E
	Madžiūnai, Rūdiškių Miškas f.	54°27'28"N, 24°57'17"E
Labanoro Giria f., Lake Kerotis environs	Pabradė, Varnėnų Miškas f.	54°59'59"N, 25°41'57"E
	Pažeimenė, Pabradės Miškas f.	55°02'16"N, 25°54'39"E
Labanoro Giria f., Lake Salaičiai environs	Padubingė	55°04'55"N, 25°54'48"E
	Labanoro Giria f., Lake Salaičiai environs	55°13'37"N, 25°55'40"E
Ešerinis-1 environs	Labanoro Giria f., Lake Ešerinis-1 environs	55°15'02"N, 25°51'48"E
	Labanoro Giria f., Lake Ešerinis-1 environs	55°10'57"N, 25°53'50"E

Results and discussion

A total of 920 dead *Pinus sylvestris* and 3 *Betula sp.* trees were examined. *B. schneideri* was detected under the bark of 119 *P. sylvestris* trees and one *Betula pendula* tree in 31 localities (Fig. 1). Dead trees inhabited by this species made up 13.0% of all examined trees. The finding site, the diameter of the host-tree trunk, the number of beetles found and biotope type are presented below.

Tauragė district

Sakalinė environs, under the bark of five *P. sylvestris* trees: Ø 20.4 cm, 1 larva, Ø 33.1 cm, 4 larvae, Ø 20.1 cm, 1 larva, Ø 11.8 cm, 1 larva, Ø 15.3 cm, 1 larva, *Vaccinio myrtilli-Pinetum*.

Viešvilė Strict Nature Reserve, Ø 15.6 cm *P. sylvestris* trunk, 1 larva, *Vaccinio vitis-idaea-Pinetum*; Lake Glitis environs, under the bark of five *P. sylvestris* trees: Ø 21.7 cm, 1 larva, Ø 13.1 cm, 1 larva, Ø 13.1 cm, 1 larva, Ø 18.2 cm 1 larva, Ø 13.1 cm, 1 larva, *Vaccinio vitis-idaea-Pinetum* subassociatio *myrtilletosum*.

Jurbarkas district

Antšvenčių Miškas f., under the bark of four *P. sylvestris* trees: Ø 12.7 cm, 1 larva, Ø 10.2 cm, 2 larvae, Ø 15.6 cm, 1 larva, Ø 13.4 cm, 1 larva, *Vaccinio myrtilli-Pinetum*.

Lemantiškių Miškas f., under the bark of three *P. sylvestris* trees: Ø 17.5 cm, 1 larva, Ø 24.2 cm, 1 larva, Ø 20.7 cm, 2 larvae, *Vaccinio vitis-idaea-Pinetum*.

Kaunas district

Papiškinės Miškas f., under the bark of two *P. sylvestris* trees: Ø 37.9 cm, 5 larvae, Ø 44.3 cm, 1 larva, trees in clear-cutting.

Braziūku Miškas f., under the bark of two *P. sylvestris* trees: Ø 18.5 cm, 1 larva, Ø 18.5 cm, 1 larva, *Vaccinio myrtilli-Pinetum*.

Kazlų Rūda municipality

Viliūšiai environs, Ø 37.9 cm *P. sylvestris* trunk, 3 larvae, single tree in clear-cutting.

Jūrė environs, Ø 14.0 cm *P. sylvestris* trunk, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

Jonava district

Gegužinės Miškas f., Ø 35.0 cm *P. sylvestris* trunk, 3 larvae, single tree in clear-cutting.

Anykščiai district

Duobulės Miškas f., Ø 30.9 cm *P. sylvestris* trunk, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

Magylų Miškas f., Ø 22.0 cm *P. sylvestris* trunk, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

Šimonių Giria f., Ø 20.1 cm *P. sylvestris* trunk, 1 larva, *Cladonio-Pinetum*.

Lazdijai district

Kapčiamiestis environs, under the bark of two *P. sylvestris* trees: Ø 21.7 cm, 1 larva, Ø 20.7 cm, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

Varėna district

Maskauka environs, Paručiu Miškas f., under the bark of three *P. sylvestris* trees: Ø 10.8 cm, 2 larvae, Ø 17.5 cm, 1 larva, Ø 9.6 cm, 1 larva, *Cladonio-Pinetum*.

Subartonys environs, Ø 14.3 cm *P. sylvestris* trunk, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

Lake Dėlinis environs, under the bark of four *P. sylvestris* trees: Ø 11.1 cm, 1 larva,

Ø 16.6 cm, 4 larvae, Ø 31.2 cm, 2 larvae, Ø 18.8 cm, 1 larva, *Cladonio-Pinetum*.

Musteika environs, under the bark of four *P. sylvestris* trees: Ø 16.9 cm, 1 larva, Ø 12.1 cm, 1 larva, Ø 12.7 cm, 2 larvae, Ø 18.8 cm, 2 larvae, *Ledo-Pinetum*.

Bakanauskai environs, under the bark of seven *P. sylvestris* trees: Ø 24.8 cm, 1 larva, Ø 22.3 cm, 1 larva, Ø 11.1 cm, 1 larva, Ø 11.5 cm, 1 larva, Ø 33.1 cm, 1 larva, Ø 15.3 cm, 1 larva, Ø 34.4 cm, 1 larva, *Cladonio-Pinetum*.

Valkininkai railway station, Stirnabalės Miškas f., Ø 19.4 cm *P. sylvestris* trunk, 3 larvae, *Vaccinio myrtilli-Pinetum*.

Pirčiupiai environs, Dargužių Miškas f., under the bark of three *P. sylvestris* trees: Ø 12.1 cm, 1 larva, Ø 15.6 cm, 1 larva, Ø 21.0 cm, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

Druskininkai municipality

Grūtas environs, Ø 27.4 cm *P. sylvestris* trunk, 2 larvae, *Cladonio-Pinetum*.

Šalčininkai district

Rūdinkų Giria f., under the bark of two *P. sylvestris* trees: Ø 34.1 cm, 6 larvae, Ø 18.5 cm, 1 larva, *Vaccinio uliginosi-Pinetum*.

Trakai district

Paluknys environs, Ropėjos Miškas f., under the bark of three *P. sylvestris* trees: Ø 23.6 cm, 1 larva, Ø 22.0 cm, 2 larvae, Ø 16.6 cm, 9 larvae, *Vaccinio myrtilli-Pinetum*.

Madžiūnai, Rūdiškių Miškas f., Ø 11.8 cm *P. sylvestris* trunk, 1 larva, *Vaccinio myrtilli-Pinetum*.

Švenčionys district

Pabradė environs, Varnėnų Miškas f., under the bark of two *P. sylvestris* trees: Ø 40.8 cm, 1 larva, Ø 36.9 cm, 1 larva, trees in clear-cutting.

Pažeimenė, Pabradės Miškas f., Ø 20.4 cm *P. sylvestris* trunk, 1 larva, *Cladonio-Pinetum*.

Padubingė environs, under the bark of two *P. sylvestris* trees: Ø 23.9 cm, 2 larvae, Ø 31.5 cm, 2 larvae, *Vaccinio vitis-idaea-Pinetum*.

Labanoro Giria f., Lake Kerotis environs, *Vaccinio vitis-idaea-Pinetum*, under the bark of 18 *P. sylvestris* trees: Ø 21.3 cm, 1 larva, Ø 13.7 cm, 1 larva, Ø 9.9 cm, 1 larva, Ø 19.1 cm, 2 larvae, Ø 15.6 cm, 1 imago, Ø 20 cm, 1 larva, Ø 16.5 cm, 1 larva, Ø 11.8 cm, 1 larva, Ø 15.6 cm, 1 larva, Ø 13.4 cm, 1 larva, Ø 32.5 cm, 1 larva, Ø 26.1 cm, 3 larvae, Ø 37.9 cm, 2 larvae, Ø 15.6 cm, 1 larva, Ø 12.7 cm, 1 larva, Ø 14.0 cm, 3 larvae, Ø 15.9 cm, 2 larvae, Ø 10.5 cm, 1 larva; *Vaccinio myrtilli-Pinetum*, under the bark of four *P. sylvestris* trees: Ø 14.3 cm, 1 larva, Ø 20.1 cm, 2 larvae, Ø 17.2 cm, 3 larvae, Ø 12.7 cm, 1 larva; *Vaccinio uliginosi-Pinetum*, under the bark of three *P. sylvestris* trees: Ø 20.7 cm, 7 larvae, Ø 21.3 cm, 1 larva, Ø 18.8 cm, 1 larva; *Cladonio-Pinetum*, Ø 17.8 cm *P. sylvestris* trunk, 1 larva.

Labanoro Giria f., Lake Salaičiai environs, *Vaccinio vitis-idaea-Pinetum*, Ø 18.8 cm *P. sylvestris* trunk, 1 larva; *Vaccinio myrtilli-Pinetum*, under the bark of 13 *P. sylvestris* trees: Ø 13.7 cm, 1 larva, Ø 16.2 cm, 1 larva, Ø 13.1 cm, 1 larva, Ø 13.4 cm, 1 larva, Ø 14.7 cm, 2 larvae, Ø 15.0 cm, 1 larva, Ø 13.7 cm, 1 larva, Ø 16.8 cm, 1 larva, Ø 14.6 cm, 2 larvae, Ø 17.8 cm, 1 larva, Ø 15.3 cm, 1 larva, Ø 12.1 cm, 1 larva, Ø 30.6 cm, 2 larvae, and under the bark of one *B. pendula* tree, Ø 33.4 cm, 4 larvae; *Vaccinio uliginosi-Pinetum*, under the bark of three *P. sylvestris* trees: Ø 15.9 cm, 1 larva, Ø 29.6 cm, 1 larva, Ø 11.1 cm, 1 larva; *Ledo-Pinetum*, under the bark of three *P. sylvestris* trees: Ø 12.7 cm, 1 larva, Ø 10.5 cm, 1 larva, Ø 13.1 cm, 1 larva; *Cladonio-Pinetum*, under the bark of three *P. sylvestris* trees: Ø 9.9 cm, 1 larva, Ø 10.2 cm, 2 larvae, Ø 9.6 cm, 3

larvae.

Labanoro Giria f., Lake Ešerinis-1 environs, under the bark of six *P. sylvestris* trees: Ø 14.6 cm, 1 larva, Ø 34.7 cm, 1 larva, Ø 26.7 cm, 1 larva, Ø 23.9 cm, 1 larva, Ø 18.5 cm, 1 larva, Ø 27.4 cm, 1 larva, *Vaccinio vitis-idaea-Pinetum*.

In summary, the thinnest tree under the bark of which *B. schneideri* larvae were found had a diameter of 8 cm, while the thickest one was 50 cm in diameter. The majority of trees with *B. schneideri* (54.1%) were 10–20 cm in diameter. *B. schneideri* is usually described as a species of relict primeval forests inhabiting old and thick dead trees (European rarities in Estonia: *Boros schneideri*, 2007; Kubisz, 2004; Vilks & Telnov, 2003). Our data provide a substantial basis for the revision of this opinion. It is true that *B. schneideri* prefers breeding on thick trees. However, alongside thick trees, it can also inhabit relatively thin trees which are 10–15 cm in diameter. As the abundance of dead trees with a diameter of 10–20 cm in managed forests was significantly higher than that of thicker ones, they hosted the majority of the *B. schneideri* population. Consequently, dead trees with a diameter of 10–20 cm should be regarded as the main dead wood resource in *B. schneideri* conservation projects.

Most frequently *B. schneideri* was found on dead pine trees left in clear-cuttings. In *Cladonio-Pinetum*, *Vaccinio vitis-idea-Pinetum*, *Vaccinio myrtili-Pinetum*, *Ledo-Pinetum* and *Vaccinio uliginosi-Pinetum*, their occurrence frequency was three times less.

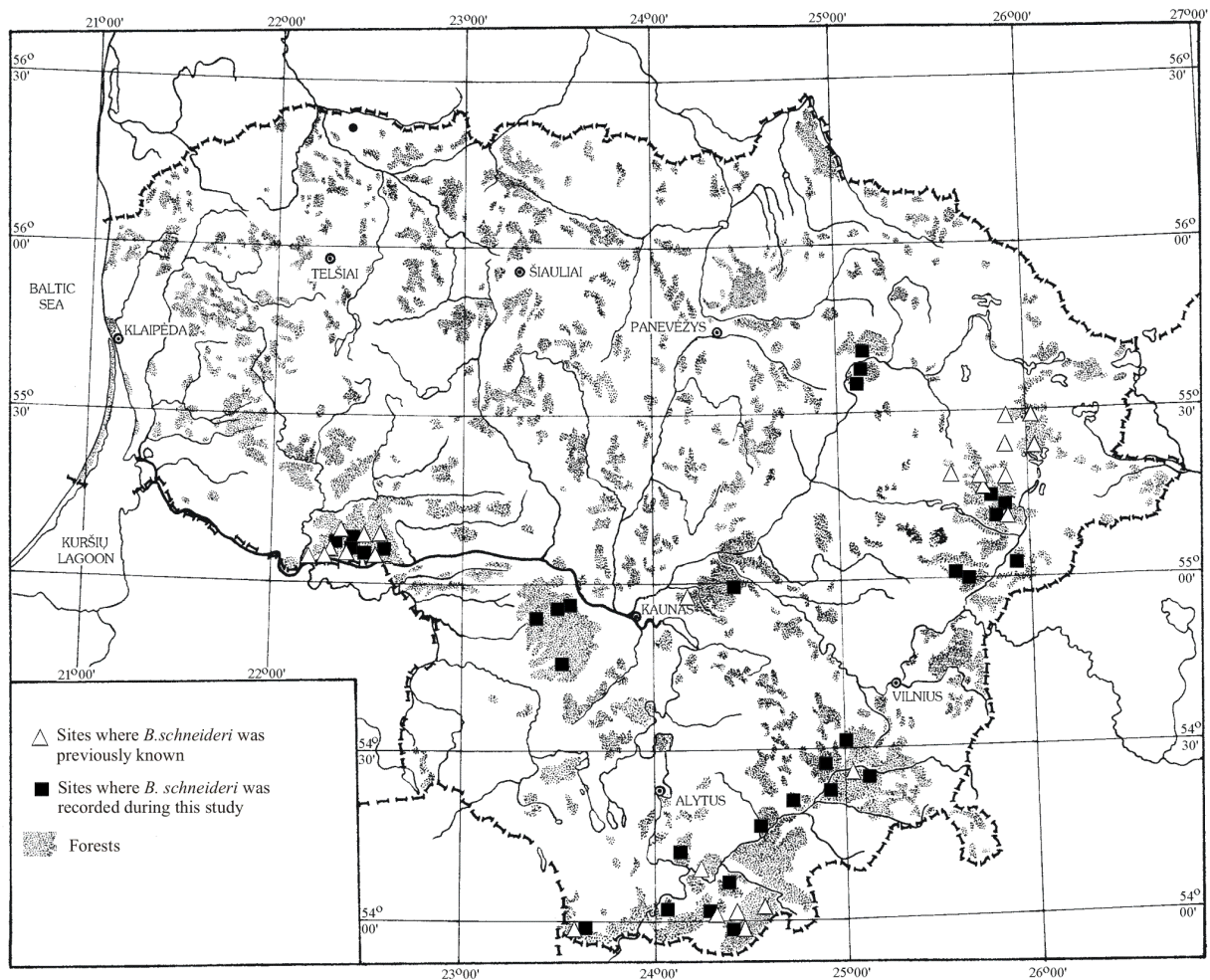


Fig. 1. Distribution of *Boros schneideri* in Lithuania

Our data have extended the knowledge of *B. schneideri* distribution in the areas where *B. schneideri* had already been known (Fig. 1), *i.e.* Čepkeliai Strict Nature Reserve (Monsevičius & Pileckis, 1992), Viešvilė Strict Nature Reserve (Ferenca, 2003; Karalius *et al.*, 2006), Labanoras Regional Park (Šablevičius, 2003; Karalius *et al.*, 2006) and Dzūkija National Park (Ivinskis *et al.*, 1996; Karalius *et al.*, 2006).

Our data confirmed the presence of *B. schneideri* in the forests in which this species had been recorded only once, *i. e.* in Rūdninkai (Ferenca, 2004), Kapčiamiestis (Bronius Šablevičius, personal communication) and Rumšiškės–Gaižiūnai forests (Meržijevskis, 2004). In four forests (Fig. 1) - Kazlų Rūda, Šimonys, Pabradė and Rūdiškės - *B. schneideri* was detected for the first time.

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Nauji *Boros schneideri* (Panzer, 1796) (Coleoptera, Boridae) radimo faktai Lietuvoje 2007 metais

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Santrauka

Straipsnyje pateikiami autorių surinkti duomenys apie *Boros schneideri* (Coleoptera, Boridae) naujas radvietes 2007 metais. Pateikiama 31 šios rūšies radavietė, iš jų keturios - Kazlų Rūda, Šimonys, Pabradė ir Rūdiškės - kuriose *B. schneideri* registruotas pirmą kartą. Pateiktas paplitimo Lietuvoje žemėlapis. Nustatyta, kad *B. schneideri* lervos Lietuvoje dažniausiai gyvena ant paprastosios pušies sausuolių, kurių skersmuo svyruoja nuo 10 iki 20 cm. Didžiausias *B. schneideri* dažnumas nustatytas ant sausuolių, esančių kirtavietėse, trigubai mažesnis kituose tirtuose biotopuose *Cladonio-Pinetum*, *Vaccinio vitis-idea-Pinetum*, *Vaccinio myrtili-Pinetum*, *Ledo-Pinetum* ir *Vaccinio uliginosi-Pinetum*.

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