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Colour variability of the elytra and distribution of *Nicrophorus lunatus* (Coleoptera: Silphidae: Nicrophorinae)

Barevná variabilita krovek a rozšíření druhu *Nicrophorus lunatus* (Coleoptera: Silphidae: Nicrophorinae)

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Faunistics, colour variability, Coleoptera, Silphidae, *Nicrophorus lunatus*, Central Asia

Abstract. Colour variability of the elytra, and distribution of *Nicrophorus lunatus* (Fischer von Waldheim, 1842) in the Central Asia is presented. Variation of elytral colour pattern consists in breaking the red band into spots.

INTRODUCTION

The burying beetles (*Nicrophorus* spp.) were objects to a detailed ecological and systematic studies (Shchegoleva-Barovskaya 1933, Semenov-Tian-Shanskiy 1933, Pukowski 1933, Anderson & Peck 1985, 1986, Peck & Miller 1993). Majority of species of the genus *Nicrophorus* Fabricius, 1775 is very variable in respect of the redblack drawing. For correct determination of the species, it is threfore necessary consider besides other diagnostic characters colour variability of the colour pattern of elytra. It was found out that also the species with black elytra [*Nicrophorus germanicus* (Linnaeus, 1758); *N. nigrita* (Mannerheim, 1843) or *N. humator* (Olivier, 1790)] can have a wide range of colour variations differing from each other in shape amount and size of the red spots (Bickhard 1909, Peck & Anderson 1985, Sikes 1993). In recently collected material of the species *Nicrophorus lunatus* (Fischer von Waldheim, 1842) I have observed five different types of colour patterns of the elytra.

If not stated otherwise, the material was determined by the author. Abbreviation used in the text: AO - collection of Aldo Olexa, Praha; JH - author's collection; JR - coll., det. Jan Růžička, Praha; JS - coll. Jan Schneider, Praha; MT - coll. Miloš Trýzna, Děčín.

Material examined:
Kazakhstan:
1. Ketmenskiy mts., Tujuk, v.1991, 30 spec., V. Beneš lgt., coll. JH, JS, MT.
2. Ketmenskiy mts., Podgornoe env., 1500 m, vi.1992, 18 spec., V. Beneš lgt., coll. MT.
3. Dzhungarskiy Ala-Tau mts., vii.1991, 3 spec., V. Beneš lgt., coll. JH.
4. Tekeli env., vi.1993, 1200-1500 m, 12 spec., A. Plutěnko lgt., coll. JH, JS.
5. Alma-Ata, Alma Arasan, v.1974, 1500 m, 2 spec., coll. AO, det. JR.
Kyrgyzstan:
6. Przevalsk, Terskey Ala-Tau mts., vii.1991, 3500 m, 7 spec., M. Kafka lgt., coll. JS, JR.
7. Cholpon-Ata, vii.1989, 2000 m, 1 spec., J. Kaláb lgt., coll. JR.
8. Kirgyzskiy Ala-Tau mts., vall. Ala-Archa, vii.1989, 2100-2500 m, 6 spec., D. Král lgt., coll. JS, JR.
9. Frunze san. 20 let Kirgyzii, vi.1989, 5 spec., Z. Kletečka lgt., coll. JH.
China:
10. China occ. Turfan, 6 spec., coll. Hungarian Natural Museum, Budapest, det. JR.

Literary data:
Shchegoleva-Baravskaya (1933):
Kyrgyzstan: 11. Issyk-Kul lake env.
12. Tyup env., Issyk-Kul lake.
13. Narynskie gory mts.
14. Sary-Dzhas mts.
15. Karakol riv., Aleksandrovskiy khrebet mts.
16. Pimuca riv., N of Kouldsha, 5000 m.
17. Verniy riv.
Kazakhstan: 18. western Dzhungaria, Borotala riv.
Portevin (1926) and Hatch (1928):
Kyrgyzstan: 19. Tian-Shan, Kouldsha.

RESULTS

The species *Nicrophorus lunatus* is one of the most largely distributed species of the genus *Nicrophorus* in the territory of Central Asia. It was collected in mountain areas to 100 km around lakes and rivers in 500 to 5000 m altitudes. The species was described by Fischer von Waldhaim (1842) according to a single specimen from "Turkestan". This specimen has black elytra with red epipleura and a red band in basal portion. The band fuses with red coloured epipleura in the outer side; in the inner side it does not reach the elytral sutura (as on Fig. 1). In the material of the species *Nicrophorus lunatus* from Kyrgyzstan and Kazakhstan I found more specimens with different shape of the red spot than in Fischer's holotype. Different colour pattern consists in dissipation of the red band into two red spots. The outer red spot is joined with red coloured epipleura (Fig. 2), or does not touch the epipleura (Fig. 3), and inner red spot lies closely to the suture (Figs 2,3). In further case the outer red spot is reduced and only inner spot of different size and shape remains (Fig. 4) and the epipleura is also red. Very rarely the red colour spots may dissapear so that elytra are black with epipleura (Fig. 5 - Kyrgyzstan: Ala-Archa, 1 ♀, coll. JR, det. JH). The body length of examined specimens was 14 to 31 mm. All colour morphs occured, according to the collectors, together at the localities.

All localities published until now (Shchegoleva-Barovskaya 1933, Portevin 1926, Hatch 1928) were from the territory of former Turkestan (Turkmenia). Recent findings of *N. lunatus* originate from the territory of Kyrgyzstan, Kazakhstan and north-west China: Ujgur autonomous region Xinjiang (Fig. 6). No specimen from Turkmenistan was recently examined.

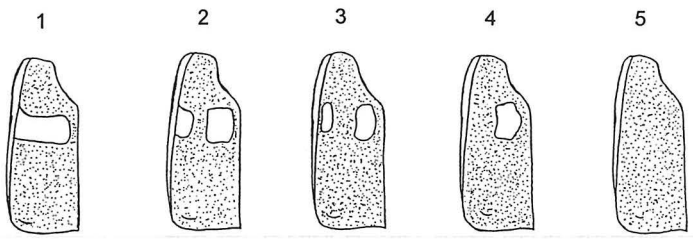


Fig. 1-5. Variation of the red band at the elytra in the species *Nicrophorus lunatus* (Fischer von Waldheim, 1842). Dotted areas - black coloured, white areas - red coloured.
Obr. 1-5. Postupná redukce červené pásky na krovkách u druhu *Nicrophorus lunatus* (Fischer von Waldheim, 1842). Tečkovaně vyznačeno černé, bíle červené zbarvení.

DISCUSSION

The data on size and colour pattern variability of *Nicrophorus lunatus* provide additional information for determination and systematic position of the species. Portevin (1926), Hlisnikovský (1964) and Shchegoleva-Barovskaya (1933) did not describe variability of the species. Variation of elytral colour pattern in *Nicrophorus* indicates that the shape of red spots may be genetically determined (Anderson & Peck 1986, Sikes 1993).

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Fig. 6. Map of the known distribution of the species *Nicrophorus lunatus* (Fischer von Waldheim, 1842) in Central Asia. Single numbers correspond to the numbers of localities stated in the text.
Obr. 6. Mapka známého rozšíření druhu *Nicrophorus lunatus* (Fischer von Waldheim, 1842) ve střední Asii. Jednotlivé číslice odpovídají číslům lokalit uvedených v textu.

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SOUHRN

Druh *Nicrophorus lunatus* je jedním z nejrozšířenějších druhů rodu *Nicrophorus* na území střední Asie. Byl sbírán v horských oblastech okolo vodních zdrojů na území dnešního Kazachstánu, Kyrgyzstánu a zasahuje i na území Číny (obr. 6). V materiálu, který jsem měl k dispozici, jsem objevil větší počet jedinců, majících odlišné zbarvení než exemplář popsaný Fischerem von Waldheimem. Rozdíly se projevují postupnou redukcí červené pásky na krovkách (obr. 1-5). Nové poznatky o velikosti a zbarvení druhu *Nicrophorus lunatus* jsou důležité při determinaci a z hlediska jeho systematického zařazení.

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FAUNISTIC RECORD FROM THE CZECH REPUBLIC - 45

Coleoptera: Dermestidae

Dermestes erichsoni Ganglbauer, 1904. Bohemia centr., Kladno - Max mine (5850), 13.vi.1954, 1 ♀, O. Voříšek lgt., J. Háva det. et coll. Species distributed throughout Europe and western Asia, from the Czech Republic reported only from Moravia (Kalík 1993). New species for Bohemia.

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