

## Aquatic molluscs (Gastropoda, Bivalvia) of the Dolnomoravský úval lowland, Czech Republic

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**Abstract.** Aquatic molluscs of the Dolnomoravský úval lowland (Southern Moravia, Czech Republic) were investigated in 1996 and 1997. Altogether 53 aquatic species were found at 165 localities under study. Populations of very rare and endangered molluscs – *Theodoxus danubialis* (C. Pfeiffer, 1828), *Viviparus acerosus* (Bourguignat, 1862), *Lithoglyphus naticoides* (C. Pfeiffer, 1828), *Bithynia leachi* (Sheppard, 1823), *Anisus vorticulus* (Troschel, 1834), *Unio crassus* Philipsson, 1788, *Pseudanodonta complanata* Rossmassler, 1835, *Sphaerium rivicola* (Lamarck, 1818), *Pisidium moitessierianum* (Paladilhe, 1866) were found. Findings of *P. moitessierianum* are first for Moravia.

**Distribution, aquatic molluscs, Czech Republic**

### INTRODUCTION

Area near the confluence of the Morava and the Dyje rivers belongs to most valuable floodplain areas in the Czech republic. Wetlands in this region are listed in the Ramsar List of Wetlands of International Importance. Only to this area involves occurrence of pontic molluscs from the Danube river basin and also aquatic malacofauna of this area was not particularly studied recently. All these facts were reasons for the following detailed research results of that are presented below.

### MATERIAL AND METHODS

Aquatic molluscs were mostly collected from vegetation or from sediment by means of a sifter.

The system and nomenclature are adopted from Glöckner & Meier-Brook (1994), only the system and nomenclature of the family Lymnaeidae follow Jackiewicz (1993). Molluscs were determined according to conchs, in case when determination according to conchs is not possible, specimens were dissected by the senior author. Material from localities visited by M. Horsák or by both the authors is deposited in the collection Horsák.

### TERRITORY OF INVESTIGATION

The area studied is situated in the Southern Moravia (the Morava river basin and the Dyje river basin) between Lapajedla on the Morava river, Nové Mlýny reservoir on the Dyje river and confluence of these two rivers on the Czech-Austrian-Slovak border. The area is covered by agricultural lands, floodplain forests, wetlands, pools, ponds, canals and rivers. The both big rivers (Dyje, Morava) are canalized on most of their watercourse. A series of three reservoirs was constructed at Nové Mlýny (on the Dyje River), over 3 000 ha in continuous water surface.

**Survey of investigated localities**

Data in the survey are as follows – number of the locality, geographical coordinates (N, E), code of the mapping square for faunistic mapping according to Buchar (1982), type (sometimes also name) of biotope (r. – river, c. – canal, p. – pond, ps. – ponds, po. – pool, b. – brook), date of investigation, name of investigator (LB – Luboš Beran, MH – Michal Horsák, LB+MH – both authors).

I - 48° 54' 45", 16° 36' 25"; 7065, Nové Mlýny reservoir and confluence of Jihlava r. and Svatka r. (18. IX. 1996, LB); 2 - 48° 51' 20", 16° 44' 10"; 7166, Dyje r. (19. IX. 1996, LB); 3 - 48° 50' 45", 16° 43' 50"; 7166, canal (3. X. 1997, LB); 4 - 48° 50' 55", 16° 43' 40"; 7166, Mlýnský náhon c. (4. IX., 8. IX., 3. X. 1997, LB); 5 - 48° 47' 30", 16° 37' 20"; 7265, canal (29. IX. 1997, LB); 6 - 48° 47' 50", 16° 41' 15"; 7266, Mušlovské rybníky ps. (18. VII. 1997, MH); 7 - 48° 47' 00", 16° 40' 40"; 7266, Nový rybník p. (10. IX. 1997, MH); 8 - 48° 46' 30", 16° 42' 40"; 7266, Nesyt p. (10. IX. 1997, MH); 9 - 48° 46' 45", 16° 45' 30"; 7266, small p. (10. IX. 1997, MH); 10 - 48° 46' 45", 16° 46' 35"; 7266, Hlohovecký rybník p. (11. IX. 1997, MH); 11 - 48° 45' 50", 16° 47' 20"; 7266, Alah p. (11. IX. 1997, MH); 12 - 48° 46' 35", 16° 47' 50"; 7266, small p. (11. IX. 1997, MH); 13 - 48° 46' 50", 16° 48' 00"; 7266, Prostřední rybník p. (11. IX. 1997, MH); 14 - 48° 47' 15", 16° 49' 10"; 7266, Mlýnský rybník p. (11. IX. 1997, MH); 15 - 48° 49' 35", 16° 45' 40"; 7166, pool (4. IV. 1997, MH); 16 - 48° 49' 20", 16° 45' 50"; 7166, Lednický náhon c. (20. IX. 1996, LB); 17 - 48° 49' 30", 16° 46' 05"; 7166, shallow po. (4. IV. 1997, MH); 18 - 48° 49' 20", 16° 46' 10"; 7166, arm of Dyje r. (4. IV. 1997, MH); 19 - 48° 49' 40", 16° 46' 20"; 7166, Dyje r. (19. IX. 1996, LB); 20 - 48° 48' 50", 16° 46' 50"; 7166, Lednický náhon c. (20. IX. 1996, LB); 21 - 48° 49' 35", 16° 46' 50"; 7166, pool (4. IV. 1997, MH); 22 - 48° 49' 35", 16° 47' 00"; 7166, shallow po. (4. IV. 1997, MH); 23 - 48° 49' 25", 16° 47' 05"; 7166, shallow po. (4. IV. 1997, MH); 24 - 48° 49' 20", 16° 47' 25"; 7166, shallow po. (marsh) (4. IV. 1997, MH); 25 - 48° 48' 50", 16° 48' 05"; 7166, large shallow po. (Pastvisko) (10. IV. 1997, MH); 26 - 48° 48' 55", 16° 48' 15"; 7166, canal (10. IV. 1997, MH); 27 - 48° 48' 10", 16° 48' 20"; 7166, Lednický náhon c. (20. IX. 1996, LB); 28 - 48° 48' 15", 16° 48' 40"; 7166, Lednický náhon c. (20. IX. 1996, LB); 29 - 48° 48' 05", 16° 48' 45"; 7166, pond (10. IV. 1997, LB); 30 - 48° 48' 40", 16° 49' 10"; 7166, Lednický náhon c. (20. IX. 1996, LB); 31 - 48° 49' 30", 16° 49' 40"; 7166, small b. (6. IX. 1997, LB+MH); 32 - 48° 48' 00", 16° 49' 35"; 7266, small c. (10. IX. 1997, LB+MH); 33 - 48° 48' 25", 16° 50' 15"; 7166, small c. (10. IV. 1997, MH); 34 - 48° 48' 20", 16° 50' 00"; 7166, Lednický náhon c. (20. IX. 1996, LB); 35 - 48° 48' 00", 16° 50' 40"; 7267, canal (10. IX. 1997, LB+MH); 36 - 48° 48' 25", 16° 51' 05"; 7167, pool (10. IV. 1997, MH); 37 - 48° 47' 35", 16° 51' 00"; 7267, canal (10. IX. 1997, LB+MH); 38 - 48° 47' 40", 16° 52' 20"; 7267, sandpit (10. IX. 1997, LB+MH); 39 - 48° 47' 00", 16° 52' 15"; 7267, canal (10. IV. 1997, LB+MH); 40 - 48° 46' 10", 16° 52' 10"; 7267, sandpit (10. IX. 1997, LB+MH); 41 - 48° 45' 25", 16° 52' 20"; 7267, canal (Nová Dyje) (20. X. 1996, LB); 42 - 48° 45' 25", 16° 52' 25"; 7267, sandpit (20. X. 1996, LB); 43 - 48° 46' 00", 16° 53' 20"; 7267, Dyje r. (9. IX. 1997, LB+MH); 44 - 48° 47' 35", 16° 54' 00"; 7267, Žižkovský potok b. (10. IX. 1997, LB+MH); 45 - 48° 47' 00", 16° 54' 10"; 7267, sandpit (10. IX. 1997, LB+MH); 46 - 48° 46' 25", 16° 54' 45"; 7267, Svodnice c. (3. X. 1997, LB); 47 - 48° 44' 40", 16° 53' 30"; 7267, pool (25. IV. 1997, MH); 48 - 48° 44' 45", 16° 55' 30"; 7267, Svodnice c. (6. IX. 1997, LB+MH); 49 - 48° 44' 40", 16° 53' 15"; 7267, canal (21. IX. 1996, LB); 50 - 48° 44' 15", 16° 53' 15"; 7267, canal (25. IV. 1997, MH); 51 - 48° 44' 00", 16° 52' 35"; 7267, canal (Nová Dyje) (21. IX. 1996, LB); 52 - 48° 44' 00", 16° 54' 10"; 7267, pool (25. IV. 1997, MH); 53 - 48° 43' 45", 16° 52' 50"; 7267, Dyje r. (21. IX. 1996, LB); 54 - 48° 43' 50", 16° 53' 45"; 7267, shallow po. (25. IV. 1997, MH); 55 - 48° 43' 45", 16° 53' 35"; 7267, shallow po. (21. IX. 1996, LB); 56 - 48° 43' 35", 16° 53' 50"; 7267, sandpit (25. IV. 1997, MH); 57 - 48° 43' 40", 16° 54' 50"; 7267, pool (25. IV. 1997, MH); 58 - 48° 43' 30", 16° 53' 25"; 7267, arm of Dyje r. (21. IX. 1996, LB); 59 - 48° 43' 25", 16° 54' 10"; 7267, shallow po. (19. X. 1996, LB); 60 - 48° 43' 40", 16° 55' 45"; 7267, Svodnice c. (9. IX. 1997, LB+MH); 61 - 48° 42' 55", 16° 55' 10"; 7267, pool (4. X. 1997, LB+MH); 62 - 48° 42' 10", 16° 55' 50"; 7267, shallow po. (4. X. 1997, LB+MH); 63 - 48° 42' 15", 16° 57' 10"; 7267, Svodnice c. (9. IX. 1997, LB+MH); 64 - 48° 41' 55", 16° 57' 00"; 7267, canal (9. IX. 1997, LB+MH); 65 - 48° 41' 30", 16° 55' 10"; 7267, Dyje r. (19. X. 1996, LB); 66 - 48° 41' 15", 16° 57' 40"; 7367, Jizda c. (9. IX. 1997, LB+MH); 67 - 48° 41' 10", 16° 57' 15"; 7367, Kyjovka r. (9. IX. 1997, LB+MH); 68 - 48° 40' 55", 16° 56' 25"; 7367, Kyjovka r. (6. IX. 1997, LB+MH); 69 - 48° 40' 50", 16° 56' 45"; 7367, shallow po. (13. V. 1997, MH); 70 - 48° 40' 45", 16° 56' 55"; 7367, shallow po. (13. V. 1997, MH); 71 - 48° 40' 45", 16° 57' 15"; 7367, canal (9. IX. 1997, LB+MH); 72 - 48° 35' 50", 16° 56' 25"; 7367, pool (13. V. 1997, MH); 73 - 48° 39' 45", 16° 56' 50"; 7367, canal (6. IX. 1997, LB+MH); 74 - 48° 39' 45", 16° 56' 00"; 7367, Kyjovka r. (6. IX. 1997, LB+MH); 75 - 48° 39' 35", 16° 56' 35"; 7367, sandpit (4. X. 1997, LB+MH); 76 - 48° 39' 25", 16° 55' 40"; 7367, Kyjovka r. (6. IX. 1997, LB+MH); 77 - 48° 39' 15", 16° 56' 40"; 7367, canal (4. X. 1997, LB+MH); 78 - 48° 39' 05", 16° 55' 15"; 7367, Dyje r. (9. IX. 1997, LB+MH); 79 - 48° 38' 50", 16° 52' 30"; 7367, canal (4. X. 1997, LB+MH); 80 - 48° 38' 50", 16° 56' 05"; 7367, shallow po. (4. X. 1997, LB+MH); 81 - 48° 38' 40", 16° 56' 00"; 7367, pool (13. V. 1997, MH); 82 - 48° 37' 30", 16° 57' 20"; 7367, large po. (Sekulská Morava) (4. X. 1997, LB+MH); 83 - 48° 37' 55", 16° 57' 20"; 7367, pool (13. V. 1997, MH); 84 - 48° 38' 00", 16° 57' 40"; 7367, sandpit (13. V. 1997, MH); 85 - 48° 38' 10", 16° 57' 40"; 7367, large po. (4. X. 1997, LB+MH); 86 - 48° 38' 20", 16° 57' 25"; 7367, canal (6. IX. 1997, LB+MH); 87 - 48° 38' 40", 16° 58' 00"; 7367, large po. (4. X. 1997, LB+MH); 88 - 48° 38' 45", 16° 57' 50"; 7367, canal (4. X. 1997, LB+MH); 89 - 48° 40' 05", 16° 57' 55"; 7367, canal (4. X. 1997, LB+MH); 90 - 48° 44' 05", 17° 01' 20"; 7268, Morava r. (20. X. 1996, LB); 91 - 48° 41' 30", 16° 58' 40"; 7367, Jizda c. (6. IX. 1997, LB+MH); 92 - 48° 41' 40", 16° 59' 00"; 7267, Jizda c. (21. X. 1996, LB); 93 - 48° 42' 40", 16° 58'

30"; 7267, Jizda c. (21. X. 1996, LB); 94 - 48° 43' 40", 16° 58' 40"; 7267, Kyjovka r. (21. X. 1996, LB); 95 - 48° 43' 30", 16° 59' 55"; 7267, Jizda c. (20. X. 1996, LB); 96 - 48° 43' 40", 16° 59' 45"; 7267, small c. (8. IX. 1997, LB); 97 - 48° 43' 40", 16° 58' 40"; 7267, Kyjovka r. (20. X. 1996, LB); 98 - 48° 43' 55", 17° 00' 10"; 7268, Jizda c. (8. IX. 1997, LB); 99 - 48° 43' 55", 16° 59' 25"; 7268, canal (10. IX. 1997, LB+MH); 100 - 48° 44' 00", 16° 59' 50"; 7268, pool (30. IX. 1997, LB); 101 - 48° 44' 05", 17° 00' 00"; 7268, canal (30. IX. 1997, LB); 102 - 48° 44' 05", 16° 59' 45"; 7268, pool (30. IX. 1997, LB); 103 - 48° 44' 10", 16° 59' 25"; 7268, canal (10. IX. 1997, LB+MH); 104 - 48° 44' 10", 16° 59' 40"; 7268, pool (10. IX. 1997, LB+MH); 105 - 48° 44' 20", 16° 59' 45"; 7268, pool (8. IX. 1997, LB); 106 - 48° 41' 20", 16° 59' 40"; 7368, Morava r. (21. X. 1996, LB); 107 - 48° 44' 10", 17° 01' 00"; 7268, Jizda c. (8. IX. 1997, LB); 108 - 48° 44' 10", 17° 00' 40"; 7268, Jizda c. (20. X. 1996, LB); 109 - 48° 44' 15", 17° 00' 15"; 7268, canal (8. IX. 1997, LB); 110 - 48° 44' 25", 17° 00' 50"; 7268, small c. (8. IX. 1997, LB); 111 - 48° 44' 30", 17° 00' 30"; 7268, canal (30. IX. 1997, LB); 112 - 48° 44' 35", 16° 59' 45"; 7268, canal (10. IX. 1997, LB+MH); 113 - 48° 44' 40", 16° 59' 10"; 7267, Kyjovka r. (8. IX. 1997, LB); 114 - 48° 44' 45", 16° 59' 55"; 7268, canal (30. IX. 1997, LB); 115 - 48° 44' 40", 17° 00' 10"; 7268, large po. (Stibůrkovská jezera) (30. IX. 1997, LB); 116 - 48° 44' 45", 17° 00' 45"; 7268, canal (30. IX. 1997, LB); 117 - 48° 44' 55", 17° 00' 20"; 7268, pool (30. IX. 1997, LB); 118 - 48° 45' 00", 17° 00' 10"; 7268, large po. (Stibůrkovská jezera) (30. IX. 1997, LB); 119 - 48° 45' 05", 17° 01' 00"; 7268, canal (30. IX. 1997, LB); 120 - 48° 45' 15", 17° 01' 55"; 7268, pool (Rýnava) (30. IX. 1997, LB); 121 - 48° 46' 15", 16° 58' 05"; 7267, Svodnice c. (10. IX. 1997, LB+MH); 122 - 48° 46' 15", 17° 03' 15"; 7268, large po. (1. X. 1997, LB); 123 - 48° 46' 25", 17° 03' 20"; 7268, large po. (1. X. 1997, LB); 124 - 48° 46' 35", 17° 03' 15"; 7268, canal (1. X. 1997, LB); 125 - 48° 46' 50", 17° 02' 10"; 7268, canal (1. X. 1997, LB); 126 - 48° 47' 40", 17° 02' 30"; 7168, sandpit (27. VIII. 1997, LB); 127 - 48° 47' 50", 17° 02' 20"; 7168, Kyjovka r. (27. VIII. 1997, LB); 128 - 48° 47' 55", 17° 04' 50"; 7268, canal (1. X. 1997, LB); 129 - 48° 48' 05", 17° 05' 10"; 7168, canal and pool (20. IX. 1997, LB); 130 - 48° 48' 10", 17° 05' 10"; 7168, canal (1. X. 1997, LB); 131 - 48° 48' 10", 17° 05' 40"; 7168, large po. (1. X. 1997, LB); 132 - 48° 48' 55", 17° 05' 50"; 7168, canal (1. X. 1997, LB); 133 - 48° 50' 35", 17° 05' 25"; 7168, Kyjovka r. (7. IX. 1997, LB); 134 - 48° 50' 00", 17° 05' 30"; 7168, small p. (2. X. 1997, LB); 135 - 48° 51' 05", 17° 05' 20"; 7168, Písečenský rybník p. (2. X. 1997, LB); 136 - 48° 51' 50", 17° 04' 20"; 7168, Novodvorský rybník p. (2. X. 1997, LB); 137 - 48° 52' 25", 17° 04' 45"; 7168, small p. (2. X. 1997, LB); 138 - 48° 53' 20", 17° 03' 40"; 7168, small p. (2. X. 1997, LB); 139 - 48° 54' 10", 17° 03' 30"; 7168, Zbrodský rybník p. (2. X. 1997, LB); 140 - 48° 50' 45", 17° 07' 20"; 7168, Stará Morava c. (27. VIII. 1997, LB); 141 - 48° 50' 35", 17° 08' 40"; 7168, Morava r. (27. VIII. 1997, LB); 142 - 48° 52' 40", 17° 14' 30"; 7169, Morávka c. (19. IX. 1997, MH); 143 - 48° 54' 15", 17° 12' 45"; 7069, Soboňky p. (7. IX. 1997, LB); 144 - 48° 54' 50", 17° 12' 05"; 7069, Ratiškovický potok b. (19. IX. 1997, MH); 145 - 48° 57' 50", 17° 09' 20"; 7068, Písečný rybník p. (29. VIII. 1997, LB); 146 - 48° 54' 20", 17° 19' 20"; 7069, Morávka c. (19. IX. 1997, MH); 147 - 48° 54' 20", 17° 21' 00"; 7070, Velička r. (19. IX. 1997, MH); 148 - 48° 50' 40", 17° 19' 10"; 7070, Velička r. (19. IX. 1997, MH); 149 - 48° 55' 55", 17° 19' 45"; 7069, Morava r. (and 2 canals) (5. IX. 1997, LB); 150 - 48° 57' 20", 17° 23' 10"; 7070, Morava r. (26. VIII. 1997, LB); 151 - 48° 57' 25", 17° 22' 50"; 7070,

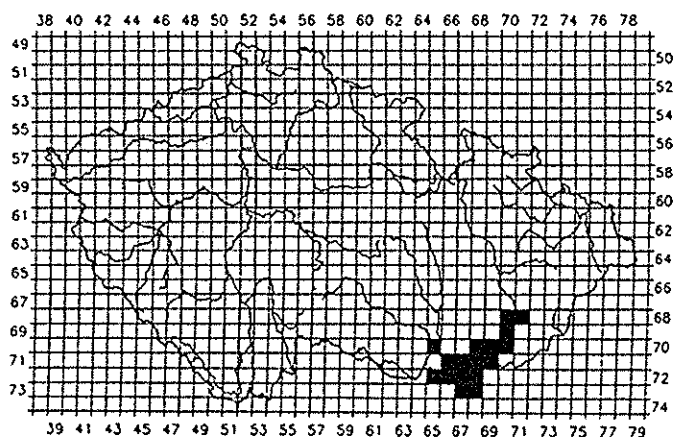


Fig. 1. Map of the Czech Republic with mapping squares of area studied.

canal (and other smaller canal) (26. VIII. 1997, LB); 152 – 48° 58' 25", 17° 24' 20"; 7070, Svodnice c. (18. IX. 1997, MH); 153 – 48° 58' 45", 17° 19' 40"; 7069, marsh (28. VIII. 1997, LB); 154 – 48° 59' 25", 17° 21' 10"; 7070, canal (18. IX. 1997, MH); 155 – 48° 59' 30", 17° 23' 50"; 7070, Morava r. (29. VIII. 1997, LB); 156 – 48° 59' 45", 17° 27' 20"; 7070, pond (18. IX. 1997, MH); 157 – 49° 00' 45", 17° 22' 35"; 6970, canal (18. IX. 1997, MH); 158 – 49° 00' 55", 17° 23' 55"; 6970, pool (18. IX. 1997, MH); 159 – 49° 01' 10", 17° 25' 45"; 6970, sandpit (20. IX. 1997, MH); 160 – 49° 00' 40", 17° 27' 00"; 6970, small c. (18. IX. 1997, MH); 161 – 49° 01' 40", 17° 28' 00"; 6970, Petřikovce b. (18. IX. 1997, MH); 162 – 49° 02' 45", 17° 25' 50"; 6970, Olšava r. (18. IX. 1997, MH); 163 – 49° 03' 15", 17° 25' 00"; 6970, Zlechovský potok b. (18. IX. 1997, MH); 164 – 49° 07' 15", 17° 30' 10"; 6870, pools, canals and small brooks (28. VIII. 1997, LB); 165 – 49° 08' 05", 17° 30' 45"; 6871, Morava r. (28. VIII. 1997, LB).

## HISTORY OF INVESTIGATION

First data on the aquatic molluscs from the area investigated are recorded from the end of the 19th century by Uličný (1885), who studied the area in 1882. Klvaňa (1885) studied area near Uherské Hradiště and Hodonín, but published only finding of *Theodoxus danubialis*. His collection were revised by Hudec (1962). Other data from the end of the 19th century were published by Rzehak (1891), Uličný (1889 and 1896) and Schierl (1901). Important data from the beginning of this century were published by Zimmermann (1916). The most important data after World War II were published by Hudec (1962). Some data were found in collection in the National Museum in Prague (material collected by J. Brabenc). Research from last 30 years directed to aquatic molluscs has been as follows: Kotolanová 1971, Balúsek & Vojtek 1973, Ditrich & Vojtek 1977, Halouzka 1977, Coufalová 1991.

### A survey of the published data

Data in the survey are as follows – name of species, name and localization of the locality (r. – river, c. – canal, p. – pond, ps. – ponds, po. – pool, pos. – pools, b. – brook, vill. – village, f. fl. – floodplain forest, NMP – National Museum Praha), code of the mapping square for faunistic mapping according to Buchar (1982), citation of the source; group of date from the same source have citation after last date of group (published data were not revised in collections).

*Theodoxus danubialis* – Morava r. – Uherské Hradiště (6970) (Klvaňa 1885), Dyje r. – Šakvice (7166) (Igt. Schierl; Uličný 1896), Morava r. – Uherské Hradiště (6970), Dyje r. – Dolní Věstonice (7165) (Schierl 1901), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence, coll. NMP).

*Viviparus costectus* – Hodonín (7168), Strachotín (7165), Dolní Věstonice (7165) (Schierl 1901), pos. near Lednice (7166) (Zimmermann 1916), f. fl. Skatina near vill. Mikulčice (7168) (Ložek 1959), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olší to the east of vill. Huštěnovice (6870), f. fl. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. fl. Kolibky to the south of vill. Nedakonice (6970), swamps and meadows to the south of Moravský Písek (7070), wetlands near Bzence (7069), Písečný rybník p. near Milotice (7068), pos. to the north of vill. Vacenovice (7068), wetlands between vill. Milotice and Místřín (7068), f. fl. to the south from Hodonín (7168), f. fl. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. fl. Pohansko to the south from Břeclav (7267) (Hudec 1962), pos. near vill. Strachotín (7165), c. near the village Lednice (7166) (Kotolanová 1971), pos. near vill. Dolní Věstonice (7165), pos. near Podivín (7167), po. near vill. Pouzdřany (7065), po. near Poštomá (7267), po. near vill. Strachotín (7165) (Balúsek & Vojtek 1973), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), c. near vill. Lednice (7166), po. near vill. Bulhary (7166), po. near vill. Přitluky (7166), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165), pos. near vill. Strachotín (7165) (Ditrich & Vojtek 1977), po. near Podivín (7167) (Ševčíková 1990).

*Viviparus acerossus* – Dyje r. – Dolní Věstonice (7165) (Uličný 1885), vill. Pouzdřany (7065), Přitluky (7166) and Dolní Věstonice (7165) (Schierl 1901), po. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence, coll. NMP), vill. Lednice (7166) (Igt. Brabence, coll. NMP), f. fl. to the south from Hodonín (7168), pos. between vill. Kostice and Lanžhot (7267), f. fl. Pohansko to the south from Břeclav (7267) (Hudec 1962), arm of Dyje r. near vill. Bulhary (7166), po. near vill. Přitluky (7166) (Ditrich & Vojtek 1977).

*Lithoglyphus naticoides* – Dyje r. – Dolní Věstonice (7165) (Igt. Rzehak; Uličný 1885), Morava r. – Hodonín (7168) (Igt. Beránek; Uličný 1896), vill. Pouzdřany (7065), Přitluky (7166) and Dyje r. – Dolní Věstonice (7165) (Schierl 1901), Dyje r. – Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), arm of Dyje r. near vill. Lednice (7166) (Kroupa 1974), Dyje r. – Dolní Věstonice (7165) (Ditrich & Vojtek 1977).

*Bithynia tentaculata* – vill. Strachotín (7165) (Uličný 1896), vill. Pouzdřany (7065), vill. Strachotín (7165) (Schierl 1901), Lednické rybníky ps. (7266) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Braběnc 1956, 1958, coll. NMP), vill. Lednice (7165) (Igt. Braběnc 1958, coll. NMP), pos. between vill. Babice and Sptyihňv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), wetlands near Bzence (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vácenovice (7068), wetlands between vill. Milotice and Místín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), c. near vill. Lednice (7166) (Kotolanová 1971), vill. Lednice (7166), pos. near Podivín (7167), po. near vill. Pouzdřany (7065), po. near Poštorná (7267), po. near vill. Strachotín (7165) (Balúsek & Vojtek 1973), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165) (Ditrich & Vojtek 1977), po. near Podivín (7167) (Ševčíková 1990).

*Bithynia leachi* – c. near vill. Lednice (7165) (Kotolanová 1971), vill. Lednice (7165) (Balúsek & Vojtek 1973), c. near vill. Lednice (7165) (Ditrich & Vojtek 1977), Nesyt and Hlohovecký rybník ps. (7266) (Coufalová 1991).

*Valvata cristata* – pos. between vill. Babice and Sptyihňv (6870, 6871), swamp Olši to the east of vill. Huštěnovice (6870), wetlands near Bzence (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vácenovice (7068), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165) (Ditrich & Vojtek 1977).

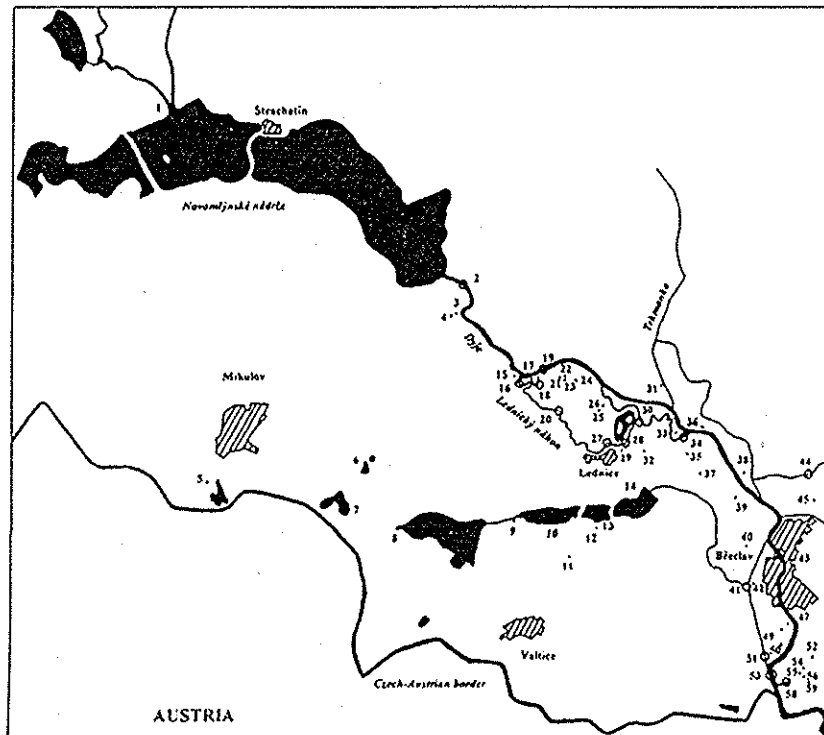


Fig. 2. Map of the studied area with investigated localities.

*Valvata piscinalis* – vill. Strachotín (7165) (Uliěný 1885), vill. Strachotín (7165), Přitluky (7166) and Dolní Věstonice (7165) (Schierl 1901), Prostřední and Hlohovecký rybník ps. (7266), Nesyt p. (7266), po. near vill. Lednice (7165) (Zimmermann 1916), the Dyje River – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), vill. Lednice (7166) (Igt. Brabence 1958, coll. NMP), Nesyt p. (7266) (Igt. Brabence 1968, coll. NMP), swamp Olši to the east of vill. Huštěnovice (6870) pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165) (Ditrich & Vojtek 1977), Nesyt p. (7166) (Coufalová 1991).

*Acroloxus lacustris* – Prostřední rybník p. (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7265) (Igt. Brabence 1956, coll. NMP), vill. Lednice (7166) (Igt. Brabence 1958, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koptivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), pool near vill. Mušov (7165) (Ditrich & Vojtek 1977).

*Lymnaea truncatula* – Prostřední rybník p. and Nesyt p. (7266) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), f. ft. Skařina near vill. Mikulčice (7168) (Ložek 1959), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koptivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Mistřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), pos. near Podivín (7167), Dyje r. – Dolní Věstonice (7165) (Ditrich & Vojtek 1977), po. near Podivín (7167) (Ševčíková 1990).

*Lymnaea peregra* f. *peregra* – Lednické rybníky ps. (7266) (Zimmermann, 1916), (Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), Nesyt p. (7266) (Igt. Brabence 1968, coll. NMP), swamp Olši to the east of vill. Huštěnovice (6870), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068, Hudec 1962), pos. near vill. Strachotín (7165), c. near vill. Lednice (7166) (Kotolanová 1971), po. near vill. Lednice (7165), po. near vill. Mušov (7065), Nesyt p. (7266), po. near Podivín (7167) (Ševčíková 1990), Prostřední rybník p. and Nesyt p. (7266) (Coufalová 1991), *Lymnaea peregra* f. *ovata* – vill. Strachotín (7165), Dolní Věstonice (7165) and Hodonín (7168, Schierl 1901), pos. near vill. Rakvice (7166) (Zimmermann, 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), Písečný rybník p. near Milotice (7068), wetlands between vill. Milotice and Mistřín (7068) (Hudec 1962), pos. near vill. Strachotín (7165), c. near vill. Lednice (7166) (Kotolanová 1971), po. near vill. Dolní Věstonice (7165), po. near vill. Lednice (7166), Prostřední rybník p. (7266), pos. near Podivín (7167), po. near vill. Strachotín (7165) (Balúsek, Vojtek 1973), pos. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), c. near vill. Lednice (7166), po. near vill. Bulhary (7166), arm of Dyje r. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165), pos. near vill. Strachotín (7165) (Ditrich & Vojtek 1977), Nové Mlýny reservoir near vill. Mušov (7065), po. near vill. Lednice (7166) (Ševčíková 1990), Hlohovecký rybník p. and Nesyt p. (7266) (Coufalová 1991), *Lymnaea peregra* f. *ampla* – Hodonín (7168) (Schierl 1901), f. ft. Pohansko near Břeclav (7267) (Hudec 1962).

*Lymnaea auricularia* – Hodonín (7168), vill. Dolní Věstonice (7165), Pouzdřany (7065) and Přitluky (7166) (Schierl 1901), Lednické rybníky ps. (7266) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), vill. Lednice (7166) (Igt. Brabence 1958, coll. NMP), Nesyt p. (7266) (Igt. Brabence 1968, coll. NMP), pos. between vill. Babice and Spytihněv (6871), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Mistřín (7068), f. ft. to the south from Hodonín (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), po. near vill. Mušov (7165) (Halouzka 1977), Dyje r. – Dolní Věstonice (7165), arm of Dyje r. near vill. Mušov (7165) (Ditrich & Vojtek 1977), Nové Mlýny reservoir near vill. Mušov (7165) (Ševčíková 1990).

*Lymnaea palustris* agg. – Hodonín (7168), village Strachotín (7165) (Schierl 1901), pos. near vill. Lednice (7166) (Zimmermann 1916), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east from vill. Huštěnovice (6870), f. ft. Koptivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Mistřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), pos. near vill. Strachotín (7165), po. near vill. Lednice (7166) (Kotolanová 1971), vill. Dolní Věstonice (7165), po. near vill. Pouzdřany (7065), po. near village Strachotín (7165) (Balúsek & Vojtek 1973), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), Nesyt p. (7266) (Ševčíková 1990), Nesyt p. (7266) (Coufalová 1991).

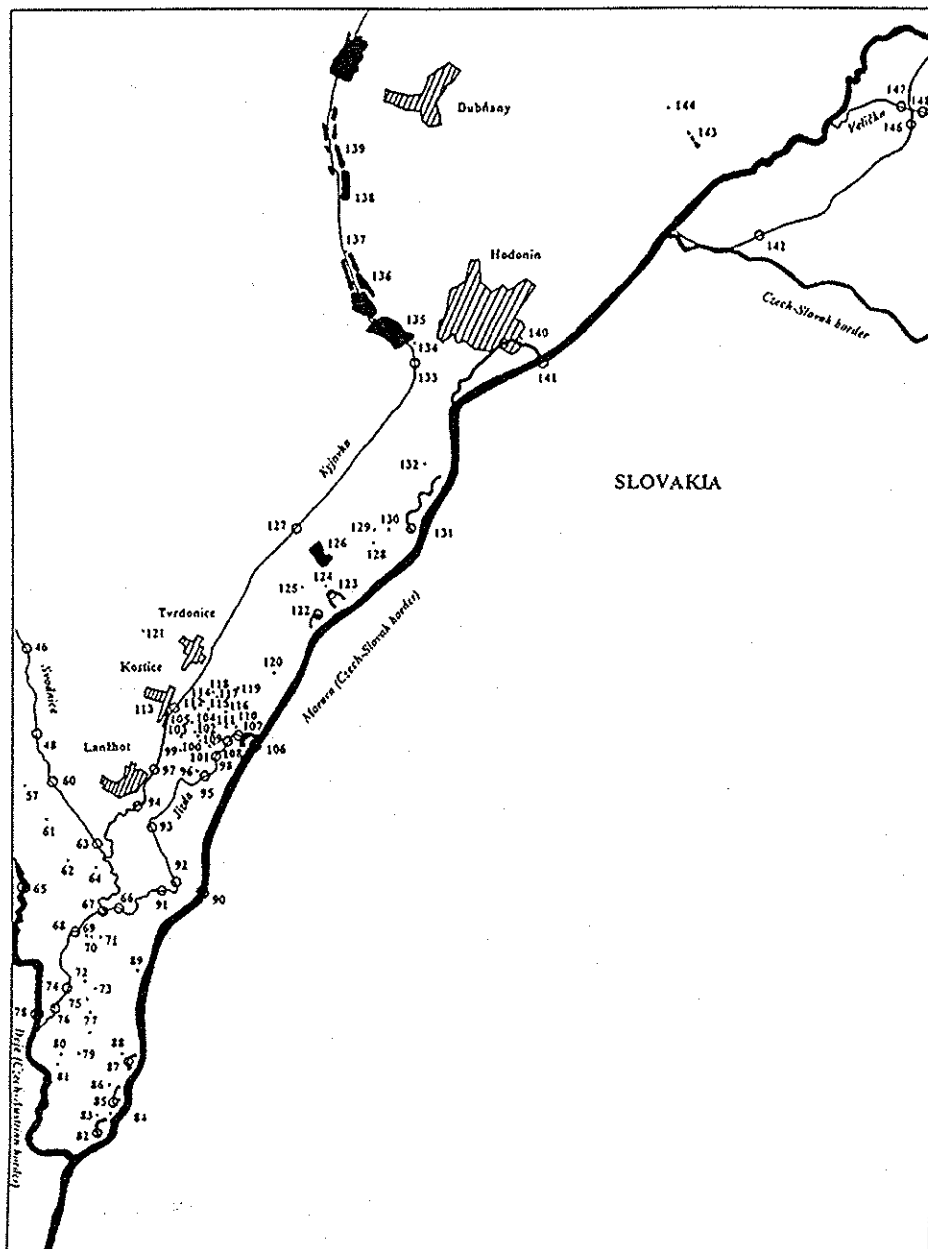


Fig. 3. Map of the studied area with investigated localities.

*Lymnaea stagnalis* – vill. Přitluky (7166), vill. Strachotín (7165) (Schierl 1901), Prostřední rybník p. (7266), pos. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Pisek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), po. to the north from vill. Vacnovice (7068), wetlands between vill. Milotice and Místřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), pos. near vill. Strachotín (7165), c. near vill. Lednice (7166) (Kotolanová 1971), vill. Dolní Věstonice (7165), Dyje r. – Dolní Věstonice (7165), po. near vill. Lednice (7166), Prostřední rybník p. (7266), pos. near Podivín (7166), po. near Poštomá (7267), po. near vill. Strachotín (7165) (Balúsek & Vojtek 1973), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), Mlýnský rybník p. (7266), arm of Dyje r. near vill. Bulhary (7166), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165), pos. near vill. Strachotín (7165) (Ditrich & Vojtek 1977), p. on the Allah b. (7266), po. near vill. Lednice (7166), Nesyt p. (7266), po. between vill. Lednice and Podivín (7166), po. near vill. Podivín (7166) (Ševčíková 1990), Lednické rybníky ps. (7266) (Coufalová 1991).

*Planorbis planorbis* – vill. Pouzdřany (7065), vill. Dolní Věstonice (7165), vill. Přitluky (7166) (Schierl 1901), Prostřední rybník p. (7266), pos. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), f. ft. Skařina near vill. Mikulčice (7168) (Ložek 1959), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Pisek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacnovice (7068), wetlands between vill. Milotice and Místřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), po. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), pos. near vill. Strachotín (7165), c. near vill. Lednice (7166) (Kotolanová 1971), vill. Dolní Věstonice (7165), Dyje r. – Dolní Věstonice (7165), po. near vill. Lednice (7166), pos. near Podivín (7166), po. and p. near vill. Pouzdřany (7065), po. near Poštomá (7267), po. near vill. Strachotín (7165) (Balúsek & Vojtek 1973), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7167), c. near vill. Lednice (7166), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165), pos. near vill. Strachotín (7165) (Ditrich & Vojtek 1977), po. near vill. Lednice (7166), Nesyt p. (7266), po. near vill. Podivín (7166) (Ševčíková 1990), Nesyt Pond (7266) (Coufalová 1991).

*Planorbis carinatus* – Písečný rybník p. near vill. Milotice, pos. to the north from vill. Vacnovice (7068), wetlands between vill. Milotice and Místřín (7068) (Hudec, 1962), po. near vill. Podivín (7166) (Ševčíková 1990).

*Anisus spirorbis* – vill. Strachotín (7165), vill. Dolní Věstonice (7165) (Schierl 1901), Nesyt p. (7266), pos. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), f. ft. Skařina near vill. Mikulčice (7168) (Ložek 1959), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Pisek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacnovice (7068), wetlands between vill. Milotice and Místřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), po. near vill. Pouzdřany (7065) (Balúsek & Vojtek 1973), po. near Podivín (7166) (Ditrich & Vojtek 1977).

*Anisus leucostoma* – vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), Nesyt p. (7266) (Igt. Brabence 1968, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacnovice (7068) (Hudec 1962).

*Anisus vortex* – pos. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), vill. Lednice (7166) (Igt. Brabence 1958, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ft. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), wetlands near Bzenec (7069) (Hudec 1962), po. near vill. Lednice (7166) (Balúsek & Vojtek 1973), po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7166), po. near vill. Mušov (7165), pos. near vill. Strachotín (7165, Ditrich & Vojtek 1977).

*Anisus vorticulus* – po. between vill. Lednice and Podivín (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), swamp Olši to the east of vill. Huštěnovice (6870), swamps and meadows to the south from Moravský Pisek (7070),



wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068) (Hudec 1962), po. near vill. Lednice (7166) (Kotolanová 1971), po. near vill. Mušov (7165) (Halouzka 1977).

*Bathymphalus contortus* – pos. between vill. Babice and Spytihněv (6870, 6871), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Místřín (7068), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962).

*Gyraulus albus* – Prostřední rybník p. (7266), po. near Podivín (7166), po. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (lgt. Brabeneč 1956, coll. NMP), vill. Lednice (7166) (lgt. Brabeneč 1958, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), the swamp Olší to the east of vill. Huštěnovice (6870), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068) (Hudec 1962), po. near vill. Mušov (7165) (Halouzka 1977), po. near vill. Lednice (7166), Mariánské jezero po. near vill. Dolní Věstonice (7165), Vrkoč p. (7065) (Ditrich & Vojtek 1977), po. near Podivín (7166) (Ševčíková 1990).

*Gyraulus laevis* – Prostřední rybník p. and Nesyt p. (7266) (Zimmermann 1916), Písečný rybník p. near the vill. Milotice (7068) (Hudec 1962).

*Gyraulus crista* – Lednické rybníky ps. (7266), pos. on Allah b. (7266) (Zimmermann 1916), Nesyt p. (7266) (lgt. Brabeneč 1968, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), swamp Olší to the east of vill. Huštěnovice (6870), swamps and meadows to the south from Moravský Písek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), po. near Podivín (7166) (Ditrich & Vojtek 1977).

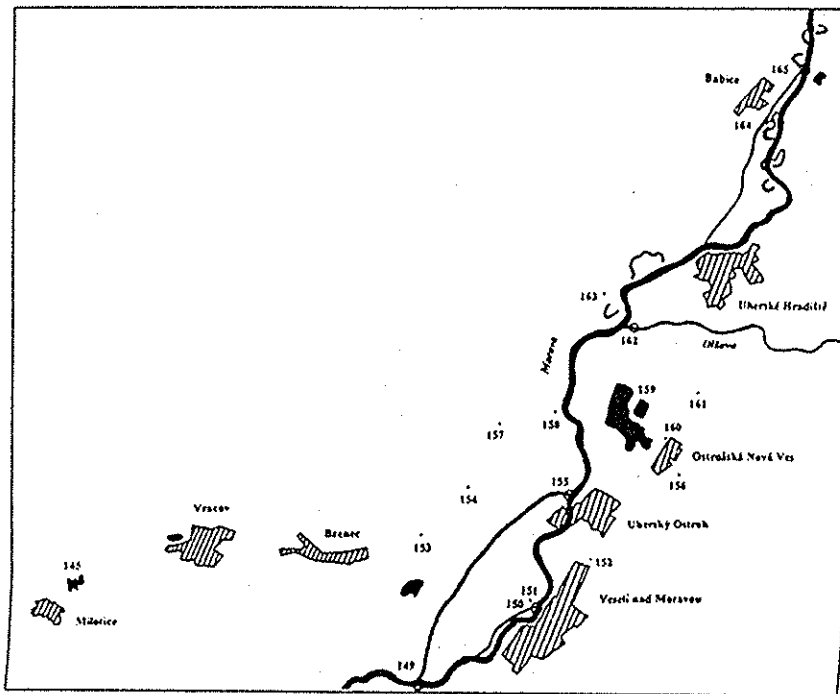


Fig. 4. Map of the studied area with investigated localities.

*Hippeutis complanatus* – vill. Lednice (7166) (Zimmermann 1916), Nesyt p. (7266) (Igt. Brabeneč 1958, coll. NMP), the village Lednice (7166, Igt. Brabeneč 1968, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), swamp Olši to the east of vill. Huštěnovice (6870) (Hudec 1962).

*Segmentina nitida* – Prostřední rybník p. (7266), pos. between vill. Lednice and Valtice (7266) (Zimmermann, 1916), pos. between vill. Babice and Spytihněv (6870, 6871), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Místřín (7068), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), po. near vill. Lednice (7166) (Kotolanová 1971), po. near vill. Lednice (7166), pos. near Podivín (7166) (Balúsek & Vojtek 1973), po. near Podivín (7166) (Ditrich & Vojtek 1977).

*Planorbarius corneus* – Hodonín (7168), vill. Strachotín (7165) (Schierl 1901), pos. and ps. near vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabeneč 1956, coll. NMP), f. ř. Skačina near vill. Mikulčice (7168) (Ložek 1959), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ř. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ř. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), wetlands near Bzenec (7069), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Místřín (7068), f. ř. to the south from Hodonín (7168), f. ř. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), pos. near vill. Strachotín (7165), c. near vill. Lednice (7166) (Kotolanová 1971), vill. Dolní Věstonice (7165), po. near vill. Lednice (7166), pos. near Podivín (7166), po. near vill. Pouzdřany (7065), po. near vill. Strachotín (7165) (Balúsek & Vojtek 1973), Bílé jezírko po. near vill. Mušov (7165) (Halouzka 1977), c. near vill. Lednice (7166), po. near vill. Mušov (7165), Mariánské jezero po. near vill. Dolní Věstonice (7165), pos. near vill. Strachotín (7165), Vrkoč p. (7065) (Ditrich & Vojtek 1977), po. near vill. Podivín (7166), po. near vill. Lednice (7166) (Ševčíková 1990), Mlýnský rybník p. (7266) (Coufalová 1991).

*Ancylus fluviatilis* – Hodonín (7168) (Uličný 1889).

*Physa fontinalis* – vill. Strachotín (7165) (Rzechak 1891), vill. Strachotín (7165), pos. near vill. Rakvice (7166), vill. Lednice (7166) (Zimmermann 1916), Dyje r. – Dolní Věstonice (7165) (Igt. Brabeneč 1956, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), swamp Olši to the east of vill. Huštěnovice (6870), f. ř. Koprivna between Uherské Hradiště and vill. Kostelany (6970), f. ř. Kolibky to the south from vill. Nedakonice (6970), f. ř. to the south from Hodonín (7168), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), c. and po. near vill. Lednice (7166) (Kotolanová 1971), po. near vill. Lednice (7166), po. near Podivín (7166) (Balúsek & Vojtek 1973), po. near vill. Mušov (7165) (Halouzka 1977), po. near Podivín (7166), po. near vill. Mušov (7165), Mariánské jezero p. near vill. Dolní Věstonice (7165) (Ditrich & Vojtek 1977), Hlohovecký rybník p. (7266) (Coufalová 1991).

*Physella acuta* – wetlands near Bzenec (7069), Písečný rybník p. near vill. Milotice (7068) (Hudec 1962), po. near vill. Lednice (7166) (Balúsek & Vojtek 1973).

*Aplexa hypnorum* – Nesyt p. (7266) (Igt. Brabeneč 1968, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), wetlands near Bzenec (7069), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), po. near vill. Lednice (7166) (Kotolanová 1971), pos. near vill. Dolní Věstonice (7165) (Balúsek & Vojtek 1973), po. near vill. Mušov (7165), po. near vill. Strachotín (7165) (Ditrich & Vojtek 1977).

*Unio pictorum* – vill. Strachotín (7165) (Uličný 1885), vill. Přitluky (7166), vill. Strachotín (7166) (Schierl 1901), Dyje r. near vill. Lednice (7166), Zámecký rybník p. and Růžový rybník p. (7166) (Zimmermann 1916), pos. between vill. Babice and Spytihněv (6870, 6871), f. ř. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), f. ř. to the south from Hodonín (7168), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), Dyje r. near vill. Lednice (7166) (Kroupa 1974).

*Unio tumidus* – pos. between vill. Babice and Spytihněv (6870, 6871), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), Dyje r. near vill. Lednice (7166) (Kroupa 1974).

*Unio crassus* – Dyje r. near vill. Lednice (7166) (Zimmermann 1916), pos. between vill. Babice and Spytihněv (6870, 6871), f. ř. Kolibky to the south from vill. Nedakonice (6970), f. ř. to the south from Hodonín (7168), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), Dyje r. near vill. Lednice (7166) (Kroupa 1974).

*Anodonta cygnea* – Strachotín (7165) (Schierl 1901), Růžový rybník p. near vill. Lednice (7166) (Zimmermann 1916), pos. between vill. Babice and Spytihněv (6870, 6871), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), pos. between vill. Kostice and Lanžhot (7267), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), Dyje r. near vill. Lednice (7166) (Kroupa 1974), po. near vill. Mušov (7165) (Halouzka 1977).

*Anodonta anatina* – Prostřední a Hlohovecký rybník ps. (7266) (Zimmermann 1916), pos. between vill. Babice and Spytihněv (6870, 6871), f. ř. Kolibky to the south from vill. Nedakonice (6970), f. ř. to the south from Hodonín (7168), pos. between vill. Kostice and Lanžhot (7267), f. ř. Pohansko to the south from Břeclav (7267) (Hudec 1962), Dyje r. near vill. Lednice (7166) (Kroupa 1974).

*Pseudanodonta complanata* – Zámecký rybník p. near vill. Lednice (7166) (Zimmermann 1916), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), Dyje r. near vill. Lednice (7166) (Kroupa 1974).

*Sphaerium corneum* – vill. Přitluky (7166) (Schierl 1901), Nesyt and Hlohovecký rybník ps. (7266) (Zimmermann 1916), pos. between vill. Babice and Spytihněv (6870, 6871), forest between vill. Babice and Kněžpol (6871), swamp Olší to the east of vill. Huštěnovice (6870), f. ft. Koptivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Mistřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962).

*Sphaerium rivicola* – Hodonín (7168), Dyje r. – Dolní Věstonice and Strachotín (7165) (Schierl 1901), Dyje r. near vill. Lednice (7166) (Zimmermann 1916), vill. Lanžhot (7267), Olšava r. – Veletiny (6971) (Igt. Krause 1930, coll. NMP), Dyje r. – Dolní Věstonice (7165, Igt. Brabence 1956, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), f. ft. Koptivna between Uherské Hradiště and vill. Kostelany (6970), f. ft. Kolibky to the south from vill. Nedakonice (6970), swamps and meadows to the south from Moravský Písek (7070), Písečný rybník p. near Milotice (7068), pos. to the north from vill. Vacenovice (7068), wetlands between vill. Milotice and Mistřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962), arm of Dyje r. near vill. Lednice (7166) (Kroupa 1974).

*Musculium lacustre* – Strachotín (7165) (Schierl 1901), Nesyt p. (7266), wetlands near vill. Lednice (7166) (Zimmermann 1916), Dyje River – Dolní Věstonice (7165) (Igt. Brabence 1956, coll. NMP), Nesyt p. (7266) (Igt. Brabence 1968, coll. NMP), pos. between vill. Babice and Spytihněv (6870, 6871), swamp Olší to the east of vill. Huštěnovice (6870), f. ft. Kolibky to the south from vill. Nedakonice (6970), wetlands between vill. Milotice and Mistřín (7068), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168) (Hudec 1962), c. near vill. Lednice (7166) (Kotolanová 1971).

*Pisidium amnicum* – Hodonín (7168) (Schierl 1901), f. ft. Kolibky to the south from vill. Nedakonice (6970), f. ft. to the south from Hodonín (7168), f. ft. near vill. Mikulčice (7168) (Hudec 1962).

*Pisidium subtruncatum* – Písečný rybník p. near vill. Milotice (7068) (Hudec 1962).

*Pisidium supinum* – Dyje r. – Dolní Věstonice (7165) (Igt. Brabence 1965, coll. NMP), f. ft. to the south from Hodonín (7168) (Hudec 1962).

*Pisidium obtusale* – swamp Olší to the east of vill. Huštěnovice (6870), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962).

*Pisidium casertanum* – Strachotín (7165) (Uličný 1885), Strachotín (7165) (Schierl 1901), swamp Olší to the east of vill. Huštěnovice (6870), swamps and meadows to the south from Moravský Písek (7070), wetlands between vill. Milotice and Mistřín (7068), f. ft. near vill. Mikulčice (7168), pos. between vill. Kostice and Lanžhot (7267), f. ft. Pohansko to the south from Břeclav (7267) (Hudec 1962).

## RESULTS

### A survey of molluscs

This chapter includes a survey of the molluscs found, with descriptive notes, e. g., occurrence, density (O – solitary occurrence, R – scattered occurrence (usually found less than 20 specimens), H – abundant occurrence (found more than 50 specimens), VH – very abundant occurrence (found more than 100 specimens), x only old (subfossil) conchs), and distribution in the Czech Republic.

### Gastropoda

#### Archaeogastropoda

##### Neritidae

*Theodoxus danubialis* (C. Pfeiffer, 1828) – was found at loc. No. 74(R), 76(O), 162(xO). The Kyjovka river seems to be the last locality with recent occurrence in the Czech Republic.

## Mesogastropoda

### Viviparidae

*Viviparus contectus* (Millet, 1813) – was found at loc. No. 1(O), 3(O), 4(O), 21(H), 31(R), 32(R), 39(H), 41(O), 48(O), 49(R), 52(H), 55(R), 61(R), 63(R), 64(H), 66(R), 71(R), 73(R), 77(R), 80(O), 82(R), 83(H), 86(R), 88(R), 89(R), 99(R), 100(R), 101(R), 103(R), 104(R), 105(H), 109(R), 110(R), 113(O), 114(R), 115(R), 116(R), 117(R), 118(H), 119(R), 120(R), 125(R), 128(O), 129(VH), 145(R), 146(O), 149(H), 151(H), 155(R).  
*Viviparus acerosus* (Bourguignat, 1862) – was found at loc. No. 4(xO), 16(H-VH, max. density more than 100 individuals/m<sup>2</sup>), 20(H-VH, max. density more than 100 individuals/m<sup>2</sup>), 27–28(H-VH, max. density more than 100 individuals/m<sup>2</sup>), 30(H), 34(R-H), 35(H), 36(H), 41(R), 42(xO), 43(O), 51(R), 53(O), 58(O), 63(H), 66(O), 67(H), 68(H), 73(xO), 74(R), 76(R), 91(O), 92(O), 94(R), 95(H), 97(H), 98(H), 101(R), 107(O), 108(R-H), 109(R), 113(R). A rare pontic species. This species probably lives in the Czech Republic only in the studied area.

### Hydrobiidae

*Lithoglyphus naticoides* (C. Pfeiffer, 1828) – was found at loc. No. 20(O), 27(O), 28(H, max. density more than 30 individuals/m<sup>2</sup>), 30(R), 43(O), 48(R), 53(xO), 65(O), 66(H), 67(H), 74(H), 76(R), 78(R), 91(O), 93(O), 94(H-VH, max. density more than 100 individuals/m<sup>2</sup>), 95(H), 97(O), 101(O), 162(xR). A rare pontic species. This species probably lives in the Czech Republic only in the studied area.

### Bithyniidae

*Bithynia tentaculata* (Linnaeus, 1758) – was found at loc. No. 1(H), 2(H), 3(H), 4(R), 7(R), 10(R), 16(R), 19(H), 20(R), 21(H), 23(H), 26(H), 27(R), 28(H), 30(R), 31(R), 32(R), 34(R), 36(H), 37(O), 39(R), 40(R), 41(O), 43(R), 46(R), 47(H), 48(H), 50(H), 53(R), 58(R), 60(R), 63(R), 64(R), 65(O), 66(R), 67(R), 71(R), 73(R), 74(R), 76(R), 77(O), 78(O), 79(O), 81(R), 87(O), 88(R), 90(O), 91(R), 92(R), 93(R), 95(H), 97(H), 98(H), 99(O), 100(R), 101(R), 103(O), 104(O), 105(R), 107(R), 108(H), 109(R), 110(R), 112(R), 113(R), 115(R), 116(R), 117(O), 118(R), 119(R), 120(R), 124(O), 126(R), 127(R), 129(H), 131(H), 138(H), 139(R), 140(R), 141(O), 142(VH), 145(H), 146(H), 147(H), 148(O), 149(R), 150(O), 151(VH), 153(H), 155(R), 158(H), 159(R), 164(R), 165(R).

*Bithynia leachi* (Sheppard, 1823) – was found at loc. No. 100(R), 101(R), 104(O), 105(R), 115(H), 117(O). A rare palaearctic species. This species is known in the Czech Republic only from the studied area.

### Valvatidae

*Valvata cristata* O. F. Müller, 1774 – was found at loc. No. 72(R), 96(R), 105(O), 115(O), 129(H), 145(R), 151(H), 153(R).

*Valvata piscinalis* (O. F. Müller, 1774) – was found at loc. No. 1(R), 2(R), 3(H), 4(R), 9(VH), 16(VH), 20(VH), 27(VH), 28(H), 30(R), 31(R), 32(R), 34(R), 37(O), 43(R), 46(H), 48(R), 58(R), 60(R), 63(R), 64(R), 65(O), 66(R), 67(R), 68(H), 74(R), 76(R), 79(R), 91(R), 92(R), 97(R), 101(R), 107(O), 109(R), 110(O), 113(R), 116(O), 119(R), 127(R), 142(H), 146(R), 147(R), 151(R).

## Basommatophora

### Acroloxidae

*Acroloxus lacustris* (Linnaeus, 1758) – was found at loc. No. 12(R), 16(R), 17(R), 20(R), 23(VH), 24(VH), 27(R), 28(R), 66(R), 74(O), 83(O), 92(O), 95(R), 105(R), 108(R), 129(H), 140(R), 145(R), 146(H).

### Lymnaeidae

*Lymnaea truncatula* (O. F. Müller, 1774) – was found at loc. No. 4(R), 5(R), 7(R), 9(R), 10(VH), 19(H), 22(R), 25(O), 31(R), 32(R), 33(H), 36(R), 37(O), 38(H), 40(O), 48(O), 52(O), 55(H), 56(R), 57(H), 59(H), 60(R), 61(R), 63(R), 66(R), 67(R), 68(R), 72(R), 74(H), 76(H), 78(H), 79(R), 80(R), 81(R), 83(R), 84(R), 91(O), 94(R), 99(R), 100(H), 103(R), 104(R), 105(R), 110(O), 115(R), 120(R), 127(R), 129(R), 140(R), 142(H), 145(R), 146(H), 147(R), 148(H), 149(O), 152(R), 159(H), 161(R), 164(R), 165(R).

*Lymnaea peregra* (O. F. Müller, 1774) – *Lymnaea peregra* f. *peregra* (O. F. Müller, 1774) – was found at loc. No. 148(H), 152(H), 156(H), 163(R), 164(R), *Lymnaea peregra* f. *ovata* (Draparnaud, 1805) – was found at loc. No. 4(R), 5(H), 6(H), 7(R), 8(VH), 9(VH), 10(R), 11(R), 12(H), 13(H), 14(VH), 15(H), 18(R), 22(VH), 25(O), 26(H), 32(R), 33(R), 34(R), 37(O), 38(O), 39(R), 41(O), 43(O), 50(H), 51(R), 54(O), 56(VH), 57(VH), 59(H), 61(R), 62(H), 63(R), 65(O), 66(R), 67(R), 68(H), 71(R), 72(R), 74(R), 75(R), 76(R), 77(R), 78(R), 79(R), 80(O), 83(H), 84(R), 85(O), 86(R), 88(R), 89(R), 99(R), 100(R), 103(R), 104(R), 105(H), 107(R), 109(R), 110(H), 112(O), 113(H), 114(R), 115(R), 116(O), 117(R), 118(R), 127(R), 129(H), 133(R), 142(R), 144(R), 146(R), 149(H), 154(H), 158(H), 159(R), 161(R), 162(R), 165(R).

*Lymnaea auricularia* (Linnaeus, 1758) – was found at loc. No. 1(H), 2(H), 3(H), 6(R), 7(O), 14(H), 16(R), 18(R), 19(H), 20(R), 27(R), 28(R), 29(O), 30(R), 31(O), 32(R), 34(R-H), 38(R), 39(O), 40(O), 51(H), 53(R), 58(R), 60(O), 65(R), 71(O), 74(R), 78(R), 81(R), 84(R), 95(R), 97(R), 98(R), 107(R), 108(R), 112(O), 114(O), 118(R), 119(O), 124(O), 126(H),

127(R), 130(O), 131(R), 132(O), 135(O), 138(R), 140(R), 143(R), 145(H), 149(H), 151(H), 152(H), 153(R), 158(H), 162(O), 164(R), 165(R).

*Lymnaea turricula* (Held, 1836) – was found at loc. No. 3(O), 4(R), 5(R), 8(H), 9(R), 12(R), 17(H), 23(O), 24(R), 30(O), 38(O), 40(O), 44(O), 57(VH), 63(R), 66(R), 69(R), 70(R), 72(O), 76(R), 77(O), 82(O), 83(H), 92(O), 96(H), 99(R), 100(H), 101(R), 102(R), 103(R), 104(R), 107(R), 110(O), 114(H), 115(R), 116(O), 117(R), 118(O), 119(O), 129(VH), 144(H), 145(R), 149(O), 151(R), 153(VH), 154(VH), 157(VH), 164(R).

*Lymnaea corvus* (Gmclin, 1791) – was found at loc. No. 59. The species seems to be not rare in the Czech Republic (especially in the Bohemia), but in the studied area is very rare.

*Lymnaea stagnalis* (Linnaeus, 1758) – was found at loc. No. 1(R), 4(R), 6(R), 8(H), 9(VH), 10(VH), 11(VH), 12(H), 13(H), 14(H), 15(O), 18(O), 19(O), 22(VH), 24(H), 25(H), 26(R), 28(R), 29(O), 30(O), 31(R), 32(R), 33(R), 34(O), 36(O), 37(O), 39(R), 40(O), 41(O), 47(H), 50(R), 51(R), 54(O), 55(H), 57(H), 58(R), 59(H), 61(R), 63(R), 66(R), 67(R), 68(R), 69(R), 74(O), 71(R), 72(R), 73(R), 77(O), 80(VH), 81(O), 82(O), 84(R), 85(O), 86(H), 87(O), 88(R), 89(R), 95(R), 96(R), 97(O), 98(R), 99(R), 100(H), 101(H), 102(R), 103(R), 104(R), 105(R), 107(R), 108(R), 109(R), 110(H), 111(O), 112(O), 113(R), 114(H), 115(H), 116(R), 117(R), 118(H), 119(H), 120(R), 124(O), 125(R), 129(R), 131(R), 132(O), 134(H), 135(O), 136(R), 137(O), 138(R), 139(R), 142(R), 143(R), 145(R), 146(R), 149(R), 151(R), 159(O), 164(O), 165(O).

#### Planorbidae

*Planorbis planorbis* (Linnaeus, 1758) – was found at loc. No. 3(O), 5(H), 6(R), 7(H), 8(H), 11(R), 13(R), 14(VH), 15(H), 17(H), 18(H), 22(VH), 23(H), 24(R), 26(R), 31(R), 32(R), 33(VH), 37(O), 39(H), 44(H), 45(H), 46(O), 47(R), 48(O), 49(R), 50(VH), 52(VH), 54(H), 55(R), 59(R), 61(H), 62(VH), 64(R), 66(R), 69(VH), 70(VH), 71(R), 72(H), 73(O), 76(R), 77(O), 79(O), 80(H), 81(O), 82(R), 84(O), 85(O), 86(R), 88(R), 89(R), 96(R), 99(H), 100(H), 101(O), 102(R), 103(O), 104(O), 105(R), 110(O), 112(O), 114(H), 115(H), 116(O), 117(R), 119(O), 120(O), 122(R), 123(H), 125(H), 129(VH), 130(O), 134(H), 135(O), 136(H), 137(O), 138(H), 139(R), 142(O), 143(R), 145(R), 148(O), 151(H), 153(VH), 154(VH), 157(VH), 158(R), 160(VH), 165(O).

*Planorbis carinatus* O. F. Müller, 1774 – was found at loc. No. 66(O), 95(R), 98(H), 99(O), 101(H), 103(R), 104(H), 105(H), 107(O), 108(R), 110(R), 112(O), 118(O), 119(O), 131(R). Rare species, which may lives in the Moravia only in the studied area.

*Anisus spirorbis* (Linnaeus, 1758) – was found at loc. No. 5(R), 8(H), 9(R), 14(H), 15(VH), 31(O), 33(VH), 52(R), 54(H), 57(R), 61(R), 69(H), 72(R), 76(O), 77(O), 79(O), 80(H), 81(R), 91(O), 92(O), 100(O), 123(R).

*Anisus leucostoma* (Millet, 1813) – was found at loc. No. 6(H), 7(O), 9(H), 10(H), 11(H), 35(O), 39(VH), 44(O), 59(R), 72(H), 80(VH), 81(R), 84(R), 129(H), 134(H), 153(R), 157(VH), 160(R).

*Anisus vortex* (Linnaeus, 1758) – was found at loc. No. 4(R), 16(R), 17(R), 20(R), 22(H), 25(O), 26(O), 27(R), 28(R), 30(O), 31(O), 32(R), 34(R), 39(H), 47(H), 48(R), 49(R), 50(O), 52(R), 56(R), 58(R), 59(R), 61(H), 63(R), 64(R), 66(R), 72(O), 79(O), 83(R), 92(O), 95(H), 98(H), 99(H), 100(H), 101(H), 102(O), 103(R), 104(R), 105(H), 107(H), 108(H), 110(H), 114(R), 115(R), 116(O), 117(R), 118(O), 119(R), 125(R), 129(R), 131(R), 141(R), 146(O), 147(O), 151(VH), 164(R), 165(O).

*Anisus vorticulus* (Troschel, 1834) – was found at loc. No. 25(O), 61(H), 79(O), 100(R), 103(O), 104(O), 105(H), 112(O), 114(R), 115(O), 118(O). Very rare species, which is in the Czech Republic near extinction.

*Bathymphalus contortus* (Linnaeus, 1758) – was found at loc. No. 72(R), 145(R), 153(R). In the Czech Republic (especially Bohemia) common mollusc, but very rare in the studied area.

*Gyraulus albus* (O. F. Müller, 1774) – was found at loc. No. 12(H), 14(R), 19(R), 31(O), 38(O), 56(O), 57(R), 61(R), 84(VH), 98(R), 108(R), 129(O), 131(O), 138(H), 145(R), 146(R), 151(R), 159(H), 164(R).

*Gyraulus laevis* (Alder, 1838) – was found at loc. No. 9(VH), 10(H), 11(H), 12(R), 13(R), 14(R), 61(R), 136(R), 143(R), 144(O), 148(R), 156(R), 159(R). Relative rare species in the Czech Republic.

*Gyraulus crista* (Linnaeus, 1758) – was found at loc. No. 10(R), 12(R), 14(O), 15(R), 28(O), 32(O), 72(O), 129(H), 136(R), 143(R), 145(R), 146(R), 153(R), 159(H).

*Hippeutis complanatus* (Linnaeus, 1758) – was found at loc. No. 12(R), 13(H), 28(R), 37(O), 46(O), 48(O), 63(O), 101(O), 104(R), 105(R), 107(R), 110(O), 115(O), 129(R), 131(O), 136(R), 143(R), 153(R), 159(H), 164(R).

*Segmentina nitida* (O. F. Müller, 1774) – was found at loc. No. 12(R), 25(R), 66(O), 69(VH), 70(H), 72(VH), 80(O), 83(R).

*Planorbarius corneus* (Linnaeus, 1758) – was found at loc. No. 1(O), 8(O), 14(R), 18(R), 21(R), 22(VH), 24(R), 25(H), 26(R), 28(O), 29(R), 31(R), 32(R), 33(O), 34(O), 36(O), 37(O), 39(R), 41(O), 44(O), 47(O), 48(O), 50(R), 51(R), 54(R), 55(R), 56(O), 57(O), 59(R), 60(O), 61(R), 63(O), 64(R), 66(R), 68(O), 70(H), 71(R), 72(R), 73(R), 77(R), 80(R), 82(R), 83(O), 86(R), 88(R), 89(R), 96(H), 99(R), 100(H), 101(H), 102(R), 103(R), 104(R), 105(H), 107(R), 109(R), 110(R), 111(O), 112(O), 114(R), 115(R), 116(O), 117(R), 118(H), 119(R), 120(R), 122(O), 123(R), 124(O), 125(H), 128(O), 129(H), 130(O), 132(O), 134(H), 135(R), 136(R), 138(R), 139(R), 142(R), 145(H), 146(R), 149(R), 151(H), 152(O), 153(R), 154(VH), 155(R), 157(VH), 160(R), 164(R), 165(O).

*Ancylus fluviatilis* O. F. Müller, 1774 – was found at loc. No. 53(O), 65(O), 147(O), 148(H).  
*Ferrissia wautieri* (Miroli, 1960) – was found at loc. No. 101(O), 131(R), 259(VH). Probably a North-American species.

#### Physidac

*Physa fontinalis* (Linnaeus, 1758) – 31(R), 95(H), 100(R), 108(H). In the Czech Republic (especially Bohemia) common molusc, but very rare in the studied area.

*Physella acuta* (Draparnaud, 1805) – was found at loc. No. 1(VH), 2(R), 10(O), 13(O), 14(R), 16(R), 19(H), 20(R), 27(R), 29(VH), 31(O), 34(R), 42(R), 67(R), 97(R), 113(H), 126(VH), 127(R), 129(VH), 133(R), 136(H), 147(VH), 148(VH), 164(O).

*Aplexa hypnorum* (Linnaeus, 1758) – was found at loc. No. 14(R), 145(R). A relative rare species in the Czech Republic.

#### Bivalvia

##### Unionoida

##### Unionidac

*Unio pictorum* (Linnaeus, 1758) – was found at loc. No. 1(R-H), 2(H), 4(xO), 16(R-H), 19(H), 20(R-H), 21(O), 27(R-H), 28(H), 30(H), 31(O), 34(R-H), 35(O), 36(R), 41(O-R), 43(R), 46(O), 48(R), 51(R-H), 53(R), 58(H), 65(O), 66(R), 67(R), 68(R), 73(O), 74(R), 76(O), 77(R), 78(R), 90(R), 91(O), 92(O), 94(R), 95(R), 98(O), 101(R), 106(R), 107(R), 108(R), 111(R), 113(O), 116(R), 119(R), 124(O), 127(O), 128(O), 129(VH), 130(O), 132(O), 133(O), 140(O), 141(O), 147(R), 149(H), 150(H), 155(R), 162(H), 165(O).

*Unio tumidus* Philipsson, 1788 – was found at loc. No. 1(R-H), 2(R), 4(xO), 16(R-H), 19(R), 20(R-H), 27(R-H), 28(H), 30(H), 34(R-H), 35(O), 41(O-R), 43(R), 51(R-H), 53(R), 58(R), 60(O), 65(O), 66(R), 67(R), 68(R), 73(O), 74(R), 76(R), 77(R), 78(R), 79(O), 91(H), 92(H), 93(H), 94(R), 95(R), 98(R), 101(R), 107(H), 108(R), 109(R), 111(R), 116(R), 119(R), 120(R), 124(O), 128(O), 129(VH), 130(O), 132(O), 146(R), 155(O).

*Unio crassus* Philipsson, 1788 – was found at loc. No. 4(xO), 43(xO), 53(xO), 65(xO), 74(O), 78(O), 91(O), 141(xO), 147(O), 148(H), 150(xO), 155(xO), 162(xR). In the Czech Republic a rare species, which was very common in the past.

*Anodonta cygnea* (Linnaeus, 1758) – was found at loc. No. 1(R-H), 2(R), 7(O), 13(O), 14(O), 16(R-H), 20(R-H), 21(R), 23(O), 25(R), 27(R-H), 28(H), 30(H), 31(R), 32(O), 34(R-H), 35(O), 36(O), 40(O), 41(O-R), 43(O), 48(O), 50(R), 51(R-H), 58(R), 63(R), 73(O), 74(R), 91(R), 95(H), 98(H), 101(R), 107(R), 108(H), 109(R), 110(R), 111(R), 116(R), 118(R), 119(R), 124(O), 128(O), 129(R), 130(O), 131(R), 132(O), 142(O), 147(R), 155(O), 156(R), 159(O).

*Anodonta anatina* (Linnaeus, 1758) – was found at loc. No. 1(R-H), 2(R), 3(O), 4(O), 14(O), 16(R-H), 19(R), 20(R-H), 21(H), 25(H), 27(R-H), 28(H), 30(H), 31(R), 34(H), 35(O), 40(O), 41(O-R), 43(R), 46(O), 48(O), 51(R-H), 52(O), 53(R), 58(R), 60(R), 63(R), 65(O), 66(R), 67(R), 71(O), 73(O), 74(O), 75(R), 76(R), 77(R), 78(R), 84(H), 87(O), 91(R), 92(R), 93(O), 94(R), 95(H), 98(H), 101(R), 105(O), 106(O), 107(R), 108(H), 109(R), 111(R), 113(R), 116(R), 119(R), 120(R), 122(O), 124(O), 127(O), 128(O), 129(VH), 130(O), 131(R), 132(O), 137(O), 140(O), 141(O), 142(R), 146(O), 147(H), 149(H), 150(R), 153(O), 155(O), 158(O), 159(O), 162(R), 165(R).

*Pseudanodonta complanata* (Rossmässler, 1835) – was found at loc. No. 58(O), 74(O), 76(O), 78(O). A rare species in the Czech Republic.

*Sinanodonta woodiana* (Lea, 1834) – was found at loc. No. 58(O). First evidence of this non-native species in the Czech republic (Bcran 1997).

#### Veneroida

##### Sphaeriidae

*Sphaerium corneum* (Linnaeus, 1758) – was found at loc. No. 3(H), 4(H), 16(R), 20(R), 26(VH), 27(R), 31(H), 34(O), 41(O), 43(R), 46(H), 48(H), 60(R), 63(R), 65(O), 74(R), 76(O), 78(R), 90(R), 91(R), 96(R), 97(H), 99(O), 100(R), 101(H), 103(O), 104(O), 105(O), 106(R), 109(R), 112(O), 113(H), 120(R), 124(O), 129(H), 140(R), 147(O), 149(O), 150(R), 151(R), 155(O).

*Sphaerium rivicola* (Lamarck, 1818) – was found at loc. No. 48(O), 74(xO), 90(O), 91(H), 92(O), 93(O), 97(xR), 108(xO), 113(R), 127(xR), 140(R), 141(xO), 147(R), 148(O), 149(O), 150(R), 155(O), 162(xR). A rare species, which is near extinction in the Czech Republic.

*Musculium lacustre* (O. F. Müller, 1774) – was found at loc. No. 26(R), 31(R), 32(R), 39(R), 48(O), 60(R), 63(R), 64(R), 72(R), 73(O), 74(O), 76(O), 86(O), 88(O), 89(O), 99(O), 100(R), 101(R), 103(O), 104(O), 105(O), 107(O), 116(O), 119(R), 127(O), 129(R), 145(R), 151(R), 155(O), 157(VH), 165(O).

*Pisidium amnicum* (O. F. Müller, 1774) – was found at loc. No. 148(xH), 164(xO). A rare species, which probably died out in the studied area.

*Pisidium henslowanum* (Sheppard, 1823) – was found at loc. No. 3(R), 16(R), 20(R), 27(R), 28(R), 30(R), 34(R), 35(O), 41(O), 43(R), 46(R), 48(O), 60(R), 63(R), 65(O), 66(R), 74(O), 76(H), 91(R), 92(R), 93(R), 101(R), 113(R), 140(R), 142(VH), 146(O), 147(R), 151(R).

*Pisidium supinum* A. Schmidt, 1851 – was found at loc. No. 48(O), 65(O), 76(H), 91(R), 93(R), 148(O). A relative rare species in the Czech Republic.

*Pisidium milium* Held, 1836 – was found at loc. No. 76(O). A relative rare species in the Czech republic.

*Pisidium subtruncatum* Malm, 1855 – was found at loc. No. 4(R), 31(R), 32(R), 37(O), 39(O), 44(O), 48(O), 60(R), 63(H), 76(H), 91(O), 129(O), 142(VH), 144(VH), 145(R), 146(R), 147(H), 148(VH), 154(R), 156(R), 159(H).

*Pisidium nitidum* Jenyns, 1832 – was found at loc. No. 32(R), 48(R), 142(O), 143(H), 144(O), 145(R), 148(R).

*Pisidium personatum* Malm, 1855 – was found at loc. No. 129(O). A common species in the Czech Republic, but rare in the studied area.

*Pisidium casertanum* (Poli, 1791) – was found at loc. No. 16(R), 20(R), 27(R), 28(R), 30(R), 34(R), 60(R), 64(R), 66(R), 74(O), 113(R), 121(R), 127(R), 129(R), 133(O), 145(R), 147(R), 148(VH), 151(R), 152(R), 157(H), 158(O), 161(VH), 163(R), 164(R).

*Pisidium moitessierianum* (Paladilhe, 1866) – was found at loc. No. 46(O), 60(O), 92(R), 142(VH), 148(O). A rare species in the Czech Republic. First evidence of this species from the Moravia.

#### Dreissenidae

*Dreissena polymorpha* (Pallas, 1771) – was found at loc. No. 41(O), 42(VH), 51(R), 58(R), 78(O), 126(R), 159(VH), 161(H).

### Zoogeographical analysis

In this chapter molluscs are divided into zoogeographical groups according to Lisický (1991).

	num.	%
Pontic	4	7.5
Mediterranean	1	1.9
European	8	15.1
Eurosiberian	7	13.2
Palearctic	18	34.0
Holarctic	13	24.5
Other *	2	3.8

\* non-native (non-European) species

### Conservation

In this chapter molluscs are divided into groups according to the Red List of aquatic molluscs of the Czech Republic (Beran in prep.).

#### Critically Endangered

*Theodoxus danubialis*, *Viviparus acerosus*, *Lithoglyphus naticoides*, *Bithynia leachii*, *Anisus vorticulus*, *Sphaerium rivicola*, *Pisidium moitessierianum*

#### Endangered

*Planorbis carinatus*, *Unio crassus*, *Pseudanodonta complanata*, *Pisidium amnicum*

#### Vulnerable

*Anisus spirorbis*, *Gyraulus laevis*, *Segmentina nitida*, *Aplexa hypnorum*, *Unio tumidus*, *Anodonta cygnea*, *Pisidium supinum*, *Pisidium milium*

#### Near Threatened

*Viviparus contectus*, *Valvata piscinalis*, *Anisus leucostoma*, *Physa fontinalis*, *Musculium lacustre*, *Pisidium obtusale*

#### Least Concern

*Bithynia tentaculata*, *Valvata cristata*, *Arcydenia lacustris*, *Lymnaea truncatula*, *Lymnaea peregra*, *Lymnaea auricularia*, *Lymnaea turricula*, *Lymnaea corvus*, *Lymnaea stagnalis*, *Planorbis planorbis*, *Anisus vortex*, *Bathymophalus conortius*, *Gyraulus albus*, *Gyraulus crista*, *Hippeutis complanatus*, *Planorbis barbus*, *Anisus vortex*, *Ancylus fluviatilis*, *Unio pictorum*, *Anodonta anatina*, *Sphaerium corneum*, *Pisidium henslowanum*, *Pisidium subtruncatum*, *Pisidium nitidum*, *Pisidium personatum*, *Pisidium casertanum*

Not Evaluated (NE)

*Ferrissia wautieri*, *Physella acuta*, *Sinanodonta woodiana*

### A survey of the most valuable localities

In this chapter are presented localities which are the most important for survive of endangered and rare species (only species from critically endangered and endangered categories are presented).

The Dyje river – between the Nové Mlýny and inflow to the Morava river (loc. No. 2, 19, 43, 53, 58, 65, 78). Populations of *Viviparus acerosus*, *Lithoglyphus naticoides*, *Unio crassus*, *Pseudanodonta complanata*.

The Kyjovka river – between the Kostice village and the inflow to the Dyje river (loc. No. 67, 68, 74, 76, 94, 97, 113). Populations of *Theodoxus danubialis*, *Viviparus acerosus*, *Lithoglyphus naticoides*, *Unio crassus*, *Pseudanodonta complanata*, *Sphaerium rivicola*.

The Velička river – between the Hroznová Lhota village and the inflow to the Morava River (loc. No. 147, 148). Populations of *Unio crassus*, *Sphaerium rivicola*.

The Lednický náhon canal – canal between the Bulhary village and Janův Hrad castle (loc. No. 16, 20, 27, 28, 30, 34). Populations of *Viviparus acerosus*, *Lithoglyphus naticoides*.

The Jizda canal (Spářavka, Čistý járeček) – canal between the Morava river near Kostice and the Kyjovka river (loc. No. 66, 91, 92, 93, 95, 107, 108). Populations of *Viviparus acerosus*, *Lithoglyphus naticoides*, *Planorbis carinatus*, *Unio crassus*, *Sphaerium rivicola*, *Pisidium moitessierianum*.

The Morávka canal – between the Vnorovy village and the Rohatec village (loc. No. 142, 146). A population of *Pisidium moitessierianum*.

The Floodplain forest near Kostice – pools in the floodplain forest between Lanžhot and Tvrdonice (especially loc. No. 100, 101, 103, 104, 105, 112, 114, 115, 117, 118). Populations of *Bithynia leachi*, *Planorbis carinatus*, *Anisus vorticulus*.

The Lány castle – pool near the Lány castle (loc. No. 61). A population of *Anisus vorticulus*.

### DISCUSSION

Altogether 46 aquatic species (32 gastropods, 14 bivalves) were found in this area by malacozoologists before 1996. Research were directed especially to gastropods. Last findings of some rare species are more than 20 years old, e. g., last evidence of *Theodoxus danubialis* is 41 years old. All these species except for *Pisidium obtusale* were also found in 1996 and 1997.

Research in 1996 and 1997 documents the findings of 53 aquatic species (33 gastropods, 20 bivalves) in the different wetlands (rivers, canals, pools, ponds) at 165 localities in the Dolnomoravský úval lowland. The diversity of aquatic malacofauna of this area is probably highest in the Czech Republic, because 75% species inhabiting the Czech Republic were found. A finding of *Sinanodonta woodiana* is the first evidence from the Czech Republic (Beran 1997) and findings of *Pisidium moitessierianum* are first for the Moravia. The most frequent species (40 localities and more) were the following common molluscs: *Viviparus contectus*, *Valvata piscinalis*, *Bithynia tentaculata*, *Lymnaea truncatula*, *L. peregra*, *L. auricularia*, *L. turricula*, *L. stagnalis*, *Planorbis planorbis*, *Anisus vortex*, *Planorbis barbus*, *Planorbis barbus*, *Unio pictorum*, *U. tumidus*, *Anodonta cygnea*, *A. anatina*, *Sphaerium corneum*. Rare occurrence of some common molluscs e. g., *Valvata cristata*, *Bathymorphus contortus*, *Ancylus fluviatilis*, *Physa fontinalis*, *Pisidium nitidum* is surprising and was not expected. Occurrence of pontic molluscs (*Theodoxus danubialis*, *Viviparus acerosus*, *Lithoglyphus naticoides*) is typical for the lower part of area studied. These species are known in the Czech Republic only from the area under study.

Other very rare and endangered species (*Bithynia leachi*, *Planorbis carinatus*, *Anisus vorticulus*, *Unio crassus*, *Pseudanodonta complanata*, *Sphaerium rivicola*, *Pisidium moitessierianum*) were found. Some species live in the Czech Republic or in the Moravia only there. Altogether 19 species (36%) are listed in the Red List in categories Critically Endangered (7), Endangered (4) and Vulnerable (8).



Zoogeographical analysis indicates, that the most numerous groups of aquatic molluscs are species with wide distributional range – holarctic, palearctic and eurosiberian (71.7%) species. Four species of molluscs (7.5%) belong to the pontic elements.

Most valuable biotopes which are important for survive rare and endangered species are rivers, canals and pools with shallow and overgrown parts.

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