



MATERIALS TO THE KNOWLEDGE OF MOLLUSCS OF WIELKOPOLSKA (WEST-CENTRAL POLAND). III. FAMILIES: ACICULIDAE J. E. GRAY, 1850, CARYCHIIDAE JEFFREYS, 1830, SUCCINEIDAE H. BECK, 1837, COCHLICOPIDAE PILSBRY, 1900

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ABSTRACT: The paper presents data on 10 terrestrial snail species: *Platyla polita* (W. Hartmann, 1840), *Carychium (Carychium) minimum* O. F. Müller, 1774, *C. (Saraphia) tridentatum* (Risso, 1826), *Succinea putris* (Linnaeus, 1758), *Succinella oblonga* (Draparnaud, 1801), *Oxyloma (Oxyloma) elegans* (Risso, 1826), *O. (O.) sarsii* (Esmark, 1886), *Cochlicopa lubrica* (O. F. Müller, 1774), *C. lubricella* (Rossmässler, 1834), *C. nitens* (M. von Gallenstein, 1848), recorded over the last fifty years in the Wielkopolska district (W. Poland). They include species location in the UTM grid on the map of Wielkopolska. Among those species *Cochlicopa lubrica* (663 sites) and *Succinea putris* (422 sites) are the most frequent in Wielkopolska.

KEY WORDS: *Platyla polita*, *Carychium minimum*, *Carychium tridentatum*, *Succinea putris*, *Succinella oblonga*, *Oxyloma elegans*, *Oxyloma sarsii*, *Cochlicopa lubrica*, *Cochlicopa lubricella*, *Cochlicopa nitens*, occurrence, Wielkopolska, Poland

INTRODUCTION

Part III is a continuation of the articles by KORALEWSKA-BATURA et al. (2010a, b) and presents the characteristics of four families of terrestrial snails found in Wielkopolska after 1957. The distribution of species is shown on maps with UTM grid; habitats in which the species most frequently occur in Wielko-

polska are given; reports from the last 50 years are analysed, as pre-1957 publications containing the information about the past occurrences in Wielkopolska or the Wielkopolsko-Kujawska Lowland were listed earlier (URBAŃSKI 1957, RIEDEL 1988, KORALEWSKA-BATURA 1992).

METHODS

The methods have been described in KORALEWSKA-BATURA et al. (2010a, b). Due to the common occurrence of most species, the data on their distribution are limited to the maps¹. In the case of the rare

Platyla polita, the data are also presented in the form of a list. On the maps the number of sites of the species in individual UTM squares is marked.

¹ Details for particular species are available from the Department of General Zoology, Adam Mickiewicz University, on request.

RESULTS

ACICULIDAE J. E. GRAY, 1850

A terrestrial family occurring in the Western Palaearctic, with 56 known species (BOETERS et al. 1989). Only two species occur in Poland: *Platyla polita* (W. Hartmann, 1840) and *Acicula parcelineata* (Clessin, 1911) (JACKIEWICZ 1974). These are forest snails, which live in moist places, under leaf litter, pieces of timber, moss and soil (JACKIEWICZ 1974). *A. parcelineata* is a rare Carpathian species, and is legally protected (WIKTOR & RIEDEL 2002). *Platyla polita* occurs in Wielkopolska.

Platyla polita (W. Hartmann, 1840)

This snail inhabits Central Europe. In Poland it is found both in the lowlands and in the mountains, but almost everywhere it is rare (URBAŃSKI 1957a). It often forms isolated populations (WIKTOR 2004). It occupies moist, shady forests and brushwood, where it occurs in leaf litter, moss, under stones and pieces of timber (JACKIEWICZ 1974).

In the past 50 years *P. polita* was found in 13 natural sites and one subfossil site in Wielkopolska (Fig. 1). It occurred mainly in alder forests, to a lesser extent in oak-hornbeam forests, oak-ash forests and in one site in a mixed forest. In Wielkopolska it occurs in single sites in 11 UTM squares in the central part of the region, except square XU 51 where it was found in three sites.

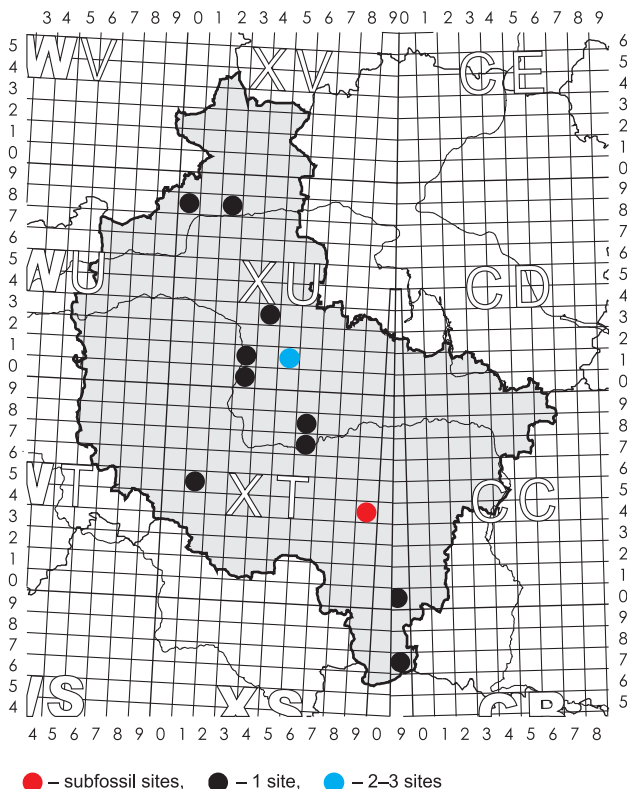


Fig. 1. Distribution of *Platyla polita* in Wielkopolska Province

Localities of *P. polita* in Wielkopolska: BB 97 Siemianice, deciduous forest (BERGER 1961); BC 90 Kamola, alder forest (BERGER 1961); XT 15 Łoniewo, deciduous forest (BERGER 1961); XT 67 Dębno, nature reserve “Dębno nad Wartą”, hornbeam forest (MICHĄŁKIEWICZ 1977); XT 68 Orzechowo, oak-hornbeam forest (KORALEWSKA 1979); XT 94 Ludwina, meadow (subfossil) (BERGER 1961); XU 08 Stobno, alder woods (ANTCZAK 1958); XU 28 Kalina, mixed forest (ANTCZAK 1958); XU 30 Poznań-Malta, alder carrs (SIKORA 1965); XU 31 Poznań-Morasko, oak-hornbeam forest (DZIĘCZKOWSKI 1974); XU 43 Sława Wielkopolska, alder grove near the stream (STROJKOWSKA 1971); XU 51 Promno, alder carrs on Lake Brzostek (JACKIEWICZ 1967); Promno, oak-hornbeam forest, section 183 (NASKRĘT 1978); Promno, oak-ash forest, section 179 (NASKRĘT 1978).

CARYCHIIDAE JEFFREYS, 1830

Carychiidae were formerly regarded as a subfamily of the family Ellobiidae. They differ from Ellobiidae in the structure of embryonic shell and in the fact that their embryonic development takes place inside the egg envelopes (HARBECK 1996). Carychiidae are Euro-Siberian. They occupy permanently damp habitats, in the forest leaf litter, marshes, as well as subterranean habitats and karst caves (BARKER 2001). Two species occur in Poland: *Carychium (Carychium) minimum* O. F. Müller, 1774 and *C. (Saraphia) tridentatum* (Risso, 1826).

Carychium (Carychium) minimum
O. F. Müller, 1774

Before the middle of the 20th century it was not distinguished from *C. tridentatum* and in the literature those two species were treated jointly (RIEDEL 1988). The species is Euro-Siberian and very common in the whole of Europe. In Poland it inhabits lowlands and lower mountain altitudes (WIKTOR 2004). It lives in moist water-soaked places, on the soil surface, in leaf litter and moss. This snail often climbs stems, decomposing leaves and twigs. It occurs in deciduous forests, mostly in alder carrs as well as meadows. This species is widespread and frequent (RIEDEL 1988, WIKTOR 2004, SULIKOWSKA-DROZD 2008).

In the past fifty years *C. minimum* was found in 165 sites (Fig. 2) by ANTCZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), DWORNICZAK (1971), KĘDRA (1971, 1977), STACHOWIAK (1971), STROJKOWSKA (1971), LENARTOWICZ (1972), MACIEJEWSKA (1972), SAPA (1972), ROSZAK (1974), MICHĄŁKIEWICZ (1977), NASKRĘT (1978), SIP (1980), STEFAŃSKA (1980), SIKORA (1988), KORALEWSKA-BATURA (1989, 1992), SZYBIAK (1996, 2001, 2002, 2008), SZYBIAK & LEŚ-

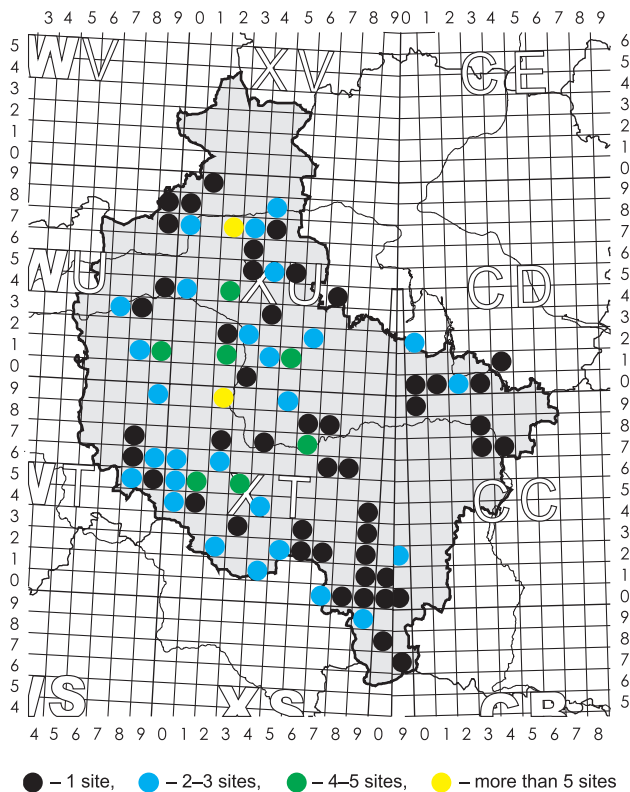


Fig. 2. Distribution of *Carychium minimum* in Wielkopolska Province

NIEMSKA (2005), WACHNICKA (2005), KORALEWSKA & BŁOSZYK (2007), MĘCZEKALSKI (2007), SZMYD (2007) and SZYBIAK et al. (2007). The habitats in most of the sites were forests and alder brushwood (33% of all sites), deciduous forest (25%) and meadows (20%); it was also found in cemeteries, on railway embankments, in ditches along roads and in parks.

Carychium (Saraphia) tridentatum
(Risso, 1826)

The species is Euro-Siberian and is widespread and abundant throughout Poland (SULIKOWSKA-DROZD 2008). This snail lives in deciduous and mixed forests (WIKTOR 2004). It occupies moist and mesic places on the soil surface, in leaf litter, among roots of grasses and herbs. Compared to *C. minimum* it is less hygrophilous and more common in the mountains (WIKTOR 2004).

Before 1957 it was not mentioned as occurring in Wielkopolska or it was referred to as *C. minimum*. In the past fifty years *C. tridentatum* was found in 82 sites (Fig. 3) in Wielkopolska by ANTCZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), SIKORA (1965), DZIECZKOWSKI (1966, 1974), DWORNICZAK (1971), KĘDRA (1971), STACHOWIAK (1971), ROSZAK (1974), NASKRĘT (1978), SIP (1980), KORALEWSKA-BATURA (1992) and SZYBIAK (2001, 2002, 2008). Most of its habitats were deciduous forests (75%), especially alder forests (43%), and occasionally parks, meadows, ditches, roadsides and nettle beds.

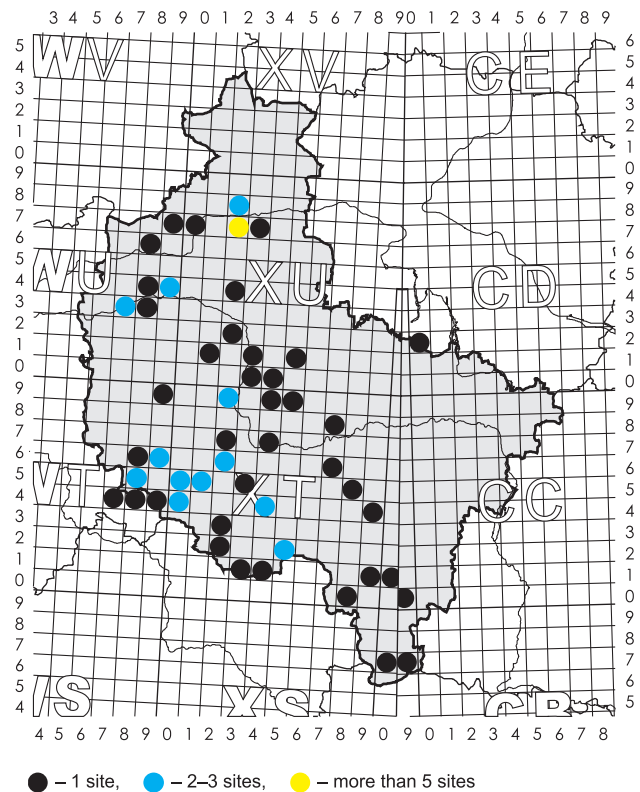


Fig. 3. Distribution of *Carychium tridentatum* in Wielkopolska Province

SUCCINEIDAE H. BECK, 1837

Members of this family occur almost worldwide. Europe has seven species (FAUNA EUROPEA 2010), five of which have been recorded from Poland: *Succinea putris* (Linnaeus, 1758), *Succinella oblonga* (Draparnaud, 1801), *Oxyloma (Oxyloma) elegans* (Risso, 1826), *O. (O.) sarsii* (Esmark, 1886) and *Quickella arenaria* (Bouchard-Chantreaux, 1837) (WIKTOR 2004). The presence of *Quickella arenaria* in Poland is doubtful (JACKIEWICZ 2003). The snails inhabit very damp places, mainly on river banks and lake shores. Some of them are semi-aquatic (JACKIEWICZ 2003). In Wielkopolska the following species occur: *Succinea putris*, *Succinella oblonga*, *Oxyloma elegans*, *O. sarsii*.

Succinea putris (Linnaeus, 1758)

This Euro-Siberian species is widely distributed in Europe except the Mediterranean countries, and in a substantial part of Asia (JACKIEWICZ 2003, WIKTOR 2004). In Poland it is very common and widespread, occasionally found in foothills, where it reaches up to 700 m a.s.l. (URBAŃSKI 1957). The snail lives on shores of water bodies, in moist brushwood, bogs, wet meadows and in alder carrs. It feeds on plants, climbing up to 2 m, and is often found on nettles (JACKIEWICZ 2003).

In the past fifty years *S. putris* was found throughout Wielkopolska, except the northern part where little research was done, in 422 sites (Fig. 4) by

BZDZIEL-GRENDA (1952), ANTCZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), SIKORA (1965), DWORNICZAK (1971), KĘDRA (1971), STACHOWIAK (1971), STROJKOWSKA (1971), MACIEJEWSKA (1972), LENARTOWICZ (1972), SAPA (1972), DZIĘCZKOWSKI (1974), ROSZAK (1974), CHMURA (1975), JAZDON (1976), LISIAK (1977), MICHAŁKIEWICZ (1977), NASKRĘT (1978), KORALEWSKA (1979), SIP (1980), STEFAŃSKA (1980), KACZMAREK (1981), WITOSŁAWSKA (1981), ĆWIKLIŃSKA (1982), WANAD (1982), RADZISZEWSKA (1990), KORDOWIECKA (1991), KORALEWSKA-BATURA (1992), DEGÓRSKI (1995), KUCNER (1995), STATNIK (1996), WAWRZYŃIAK (1996), SZYBIAK (2001, 2002, 2008), WACHNICKA (2005), KORALEWSKA-BATURA & BŁOSZYK (2007) and SZMYD (2007). In Wielkopolska *S. putris* occurs mainly in brushwood on river banks and lake shores (27% of all sites), in alder groves (21%), meadows (21%) and in ditches (8%). It lives in deciduous forests (11%) and in parks (6%), less often in mixed forests, cemeteries, gardens and bogs.

Succinella oblonga (Draparnaud, 1801)

S. oblonga is distributed in Europe, where it occurs almost everywhere, and in Western Asia (WIKTOR 2004). In Poland it is widespread throughout the country, except the Tatra and the Karkonosze Mts. In other mountainous areas it is less frequent than in the lowlands. The snail is found in brushwood, forests, gardens and ruins; it lives under stones, pieces of timber and leaf litter. Occasionally it climbs plants but

only to a small height. It is hygrophilous, but also present in relatively dry places (JACKIEWICZ 2003).

In the past fifty years *S. oblonga* was found in Wielkopolska in 193 sites (Fig. 5) by ANTCZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), SIKORA (1965), DWORNICZAK (1971), KĘDRA (1971), STACHOWIAK (1971), STROJKOWSKA (1971), LENARTOWICZ (1972), MACIEJEWSKA (1972), SAPA (1972), ROSZAK (1974), CHMURA (1975), LISIAK (1977), MICHAŁKIEWICZ (1977), NASKRĘT (1978), KORALEWSKA (1979), STEFAŃSKA (1980), KACZMAREK (1981), SIKORA (1988), KORALEWSKA-BATURA (1992), KUCNER (1995), STATNIK (1996), WAWRZYŃIAK (1996), SZYBIAK (2001, 2003, 2008), WACHNICKA (2005), KORALEWSKA-BATURA et al. (2006), KORALEWSKA-BATURA & BŁOSZYK (2007), SZMYD (2007) and SZYBIAK et al. (2007). It occurs there mainly in deciduous forests and alder brushwood (47% of all sites). It is often found in meadows, parks and cemeteries (30%), occasionally also in ditches, gardens, slopes of embankments and brushwood by the water.

Oxyloma (Oxyloma) elegans (Risso, 1826)

O. elegans is a Holarctic species. In Poland it is very common throughout the lowlands, but less so in the foothills, where it reaches up to 800 m a.s.l. It does not occur at higher altitudes (WIKTOR 2004). It lives on edges of stagnant waters, rivers, streams and bogs (JACKIEWICZ 2003).

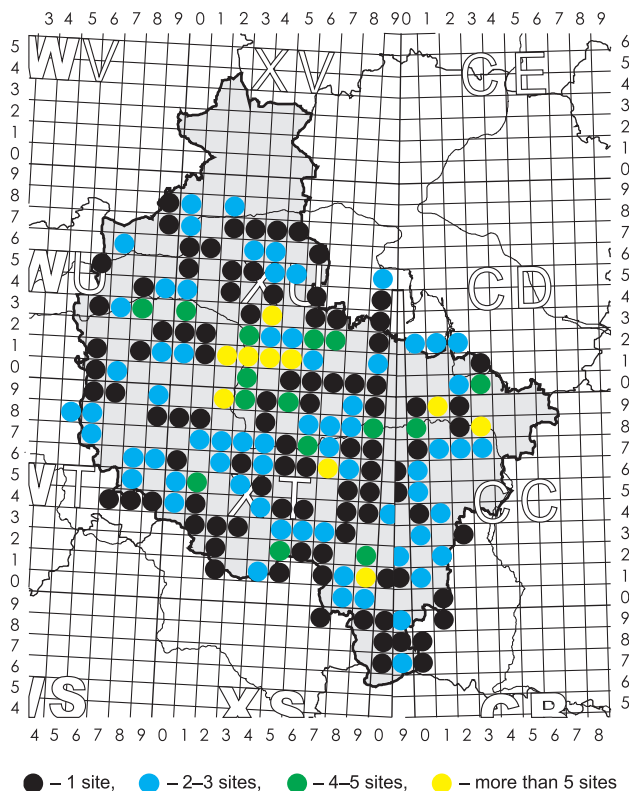


Fig. 4. Distribution of *Succinea putris* in Wielkopolska Province

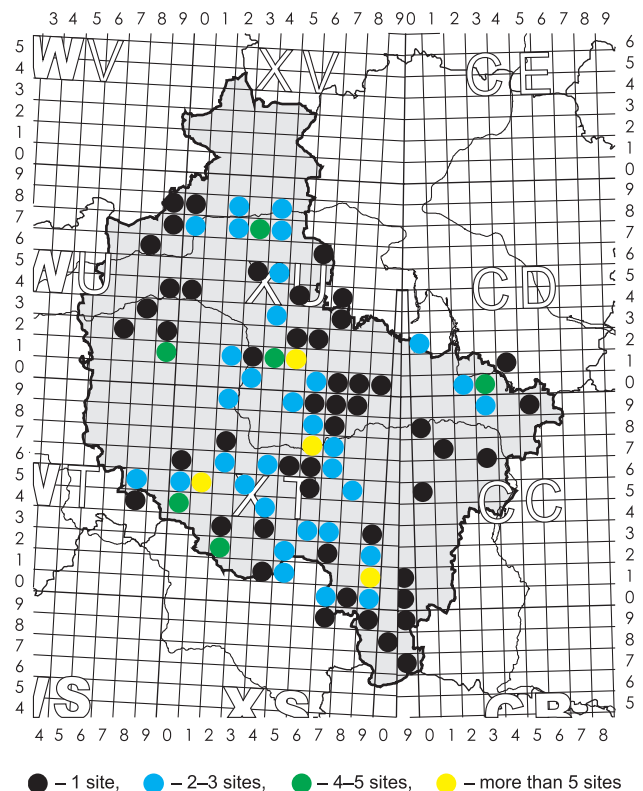


Fig. 5. Distribution of *Succinella oblonga* in Wielkopolska Province

In the past fifty years *O. elegans* was found in Wielkopolska in 251 sites (Fig. 6) by BZDZIEL-GRENDA (1952), ANTCZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), KĘDRA (1971), STROJKOWSKA (1971), LENARTOWICZ (1972), MACIEJEWSKA (1972), SAPA (1972), CHMURA (1975), JAZDON (1976), LISIAK (1977), MICHAŁKIEWICZ (1977), JACKIEWICZ (1978), NASKRĘT (1978), SIP (1980), KACZMAREK (1981), WITOSŁAWSKA (1981), ĆWIKLIŃSKA (1982), WANAD (1982), SIKORA (1988), KORALEWSKA-BUTURA (1992), KUCNER (1995) and WAWRZYŃIAK (1996). In Wielkopolska it inhabits mainly brushwood on water edges (30% of all sites), meadows (27%), brushwood and alder forests (19%), ditches (15%), vicinity of peat lakes and parks.

Oxyloma (Oxyloma) sarsii
(Esmark, 1886)

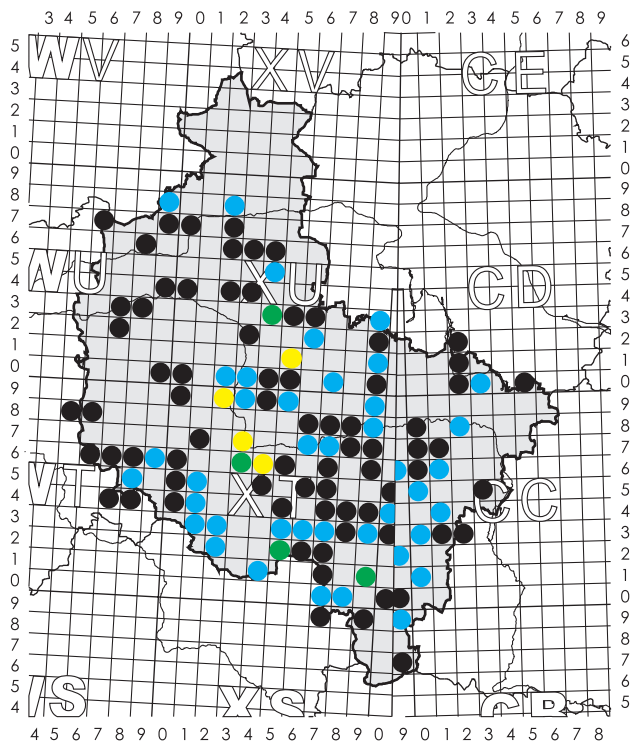
Before the publication of JACKIEWICZ (1978) it was often confused with other succineids. *Oxyloma sarsii* is probably a north European species, however its distribution is insufficiently known (WIKTOR 2004). In Poland, it mainly occurs in the northern and north-western parts of the country, and occupies the same habitats as *Oxyloma elegans* (JACKIEWICZ 2003).

In the past fifty years *O. sarsii* was found in Wielkopolska in 83 sites (Fig. 7) by ANTCZAK (1958), CHMURA (1975), DWORNICZAK (1971), KĘDRA (1971),

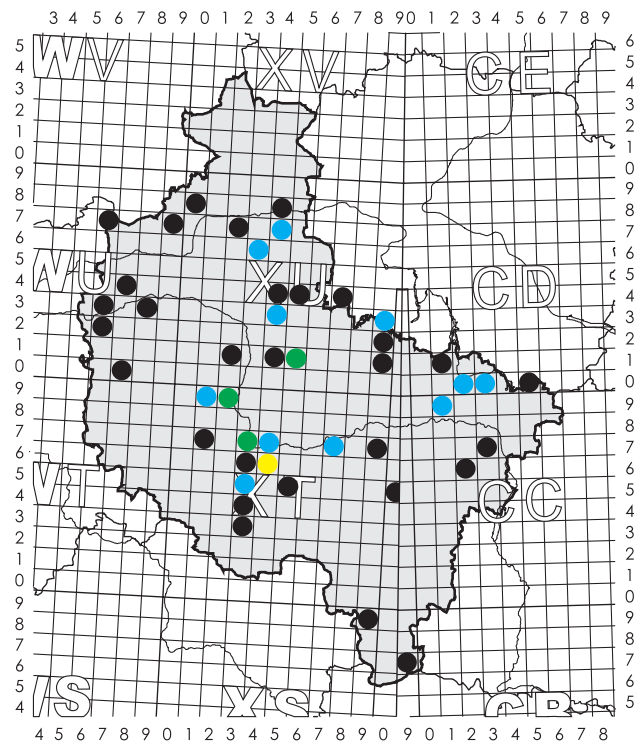
STROJKOWSKA (1971), LENARTOWICZ (1972), SAPA (1972), MICHAŁKIEWICZ (1977), JACKIEWICZ (1978), NASKRĘT (1978), SIP (1980), KACZMAREK (1981), WITOSŁAWSKA (1981), SIKORA (1988), KORDOWIECKA (1991) and KORALEWSKA-BATURA (1992). In Wielkopolska it occurs, like *O. elegans*, mainly in brushwood by the water edges (59% of all sites), on meadows (17%), in alder brushwood and forests (17%), occasionally in parks, near peat lakes and in roadside ditches.

COCHLICOPIDAE PILSBRY, 1900 (1879)

Members of this family occur in the Western Palaearctic and North America (KERNEY et al. 1983). The following species are present in Europe and Poland: *Cochlicopa lubrica* (O. F. Müller, 1774), *C. lubricella* (Rossmässler, 1834) and *C. nitens* (Gallenstein, 1848). They inhabit forests and open habitats of varying humidity. In older literature *C. lubricella* was regarded as a stunted, xerophilous form of *C. lubrica*, while *C. nitens* was taken for a gigantic form occurring in very wet sites (RIEDEL 1988). *Cochlicopa repentina* Hudec, 1960, also recorded from Poland, is actually a synonym of *C. lubrica* (ARMBRUSTER 1994, ARMBRUSTER & SCHLEGEL 1994). Accordingly, the records of *C. repentina* from Wielkopolska (DZIECZKOWSKI 1974) are treated here as records of *C. lubrica*.



● - 1 site, ● - 2-3 sites, ● - 4-5 sites, ● - more than 5 sites
Fig. 6. Distribution of *Oxyloma elegans* in Wielkopolska Province



● - 1 site, ● - 2-3 sites, ● - 4-5 sites, ● - more than 5 sites
Fig. 7. Sites distribution of *Oxyloma sarsii* in Wielkopolska Province

Cochlicopa lubrica (O. F. Müller, 1774)

C. lubrica is a Holarctic species, very common and widespread (RIEDEL 1988). It is found throughout Poland. This snail lives in mesic habitats: on meadows, water edges, in forests and brushwood (WIKTOR 2004).

In the past fifty years *C. lubrica* was found in Wielkopolska in 663 sites (Fig. 8) by ANT CZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), SIKORA (1965), DWORNICZAK (1971), KĘDRA (1971, 1977), STACHOWIAK (1971), STROJKOWSKA (1971), LENARTOWICZ (1972), MACIEJEWSKA (1972), SAPA (1972), DZIĘCZKOWSKI (1974), JAZDON (1976), LISIAK (1977), MICHAŁKIEWICZ (1977), NASKRĘT (1978), KORALEWSKA (1979), SIP (1980), STEFAŃSKA (1980), KACZMAREK (1981), ĆWIKLIŃSKA (1982), WANAD (1982), SIKORA (1988), RADZISZEWSKA (1990), KORDOWIECKA (1991), KORALEWSKA-BATURA (1992), KORALEWSKA-BATURA & DZIABASZEWSKI (1992), DEGÓRSKI (1995), WAWRZYŃIAK (1996), SZYBIAK (2001, 2002, 2008), SZYBIAK & LEŚNIEWSKA (2005), KORALEWSKA-BATURA et al. (2006), KORALEWSKA-BATURA & BŁOSZYK (2007), MĘCZEKALSKI (2007) and SZMYD (2007). In Wielkopolska it occurs mainly in brushwood (25% of all sites), especially alder, meadows (20%), forests (20%) and parks (13%), in cemeteries (7%), in ditches (6%), on railway embankments and slopes (5%).

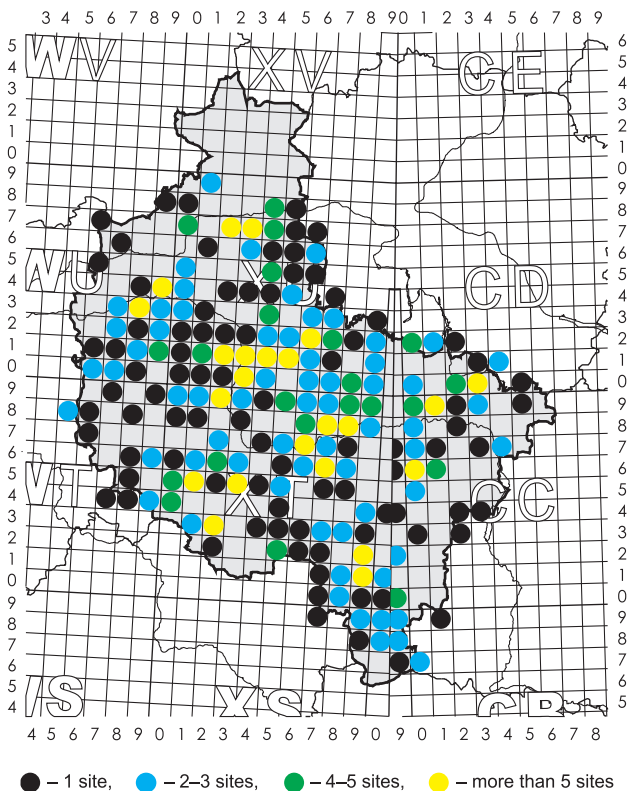


Fig. 8. Distribution of *Cochlicopa lubrica* in Wielkopolska Province

Cochlicopa lubricella (Rossmässler, 1834)

C. lubricella is a common Holarctic species. It occurs throughout Poland. It lives in more or less dry habitats: meadows, dry slopes, rock ledges (WIKTOR 2004).

In the past fifty years *C. lubricella* was found in Wielkopolska in 207 sites (Fig. 9) by ANT CZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), DZIĘCZKOWSKI (1966), DWORNICZAK (1971), KĘDRA (1971, 1977), LENARTOWICZ (1972), MACIEJEWSKA (1972), SAPA (1972), JAZDON (1976), LISIAK (1977), MICHAŁKIEWICZ (1977), NASKRĘT (1978), KORALEWSKA (1979), SIP (1980), STEFAŃSKA (1980), KACZMAREK (1981), ĆWIKLIŃSKA (1982), WANAD (1982), SIKORA (1988), KORALEWSKA-BATURA (1989, 1992), RADZISZEWSKA (1990), SZYBIAK (2001, 2002, 2008), WĄCHNICKA (2005), KORALEWSKA-BATURA et al. (2006), MĘCZEKALSKI (2007), SZMYD (2007) and SZYBIAK et al. (2007). In Wielkopolska it occurs mainly in forest habitats (39% of all sites): mixed forests, deciduous forests: alder, oak-hornbeam, oak, riparian forests, brushwood (22%) – especially alder and birch, in parks (13%), cemeteries (7%), on meadows (6%), railway embankments and slopes (5%), occasionally in ditches, sports stadiums and greenhouses.

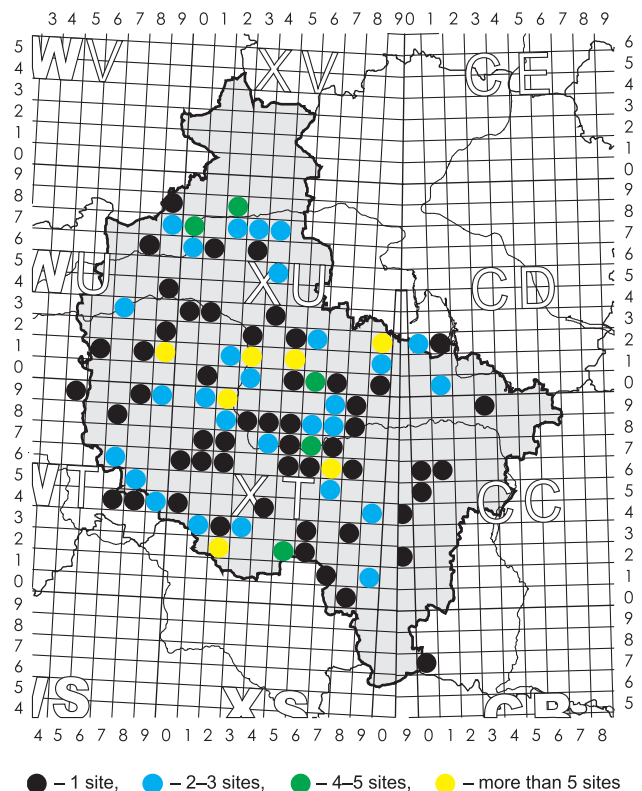


Fig. 9. Distribution of *Cochlicopa lubricella* in Wielkopolska Province

Cochlicopa nitens

(M. von Gallenstein, 1848)

C. nitens is a Central and Eastern European species. In Poland it is found in the lowlands and in the Sudety Mountains (WIKTOR 2004). It occupies bogs, swamps, especially on calcium-rich substrata, and moist forests (RIEDEL 1988). It is a rare species, though widely distributed. *C. nitens* is regarded as an endangered (PAWŁOWSKA & POKRYSZKO 1998).

In the last fifty years *C. nitens* was found in Wielkopolska in 80 sites (Fig. 10) by ANTCZAK (1958), WŁOCHOWICZ (1960), BERGER (1961), SIKORA (1965), KĘDRA (1971), STACHOWIAK (1971), LENARTOWICZ (1972), MACIEJEWSKA (1972), ROSZAK (1974), MICHAŁKIEWICZ (1977), NASKRĘT (1978), KORALEWSKA (1979), SIP (1980), STEFAŃSKA (1980), KACZMAREK (1981), ĆWIKLIŃSKA (1982), SIKORA (1988), KORALEWSKA-BATURA (1989, 1992), RADZISZEWSKA (1990), DEGÓRSKI (1995), KUCNER (1995), STATNIK (1996), SZYBIAK (2001, 2008), MĘCZEKALSKI (2007) and SZMYD (2007). In Wielkopolska it occurs mainly in brushwood (43% of all sites), especially alder, meadows (15%), deciduous forests (11%), in old gardens (10%) and parks (6%), occasionally in ditches, cemeteries and sports stadiums.

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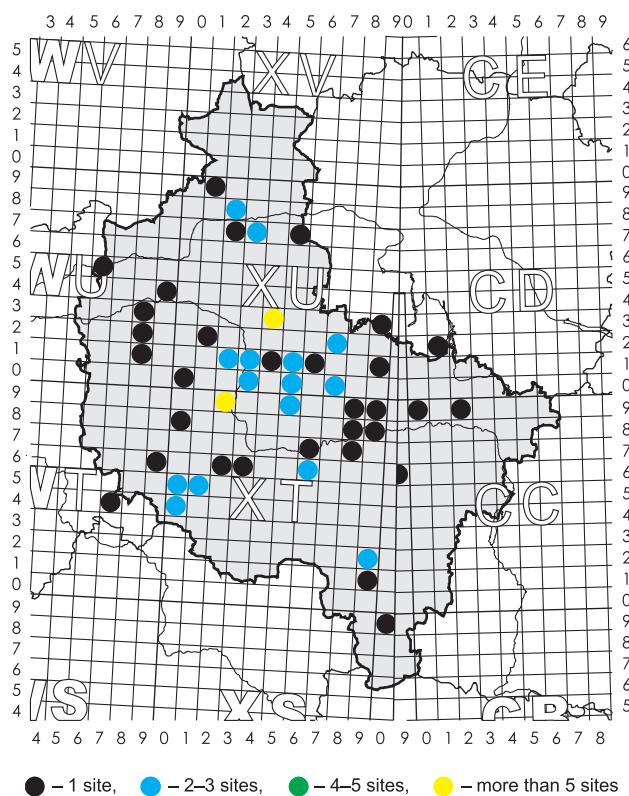


Fig. 10. Distribution of *Cochlicopa nitens* in Wielkopolska Province

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