

**The first report on development of *Rosalia alpina* (LINNAEUS, 1758)
(Coleoptera: Cerambycidae) in wood of *Ulmus* L. in Poland**

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ABSTRACT. This is the first report on development of *Rosalia alpina* (LINNAEUS, 1758) (Coleoptera: Cerambycidae) in wood of elm (*Ulmus* L.) in Poland, on the basis of the adult beetle reared from the material collected in the Beskid Niski mountain range.

KEY WORDS: Coleoptera, Cerambycidae, *Rosalia alpina*, *Ulmus*, Poland, Beskid Niski

Rosalia alpina mainly occurs in central and southern Europe. In central Europe, it prevailly lives in old mountain beech forests (BURAKOWSKI et al. 1990). It belongs to very rare and disappearing species in the Cerambycidae fauna of Poland. Previously, this species most likely occurred in the entire range of common beech (*Fagus sylvatica* L.) in Poland, so far the only host of its larvae in this country (STARZYK 2004). Presently, this longhorn may be found most numerously in beech forests of the Beskid Niski and Bieszczady mountain ranges, where it finds the best conditions for its development.

Ecologically *Rosalia alpina* is associated with *Fagus* (SAMA 2002). In literature also other broadleaved species have been reported as hosts of its larvae, including species from genera: *Ulmus*, *Carpinus*, *Tilia*, *Castanea*, *Fraxinus*, *Juglans*, *Quercus* and even some coniferous trees have been reported as the hosts (ŠVÁCHA & DANILEVSKY 1988, BURAKOWSKI et al. 1990, BENSE 1995, SLÁMA 1998, SAMA 2002). However, data on development of this longhorn in conifers are little reliable. In central Europe, *R. alpina* is almost exclusively known from *Fagus* (BENSE 1995).

In 2006 the development of *Rosalia alpina* in wood of elm *Ulmus* L. was observed in southeastern Poland, in the Beskid Niski mountain range. In the fragment of fuel wood

originating from the vicinity of Myscowa village (Żmigród forst section of the Dukla forest district) a larva and larval tunnels were found (Fig. 1-2). From this material one adult female of *R. alpina* was reared in the laboratory (Fig. 3).



Fig. 1-2. Larval tunnels of *Rosalia alpina* (L.) in wood of elm *Ulmus* L. – Beskid Niski, Myscowa ad Krempna, Oct. 28, 2006, leg. M. CIACH. 1 – view on longitudinal section; 2 – fragment of the tunnel on cross-section. Photo by M. CIACH.



Fig. 3. *Rosalia alpina* (L.), adult female reared from elm wood – noticed Jan. 7, 2007, cult. M. CIACH & M. FLUDA. Photo by M. CIACH.

Larval tunnels of *Rosalia alpina* were found in a fragment of hard and not decayed elm wood. Probably it is the fragment of the stem, 12.5 cm in diameter and 19 years of age (Fig. 1-2). Most likely this is wood of mountain elm *Ulmus glabra* HUDS., which seem to be indicated by macroscopic and microscopic wood features.

Material examined

Larva and feeding tunnels – Beskid Niski, Myscowa ad Krempna, October 28, 2006; 1 ex., female, ex cult. – noticed January 7, 2007 (leg. M. CIACH, cult. M. CIACH & M. FLUDA).

Moreover, it is worth to mention that an adult of *Rosalia alpina* was observed on dead mountain elm on southern slopes of Mt. Łysa Góra near Myscowa in July 2001 (ARTUR

ZATOR – personal information). Adults of this species were also observed on sap of *Ulmus* (SLÁMA 1967, 1998).

Elm *Ulmus* L. as a host tree of *Rosalia alpina* has been reported among others by LUIGIONI (1923, 1927), PLAVILSTSHIKOV (1940, 1955), TASSI (1966), HELLRIGL (1974), MAMAEV & DANILEVSKY (1975), ŠVÁCHA & DANILEVSKY (1988), ANGELOV (1995), BENSE (1995). It seems that only data of LUIGIONI (1923, 1927), PLAVILSTSHIKOV (1940), MAMAEV & DANILEVSKY (1975), and ŠVÁCHA & DANILEVSKY (1988) are the original data. LUIGIONI (1923, 1927) reported Maccarese (situated by the sea, near Rome in Italy) as the locality of *R. alpina*, where in the place pointed out by his friend he found adults, larvae, and pupae of this species in elms. This finding has, however, been questioned (GIANFRANCO SAMA – personal information). In publication of PLAVILSTSHIKOV (1940) the information on elm as the host plant of larvae of *R. alpina* is only of a general nature. MAMAEV & DANILEVSKY (1975) as well as ŠVÁCHA & DANILEVSKY (1988) refer to the material originating from the Soviet Union, presently Russia (district of Voronezh, Tellermanovsk forest unit), i.e. two larvae collected by G. V. LINDEMANN on July 5, 1964 in wood of *Ulmus*.

It seems that larval feeding of *Rosalia alpina* in elm wood in this part of the Beskid Niski may be the result of a quite good condition of this longhorn beetle in this area where it is relatively numerous, and it may have a tendency to colonize not only beech. Also a poor condition (local dying) of elm trees in this area was most certainly of importance. On the other hand the adaptation of *R. alpina* to feeding in elm wood in Maccarese had been explained by migration of this insect as the result of deforestation taking place during the World War I when the most beautiful forests of the Appenines were damaged (LUIGIONI 1923).

It is expected that in future *Rosalia alpina* will be found feeding also on other species of broadleaved trees in Poland. Presently it would be necessary to study in detail the trophic relations between this insect species and elm in vicinity of Myscowa. This would enlarge the knowledge on biology and ecology of this longhorn and would be of importance for its protection in Poland.

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