

**Contribution to the macroinvertebrate fauna
of the Hungarian Danube.
III. Mysid shrimps (Crustacea: Mysidacea)**

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Introduction

To date three mysid species have occurred in Hungary. *Limnomysis benedeni* Czerniavsky, 1882 was found in September 1946 in the Lágymányosi-öböl (a bay in South-Budapest) (WOYNÁROVICH 1954). In 1950 it was successfully introduced into the lake Balaton where now it is common. In the Danube it inhabits almost every type of habitats from lotic gravel banks to oxbows, but prefers lentic conditions.

Katamysis warpachowskyi G. O. Sars, 1893 turned up in 2001 in the Danube at Komárom (WITTMANN 2002), and now it is abundant at several locations. According to our experiences in Danube it prefers gravel banks and rip-raps with slow current, and is more abundant in deep water (>1m). It avoids muddy, sandy substrata, as well as strong current. We also found it in still waters of oxbows connected with the Danube (Lipóti-morotva, Zátonyi-Duna), but only on hard substrata (plant detritus, gravel).

Hemimysis anomala G. O. Sars, 1907, the third species was first described in Hungary by WITTMANN (2007) based on a sample of 2005 from Dunaújváros, but later it was found in two samples of the Hungarian Danube Research Station of 2004. It inhabits almost exclusively anthropogenic habitats (i.e. rip-raps). Due to its nocturnal activity it can be collected efficiently only by night. If it is not feasible, bottle traps can be used (ODENWALD et al. 2005).

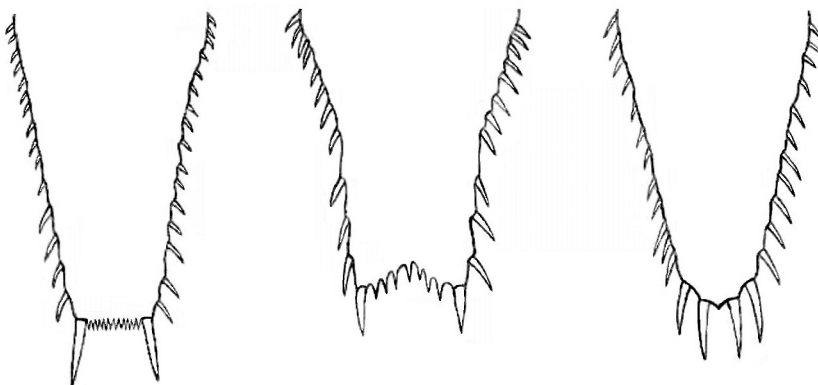


Figure 1. The telson of (A) *Hemimysis anomala*, (B) *Limnomysis benedeni*, (C) *Katamysis warpachowskyi* (modified after BĂCESCU 1954).

This three species can be identified quite easily by the relative size of their eyes and eyestalks, and the shape of their telsons. *Hemimysis anomala* has relatively large eyes, short eyestalks, and the tip of the telson is truncated (Figure 1. A). *Limnomysis benedeni* has relatively long eyestalks and small, spherical eyes, its telson is slightly V-shaped on the apex (Figure 1. B). *Katamysis warpachowskyi* has small, oval eyes on short eyestalks, the telson is tongue-shaped (Figure 1. C).

Material and methods

The main objective of this paper is summarising faunistic results concerning mysid shrimps collected in different macroinvertebrate investigations carried out by the Hungarian Danube Research Station of the Hungarian Academy of Sciences in the last fourteen years.

The 'results' section of the article contains the code of the sampling site, code of the method, date of collection, number of specimens, and monogram of collectors (in parentheses), respectively. The data are arranged in alphabetical order of the code of the sampling sites. Detailed descriptions of sampling sites and methods, and the explanations of the abbreviations can be found in NOSEK (2007). In the case of *Limnomysis benedeni* we did not count the specimens, because this species has been present for a long time, it is widespread, and often occurred in high abundance.

Results

Limnomysis benedeni Czerniavsky, 1882 — ALF1-H: 2002.07.02. (AS, BG, NJ, VT); 2003.05.14. (ME, NJ) — ALF1-V: 2007.05.17. (BP) — ALM1-H: 1998.10.15. (CsG, NJ, ON) — ASV3-D: 2003.09.09. (AS, BG, CsZ, NJ) — ASV3-K: 2003.09.09. (AS, BG, CsZ, NJ) — ASV6-C: 2004.07.25. (ME, NJ) — ASV6-D: 2006.09.25. (BE, NJ) — ASV6-V: 2007.05.15. (BP) — BAG1-D: 2003.07.26. (ME, NJ) — BAG2-D: 2003.09.09. (AS, BG, CsZ, NJ) — BAG2-K: 2003.09.09. (AS, BG, CsZ, NJ) — BAJ2-H: 1998.10.21. (CsG, NJ, ON) — BDH3-K: 2004.08.28. (ME, NJ) — BEB1-K: 2004.08.28. (ME, NJ) — BEB2-K: 2004.09.28. (BG, CsZ, NJ) — BOD2-H: 2003.09.08. (AS, BG, CsZ, NJ) — BOD2-K: 1995.09.13. (NJ); 1997.07.28. (NJ); 1997.09.09. (NJ); 1997.10.14. (NJ); 1998.04.20. (NJ); 1998.06.22. (NJ); 1998.09.01. (NJ); 1998.10.14. (NJ); 1999.06.08. (NJ); 1999.07.13. (NJ); 1999.08.31. (NJ); 1999.10.27. (NJ); 2001.09.05. (NJ); 2001.10.09. (NJ); 2002.07.09. (NJ); 2002.09.17. (NJ); 2002.10.08. (NJ); 2003.05.30. (AS, BG, CsZ, NJ); 2003.07.25. (ME, NJ); 2003.09.08. (AS, BG, CsZ, NJ) — BOD2-V: 2007.05.15. (BP) — BOD3-K: 2004.07.24. (ME, NJ) — BOK1-K: 2004.08.28. (ME, NJ) — BPE1-V(N): 2007.05.26. (BP) — BPE2-V(N): 2007.05.26. (BP) — BPM1-V(N): 2007.05.12. (BP) — BPM2-V(N): 2007.05.26. (BP) — BPT1-V(N): 2007.05.12. (BP); 2007.05.26. (BP) — BPT2-V(N): 2007.05.26. (BP) — BTH2-K: 2004.08.25. (ME, NJ); 2005.06.16. (BG, CsZ, NJ, VT) — CIK1-K: 2004.07.23. (ME, NJ) — CIK2-D: 2006.09.25. (BE) — CIK2-H: 2003.09.08. (AS, BG, CsZ, NJ) — CIK2-K: 1997.10.14. (NJ); 1998.09.01. (NJ); 1998.10.14. (NJ); 1999.06.08. (NJ); 1999.07.13. (NJ); 1999.08.31. (NJ); 1999.10.27. (NJ); 2001.09.05. (NJ); 2002.07.09. (NJ); 2002.09.17. (NJ); 2002.10.08. (NJ); 2003.05.29. (AS, BG, CsZ, NJ); 2003.07.25. (ME, NJ); 2003.09.08. (AS, BG, CsZ, NJ); 2006.09.25. (NJ) — CIK2-V: 2007.05.15. (BP) — CIK4-K: 2003.07.26. (ME, NJ) — CIK5-K: 2004.07.24. (ME, NJ) — CIK6-K: 2004.07.24. (ME, NJ) — CIK7-K: 2004.07.24. (ME, NJ) — CSA0-K: 2003.09.08. (AS, BG, CsZ, NJ) — CSA1-C: 2001.07.02. (NJ); 2001.09.05. (NJ); 2001.10.09. (NJ); 2002.06.11. (NJ); 2002.07.09. (NJ); 2002.09.17. (NJ) — CSA2-CK: 1998.09.01. (NJ); 1999.07.13. (NJ); 1999.10.27. (NJ); 2003.05.26. (AS, BG, CsZ, NJ, VT); 2003.05.27. (AS, BG, CsZ, NJ, VT); 2006.09.25. (NJ) — CSA3-K: 2003.09.09. (AS, BG, CsZ, NJ) — CSA4-K: 1996.07.30. (NJ); 1997.06.27. (NJ) — CSA4-V: 2007.05.16. (BP) — CSA5-V(N): 2007.05.16. (BP) — CSA6-V(N): 2007.05.16. (BP) — CSA8-K: 2004.09.15. (NJ) — CSA9-D: 2004.09.15. (NJ) — CSK1-K: 2004.09.15. (NJ) — CSK2-K: 2004.09.15. (NJ) — CSK3-K: 2004.09.15. (NJ) — CSK4-K: 2004.09.15. (NJ) — CSK5-K: 2004.09.15. (NJ) — CSO1-K: 2004.09.15. (NJ) — CSO2-K: 2004.09.15. (NJ) — CSO3-K: 2004.09.15. (NJ) — CSP1-K: 2005.09.14. (NJ, ON) — DBO1-H: 2002.07.05. (AS, BG, NJ, VT) — DBO1-HD: 2001.05.25. (BE, CsG, NJ, ON) — DFL1-H: 1998.10.21. (CsG, NJ, ON) — DIS1-K: 2004.09.15. (NJ) — DIS4-K: 2004.09.15. (NJ) — DIS5-D: 2004.09.15. (NJ) — DIS5-K: 2004.09.15. (NJ) — DKD2-K: 2005.07.20. (ME, NJ) — DK10-K: 1999.08.31. (NJ) — DK11-H: 2003.07.22. (ME, NJ) — DK12-C: 1996.09.17. (NJ) — DK14-D: 2003.07.22. (ME, NJ) — DOB1-K: 2004.07.23. (ME, NJ) — DOF1-K: 2004.07.24. (ME, NJ) —

(NJ, ON) – SOR2-K: 2005.09.14. (NJ, ON) – SUG1-K: 2005.06.16. (BG, CsZ, NJ, VT) – SUG2-K: 2004.08.29. (ME, NJ) – SUT1-H: 1998.10.15. (CsG, NJ, ON); 2002.07.02. (AS, BG, NJ, VT) – SUT1-HD: 2001.05.08. (BE, CsG, NJ, ON) – SZB2-K: 2005.06.23. (NJ, ON) – SZL1-V: 2007.04.03. (BP) – SZL3-V: 2007.04.03. (BP) – SZM2-V: 2006.07.20. (BP) – SZM3-HD: 2001.05.25. (BE, CsG, NJ, ON) – SZN1-H: 2002.07.05. (AS, BG, NJ, VT) – SZU1-HD: 2001.05.23. (BE, CsG, NJ, ON) – TAH1-H: 2002.07.05. (AS, BG, NJ, VT); 2003.05.13. (ME, NJ) – TAS1-C: 2001.05.23. (BE, CsG, NJ, ON) – TAS2-D: 2005.09.15. (NJ, ON) – TAS2-H: 2001.05.23. (BE, CsG, NJ, ON) – TAS2-K: 2005.06.23. (NJ, ON); 2005.09.15. (NJ, ON) – TAT2-K: 2002.07.03. (AS, BG, NJ, VT) – TAT4-D: 2002.07.03. (AS, BG, NJ, VT) – TEJ2-D: 2003.07.25. (ME, NJ); 2007.05.16. (BE) – TEJ3-D: 2003.09.11. (AS, BG, CsZ, NJ) – TEJ3-K: 2003.09.11. (AS, BG, CsZ, NJ) – VAC1-D: 2002.07.04. (AS, BG, NJ, VT); 2003.05.13. (ME, NJ) – VAC1-H: 1998.05.27. (CsG, NJ, ON) – VAC3-H: 2003.05.13. (ME, NJ) – VAC5-V: 2006.07.21. (BP) – VED1-D: 2004.08.25. (ME, NJ); 2005.06.16. (BG, CsZ, NJ, VT) – VEN1-D: 2002.09.23. (AS, BG, NJ, VT) – VEN1-DC: 2001.05.07. (BE, CsG, NJ, ON) – VEN3-K: 2002.09.23. (AS, BG, NJ, VT) – VIS1-H: 2002.07.03. (AS, BG, NJ, VT); 2002.09.25. (AS, BG, NJ, VT) – VPF1-D: 2003.07.22. (ME, NJ) – ZAT1-D: 2003.07.23. (ME, NJ) – ZAT1-K: 2003.07.23. (ME, NJ) – ZAT2-C: 1998.04.20. (NJ); 2002.06.11. (NJ) – ZAT3-K: 1996.07.30. (NJ); 1996.09.17. (NJ); 1997.09.09. (NJ); 1997.10.14. (NJ); 1998.06.22. (NJ); 1998.09.01. (NJ); 1998.10.14. (NJ); 1999.08.31. (NJ); 2001.09.05. (NJ); 2002.09.17. (NJ); 2003.05.30. (AS, BG, CsZ, NJ) – ZAT4-K: 1998.10.14. (NJ); 1999.08.31. (NJ); 1999.10.27. (NJ); 2001.07.02. (NJ); 2001.09.05. (NJ); 2001.10.09. (NJ); 2002.06.11. (NJ); 2002.07.09. (NJ); 2002.09.17. (NJ); 2002.10.08. (NJ); 2003.05.27. (AS, BG, CsZ, NJ, VT); 2003.07.26. (ME, NJ); 2003.09.09. (AS, BG, CsZ, NJ); 2004.07.23. (ME, NJ); 2006.09.25. (NJ) – ZAT4-V: 2007.05.16. (BP) – ZAT5-K: 2003.09.09. (AS, BG, CsZ, NJ) – ZAT7-K: 2003.09.09. (AS, BG, CsZ, NJ) – ZAT8-K: 2003.09.08. (AS, BG, CsZ, NJ) – ZAT8-V: 2007.05.16. (BP)

Katamysis warpachowskyi G. O. Sars, 1893 — ALF1-V: 2007.05.17., 1 (BP) – ASV3-D: 2003.09.09., 48 (AS, BG, CsZ, NJ) – ASV3-K: 2003.09.09., 5 (AS, BG, CsZ, NJ) – ASV6-V: 2007.05.15., 53 (BP) – BAG1-D: 2003.07.26., 4 (ME, NJ) – BAG2-D: 2003.09.09., 34 (AS, BG, CsZ, NJ) – BOD2-H: 2003.09.08., 1 (AS, BG, CsZ, NJ) – BOD2-V: 2007.05.15., 18 (BP) – BPT1-V(N): 2007.05.26., 5 (BP) – BPT2-V(N): 2007.05.26., 3 (BP) – CIK1-D: 2004.07.23., 1 (ME, NJ) – CIK2-D: 2006.09.25., 2 (BE) – CIK2-H: 2003.09.08., 1 (AS, BG, CsZ, NJ) – CIK2-V: 2007.05.15., 25 (BP) – CSA4-V: 2007.05.16., 4 (BP) – CSA5-Pc: 2007.05.16-17., 1 (BP) – CSA5-V(N): 2007.05.16., 3 (BP) – CSA6-V(N): 2007.05.16., 3 (BP) – DIS5-D: 2004.09.15., 2 (NJ) – DIS5-K: 2004.09.15., 1 (NJ) – DK10-V: 2007.05.16., 22 (BP) – DUF4-V: 2007.05.15., 9 (BP) – ESZ1-H: 2002.07.03., 6 (AS, BG, NJ, VT) – ESZ1-H: 2003.05.13., 1 (ME, NJ) – GOD1-V: 2006.07.24., 1 (BP) – GOD5-V: 2002.05.22., 1 (NJ) – GOD7-V: 2007.04.10., 1 (BP) – GON1-V: 2007.05.17., 11 (BP) – GOS1-D: 2003.07.26., 3 (ME, NJ) – KOM1-Pc: 2007.05.15-17., 1 (BP) – KOM2-V: 2007.05.17., 10 (BP) – KOP1-H: 2002.09.23., 1 (AS, BG, NJ, VT) – KOP1-H: 2003.05.14., 10 (ME, NJ) – KOP1-V: 2007.05.17., 19 (BP) – LIP3-V: 2007.05.16., 23 (BP) – NBA2-H: 2002.07.01., 8 (AS, BG, NJ, VT) – RAJ2-H: 2003.09.10., 7 (AS, BG, CsZ, NJ) – SZO1-H: 2003.05.13., 1 (ME, NJ) – TEJ2-D: 2007.05.16., 2 (BE) – VAC1-D: 2002.07.04., 4 (AS, BG, NJ, VT) – VAC3-H: 2003.05.13., 2 (ME, NJ) – VED1-D: 2004.08.25., 6 (ME, NJ) – ZAT4-V: 2007.05.16., 12 (BP) – ZAT8-V: 2007.05.16., 8 (BP)

Hemimysis anomala G. O. Sars, 1907 — BPE1-V(N): 2007.05.26., 13 (BP) – BPM2-V(N): 2007.05.26., 4 (BP) – BPT1-V(N): 2007.05.26., 52 (BP) – CSA5-Pc: 2007.05.16-17., 30 (BP) – CSA5-V(N): 2007.05.16., 56 (BP) – CSA6-V(N): 2007.05.16., 12 (BP) – CSK3-K: 2004.09.15., 4 (NJ) – DIS5-D: 2004.09.15., 1 (NJ) – FGK1-I: 2006.06.23., 1 (BP) – FGK2-V: 2006.09.13., 21 (BP) – KOM1-Pc: 2007.05.15-17., 2 (BP)

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