

FIRST FINDING OF *PORPHYROPHORA POLONICA* (HEMIPTERA: COCCOIDEA: MARGARODIDAE) IN SLOVAKIA

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Abstract: A female specimen of the Polish cochineal scale, *Porphyrophora polonica* (Linnaeus, 1758), was found in the surroundings of the city of Nové Mesto nad Váhom in August 1956. This is the first published record of the species from Slovakia.

Key words: Hemiptera, Margarodidae, *Porphyrophora polonica*, Slovakia, faunistics.

INTRODUCTION

The Polish cochineal scale, *Porphyrophora polonica* (Linnaeus, 1758), is a scarcely recorded insect species at present. However, its complete life cycle was accurately described already in the early 18th century (BREGNIUS 1731–1732). Females and cysts of *P. polonica* contain large quantities of intensive crimson red dye which can be used for dyeing wool and silk. For this reason, *P. polonica* was intensively collected and used throughout the Middle Ages before it was replaced by a cheaper and more intensive dye from the bodies of the Mexican cochineal, *Dactylopius coccus* (O. Costa, 1829). It is supposed that the medieval Czech words for the months of June (červen) and July (červenec) and the red colour (červená) were derived from „červ“ which was used then for denoting most small epigeic invertebrates and that their etymologies are associated with the season of the occurrence of *P. polonica* and its colour.

The development of *P. polonica* takes place in the ground on roots of various plants in sparsely vegetated areas on loose sandy soils, as deep as 30–50 cm below the ground. Altogether about 60 plant species from 12 families were recorded as hosts, e.g. from the genera *Gypsophila*, *Cerastium*, *Festuca*, *Fragaria*, *Herniaria*, *Melampyrum*, *Potentilla*, *Spergularia*, but the main host plant species is everywhere *Scleranthus perennis* (JAKUBSKI 1965, KOSZTARAB & KOZÁR 1988, KÖHLER 2008). This latter plant is among most frequent field weeds and occurs in particular on long-term fallows. In the Middle Ages, *P. polonica* probably used to be much more

common than nowadays. KÖHLER (2008) summarised all recent findings from Germany in a table: the majority of them dated back to the 19th and the early 20th century. Recently, *P. polonica* became much rarer in consequence of modern practices in agriculture and even ranked among critically endangered species in many countries.

The occurrence of *P. polonica* in Slovakia has not been published till now. This paper reports on a finding of this species in Slovakia 1950's.

MATERIAL AND METHODS

On 20.8.1956, the author found one female moving on tops of plants in a low-growing, sparse ruderal vegetation with dominant *Scleranthus perennis* in an extensive pasture and military training area on sandy soil. The site was situated in the lowland near the former Váh River basin in the cadastre of Kočovce near the city of Nové Mesto nad Váhom (48°44'26" N, 17°51'15" E, altitude 177 m). The specimen was fixed in 70% ethanol and was later deposited in the collections of the Department of Zoology, Charles University in Prague (Czech Republic).

RESULTS AND DISCUSSION

P. polonica has one generation per year. It overwinters as first instar nymphs inside waxy egg cases. The nymphs start their activity in late March to late April and first emerge from the ground, later return into the soil to roots. The first moulting

(ecdysis) begins as soon as the nymphs achieve the size of 1,2 mm in diameter, resulting in a cyst with stunted legs. A female cyst undergoes ecdysis altogether twelve times, the male nymph five times (the last nymphal stages being called protopupa and pupa). New adults appear at the end of June (JAKUBSKI 1965).

The mature female is oval to sphaerical, considerably varying in size between 1,5 to 6,5 mm. Its mouth parts are stunted and the fore legs are very robust with tarsus transformed into a sharp thorn as an adaptation for soil digging (JAKUBSKI 1965). *P. polonica* shows a wide morphological variability and have a number of younger synonyms because of that. *P. polonica* is widely distributed in the Euro-siberian region from Europe to Inner Mongolia in China, a distribution map was published by JAKUBSKI (1965). It has not been published from Slovakia (ZAHRADNÍK 1977). Zahradník (in litt.) also found this species in Slovakia, but has not published his records for his illness. In the neighbouring Czech Republic, it is known as uncommon from several localities in southern Moravia (Mohelno, Dolní Věstonice, Pavlovské vrchy). In Hungary, Moldova, and namely on sandy soils in Poland, it was found

more often. Only isolated findings were made in western Europe (southern France to Scandinavia), the species is also rare e.g. in Germany (KÖHLER 2008). *P. polonica* occurs mostly in lowlands in Europe, while it reaches the subalpine zone in Asia (JAKUBSKI 1965).

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