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Anisus septemgyratus (Mollusca: Gastropoda) in the Czech Republic, with notes to its anatomy

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Abstract. First specimens of *Anisus septemgyratus* (Rossmäessler, 1835) in the Czech Republic, were found at three localities in South Moravia in flood-plain of the Dyje River in 1998. Dissection of about 30 specimens showed anatomical differences from *A. leucostoma* (Millet, 1813) and *A. spirorbis* (Linnaeus, 1758). Also habitats of this species seem to be different from those of *A. leucostoma* and *A. spirobis*.

Distribution, anatomy, Mollusca, Gastropoda, *Anisus septemgyratus*, Moravia, Palaearctic region

INTRODUCTION

Anisus septemgyratus (Rossmäessler, 1835) is known especially from East Europe (Ložek 1986, Zhadin 1952) and its occurrence is documented also from West Siberia (Zhadin 1952). Some authors (Hudec 1967,Glöer & Meier-Brook 1998) classified this taxon only as subspecies of *A. leucostoma* (Millet, 1813) and other authors (Falkner 1989, Ložek 1986, Piechocki 1979) as species. According to Ložek (1986) this taxon inhabits different habitats than *A. leucostoma*. *A. septemgyratus* is known predominantly from large and not temporary pools, but *A. leucostoma* and *A. spirorbis* (Linnaeus, 1758) are typical species of small temporary pools and wetlands. A distribution of *A. leucostoma* is also wider (throughout the Palaearctic region) than *A. septemgyratus* (East Europe, West Siberia) (Ložek 1986). The nearest locality is known from Slovakia (old arm of the Hron River in Bánská Bystrica) (Ložek 1986). This species is considered as endangered or rare in most of European countries.

MATERIAL AND METHODS

Molluscs were collected from vegetation or from water level by means of a sifter. Specimens for dissection were drowned in water and later fixed in 70% ethanol. Dissected reproductive organs and shells are deposited in collections of both authors. Sample of shells from second locality is deposited also in National Museum in Prague and sample of fixed specimens is deposit in the collection of C. Meier-Brook (Germany) for further analysis.

RESULTS

First specimens were found in a pool near Nejdek (data are as follows, geographical coordinates, code of the mapping square for faunistic mapping according to Buchar (1982), elevation above sea-level (approximately), description of the locality, date of investigation, name of investigator – LB – Luboš Beran, MH – Michal Horsák, LB+MH – both authors; 48° 49’ 16,96” N, 16° 46’ 52,04” E, 7166, 174 m, Nejdek, a pool /Bažina u Azantu/ on Nejdecké louky meadows between Nejdek and the

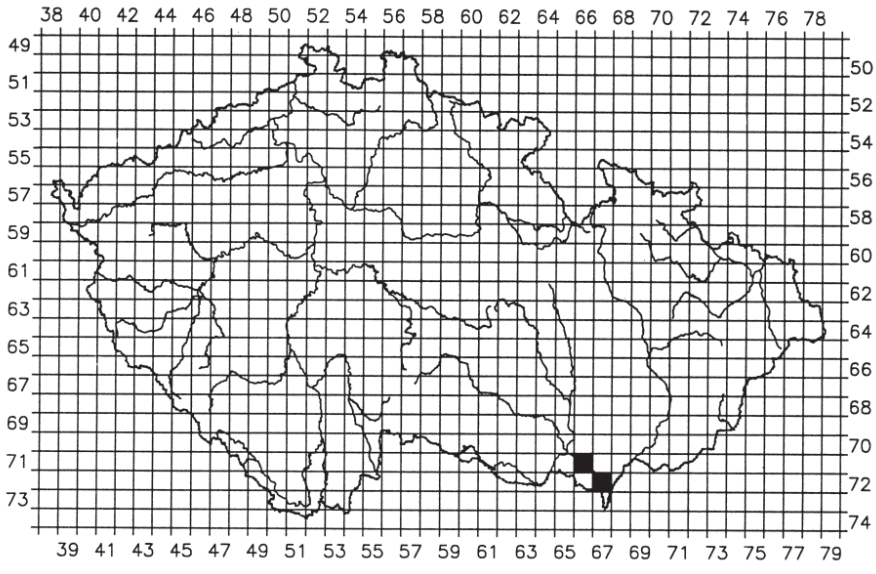


Fig. 1. Known distribution of *Anisus septemgyratus* (Rossmässler) in the Czech Republic.

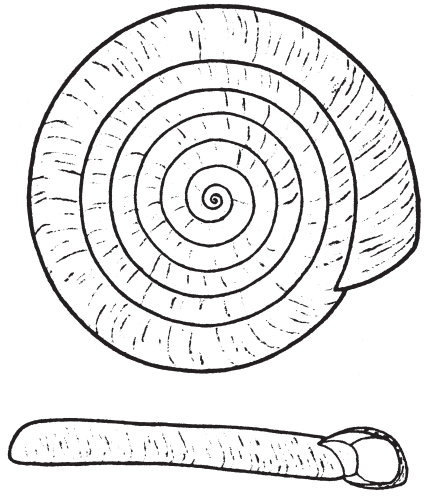
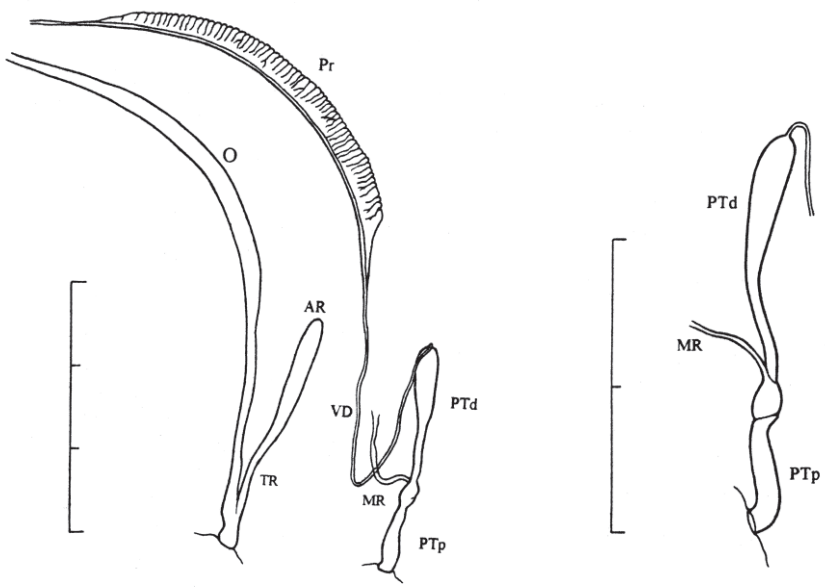


Fig. 2. A shell of *Anisus septemgyratus* (Rossmässler) from locality Břeclav (restored pool in the Kančí obora floodplain forest, about 600 m N from the Dyje river is divided into two streams; lgt. M. Horsák, 25. IX. 1999, height 0.9 mm, width 7.1 mm). Orig. M. Horsák.

Dyje River, 10. IX. 1998, LB+MH). Further specimens were found at two localities near Břeclav (48° 46' 46,75" N, 16° 52' 37,58" E, 7267, 158 m, Břeclav, restored pool in the Kančí obora flood-plain forest, about 600 m N from the point where the Dyje River is divided to two river streams, 10. IX. 1998, LB+MH, 25. IX. 1999, MH; 48° 46' 34,82" N, 16° 52' 37,76" E, 7267, 158 m, Břeclav, restored pool in the Kančí obora flood-plain forest, about 300 m N from the point where the Dyje River is divided to two river streams, 11. IX. 1998, LB+MH). First locality is old and shallow pool, overgrown by aquatic vegetation. Both other large (each about 0.5 ha) pools were recently (1991–96) restored and are relatively fresh and with vegetation only near banks. Findings in larger pools correspond with observation of Ložek (1986) in Slovakia and inhabiting biotopes are different to biotopes which inhabits *A. leucostoma* and *A. spirorbis*. Especially in restored two pools was *A. septemgyratus* very abundant and was eudominant mollusc. A occurrence of *A. septemgyratus* in the Moravia is surprising and further research will be directed to study of population of this rare species (especially in restored pools and their surroundings).



Figs 3–4. 3 – reproductive organs of *Anisus septemgyratus* (Rossmässler) from the same locality as in Fig. 2. AR – bursa copulatrix, MR – penis retractor muscle, O – oviduct, Pr – prostate gland, PTd – penis sheat, PTp – preputium, TR – truncus of bursa copulatrix, VD – vas deferens; scale: one segment = 1 mm. Orig. M. Horsák. 4 – male copulating organs of *Anisus septemgyratus* (Rossmässler) from the same locality as in Fig. 2. MR – penis retractor muscle, PTd – penis sheat, PTp – preputium; scale: one segment = 1 mm. Orig. M. Horsák.

Reproductive organs of about 30 specimen from second locality were dissected and results were compared with Hudec (1967). Our most important results are as follows: (1) Prostate gland is long and has many small folds. (2) Ratio between preputium and penis sheath is about 1:2. (3) Bursa copulatrix is long and slim. First and third features are according to Hudec (1967) and also our observations characteristic for *A. septemgyratus* and are different from *A. leucostoma* and *A. spirorbis*. Second feature is according to Hudec (1967) characteristic for *A. spirorbis* and for *A. septemgyratus* is documented ratio 1:1. This result is different to our observations and needs further research.

According to our observation of inhabiting biotopes and especially of differences in reproductive organs is probable that this taxon is separate species, but is suitable to carry out further research on this taxon from other parts of Europe before final conclusion.

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