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Mass collection of two rare Longicorn-species (Coleoptera, Cerambycidae) in Central Russia

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Key words: Coleoptera, Cerambycidae, morphology, sexual dimorphism, Russia. **Abstract:** Mass collection of *Leptura (Macroleptura) thoracica* Creutzer, 1799 and *Purpuricenus kaehleri* (Linnaeus, 1758) in Mordovia and Penza Region of Russia is described. Sexual dimorphism in *Leptura thoracica* is described for the first time. Subspecies status of *P. k. rossicus* Danilevsky, 2019 is proved.

Introduction

Leptura (Macroleptura) thoracica Creutzer, 1799 and Purpuricenus kaehleri (Linnaeus, 1758) are not very numerous in European Russia (Russian *P. kaehleri* was recently described as *P. k.* rossicus Danilevsky, 2019). Both species are often very rare in the most of known localities.

Beetles were collected during spring-summer season in 2019 by crown traps with fermenting baits. This method was rather effective in the region (Egorov, Ivanov, 2018; Ruchin, Egorov, 2018a, 2018b). Each trap consisted of a plastic five-liter container with a window cut into it on one side at a distance of 10 cm from the bottom. A rope with an attached trap was thrown onto a tree branch at a height of 8 to 10 m from the soil surface with the help of a load. In each case, fermenting beer, various mixtures of dry wine with honey, jam or sugar were used as bait.

The collecting localities were situated in Penza Region (not far from the city), in the Mordovia State Nature Reserve and in National Park «Smolny». The biotopes were usually represented by broad-leaved forests with *Quercus robur* L., *Tilia cordata* Mill., *Betula pendula* Roth, *U. glabra* Huds., *Alnus glutinosa* (L.) Gaertn., *Fraxinus excelsior* L., *Populus tremula* L., *Corylus avellana* L., *Euonymus verrucosa* Scop., *Padus avium* Mill., *Sorbus aucuparia* L., *Lonicera xylosteum* L. and others.

Each trap (totally about 30) was exposed from May to July 2019 and checked every week.

Results

Leptura (Macroleptura) thoracica Creutzer, 1799

Totally 295 specimens were collected in 14 localities (239 males, 56 females). Most of specimens were collected in three sites:

1. Quarter 393 of Mordovia State Nature Reserve, 6-17.6.2019 - 144 specimens (125 males, 19 females) were collected. Biotope was represented by small clearing in the mixed forest with domination of *Pinus sylvestris* and *Betula pendula*, besides undergrowth was consisted of *Tilia cordata, Euonymus verrucosa* and *Sorbus aucuparia*. The trap was fixed on a stem of *Betula pendula* at the edge of the clearing.

2. Quarter 368 of Mordovia State Nature Reserve, 6-17.6.2019 - 21 specimens (15 males, 6 females) were collected. Biotope was represented by a large clearing surrounded by mixed forest with domination of *Pinus sylvestris* and *Betula pendula*. The collecting site was mostly consisted of *Betula pendula*; undergrowth was composed of with *Tilia cordata, Quercus robur, Pinus sylvestris, Sorbus aucuparia* in the undergrowth. The trap was fixed on a stem of *Betula pendula* at the edge of the clearing.

3. Quarter 86 of National Park «Smolny», Kemlyanskoe forestry farm, 14-28.6.2019 - 43 specimens (34 males, 9 females) were collected. It was mixed forest with the domination of *Betula pendula* and *Pinus sylvestris*; undergrowth was composed of *Tilia cordata, Quercus robur* and *Sorbus aucuparia* - in the undergrowth.

A remarkable case of very distinct sexual dimorphism unknown before was observed. All males from the region have red elytra, all females (but one) have black elytra. Only one female has red elytra. Other specimens known to the co-authors from Central Russia demonstrate same colour dimorphism, though only a few specimens were known before. Several females with red elytra are preserved in the collection of M.L. Danilevsky from the Far Eastern Russia only, but no males with black elytra are known to us from anywhere.

A collection of Zoological Museum of Moscow State University includes 55 specimens (47 females and 8 males) of *L. thoracica.* and only 6 (females only) from European part of the former USSR (Ukraine, Moldavia, Russia). All 6 have black elytra. All males have red elytra, but 12 Siberian females (all from Primorsky Region) and 3 females from Manchuria also have red elytra.

So, *L. thoracica* from Central Russia and from Far East belong to different subspecies. The location of the transitional zone in Siberia are not known, neither its width. The species was described from Slovenia, but the range of variability of the nominative populations is not clear because too small number of specimens is available.

Available specimens from the area (Mordovia State Nature Reserve and Penza Region) are represented by 5 main colour forms:

1. Pronotum red (with narrowly black anterior and posterior margins), elytra red, abdomen red - 195 specimens (males only)

2. Pronotum red (with narrowly black anterior and posterior margins), elytra red, abdomen partly red - 33 specimens (males only: abdomen black with red apical segment, or abdomen red with black first segment, or abdomen red with black central areas of all segments)

3. Pronotum red (with narrowly black anterior and posterior margins), elytra red, abdomen black - 12 specimens (11 males and 1 female)

4. Pronotum red (with narrowly black anterior and posterior margins), elytra black, abdomen black - 55 specimens (females only)

5. Pronotum black, elytra black, abdomen black - 1 specimen (female)

So, a specimen with black pronotum represents the rarest aberration. One such female from the Far East Russia is represented in the collection of Zoological Museum of Moscow State University

Purpuricenus kaehleri rossicus Danilevsky, 2019

Totally 74 specimens (27 males, 47 females) were collected in 6 localities. Most of specimens were collected in two sites:

1. Penza Region, Mokshan district, 5 km south-western wards of Sumarokovo, 15-29.6.2019 - 44 specimens (19 males, 25 females) were collected. It was oak forest with dominating of *Quercus robur*, *Tilia cordata, Betula pendula, Fraxinus excelsior; Sorbus aucuparia* and *Frangula alnus* were in the undergrowth. The trap was fixed on a stem of *Quercus robur* at the edge of the forest.

2. Penza Region Mokshan district, Zasechnoe village, 15-29.6.2019 - 21 specimens (8 males, 13 females) were collected. It was a large forest with domination of *Quercus robur, Tilia cordata, Populus tremula* and *Corylus avellana; Euonymus verrucosa, Lonicera xylosteum, Padus avium, Sorbus aucuparia* were in the undergrowth. The trap was fixed on a stem of *Quercus robur* at the edge of the forest.

Morphologically all specimens are normal *P. k. rossicus*: prothorax is totally black, only one female has very small nearly indistinct lateral red spots; black elytral area is always large, never moved backwards.

71 specimens of *P. k. rossicus* from Russia, Ukraine and Moldavia are preserved in the collection of Zoological Museum of Moscow State University from Russia, Ukraine and Moldavia; 5 females only have small lateral prothoracic red spots, but a pair from Konotop (Northern Ukraine, Sumy Region) has red stripe along anterior pronotal margin widened laterally.

P. k. kaehleri (Linnaeus, 1758) distributed in the West Europe often has distinct red lateral thoracic spots, which can be protruding along whole lateral and anterior thoracic margins; black elytral area is often more or less reduced and moved backwards, sometimes totally disappearing.

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