

Area-analytical zoogeographic classification of the family Melanopsidae (Gastropoda: Prosobranchia).

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Abstract

This paper presents results of the area-analytical zoogeographic classification for the freshwater gastropod family Melanopsidae following the methods created by DE LATTIN (1967) and DÉVAI (1976).

Keywords: Melanopsidae, area-analytical classification of Siberian elements, Western Palearctic elements, Western Asian elements, Holomediterranean elements.

Introduction

An area-analytical zoogeographic classification has been carried out for the representatives of the gastropod family Melanopsidae following the methods of DÉVAI (1976) based on the establishment of a classification system according to the refugial areas for freshwater Mollusks (Fig. 4).

Material and Methods

As a first step detailed distribution maps for the species of the family Melanopsidae were prepared. Then the species were classified according to their occurrences in the newly determined refugial areas after the methods presented in DÉVAI (1976) and VARGA (1971) (Fig. 4). These are depicted on Fig. 1 and 2 in an order from east towards west.

Faunal groups

The representatives of the family belong to the Siberian, Western Palearctic, Western Asian, and Holomediterranean fauna circles.

The species *Marstoniopsis scholtzi* (SCHMIDT 1856) [syn: *M. steini* (MARTENS 1856)] is a Siberian element with a West Siberian refugial area (Fig. 1.) occurring from Holland as far as the areas of the rivers Dnjepr and the middle parts of the river Volga.

The following species are Western Asian elements with Iranian refugial areas: *Melanopsis lutensis* STAROBOGATOV & IZZATULAEV 1985 (STAROBOGATOV & al. 1985); *Melanopsis praemorsa* (LINNÉ 1758), *Melanoides tuberculatus* (O. F. MÜLLER 1774). The species *M. praemorsa* has a segregated distribution pattern from Spain to Israel and sporadic occurrences in Marocco and Algeria in Northern Africa as well (MIENIS 1986, SHADIN 1952). *Melanopsis tuberculata* (O. F. MÜLLER 1774) is not an indigenous species to Hungary. It has been introduced into the Malom (Mill) Pond of the Margit-sziget (Margit Island) (PINTÉR & al. 1979). That's why the species is not depicted on the distribution map. Its synonyms are: *M. sauleyi* BOURGUIGNAT 1853, *M. jordanica* ROTH 1839, *M. cerithiopsis* BOURGUIGNAT 1884. *Melanopsis nodosa* FERRUSSAC 1823 and *Melanopsis costata* OLIVIER 1804 (Fig. 1) can be placed into the Syrian refugial area. Some specimens of *M. nodosa* have come to light from Turkey as well (BILGIN 1986) along with the species *Melanopsis buccinoidea* OLIVIER 1801, inhabiting several areas (BILGIN 1980) (Fig 1).

Among the Western Palearctic elements (Fig.4) we can find representatives of the Ponto-Caspian fauna circle with Ponto-Caspian refugial areas (Fig.1, Fig. 2). The following species can be placed here: *Micromelania lincta* MILASEVICH 1908 (Fig. 1), *Melanopsis dragiaensis* STAROBOGATOV & C IZZATULAEV 1985 (STAROBOGATOV & al. 1985) (Fig. 2), and the species living in the Caspian Sea, namely: *Micromelania caspia* (EICHWALD 1838), *Micromelania spica* (EICHWALD 1841), *Micromelania dimidiata* (EICHWALD 1841), *Micromelania turricula* W. DYBOWSKI 1888 and *Micromelania elegantula* W. DYBOWSKI 1888 (SHADIN 1952).

The Holo-mediterranean elements can be placed into the Western-Palearctic fauna circle (Fig. 4). From these the Ponto-mediterranean or Ponto-pannonian *Melanopsis parreyssi* PHILIPPI 1847 populating the hot water spring lake of Püspökfürdő in Transylvania is worth to be mentioned (Fig. 2) (SOÓS 1943). According to PINTÉR, RICHNOVSZKY & SZIGETHY (1979) representatives of the same species have been introduced to Kőrösladány and the Malom (Mill) Pond of Budapest-Margit Island, that's why these two localities are again not depicted on the distribution map.

GLAUBRECHT (1993) and NESEMANN (1991) gave a very good overview on the species classified into the Ponto-mediterranean refugial area. These are: *Fagotia acicularis* (FERRUSSAC 1823), *Fagotia stussineri* SCHÜTT 1974 (Fig. 2) (SOÓS 1943, REISCHÜTZ 1981, REISCHÜTZ & al. 1971, 1982, JAECKEL & al. 1957, BILGIN 1980). Other Ponto-mediterranean elements are *Fagotia esperi* (FERRUSSAC 1823), *Amphimelania holandri* (ROSSMÄSSLER 1839) (Fig. 2.) (SOÓS 1943, JAECKEL & al. 1960, BILGIN 1980, NESEMANN 1991).

Melanopsis dufouri etrusca BROU 1862, endemic to the thermal springs of Marenma (Fig. 2.) (COSSIGNANI T. & V. (1995) was placed into the Adriato-mediterranean refugial area. Two other species belong to this area as well: *Melanopsis penchinati* BOUGUIGNAT 1868 and *Melanopsis cariosa* LINNÉ 1767 (Fig. 2 and 3) (GLAUBRECHT 1993).

Summary

An area-analytical zoogeographic classification has been carried out for 22 species of the gastropod family Melanopsidae following the methods of DÉVAI (1976) based on the establishment of a classification system according to the refugial areas for freshwater mollusks of VARGA 1971 and 1975. These species were classified into three major groups in an order from the East to the West; namely into the Siberian, Western Asian and Western Palearctic fauna circles with 8 refugial areas. One species belongs to the West-Siberian refugial area while 3-3 species could have been placed into the Iranian and Syrian refugial areas from the West-Asian fauna circle. From the West-Palearctic elements 7 species belong to the Ponto-Caspian refugial area. Among the Holomediterranean elements we have one Ponto-pannonian, four Ponto-mediterranean, one Adriato-mediterranean and two Atlanto-mediterranean species. We could place 15 species into the refugial areas of this last group.

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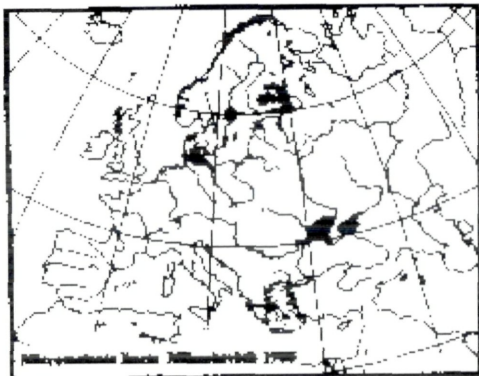
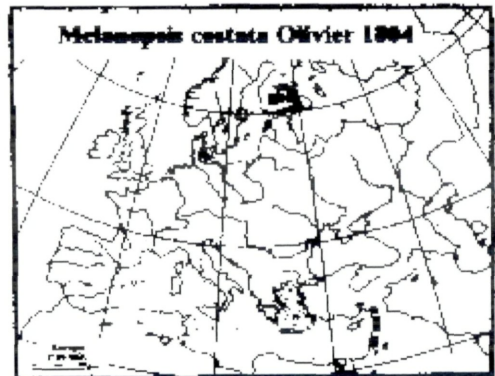
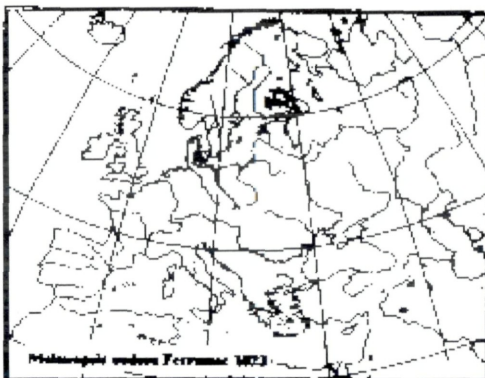
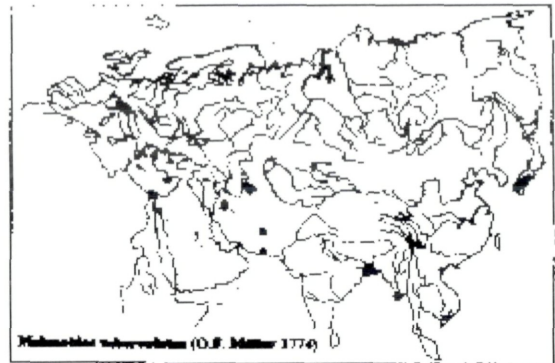
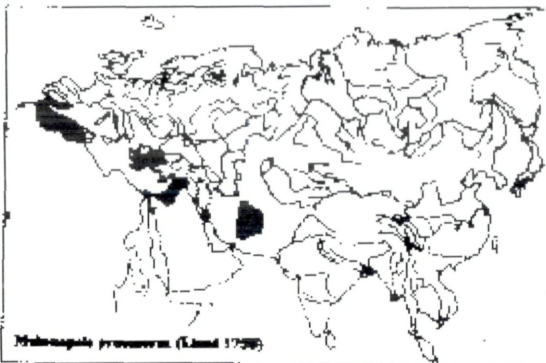
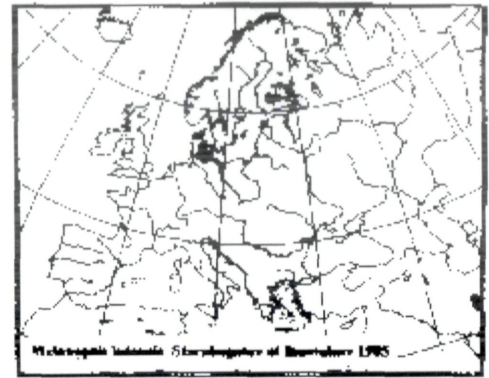
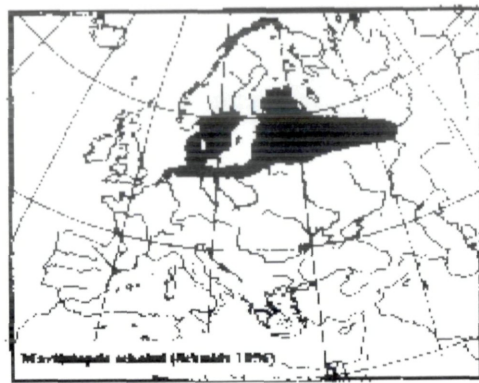


Fig. 1:

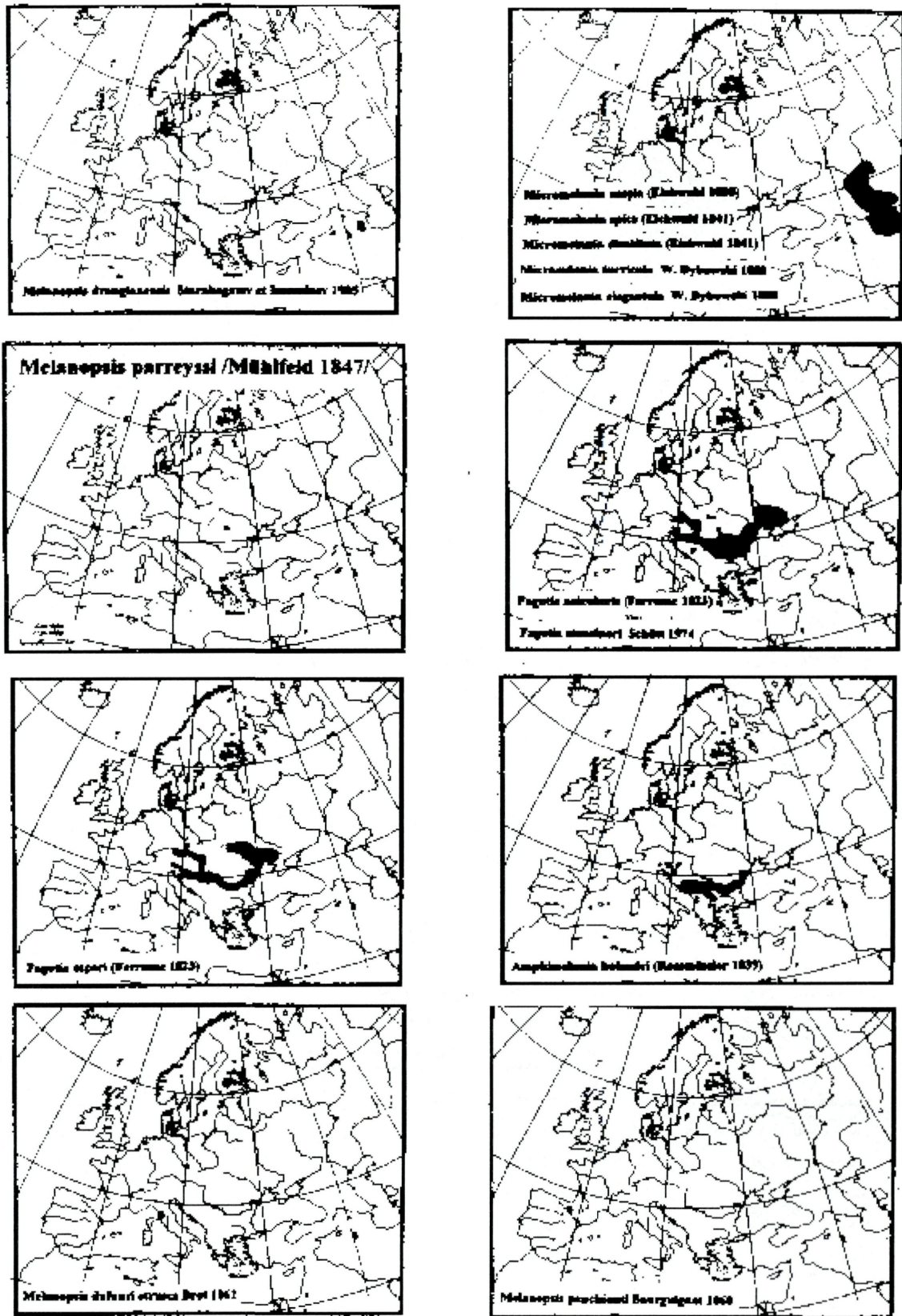


Fig. 2:

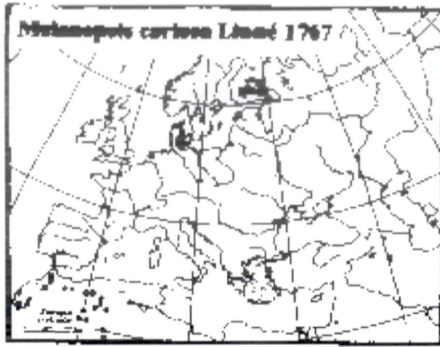


Fig. 3:

System of freshwater refugial areas (shown circles) and faunal elements in the Palearctic region.
(De Lattin 1947, Z. Varga 1971, 1975) from Gy. Bátori 1976



West-Palaearctic Elements

1. **Sub-Mediterranean Elements**
(Canarian, Mauritanian, Tyrrhenian, Cyprian, Cyprian Refugial areas)

1. **Holo-Mediterranean Elements**
1.a. Atlantic-Mediterranean
1.b. Adriatic-Mediterranean Refugial areas

1.c. Pannonic-Mediterranean
1.d. South Italian
1.e. Sicilian

2. **Ponto-Caspian Elements**
Ponto-Caspian Refugial areas

West-Asian Elements

a) **Pre-Asian Elements**
3. Syrian Refugial areas
4. Iranian

b) **Central-Asian Elements**
5. Afghan Refugial areas
6. Turkmenian

East-Palaearctic Elements

9. **Mongolian Elements**

Dzauagurian Refugial areas
Mongolian-Akaiic-Finegaysa Refugial areas

Draucian Refugial areas

Siberian Elements

a) **West-Siberian Elements**
7. West-Siberian Refugial areas

b) **Central-Siberian Elements**
8. Angara Refugial areas

10. c) **East-Siberian Elements**
Stanovoy-Bureyn
Okhotskian Refugial areas
Kamchatkan

11. d) **Manchurian Elements**
Amurian
Sakhalin-Kurilen
Hokkaido Refugial areas
Manchu-Ussuri

Pacific-Palaearctic Elements

12. Japanese
13. Korean
14. Sino-Pacific Refugial areas
15. Sino-Tibetan
16. Yunnan

Note: The Korean Refugial area belongs to Manchurian elements by De Lattin (1947).

Fig. 4:

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Nachrichtenblatt der Ersten Malakologischen Gesellschaft Vorarlbergs](#)

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