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Distribution of *Cymbalaria muralis* P. Gaertn., B. Mey. & Scherz. in the central part of Polish Pomerania

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Abstract: This paper describes twelve new sites of *Cymbalaria muralis* found in 2003-2005 in the central part of Polish Pomerania. Four sites are situated in Słupsk and single sites are in Bytów, Jarosławiec, Lębork, Łeba, Sławno, Strzekęcin, Wieszyno and Zaleskie. *C. muralis* appears there on gothic defence walls, walls of old churches and castles, in slits of ports and canals, in joints of underpinnings of old houses, in stone slits of old wells, etc.

Key words: *Cymbalaria muralis*, rare kenophyte, plant of old walls, Pomerania

1. Introduction

Cymbalaria muralis P. Gaertn., B. Mey. & Scherz. (Scrophulariaceae) is a native species in south and south-west Europe, in the south Alps, east Jugoslavia, central and south Italy, and in the Sicily (Meusel *et al*. 1965; Webb 1972); it is also noted in north Africa and east Asia (Meusel *et al*. 1965; Wojewoda 1963). In other parts of Europe it is cultivated as a decorative plant, but sometimes it is also introduced accidentally or reported as a garden escape (Wojewoda 1963; Webb 1972; Rothmaler *et al*. 1988). Most frequently it appears on old brick or stone walls (Wojewoda 1963; Szafer *et al*. 1967; Webb 1972; Rutkowski 2004) and especially on calcareous joints of old buildings (Rothmaler *et al*. 1988), sometimes on debris, rarely on roadsides and near railway tracks (Wojewoda 1963).

In Polish flora, *C. muralis* is a rare species (Zając & Zając 2001). It was noted in many places only in Lower Silesia and in a few places in Pomerania (Wojewoda 1963; Weretelnik 1973, 1992; Świerkosz 1993; Szczęśniak & Świerkosz 2003). Elsewhere it was noted only in single sites, mainly in towns: Szczecin (Żukowski 1960), Świnoujście (Piotrowska 1966), Gorzów Wielkopolski (Misiewicz 1970), Słupsk (Misiewicz 1978), Warsaw (Sudnik-Wójcikowska 1987), Poznań (Jackowiak 1993), and Gdańsk (Buliński 2000).

It is hard to say when the species arrived to Poland. In gardens it started to be planted possibly at the beginning of the 19th century. First, *C. muralis* came to Silesia. However, it is unclear if the first dates from Silesia refer to naturalized plants in ruderal habitats, as these might be notes on plants in cultivation (as such a tendency was fairly popular in German floristic studies). Anyway, the wider spread of *C. muralis* after 1870 is certainly a result of its spontaneous migration. From Silesia it spread north and east, mainly in the first half of the 20th century (Zając & Zając 1973).

In our country it is mainly a kenophyte (Kornaś 1968) regarded as an epecophyte (Kornaś 1968; Sudnik-Wójcikowska 1987) ergasiophyte (Schwarz 1967) or ephemerophyte (Jackowiak 1993). According to Wojewoda (1963) and Szafer *et al*. (1967), *C. muralis* is a therophyte, but according to Rothmaler *et al*. (1988) it is a perennial plant. Jackowiak (1993) describes *C. muralis* as a hemicryptophyte or herbaceous chamaephyte or hemicryptophyte (Jackowiak 1998; Rutkowski 2004). In all probability, due to its rare appearance in our country and the specific sites it requires, the species was not assigned any ecological indicator value by Zarzycki *et al*. (2002). According to Matuszkiewicz (2001), *C. muralis* is the species distinguishing the order *Potentilletalia caulescentis*, belonging to the class *Asplenietea rupestria*.

C. muralis is a stoloniferous, low, trailing perennial with shoots producing roots at the base of its leaves and that is why it easily attaches and grows on vertical walls. During development the flower pedicel changes

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its reaction to light. At first it shows positive phototropism, exposing the flowers to possibly best light conditions, which allows insects to pollinate the flower. When the fruit on the pedicel ripens, the pedicel starts to react to light negatively, as it elongates and bends back, directly into dark places (slits in walls), where its seeds find good conditions for germination (Podbielkowski & Podbielkowska 1992).

The aim of this work is to report on new localities of *C. muralis* in the central part of Polish Pomerania.

2. Material and methods

Field research on distribution of *Cymbalaria muralis* was conducted in 2003-2005 in the central part of Polish Pomerania, i.e. between the Łeba river in the west and the Parsęta river in the east. This area according to Kondracki (1998) is the eastern part of the region called Western Pomerania. For each new site of *C. muralis*, the number of ATPOL square is given, according to the system applied in the *Distribution Atlas of Vascular Plants in Poland* (Zając 1978).

3. Results

In the study area, *Cymbalaria muralis* was noted before only in two places: (1) Żydowo, in slits of stone underpinnings of the school (Holzfuss 1937); and (2) Słupsk, on the defence walls in Kilińskiego Street and Jagiełły Street (Misiewicz 1978).

Our field research confirmed the existence of both localities mentioned above and revealed the existence of thirteen new places of occurrence of this species: four sites in Słupsk and single sites in Bytów, Jarosławiec, Karżniczka, Lębork, Łeba, Sławno, Strzekęcin, Wieszyno and Zaleskie (Fig. 1).

List of new localities

Bytów (number of locality 1-ATPOL square CB03) – sparse, flowering and fruiting clump of *C. muralis* on stone underpinnings of the castle (built by Teutonic Knights) on the way to a park. This place is shadowed by monumental oaks (*Quercus robur* L.) growing nearby.

Jarosławiec (2-BA67) – a few flowering and fruiting clumps in slits of concrete support of a cliff, above the level of waves at the height of the way out to Rusinowo.

Karżniczka (3-CA71) – a great many of rich, flowering and fruiting clumps of *C. muralis* between the joints of a brick underpinning of the mansion.

Lębork (4-CA64) – a few flowering and fruiting clumps on the underpinning of the court building. Next to them there are seedlings of *Betula pendula* Roth and *Chelidonium majus* L. The site is shaded and damp. This part of the court building borders on the Łeba river.

Łeba (5-CA43) – a few flowering and fruiting clumps in concrete slits of the walls of the canal in the port. This species is accompanied by: *Sedum acre* L., *Leymus arenarius* (L.) Hochst. and *Tussilago farfara* L.

Sławno (6-CA87) – sparse flowering and fruiting clumps in cracks of concrete walls of the Town's Canal in Kąpielowa Street and the Sports Square. The site of *C. muralis* is shadowed by buildings.

Słupsk (7-10 – CA70) – many flowering and fruiting clumps on old gothic defence walls in Prosta Street; a single clump on old gothic walls at the Boulevard of Popiełuszko; a single clump between the pavement bricks in Francesco Nullo Street; and a great many fruiting and flowering clumps on old defence walls at

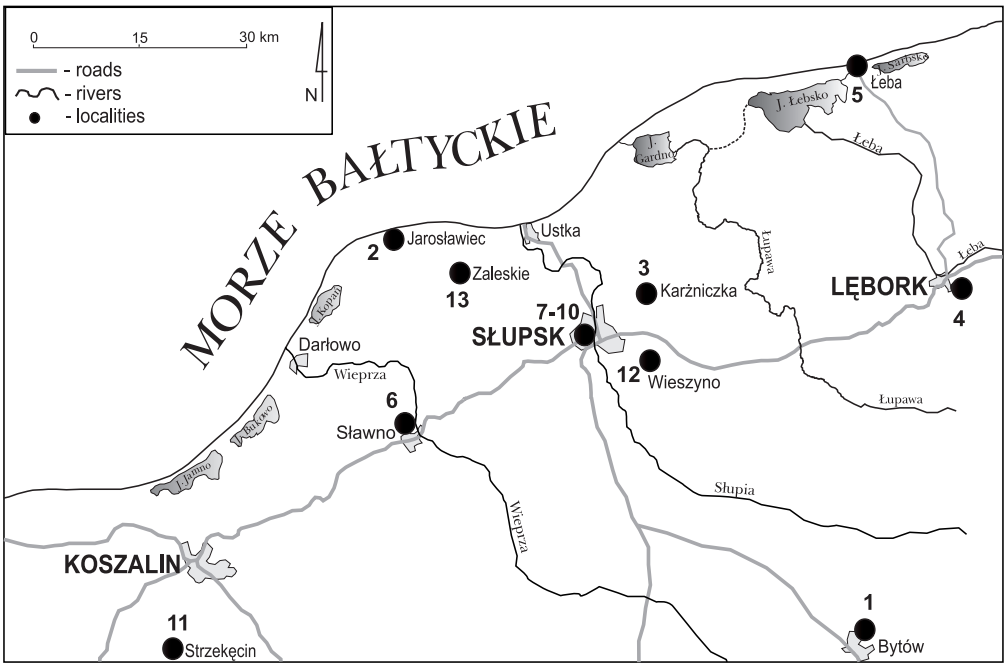

Fig. 1. Distribution of *Cymbalaria muralis* in the central part of Polish Pomerania
Explanations: 1-13 – localities of *Cymbalaria muralis* (see in text)

the town's Public Library in Grodzka Street.

Strzekęcin (11-BB04) – many flowering and fruiting clumps between joints of a stone well in a former manor park.

Wieszyno (12-CA70) – about a dozen flowering and fruiting clumps on a former manor house between the slits of stone underpinning of stairs from the southern part of the building.

Zaleskie (13-BA68) – a great many of rich, flowering and fruiting clumps of *C. muralis* between the joints of a brick underpinning of the mansion from the eastern side of the entrance to the former manor park.

4. Conclusions

Cymbalaria muralis is a rare species in the central part of Polish Pomerania. It mainly appears in slits of brick joints, gothic defence walls, on underpinnings of stone mansions and other old buildings, such as castles, churches, schools, or courts. In the majority of its currently reported sites, *C. muralis* forms only small patches or single clumps. In Słupsk, compared to 1978, four new places of its occurrence have been found. However, two of them are in initial phases, being single clumps. Only continued observations will make it possible to decide whether this species will persist there, especially that one of the new sites is a slit between granite pavement bricks so this species is prone to trampling there. In the central part of Polish Pomerania *C. muralis* was supposed to die out soon (Markowski & Buliński 2004). Because of the small number of places of occurrence and the possibility of their destruction i.e. during building renovation, it seems appropriate and advisable to protect *C. muralis* by law.

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