

***CALLIDIELLUM RUFIPENNE* (MOTSCHULSKY, 1862) (COLEOPTERA: CERAMBYCIDAE) –
NEW TO THE FAUNA OF CROATIA WITH REMARKS OF ITS BIOLOGY**

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ABSTRACT: *Callidiellum rufipenne* (Motschulsky, 1862) (Coleoptera: Cerambycidae), new to the fauna of Croatia has been found during the studies on the Krk Island. New data on biology and ecology of species are presented.

KEY WORDS: *Callidiellum rufipenne*, Coleoptera, Cerambycidae, Croatia, faunistic

Introduction

Callidiellum rufipenne (Motsch.) occurs in Russia (Sakhalin Isl.), South Korea, Japan, China (Švacha and Danilevsky 1988), Northern America (Canada, The United States), Southern America (Argentina) and New Zealand (Hoebeke 1999, Turienzo 2007). Two decades ago, it was spread to Italy with imported timber (Campadelli and Sama 1988). As for now, from the European continent it is also known from Spain, Belgium, France, Georgia and southern parts of Russia (Sama and Löbl 2010).

The development of *C. rufipenne* takes place on coniferous trees, especially on *Abies*, *Chamaecyparis*, *Cupressus*, *Cryptomeria*, *Juniperus*, *Pinus*, *Thuja*, and *Thujopsis*.

During the research on *Cerambycidae* of Croatia, *C. rufipenne* was found as a new in this country on the Krk Island: Njivice, ex. larva 07.2007 *Thuja* sp.; adults 01-02.2008: 7♂♂ and 5♀♀; leg. K. Łoś. The Njivice is located by the Adriatic Sea, in the northern part of island.

Currently, range of *C. rufipenne* in Europe increases due to timber trade across the area of continent. Natural dispersion of species is another factor in this process. Locations in Italy are not distant and the climate conditions of Mediterranean basin are similar, therefore, the reveal of *C. rufipenne* from the area of Croatia is not surprising. Owing to its adaptation characteristics, which allow developing under different climate

conditions and on various food plants, *C. rufipenne* should now be considered as a cosmopolitan species.

C. rufipenne infests weak and dying trees mostly, sometimes however, it can be found on healthy plants, as it has been observed in northern-american populations in Connecticut State (Hoebeke 1999). The classification of *C. rufipenne* as a pest of coniferous trees should be preceded by some additional studies.

Biology

Young larvae of *C. rufipenne* were found inside relatively fresh (containing resin) branch on the ground. Material, which was about 2,5 m long, 5 cm in diameter at the thicker end, was infested by the larvae all over its length. For breeding studies about 0,5 m long branch section was cut off.

After rearing 12 specimens of *C. rufipenne* from the material collected, additional laboratory breeding has been conducted, which allowed to observe general characteristics of its biology. As a breeding material, few freshly severed and slightly dried branches of *C. lawsoniana* (Murr.) Parl. and *J. communis* L., each 2-5 cm in diameter, were used.

After mating, female deposits eggs into cracks of the cortex. In order to this, mostly clean fragments of branches are chosen; those with lichens cover or with excessively protruding bark are usually omitted. Larvae burrow under the bark, and feed between cortex and xylem, making irregular, sharp-edged galleries of 2-12 mm width, which are strongly visible on the surface of wood after bark is removed. Sawdust, which is not extracted from the feeding place, is firmly squeezed in the galleries. At the end of its development, larva creates much wider gallery and next, a hook-like, 2,5 cm long, pupal chamber is constructed (fig. 1). The chamber is situated in parallel to the main axis of the branch and, especially in thin material, is situated almost by the pith of the branch. The entrance is clogged with cluster of sawdust. The entire development takes only 6 months under laboratory conditions; some of the specimens, however, stay in pupal chambers for some additional time, and hatch during the following months. The lifetime of imago is short and lasts for about 2 weeks. During this time beetles don't feed. The studies of other authors showed that the species is mostly active at high temperatures and prefers low humidity of wood infested (Iwata et al. 2007), which was confirmed during our research.

The sexual dimorphism is strongly manifested in different length of antennae and the color of elytrae (fig. 2). Males' antennae are equal or slightly longer than the body length, while females have shorter antennae, reaching up to 2/3 of body-length. The elytrae of males are usually black, with blue-violet or greenish metallic shine. Sometimes, completely red or black specimens, having only red shoulders, are encountered. Females have always brown-red to red coloration.

Short development period and wide range of food plants makes *C. rufipenne* the species, which can easily adapt to different environments. For this reason it has a status of quarantine species in Japan and it is considered as a pest of coniferous trees in the US.



Fig. 1. Larval gallery (A) and pupal chamber (B) of *Callidiellum rufipenne* (Motsch.) – the arrows mark entrance openings (photos by K. Łoś)



Fig. 2. Male (left) and female (right) of *Callidiellum rufipenne* (Motsch.) (photos by W. Janiszewski)

Previous records of *C. rufipenne* from different localities in the world, especially those having close longitude to Poland (Canada, Russia, The United States) suggest, that the acclimatization of this species is also possible in our country, for example in its southern part.

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