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**Notes on the Life History of *Eulecanium douglasi* (Šulc)  
(Homoptera, Coccidae) and Its Parasites**

Obserwacje nad rozwojem *Eulecanium douglasi* (Šulc) (Homoptera, Coccidae)  
i jego pasożytami

INTRODUCTION

*Eulecanium douglasi* is one of the widely distributed species, classified as a transpalaeartic coccid by Kosztarab and Kozar (6). It feeds on twigs and branches of *Alnus*, *Betula*, *Corylus*, *Populus*, *Ribes*, *Salix*, *Sorbus*, *Sorbaria* and *Spirea* (6, 1). According to Kaweck i (5) and Drozdovskij (2) currant soft scale is considered to cause occasionally severe injury to *Ribes grossularia*. So far, in the coccid literature only few information exists about phenology of *E. douglasi*, mainly in Šulc (7) and Green (3). The present study was undertaken in order to obtain basic data on the life history of *E. douglasi* in Poland.

I am very indebted to Prof. Bartłomiej Miczulski (Department of Phytopathology and Plant Protection, Agric. Univ., Lublin) who has identified the hymenopterous parasites.

MATERIAL AND METHODS

The observations were carried out on *Ribes grossularia* near Lublin. Samples from twigs (pieces of bark 2×2 cm) and leaves were collected every 10 days from August 1987 to November 1989. For the purpose of determination of particular instars of *E. douglasi* about 100 microscopic slides were made according to Williams and Kosztarab (9).

RESULTS

Life history

The currant soft scale *Eulecanium douglasi* develops one annual generation on *R. grossularia* in Poland. Its seasonal life cycle is shown in Fig. 1.

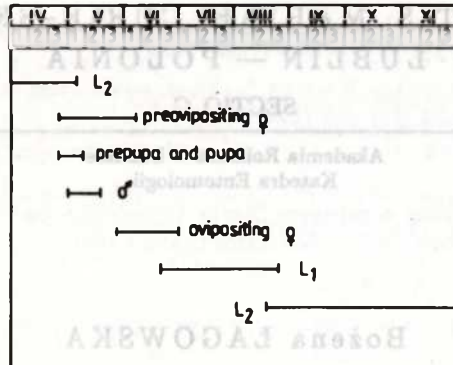


Fig. 1. The life history of *Eulecanium douglasi* (Šulc) compiled after collecting dates between 1987 and 1989

*E. douglasi* develops through two larval instars to the adult female and through two larval instars, a prepupa and pupa to the adult male. The second instar larva hibernates. The first individuals of this instar were sampled on the 20th of August 1987 and on the 15th August, 1988. After the winter diapause the larvae keep growing through March and April. The second moult of the female larvae took place at the beginning of May in 1988 and by the end of April, 1989. The first specimens of young female were collected on the 4th of May, 1988 and on the 23rd of April, 1989. At that time male specimens were in the prepupal and pupal instars. The beginning of the appearance of young females and prepupae and pupae coincided with the beginning of blossoming of *R. grossularia* in both years. The flight of males was observed on the 14th of May, 1988 and on the 2nd of May, 1989. According to Green (3) adult male emerged at the beginning of June. The preovipositing females were sampled for about 30 days. At the beginning of June, 1988 and in the third decade of May, 1989 a sclerotization of the body was observed in all examined females, a process indicating the near ovipositor. The appearance of ovipositing females was synchronized with the appearance of fruits on *R. grossularia*.

The first instar larvae hatched by the third decade of June (29 VI 1988 and 20 VI 1989). The development of the first instar larvae lasted about 8 weeks. The first moult took place in the second decade of August. On the 27th of August, 1988, all examined larvae passed into the second instar and lived on leaves and twigs. From October all specimens were found on twigs only.

In 1988 and 1989 the development of *E. douglasi* from young females to the second instar larvae lasted about 127 days.

## Parasites

The available literature (4, 8, 11) reports the following species of encyrtids (*Encyrtidae*): *Blastothrix trjapitzyni* Sugonajev, *B. sericea* (Dalman), *Discodes aeneus* Dalman, *Encyrtus infidus* Rossi, *Anagyrus schönerii* (Westw.) and aphelinids (*Aphelinidae*); *Coccophagus aterrimus* Vikberg.

Two parasites have been recorded from Poland: *Blastothrix britannica* Girault (*Encyrtidae*) and *Coccophagus piceae* Erdös (*Aphelinidae*).

*Blastothrix britannica* Girault

Environs of Lublin; forest: host, 1♀, on *Betula* sp., parasite, 2♀, emerged on 1 IV 1989; orchard: host, 1♀ on *R. grossularia*, parasite, 3♀, emerged on 14 VI 1983; garden: host, 1♀, on *R. grossularia*, parasite, 1♀, emerged on 10 VI 1989; host, L<sub>2</sub>♀ on *R. grossularia*, parasite, 1♀, emerged on 13 V 1991.

This is a new species for *Coccinea* in Poland and the first record from *E. douglasi* so far unknown. It is quoted by Trjapicyn (8) as a parasite of *Eulecanium tiliae* (L.) and *E. ciliatum* (Douglas).

Distribution: widespread in the Soviet Union, western Europe, Mongolia (8).

*Coccophagus piceae* Erdös (= *C. scutellaris* Dalman)

Environs of Lublin; garden: host, L<sub>2</sub>♀ on *R. grossularia*, parasite, 1 specimen, emerged on 29 V 1989.

This species was recorded from Poland by Żak-Ogaza (10, 11) as a parasite of *Palaeolecanium bituberculatum* (Targ.), *E. coryli* (L.) and *Pulvinaria betulae* (L.). Jasnoš (4) reports that it is a parasite of the male nymphs of *Pulvinaria* sp.

Distribution: widespread in the Soviet Union, Hungary, Poland (4).

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#### STRESZCZENIE

Obserwacje nad rozwojem *Eulecanium douglasi* na *Ribes grossularia* prowadzono w okolicach Lublina w latach 1987–1989. W ciągu roku rozwija się jedno pokolenie tego gatunku, zimują larwy drugiego stadium. Rozwój w linii żeńskiej odbywa się poprzez dwa stadia larwalne, natomiast w linii męskiej — podobnie jak u innych czerwców. Okresy występowania poszczególnych stadiów rozwojowych *E. douglasi* zostały przedstawione na ryc. 1. Początek pojawu młodych samic zbiegał się z kwitnieniem agrestu, natomiast samice składające jaja obserwowano równocześnie z pojawieniem się owoców. Okres rozwoju *E. douglasi* od pojawu młodych samic do ukazania się larw drugiego stadium trwał ok. 127 dni.

Z samic i z żeńskich larw drugiego stadium *E. douglasi* wyhodowano dwa nowe gatunki pasożytniczych błonkówek: *Blastothrix britannica* i *Coccophagus piceae*.