

***Myzocallis (Lineomyzocallis) walshii* MONELL, 1879 (Hemiptera,
Aphidoidea), an aphid species new to Poland**

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ABSTRACT. *Myzocallis (Lineomyzocallis) walshii* MONELL, 1879, an aphid species connected with the red oak (*Quercus rubra* L.), was recorded in Tadeusz Kościuszko Park in Katowice in 2005. A description of this aphid species, new to Poland, with the key to Polish species of the genus *Myzocallis* PASSERINI, 1860 is given.

KEY WORDS: Aphidoidea, Drepanosiphidae, *Myzocallis (Lineomyzocallis) walshii*, *Quercus rubra* L., Poland

INTRODUCTION

The genus *Myzocallis* PASSERINI 1860 consists approximately of 40 monoecious and holocyclic aphid species and subspecies connected with trees of the family Fagaceae. It belongs to the family Drepanosiphidae and is divided into 10 subgenera: *Castaneomyzocallis* QUEDNAU et REMAUDIERE, 1987; *Lineomyzocallis* RICHARDS, 1965; *Paramyzocallis* QUEDNAU et REMAUDIERE, 1994; *Globulicaudaphis* HILLE RIS LAMBERS, 1966; *Neodryomyzus* QUEDNAU et REMAUDIERE, 1994; *Pasekia* AIZENBERG, 1959; *Agrioaphis* WALKER, 1870; *Myzocallis* sensu stricto; *Neomyzocallis* RICHARDS, 1965; and *Californicalis*, QUEDNAU et REMAUDIERE, 1994 (QUEDNAU & REMAUDIERE 1994).

In Poland 5 species have been recorded, representing 2 subgenera: *Myzocallis (Agrioaphis) castanicola* BAKER, 1917; *M. (A.) myricae* KALTENBACH, 1843; *M. (Myzocallis) boernerii* STROYAN, 1957; *M. (M.) carpini* KOCH, 1955; and *M. (M.) coryli* GOETZE, 1778. Among them only *M. (A.) castanicola* and *M. (M.) boernerii* feed on oaks: *Quercus robur* L. and *Q. cerris* L. (WĘGIEREK & WOJCIECHOWSKI 2004). They do not live on the red oak (*Q. rubra* L.), an ornamental tree introduced from North America into

Poland (Botanical Garden of the Jagiellonian University) in 1806. Now it is one of the most common alien species belonging to the managed urban greenery (parks, squares, housing estate and roadside green), as well as planted in the forests (BUGAŁA 2000).

In the last fifteen years, with the progressive dispersal of the red oak, we have observed an expansion of a Nearctic aphid species *Myzocallis* (*Lineomyzocallis*) *walshii*. In Europe it was first collected in France (REMAUDIERE 1989), and lately it has also been reported from Switzerland, Italy and Spain (NIETO NAFRIA & MIER DURANTE 1998), Hungary, Germany and the Czech Republic (HAVELKA et al. 2005).

SYSTEMATICS

Myzocallis (*Lineomyzocallis*) *walshii* MONELL, 1879

(Fig. 2)

Study area and material examined

In 2005 small colonies of this species were observed on the underside of leaves of the red oak (*Q. rubra*) in Tadeusz Kościuszko Park in Katowice (Fig. 1). Alate viviparous females, alatoid nymphs and nymphs were observed from July to September. In September sexuales appeared: oviparous females and alate males, which were collected in October.

The material has been deposited in the collection of the Department of Zoology, University of Silesia: 1 alate viviparous female, 1 alatoid nymph, 2 nymphs 09 June 2005; 1 alate viviparous female 16 July 2005; 2 oviparous females, 1 alate male 05 September 2005, *Quercus rubra* L., leg. B. Osiadacz, K. Wiczorek; det. B. Osiadacz, K. Wiczorek.

Description (based on RICHARDS 1968)

Alate viviparous female. Colour when alive: yellow with black pigment at apices of antennal segments and on costal margin of forewing. Frontal tubercles poorly developed. Frontal setae inconspicuous. Discal setae pointed, sometimes blunt. Antennal setae pointed, longest about equal to half basal diameter of antennal segment III. Rostrum extending beyond fore coxae, apical segment with 3 – 6 secondary setae. Fore coxa not enlarged. Tibial setae mostly pointed with a few blunt or weakly capitate ones basally on dorsal surface of each tibia. First tarsal segments each with 2 dorsal setae and 5 ventral setae. Dorsal abdominal chaetotaxy essentially; all setae pointed or blunt, about same length as discal and prothoracic setae; each tergite normally with a pleural seta on either side. Lateral abdominal papillae present, without apical setae. Siphunculi short, smooth, without apical flange. Cauda knobbed. Anal plate bilobate. Venter of each abdominal segment with a single irregular row of pointed setae.

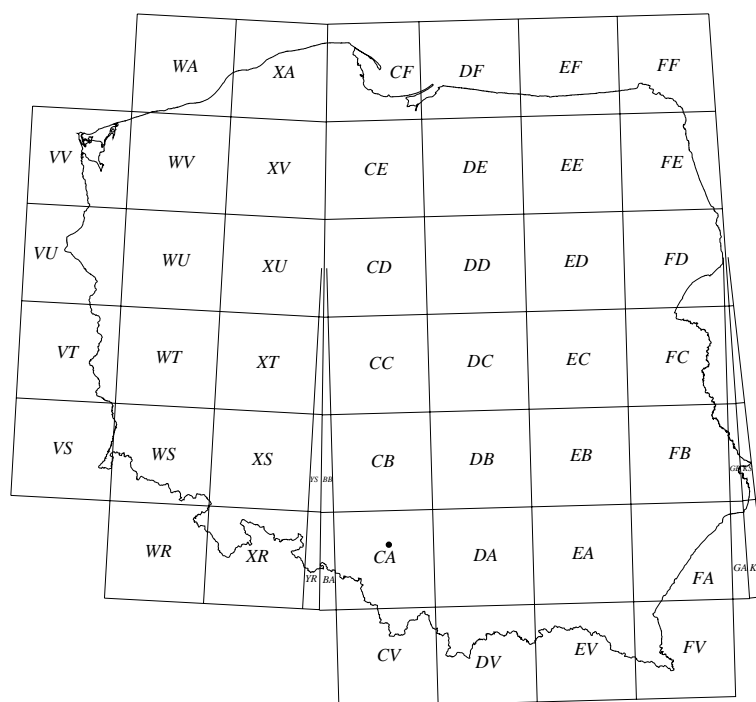


Fig. 1. Localization of the study site – Tadeusz Kościuszko Park, Katowice, Poland (UTM grid: CA 46)

Measurements of 2 alate viviparous females specimens (Katowice, Poland, 09 June 2005, 16 July 2005, *Quercus rubra* L., leg. B. Osiadacz, K. Wiczorek)

Body: 2.0–2.1mm, antennae: 1.78mm, 0.88 x body; lengths of antennal segments: III, 0.45mm; IV, 0.35mm; V, 0.32mm; VI, (0.18 + 0.35), antennal segment III with 3–4 circular secondary rhinaria situated on basal half; apical segment of rostrum 0.078 mm, about 0.8 x 2sht; siphunculus 0.039mm; cauda 0.062mm.

Bionomics

The species lives on the undersides of leaves of *Quercus rubra* L. in the small colonies. They are produced honeydew and are not visited by ants.

Remarks

The combination of characters: broad bands of black pigment running down sides of thorax and along leading edges of wings as well as fore-tibiae and tarsi black differ visibly *Myzocallis (L.) walshii* from others Polish species of genus *Myzocallis*.

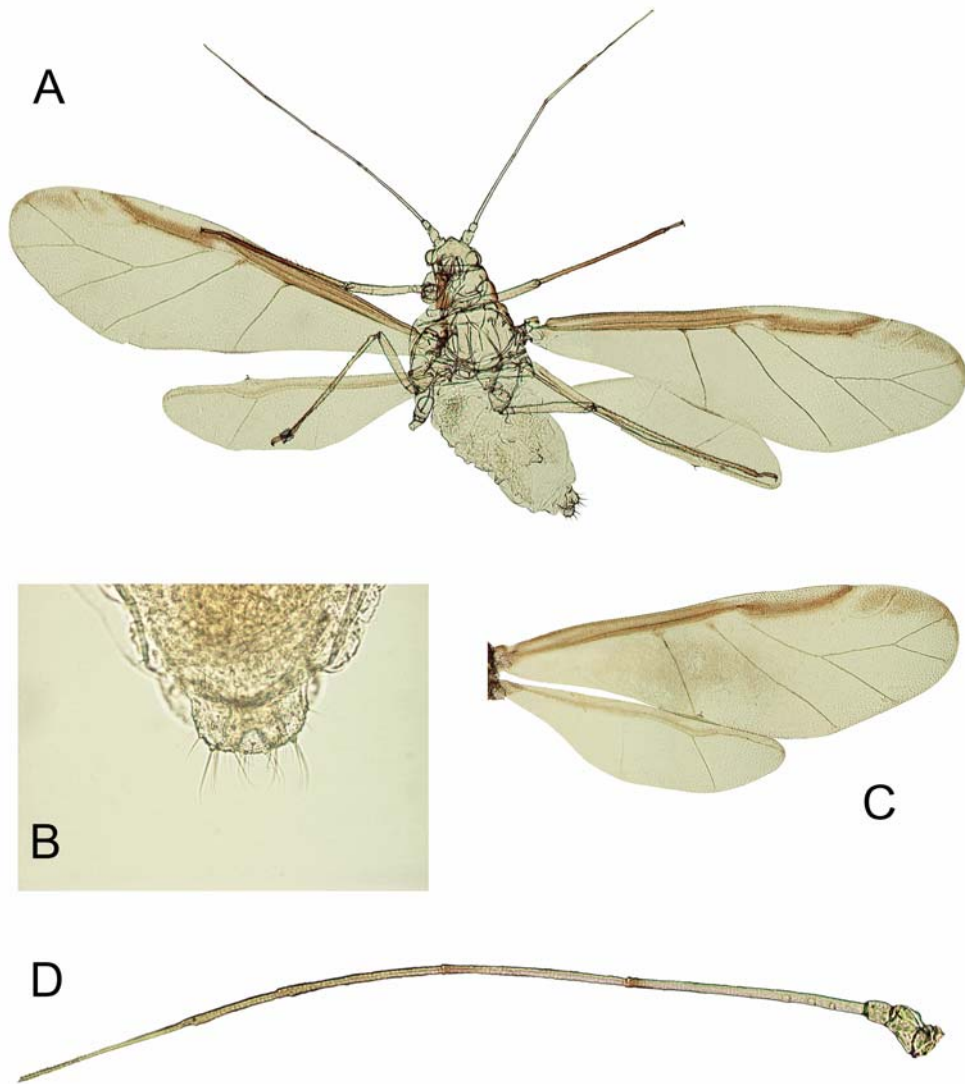


Fig. 2. *Myzocallis (Lineomyzocallis) walshii*; A - alate vivipara, B - cauda of alate vivipara, C - wings of alate vivipara, D - antenna of alate vivipara.

Key to Polish species of genus *Myzocallis* PASSERINI, 1860

Frontal tubercles weakly developed, abdomen without dorsal tubercles, sometimes with marginal tubercles. Each abdomen tergite with several spinal hairs. Antenna as long as, or shorter than body; processus terminalis longer than VIa; segment III with rather few transverse oval, rather broad or subcircular, secondary rhinaria forming a row. Rostrum reaches beyond fore coxae. Fore coxae only slightly larger than middle and hind coxae. First tarsal segment normally with 5 ventral and 2 dorsal hairs. Radial sector of fore wing more or less reduced. Siphunculi low, truncate, without flange. Cauda knobbed.

Alate viviparous female

1. Dorsum of abdomen always with a trace of pigment around bases of dorsal clusters of abdominal setae; siphunculi dark; on *Myrica gale*, *Castanea sativa*, occasionally on *Quercus* spp.; two species in Poland, subgenus *Agrioaphis* 3
- Dorsum of abdomen usually without pigment around bases of dorsal clusters of abdominal setae 2
2. Never with prothoracic pleural setae; costal margin of wing without pigment except a spot on stigma; siphunculi pale or weakly pigmented, never dark; on *Quercus* spp., *Corylus* spp., and *Carpinus betulus*; three species in Poland, subgenus *Myzocallis* s. str. 4
- If without abdominal pigment, then prothoracic pleural setae present; costal margin of wing normally conspicuously pigmented; fore-tibiae and tarsi black and mesotibiae pigmented on apical portions; on *Quercus rubra*; one species in Poland, subgenus *Lineomyzocallis* *Myzocallis* (*L.*) *walshii* (MONELL, 1879)
3. Each abdominal sclerite much darker along the edges than in the middle; distal end of antennal segment I as dark as segment II; siphunculi with a few dispersed spicules; on *Myrica gale* *Myzocallis* (*A.*) *myricae* (KALTENBACH, 1834)
- Each abdominal sclerite non darker along the edges than in the middle; distal end of antennal segment I distally paler than segment II; siphunculi without spicules; on *Castanea sativa* or *Quercus* spp. *Myzocallis* (*A.*) *castanicola* (BAKER, 1917)
4. Apical segment of rostrum long, bluntly rounded, 0.13–0.16 mm; $1.15\text{--}1.40 \times 2\text{sht}$; never with traces of pigment around bases of abdominal spinal setae; on *Corylus* spp. *Myzocallis* (*M.*) *coryli* (GOETZE, 1778)
- Apical segment of rostrum short, conical 5
5. Rostrum 0.08–0.10 mm; $0.9\text{--}1.1 \times 2\text{sht}$; sometimes with traces of pigment around bases of abdominal spinal setae; on *Carpinus betulus* *Myzocallis* (*M.*) *carpini* (KOCH, 1955)
- Rostrum 0.10–0.12 mm; $0.90\text{--}1.25 \times 2\text{sht}$; dorsal abdominal setae shorter, or barely as long as basal diameter of antennal segment III; abdominal patches not as above; on *Quercus* spp. *Myzocallis* (*M.*) *boernerii* (STROYAN, 1957).

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