

## Larvae of net-winged beetles (Lycidae: Coleoptera) of the European part of Russia and the Caucasus

### Личинки жуков-краснокрылов (Coleoptera: Lycidae) европейской части России и Кавказа

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**Key words:** Coleoptera, Lycidae, larvae, Western Palaearctic.

**Ключевые слова:** Coleoptera, Lycidae, личинки, Западная Палеарктика.

**Abstract.** The larvae of net-winged beetles *Dictyoptera aurora* (Herbst, 1784), *Erotides nasutus* (Kiesenwetter, 1874) and *E. schneideri* (Kiesenwetter, 1878) are described for the first time. Larvae of *Pyropterus nigroruber* (DeGeer, 1774) and *Xylobanellus erythropterus* (Baudi, 1872) are redescribed. An identification key to larvae of seven species of the European part of Russia and the Caucasus is provided.

**Резюме.** Впервые описываются личинки жуков-краснокрылов *Dictyoptera aurora* (Herbst, 1784), *Erotides nasutus* (Kiesenwetter, 1874) и *E. schneideri* (Kiesenwetter, 1878). Приводится переописание *Pyropterus nigroruber* (DeGeer, 1774) и *Xylobanellus erythropterus* (Baudi, 1872). Представляется определительная таблица личинок семи видов семейства Lycidae европейской части России и Кавказа.

### Introduction

The family Lycidae of the European part of Russia and the Caucasus includes ten species. The preimaginal stages have so far been studied only in four of them, *Pyropterus nigroruber* (DeGeer, 1774) [Bourgeois, 1882; Bocák, Matsuda, 2003], *Aplatopterus rubens* (Gyllenhal, 1817) [Perris, 1877], *Xylobanellus erythropterus* (Baudi, 1872) [Burakowski, 1988; Bocák, Matsuda, 2003] and *Lygistorpterus sanguineus* (Linnaeus, 1758) [Perris, 1846; Bourgeois, 1882; Korschefsky, 1951; Kazantsev, 2005].

The possibility to study the larvae of another three species, *Dictyoptera aurora* (Herbst, 1784), *Erotides nasutus* (Kiesenwetter, 1874) and *E. schneideri* (Kiesenwetter, 1878), collected and, in case of *Dictyoptera aurora*, reared by one of the authors allows describing them for the first time. Their description is given below. The preimaginal morphological characteristics of other lycids from Western Russia are complemented and an identification key to all seven known larvae of the territory is provided.

The following acronyms are used in the paper: ICCM – Insect Center Collection, Moscow; ZMMU – Zoological Museum of Moscow University.

### Descriptions

*Dictyoptera aurora* (Herbst, 1784)  
(Color plate 2: fig. 1–4)

*Pyrochroa aurora* Herbst, 1784: 105.

**Material.** 4 larvae, Moscow Oblast, Prioksko-Terrassnyj Biosphere Reserve, in soil near pine stump, 28.08.1997, N.B. Nikitsky leg. (ZMMU); 3 larvae, Moscow Oblast, Orekhovo-Zuevskij distr., near vill. Shevliagino, in brown rot of fir stump, 5.08.1998, N.B. Nikitsky leg. (ZMMU).

**Description.** Last instar. Body almost parallel-sided or slightly widening at mid-abdomen; head and terga brown, underside sclerites lighter brown; cuticle uniformly finely alveolate. Length: 6–16.5 mm; width (at dorsum): 2.2–3.5 mm.

Head strongly transverse, dorsally triangularly produced forward; head capsule open ventrally; lateral sclerites completely fused to cranium, with three lateral setae; cranium with two anterior and two discal setae; ventral plate transverse, heart-shaped, posteriorly attached to lateral sclerites. Stemmata absent. Antennae located antero-laterally, relatively small, retractable, one-segmented, scapus elongate, 1.3–1.5 times longer than wide; antennifer represented by narrow annuliform sclerite; scapus with relatively small apical membranous bilobed slit and two short distal setae (fig. 1).

Mandibular structures tripartite, consisting of sheath (ventral part), stiletto (narrow central part) and shutter (dorsal part). Sheath narrow, free; stiletto very narrow, distally attached to shutter; shutter one-segmented, narrow, with prominent seta near base; sheath/shutter (fossa/condyle) joint approximate to base. Sheath posteriorly hinged with long mandibular rod (hypothetically, stipes of mandible – see Kazantsev [2005, 2006], but referred to as "hypostomal margin" in, e.g., Böving and Craighead [1930–1931], Lawrence [1991]). Mandibular rod prominent, relatively broad, posteriorly prolonged to posterior edge of lateral sclerite, fused thereto at its ventral margin; part of mandibular rod anterior of lateral sclerite free. Hypopharynx elongate, bottle-shaped.

Maxillary stipites fused to each other, and possibly to postlabial structures, forming ventral plate, with a pair of setae at antero-lateral corner and two seta at anterior margin. Mala relatively small, basally fused with palpiger, located, with respect to palps, intero-dorsally-dorsally, with three setae. Palps three-segmented; palpiger well developed, of approximately equal length and width, or slightly transverse, somewhat longer than two proximal palpomeres taken together, with numerous apical setae; palpomeres 1 and 2 of approximately equal length and width, but palpomere 1 often slightly longer than palpomere 2, and palpomere 3 conspicuously narrower than palpomere 2, but ca. equal in length to palpomere 1. Labial prementum narrow, undivided, without