

AN ANNOTATED CHECKLIST OF THE TERRESTRIAL MOLLUSCS OF UKRAINE

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Abstract A first annotated checklist of the terrestrial molluscs of Ukraine is provided. Two hundred and three species are listed as recorded in Ukraine. Another 22 species are listed whose presence in Ukraine is doubtful. The data on the distribution of terrestrial molluscs across the seven conditional parts of Ukraine are represented. The list provides a basis for future studies of the terrestrial molluscs in Ukraine.

Key words terrestrial molluscs, Gastropoda, Ukraine, checklist

INTRODUCTION

Currently an annotated checklist of the terrestrial molluscs of Ukraine is lacking. The only list specific to this territory, which includes 185 species, is that of Sverlova & Gural (2005), but this lacks distributional data. Such data is partly present in the catalogues of the terrestrial molluscs of Russia and adjacent countries by Sysoev & Schileyko (2005, 2009). However these works contain some inaccuracies regarding the species composition and distribution of terrestrial molluscs within Ukraine. Moreover, in both works (Sysoev & Schileyko, 2005, 2009) Ukraine is viewed as part of the much larger territory of the former Soviet Union. Sufficient attention is not therefore paid to the terrestrial molluscs of Ukraine.

Since publication of the illustrated catalogue of Sysoev & Schileyko (2009) a number of terrestrial molluscs species have been found for the first time in Ukraine (Gural-Sverlova & Martynov, 2009, 2010; Gural-Sverlova *et al.*, 2009, 2010; Gural-Sverlova & Gural, 2011; Balashov & Palatov, 2011; Balashov & Baidashnikov, 2012), including four species new to science (Gural-Sverlova & Gural, 2010; Gural-Sverlova, 2010).

Ukraine is a large country comprising several natural zones. Two isolated mountain systems are present (the Carpathians and the Crimean mountains). As a result, the species composition of terrestrial molluscs is very unequally distributed. Many species occur only within discrete regions and are known from a few localities. Endemic species are also present in some regions

(especially the Crimea). In this connection it seems superficial to adduce a general list of the terrestrial molluscs' species and pass over details of their distribution and peculiarities. In our opinion, the terrestrial mollusc species composition varies widely across the territory from the uplands to the lowlands, something which requires amplification. For these reasons we have segregated 7 regions of Ukraine, 2 of which contain mountain systems with adjacent territories, and 5 of which are lowland (Fig. 1):

- 1) Carpathians, including Ciscarpathia and Transcarpathian Lowland (west of Ukraine, 130 species, including 8–12 invasive species);
- 2) Podolian Upland and vicinity, (west of Ukraine, 123 species including 15–18 invasive species);
- 3) Volhynian Polesie (northwest of Ukraine, 66 species including 3–5 invasive species);
- 4) Middle Dnieper Area and vicinities: Dnieper Upland, Dnieper Lowland and Ukrainian part of Central Russian Upland (centre, north and northeast of Ukraine, 82 species including 16–20 invasive species);
- 5) Donetsk Upland and vicinities, including Azov Upland and the north of Lugansk region (east of Ukraine, 59 species including 9–16 invasive species);
- 6) Black Sea Lowland (south of Ukraine, 57 species including 13–21 invasive species);
- 7) Crimean peninsula (south of Ukraine, 102 species including 6–13 invasive species).

Within the territory of Ukraine 203 species of terrestrial molluscs have been registered in total, including 14–26 invasive species.



Figure 1 The seven natural regions of Ukraine: CA – Carpathians; PU – Podolian Upland and vicinities; VO – Volhynian Polesie; MD – Middle Dnieper Area and vicinities; DU – Donetsk Upland and vicinities; BL – Black Sea Lowland; CR – Crimea.

Literature dealing with terrestrial molluscs of Ukraine has been critically studied by us, although only a small part is included within the references. Mention is made only of the most recent reviews and other major works dealing with the regions listed above. For the Carpathians: Baidashnikov (1985, 1988); Sverlova (2004, 2008); Sysoev & Schileyko (2009). For the Podolian Upland: Sverlova (2001); Sverlova & Gural (2004); Khlus & Sverlova (2004); Baidashnikov (2002); Balashov & Baidashnikov (2012). For the Volhynian Polesie: Baidashnikov (1992). For Middle Dnieper Area: Baidashnikov (1992); Balashov *et al.* (2009); Balashov (2010); Balashov & Baidashnikov (2010). For the Donetsk Upland and Black Sea Lowland: Sverlova (2006a). For the Crimea: Sysoev & Schileyko (2009); Leonov (2009). We have also used some unpublished

data which applies to the terrestrial molluscs' distribution within Ukraine: results of our personal research and collection materials of the State Natural History Museum (Lvov, further in text SNHM) and the Schmalhausen Institute of Zoology (Kiev).

The list does not contain the amphibiotic mollusc species within *Terrestribythinella*, *Truncatella* and *Ovatella*, which are sometimes considered together with the true terrestrial molluscs.

The systematic arrangement of the taxa mainly follows Schileyko's monograph "Treatise on recent terrestrial pulmonate molluscs" (1998–2007). Mention is made only of those synonyms which have been in use in the Ukraine over the last few years.

ABBREVIATIONS IN USE WITHIN THE TEXT

- CA Carpathians;
 PU Podolian Upland and vicinities;
 VO Volhynian Polesie;
 MD Middle Dnieper Area and vicinities;
 DU Donetsk Upland and vicinities;
 BL Black Sea Lowland;
 CR Crimean peninsula;
 WS widespread in Ukraine, registered in the all 7 above-mentioned territories;
 (e) probably an endemic species of this territory;
 (i) probably a not native (invasive) species in this territory;
 (i?) status unknown, invasive or native;
 ? presence in this territory is doubtful;
 PU(w) or MD(w) – species that occur locally only in the western part of this territory.

SYSTEMATIC LIST

Class Gastropoda Cuvier 1795

Family Aciculidae Gray 1850

Genus *Acicula* W. Hartmann 1821

Acicula parcelineata (Clessin 1911)

CA PU(w)

Genus *Platyla* Moquin-Tandon 1855

Platyla polita (J.D.W. Hartmann 1840)

CA PU MD

Syn.: *P. oedogyra* (Paladilhe 1868)

Platyla perpusilla (Reinhardt 1880) CA
 First reliably recorded in 2003, in the Carpathian biosphere reserve (Gural-Sverlova & Gural, 2009). No subsequent records.

Platyla jankowskiana (Jackiewicz 1979) CA(e)
 So far known only from the type locality in the Ivano-Frankovsk region.

Family Pomatiidae Newton 1891

Genus *Pomatias* Studer 1789

Pomatias rivularis (Eichwald 1829) CR

Family Carychiidae Jeffreys 1830

Genus *Carychium* O.F. Müller 1773

Carychium minimum O.F. Müller 1774 WS

Carychium tridentatum (Risso 1826) CA PU VO MD CR

Family Orculidae Steenberg 1925

Genus *Sphyradium* Charpentier 1837

Sphyradium doliolum (Bruguière 1792) CA PU MD(w) CR

Genus *Lauria* Gray 1840

Lauria cylindracea (Da Costa 1778) CR

Genus *Argna* Cossmann 1889

Argna bielzi (Rossmässler 1859) CA

Family Valloniidae Morse 1864

Genus *Acanthinula* Beck 1847

Acanthinula aculeata (O.F. Müller 1774) CA PU VO MD CR

Genus *Spermodea* Westerlund 1902

Spermodea lamellata (Jeffreys 1830) CA

A single shell of this species is kept in the collection of SNHM. It was collected in the last half of the nineteenth century in the vicinity of Tekuche village (Kosiv district, Ivano-Frankovsk region) (Bakowski, 1891; Sverlova, 2004). There are no other records.

Genus *Vallonia* Risso 1826

Vallonia costata (O.F. Müller 1774) WS

Vallonia pulchella (O. F. Müller 1774) WS

Vallonia excentrica Sterki 1893 CA PU MD DU

Before the revision of Gerber (1996), this and the previous species were confused. *Vallonia excentrica* was mistakenly reported from the Black Sea Lowland (Kramarenko & Sverlova, 2001).

Vallonia enniensis (Gredler 1856) CA PU MD BL CR

In the most recent reviews this is not mentioned for the Crimea (Sysoev & Schileyko, 2009; Leonov, 2009). But according to Tsvetkov (1939) it occurs in the vicinity of Sevastopol.

Family Cochlicopidae Pilsbry 1900

Genus *Cochlicopa* Férussac 1821

In this list we include a more constrained view of the species in this genus in contrast to the catalogues of Sysoev & Schileyko (2005, 2009).

- Cochlicopa lubrica* (O.F. Müller 1774) WS
 Syn.: *C. repentina* Hudec 1960
Cochlicopa lubricella (Porro 1838) WS
Cochlicopa nitens (Gallenstein 1848) WS excl. BL

Family Pupillidae Turton 1831

Genus *Gibbulinopsis* Germain 1919

- Gibbulinopsis interrupta* (Reinhardt 1876) DU(i?)
 In Ukraine known only from a single record in a granite quarry in the Donetsk region in 2008 (Gural-Sverlova & Martynov, 2010).

Genus *Pupilla* Leach 1828

- Pupilla (Pupilla) muscorum* (Linnaeus 1758) WS excl. DU
Pupilla (Pupilla) triplicata (Studer 1820) PU DU BL CR
Pupilla (Pupilla) bigranata (Rossmässler 1839) PU DU BL
 The latter reported also from the Poltava region (Middle Dnieper Area) (Likharev & Rammelmeyer, 1952). But examination of the voucher material in the collection of the Zoological institute of Russian academy of Sciences (St. Petersburg, Russia) has shown that the shells are most likely fossil (Balashov, 2010).
Pupilla (Pupilla) sterrii (Forster et Voith 1840) CA PU(w)

Family Chondrinidae Steenberg 1925

Genus *Granaria* Held 1838

- Granaria frumentum* (Draparnaud 1801) CA PU(w)
 Genus *Chondrina* Reichenbach 1828

- Chondrina arcadica* (Reinhardt 1881) CA CR
 Syn.: *C. clienta* (Westerlund 1883)

Genus *Rupestrella* Monterosato 1894

- Rupestrella rhodia* (Roth 1839) CR

Family Pyramidulidae Kennard & Woodward 1914

Genus *Pyramidula* Fitzinger 1833

- Pyramidula pusilla* (Vallot 1801) CA PU(w) CR
 Earlier reported from the Ukraine as *Pyramidula rupestris* (Draparnaud 1801), however only *P. pusilla* occurs there (Balashov & Gural-Sverlova, 2011).

Family Vertiginidae Pilsbry 1918

Genus *Vertigo* O.F. Müller 1774

- Vertigo (Vertigo) antivertigo* (Draparnaud 1801) WS
Vertigo (Vertigo) pusilla O.F. Müller 1774 WS excl. BL
Vertigo (Vertigo) substriata (Jeffreys 1833) CA PU(w) VO MD CR

- Vertigo (Isthmia) moulinsiana* (Dupuy 1849) CR
 The only known population of this species in Ukraine was found in 2008 near the north-east border of the Balaklava district (Sevastopol) in the tract "Pyataya balka" ("Fifth ravine"). This territory was intensively studied in 2009–2010 (Balashov & Palatov, 2011). The discussed population inhabits a small (< 0.01 km²) marshland near several springs and two small lakes in oriental hornbeam forest (400 m a.s.l.).
- Vertigo (Isthmia) pygmaea* (Draparnaud 1801) WS
- Vertigo (Isthmia) alpestris* Alder 1838 CA PU(w) CR
- Vertigo (Isthmia) geyeri* Lindholm 1925 PU(w) VO
 Known only from two records in the first half of the twentieth century. Material is kept in the collection of SNHM (Sverlova, 2004). In the opinion of both Schileyko and Sysoev *V. geyeri* is synonymous with *Vertigo modesta* (Say 1824) (Schileyko, 1984; Sysoev & Schileyko, 2005, 2009).
- Vertigo (Vertilla) angustior* Jeffreys 1830 WS excl. DU

Family Truncatellinidae Steenberg 1925

Genus *Columella* Westerlund 1878

- Columella edentula* (Draparnaud 1805) CA PU VO MD CR
- Columella* cf. *columella* (Martens 1830) CA PU CR
 This species has been reported repeatedly from the Carpathians, Podolian Upland and Crimea since the nineteenth century. But in 1987 diagnoses of *C. columella* and *C. edentula* were made more precise (Pokryszko, 1987). Not all of the examined shells from the territory of Ukraine, which were earlier determined as *C. columella*, correspond to the revised description of *C. columella*. According to the work of Pokryszko (1987) all these shells belongs to *C. edentula*. Nevertheless some authors still assume the two forms of *Columella* in the Ukraine are separate species (Sysoev & Schileyko, 2005, 2009; Baidashnikov, 2000; Balashov, Palatov, 2011; Balashov, Baidashnikov, 2012). Some authors further suppose that there are 3 or more European species within the ambit of *C. columella* and *C. edentula* (Balashov & Baidashnikov, 2012).

Genus *Truncatellina* Lowe 1852

- Truncatellina costulata* (Nilsson 1823) PU MD DU CR
- Truncatellina claustralis* (Gredler 1856) CA? PU(w) CR
- Truncatellina cylindrica* (Férussac 1807) WS

Family Enidae Woodward 1903

Genus *Merdigera* Held 1837

- Merdigera obscura* (O.F. Müller 1774) CA PU VO MD CR

Genus *Peristoma* Krynicki 1833

- Peristoma merduenianum* Krynicki 1833 CR(e)
- Peristoma rupestre* (Krynicki 1833) CR(e)

Genus *Ena* Turton 1831

- Ena montana* (Draparnaud 1801) CA PU(w) CR?
 Reported from the Crimea in the checklist of Leonov (2009) without comment. There are no other records for Crimea.

Genus *Brephulopsis* Lindholm 1925

- Brephulopsis cylindrica* (Menke 1828) PU(i) MD(i) DU(i) BL(i?) CR(e)

Brephulopsis bidens (Krynicky 1833) PU(i) BL(i?) CR(e)
 There are only two records outside the Crimean peninsula: in Chaplinka settlement (Kherson region, Black Sea Lowland near Crimea) in 1990; and in the vicinities of Tymkovo village (Kodyma district, Odessa region, southeast edge of the Podolian Upland) in 1996.

Brephulopsis konovalovae Gural-Sverlova & Gural 2010 CR(e)
 The type series was collected in 2006 on the Taz-Oba mountain in the Crimea (Gural-Sverlova & Gural, 2010). There are no other records so far.

Genus *Thoanteus* Lindholm 1925

Thoanteus gibber (Krynicky 1833) CR(e)

Thoanteus ferrarii Hausdorf 1994 CR(e)

Genus *Ramusculus* Lindholm 1925

Ramusculus subulatus (Rossmässler 1837) CR(e)

Genus *Chondrula* Beck 1837

Chondrula (Chondrula) tridens (O.F. Müller 1774) WS

Chondrula (Chondrula) microtragus (Rossmässler 1839) BL(i)

The only known population of this species in the Ukraine was found in 1999 in the urban biotope of Odessa city (Sverlova *et al.*, 2006).

Genus *Mastus* Beck 1837

Some authors view *Mastus* as a subgenus within *Chondrula* (Schileyko, 2002; Sysoev & Schileyko, 2009).

Mastus bielzi (Kimakowicz 1890) CA

Family Clausiliidae Mörch 1864

Genus *Serrulina* Mousson 1873

Serrulina (Serrulina) serrulata (L. Pfeiffer 1847) CA CR?

Doubts must be raised over the presence of this species in the Crimea (Sysoev & Schileyko, 2009). In the first record of *S. serrulata* the locality was reported as "Tauria" (Crimea). But it is possible that this refers to shells washed ashore on the sea coast (Sysoev & Schileyko, 2009). Against this Jaekel (1950) reported the species from the Chatyr-Dag mountainous massif in Crimea.

Genus *Cochlodina* Férussac 1821

Cochlodina (Cochlodina) laminata (Montagu 1803) WS excl. BL

Cochlodina (Paracochlodina) orthostoma (Menke 1830) CA PU VO MD

Cochlodina (Paracochlodina) cerata (Rossmässler 1836) CA

Reported from the Transcarpathian region in the work of Soós (1941). The first record refers to the "Buccovina", which is usually associated with Chernovtsy region of Ukraine, but may also refer to an adjacent part of Romania. There are no other records for Ukraine.

Genus *Elia* Adams & Adams 1855

Elia (Caucasica) novorossica (Retowski 1888) DU

This species was registered for the first time in 2008 in riparian forests to the south of the Lugansk region (Gural-Sverlova & Martynov, 2009). There are no other records for Ukraine.

Genus *Ruthenica* Lindholm 1924

Ruthenica filograna (Rossmässler 1836) CA PU VO MD

Genus *Macrogastra* J.D.W. Hartmann 1821

Macrogastra (Macrogastra) ventricosa (Draparnaud 1801) CA VO

- Macrogastrea (Pyrostoma) tumida* (Rossmässler 1836) CA PU
Macrogastrea (Pyrostoma) borealis (Boettger 1878) CA PU VO MD(w) CR
 Syn.: *M. latestriata* (Schmidt 1857). Name *Clausilia latestriata* Schmidt 1857 is preoccupied (*Clausilia latestriata* Küster 1850).
Macrogastrea (Pyrostoma) plicatula (Draparnaud 1801) PU(w) VO CR
 Genus *Clausilia* Draparnaud 1805
Clausilia (Clausilia) pumila C. Pfeiffer 1828 CA PU
Clausilia (Clausilia) cruciata (Studer 1820) CA PU? VO
 This species is at times confused with *C. dubia*. Therefore reports about its presence in the Podolian Upland require confirmation.
Clausilia (Andrea) dubia Draparnaud 1805 CA PU
 Genus *Mentissa* Adams & Adams 1855
Mentissa canalifera (Rossmässler 1836) CR(e)
Mentissa gracilicosta (Rossmässler 1836) BL(i) CR(e)
Mentissa velutina Baidashnikov 1990 CR(e)
 Genus *Vestia* Hesse 1916
Vestia (Vestia) turgida (Rossmässler 1836) CA PU
Vestia (Vestia) elata (Rossmässler 1836) CA PU
Vestia (Vestia) gulo (Bielz 1859) CA PU DU(i?)
 In the collection of SNHM are two shells of this species, which were collected in the flood oak forest within the national nature park "Sviati Gory" ("Holy Mountains", near Bogorodichne village, Sloviansk district, Donetsk region). The nature of the occurrence of *V. gulo* in this territory is unclear so far. All other known records of this species were made in the Carpathians and in the Podolian Upland.
 Genus *Bulgarica* Boettger 1877
Bulgarica (Strigilecula) cana (Held 1836) CA PU VO MD
 Genus *Laciniaria* J.D.W. Hartmann 1821
Laciniaria plicata (Draparnaud 1801) CA PU VO MD BL
 Genus *Alinda* Adams & Adams 1855
Alinda (Alinda) biplicata (Montagu 1803) CA PU?
 This was reported from the Transcarpathian region by Imre (1941). Single reports from Lvov and Vinnitsa regions are probably based on erroneous determinations. We have seen no shells of *A. biplicata* collected within the Ukraine.
Alinda (Pseudalinda) stabilis (L. Pfeiffer 1847) CA PU
Alinda (Pseudalinda) fallax (Rossmässler 1836) CA PU(w)
 Genus *Balea* Gray 1824
Balea perversa (Linnaeus 1758) CR
 Since the close of the nineteenth century this species has been reported several times from the Crimea. However, it is possible that these reports are based on erroneous determinations of the immature shells of other Clausiliidae (Sysoev & Schileyko, 2009).

Family Ferrussaciidae Bourguignat 1883

Genus *Cecilioides* Férussac 1814

- Cecilioides acicula* (O.F. Müller 1774) CA PU CR
Cecilioides raddei (Boettger 1879) BL(i?) CR

Family Punctidae Morse 1864

Genus *Punctum* Morse 1864*Punctum (Punctum) pygmaeum* (Draparnaud 1801) WS

Family Helicodiscidae Baker 1927

Genus *Lucilla* Lowe 1852

Lucilla singlyana (Pilsbry 1889) CA(i) PU(i)? DU(i)
 Reported by Baidashnikov (1985) from the vicinity of Vynogradiv city (Transcarpathian Lowland). We also have a shell of this species, collected in the Donetsk Upland in 2005. In the catalogue of Sysoev & Schileyko there is a photo of a shell labelled *Helicodiscus singlyanus* from the vicinity of Zamehov village, Khmelnytsky region (Podolian Upland), which is kept in the collection of Zoological Museum of Moscow University (Sysoev & Schileyko, 2009). This and two more shells were collected in 1969 (Sysoev, pers. comm.). However the shell in this photo does correspond precisely with literature descriptions of *Lucilla* species (Horsák *et al.*, 2009) as the form of the aperture is different with more sculptured, not translucent, walls. It is possible that it refers to a juvenile shell of a planorbid or perhaps of *Helicodiscus parallelus* (Say 1821).

Family Discidae Thiele 1931

Genus *Discus* Fitzinger 1833*Discus (Discus) ruderatus* (Férussac 1821) WS excl. BL*Discus (Discus) rotundatus* (O.F. Müller 1774) CA PU VO CR(i)?*Discus (Discus) perspectivus* (Megerle von Mühlfeld 1816) CA PU MD(w)

Family Euconulidae Baker 1928

Genus *Euconulus* Reinhardt 1883*Euconulus (Euconulus) fulvus* (O. F. Müller 1774) WSSyn.: *E. alderi* (Gray 1840)¹

Family Milacidae Ellis 1926

Genus *Tandonia* Lessona & Pollonera 1882*Tandonia cristata* (Kaleniczenko 1851) CA(i?) BL(i?) CR(i?)*Tandonia retowskii* (Boettger 1882) CRSyn.: *T. kaleniczenkoi* [kalenzkoi] (Clessin, 1883)*Tandonia kusceri* (H. Wagner 1931) BL(i) CR(i)

Family Gastrodontidae Tryon 1866

Genus *Zonitoides* Lehmann 1862*Zonitoides (Zonitoides) nitidus* (O.F. Müller 1774) WS

Family Zonitidae Mörch 1864

Genus *Vitrea* Fitzinger 1833*Vitrea diaphana* (Studer 1820) CA PU VO

¹Editor's note: the authors regard *E. alderi* as an ecotype of *E. fulvus* and follow Schileyko (2002) and Sysoev & Schileyko (2009) in synonymising it with *E. fulvus*.

- Vitrea transsylvanica* (Clessin 1877) CA
Vitrea subrimata (Reinhardt 1871) CA CR?
 The presence of this species in Western Ukraine has been considered doubtful. In a few cases where material was previously determined as *V. subrimata*, vouchers were found to be immature shells of *V. crystallina* and of *Oxychilus inopinatus* (Sverlova, 2006b). However, a genuine shell of this species is in the malacological collection of SNHM, collected in 2003 in the vicinity of Mala Ugolka village (Transcarpathian region). In a list of the terrestrial molluscs of Crimea Leonov (2009) mentions this species without explanation. The presence of this species in Ukraine outside the Transcarpathian region requires confirmation.
- Vitrea crystallina* (O.F. Müller 1774) WS excl. CR?
Vitrea contracta (Westerlund 1871) CA PU VO MD CR
Vitrea pygmaea (Boettger 1880) CR
Vitrea nadejdae Lindholm 1926 CR(e)
 Genus *Aegopinella* Lindholm 1927
- Aegopinella pura* (Alder 1830) CA PU VO MD CR
Aegopinella minor (Stabile 1864) CA? PU VO MD DU CR
Aegopinella epipedostoma (Fagot 1879) CA
Aegopinella nitens (Michaud 1831) CA PU(w)
 Outside the Carpathians reliably recorded only from the basin of the Prut River (Sverlova, 2006b).
- Aegopinella nitidula* (Draparnaud 1805) PU(i)
 Reliably recorded in Lvov city only. Many records of *A. nitidula* in the Ukraine in fact refer to *A. minor*.
 Genus *Perpolita* Baker 1928
- Perpolita hammonis* (Strøm 1765) WS
Perpolita petronella (L. Pfeiffer 1853) PU VO MD DU
 Genus *Cellariopsis* H. Wagner 1914
- Cellariopsis deubeli* (H. Wagner 1914) CA PU(w)
 Syn.: *C. orientalis* (Clessin 1887). The name *Hyalina orientalis* Clessin 1887 is preoccupied (*Hyalina orientalis* Kimakowicz 1883).
 Genus *Riedeliconcha* Schileyko 2003
- Riedeliconcha depressa* (Sterki 1880) CA
 Genus *Morlina* Wagner 1914
- Morlina glabra* (Rossmässler 1836) CA PU VO MD(w)
 Genus *Oxychilus* Fitzinger 1833
- Oxychilus (Oxychilus) draparnaudi* (Beck 1837) CA(i) PU(i) MD(i)
Oxychilus (Oxychilus?) diaphanellus (Krynicky 1836) MD(i) BL(i) CR(e)
Oxychilus (Ortizius) translucidus (Mortillet 1854) PU(i) MD(i)
 This species was erroneously reported several times from the territory of Ukraine. Specimens were later shown to be *O. diaphanellus* or *Morlina glabra* (Sverlova *et al.*, 2006; Balashov & Baidashnikov, 2010, 2012). Reliably recorded for the first time in Ukraine in 2009, in Vinnitsa City park, east of the Podolian Upland (Balashov & Baidashnikov, 2012). In the summer of 2011 a large colony of this species was found at the bottom of a ravine in the Fomin Botanical Garden in Kiev (so there are at least two similar invasive species of *Oxychilus* in Kiev – *O. diaphanellus* and *O. translucidus*).

- Oxychilus (Longiphallus) deilus* (Bourguignat 1857) BL(i) CR
Oxychilus (Schistophallus) kobelti (Lindholm 1910) CR
 In the majority of works this is reported as an endemic Crimean species. But it is also known from the north coast of Asia Minor (Riedel, 1998).
Oxychilus (Mediterranea) hydatinus (Rossmässler 1838) CR(i?)
 This species is not listed in the general works which deal with the terrestrial molluscs of Crimea and Ukraine (Sysoev & Schileyko, 2009; Leonov, 2009). Nevertheless Riedel (1998) reported it as occurring from the Canary Islands to the Crimea.
Oxychilus (Mediterranea) inopinatus (Uličný 1887) CA PU BL
Oxychilus iphigenia (Lindholm 1926) CR(e)
 So far known only from the type locality in the vicinity of Simeiz town.

Family Daudebardiidae Kobelt 1906

Genus *Daudebardia* W. Hartmann 1821

- Daudebardia rufa* (Draparnaud 1805) CA? PU(w)
 A report by Gitilis (1959) on the presence of this species in the mountainous part of the Chernovtsy region, may have been based on an erroneous determination of *Carpathica calophana* or some *Semilimax*.
Daudebardia brevipes (Draparnaud 1805) PU(w)
 Genus *Bilania* Schileyko 1986
Bilania boettgeri (Clessin 1883) CR(e)
 Genus *Carpathica* A. Wagner 1895
Carpathica calophana (Westerlund 1881) CA PU(w)

Family Parmacellidae Fischer 1856

Genus *Parmacella* Cuvier 1804

- Parmacella ibera* (Eichwald 1841) CR(i)
 This was recorded for the first time from oak forest in the vicinity of Yalta (south coast of Crimea) in 2006 (Gural-Sverlova *et al.*, 2010).

Family Vitrinidae Fitzinger 1833

Genus *Phenacolimax* Stabile 1859²

- Phenacolimax annularis* (Studer 1820) BL(i) CR
 Genus *Semilimax* Agassiz 1845
Semilimax (Semilimax) semilimax (Férussac 1802) CA
Semilimax (Hessemilimax) kotulae (Westerlund 1883) CA
 Genus *Eucobresia* Baker 1929
Eucobresia nivalis (Dumont & Mortillet 1854) CA
 Genus *Vitrina* Draparnaud 1801
Vitrina pellucida (O.F. Müller 1774) WS

²Editor's note: the authors quote Schileyko (2003: 1483) who listed only one species in *Oligolimax* – *O. bonneli* (Targioni Tozzetti 1873) and considered the type species of *Oligolimax* (*Vitrina paulucciae* Fischer 1878) as a synonym of *O. bonneli*. Sysoev & Schileyko (2009) have further listed *annularis* Studer 1820 in *Phenacolimax*. They conclude that the systematic position of this species is probably open to discussion.

Family Limacidae Rafinesque 1815

Genus *Malacolimax* Malm 1868*Malacolimax tenellus* (O.F. Müller 1774) PU VO MDGenus *Lehmannia* Heynemann 1862*Lehmannia marginata* (O.F. Müller 1774) CA PU VO MD*Lehmannia macroflagellata* Grossu & Lupu 1962 CAGenus *Limax* Linnaeus 1758*Limax maximus* Linnaeus 1758 WS(i) excl. BL*Limax cinereoniger* Wolf 1803 CA PU VO MD*Limax bielzii* Seibert 1873 CA

There is only one record of this species in Ukraine: it was found in 1982 in the Transcarpathian region (Baidashnikov, 1989). In the opinion of some authors *L. bielzii* is an intraspecific form of *L. cinereoniger* (Likharev & Wiktor, 1980).

Genus *Limacus* Lehmann 1864*Limacus flavus* (Linnaeus 1758) PU(i) MD(i) BL(i) CR(i)

A majority of the reports from Ukraine refer to cellars and basements. There are no reliably recorded populations of this species wintering out of doors in Ukraine.

Limacus maculatus (Kaleniczenko 1851) MD(i) DU(i) BL(i) CRSyn.: *L. ecarinatus* Boettger 1881

Family Bielziidae Likharev & Wiktor 1980

Genus *Bielzia* Clessin 1887*Bielzia coerulans* (Bielz 1851) CA PU MD(i)

Family Agriolimacidae H. Wagner 1935

Genus *Deroceras* Rafinesque 1820*Deroceras (Deroceras) laeve* (O.F. Müller 1774) WS

For Crimea only recorded in the checklist of Leonov (2009).

Deroceras (Deroceras) sturanyi (Simroth 1894) CA(i?) VO(i?) MD(i?) DU(i?) BL(i?)*Deroceras (Deroceras) agreste* (Linnaeus 1758) WS excl. DU*Deroceras (Deroceras) reticulatum* (O.F. Müller 1774) WS(i?)

This species is abundant in the urban biotopes of Ukraine. In central Ukraine it is also abundant in natural broad-leaved forests. So this species seems native at least in the north-western part of the Middle Dnieper Area and in the eastern part of the Podolian Upland (Balashov & Baidashnikov, 2010, 2012).

Deroceras (Deroceras) turcicum (Simroth 1894) PU*Deroceras (Deroceras) tauricum* (Simroth 1901) CR(e)Syn.: *Agriolimax crimensis* Simroth 1901 (Sysoev & Schileyko, 2009).*Deroceras (Deroceras) rodnae* Grossu & Lupu 1965 CA PU(w)*Deroceras (Deroceras) subagreste* (Simroth 1892) DU CR

Recorded for the first time in 2006. It occurs in the Kerch Peninsula (east Crimea) and in the Donetsk Upland with adjacent territories (Gural-Sverlova *et al.*, 2009).

Deroceras (Deroceras) bakurianum (Simroth 1912) CR(i?)

So far known only from the work of Wiktor & Jurkowska (2007), in which the collecting locality and nature of this species' presence in the region was not mentioned.

- Deroceras (Liolytopelte) caucasicum* (Simroth 1901) MD(i) DU CR
Deroceras (Liolytopelte) moldavicum (Grossu & Lupu 1961) CA PU(w)
Deroceras (Liolytopelte) occidentale (Grossu & Lupu 1966) CA
 Genus *Krynickillus* Kaleniczenko 1851
Krynickillus (Krynickillus) melanocephalus Kaleniczenko 1851 PU(i) MD(i) DU(i) CR

Family Boettgerillidae Van Goethem 1972

Genus *Boettgerilla* Simroth 1910

- Boettgerilla pallens* Simroth 1912 CA(i) PU(i) MD(i) DU(i?)
 In 2008 a single specimen was collected in a riparian forest to the south of the Lugansk region together with *Elia novorossica*, *Deroceras subagreste* and *D. caucasicum* (Gural-Sverlova & Martynov, 2009). This may signify that the species is native here (the main part of its native range is in the Caucasus).

Family Bradybaenidae Pilsbry 1939

Genus *Fruticicola* Held 1837

- Fruticicola fruticum* (O.F. Müller 1774) WS

Family Helicidae Rafinesque 1815

Genus *Drobacia* Brusina 1904

- Drobacia banatica* (Rossmässler 1838) CA

Genus *Isognomostoma* Fitzinger 1833

- Isognomostoma isognomostomos* (Schröter 1784) CA PU MD(w)
 Syn.: *I. personatum* (Lamarck 1792)

Genus *Arianta* Leach 1831

- Arianta arbustorum* (Linnaeus 1758) CA PU

- Arianta petrii* (Kimakowicz 1890) CA

This species is usually considered a subspecies of *Arianta aethyops* (Bielz 1851). But according to Sysoev & Schileyko (2009) it is a good species.

Genus *Campylaea* Beck 1837

- Campylaea (Fustina) faustina* (Rossmässler 1835) CA PU

Genus *Eobania* Hesse 1913

- Eobania vermiculata* (O.F. Müller 1774) DU(i) BL(i) CR(i)

Genus *Helix* Linnaeus 1758

- Helix (Helix) pomatia* Linnaeus 1758 CA PU VO MD BL(i?) CR(i)

An attempt to introduce this species in the Crimea took place in 1993 (in Bakhchisaray and Belogorsk districts and in Simferopol city). But in Simferopol no living snails were recorded after 2001 (Sverlova *et al.*, 2006). The species is reported several times from the Middle Dnieper Area as an invasive. But in the last few years this territory was studied in more detail and *H. pomatia* was found in natural broad-leaved forests many times. So probably it is native, at least in the western part of the Middle Dnieper Area (Balashov & Baidashnikov, 2010).

- Helix (Helix) lutescens* Rossmässler 1837 CA PU VO MD(w) BL

- Helix (Helix) albescens* Rossmässler 1839 MD(i) DU BL CR

- Helix (Helix) lucorum* Linnaeus 1758 BL(i) CR(i?)

Genus *Cepaea* Held 1837

- Cepaea (Cepaea) nemoralis* (Linnaeus 1758) PU(i)
In Ukraine *C. vindobonensis* has been confused with this species (Sverlova, 2006b). Till now reliably known only from Lvov city (west of Podolian Upland).
- Cepaea (Cepaea) hortensis* (O.F. Müller 1774) CA(i) PU(i) VO(i)
Evidently found in the Western Ukraine only (Lvov, Volyn and Ivano-Frankivsk regions). In the Middle Dnieper Area *C. vindobonensis* has probably been confused with this species (Sverlova, 2006b).
- Cepaea (Austrotachea) vindobonensis* (Férussac 1821) WS

Family Hygromiidae Tryon 1866

Genus *Plicuteria* Schileyko 1978

- Plicuteria lubomirskii* (Śloński 1881) CA PU(w)

Genus *Trochulus* Chemnitz 1786

- Trochulus hispidus* (Linnaeus 1758) CA PU VO MD
Syn.: *T. concinnus* (Jeffreys 1830)
Sysoev & Schileyko (2009) view *T. concinnus* as a separate species, which probably occurs in western Ukraine.
- Trochulus villosulus* (Rossmässler 1838) CA
- Trochulus bielzi* (Bielz 1860) CA

Genus *Edentiella* Poliński 1924

- Edentiella bakowskii* (Poliński 1924) CA

Genus *Helicopsis* Fitzinger 1833

- Helicopsis striata* (O.F. Müller 1774) PU VO MD BL
- Helicopsis retowskii* (Clessin 1883) CR(e) BL(i?)
- Helicopsis dejecta* (Cristofori & Jan 1832) DU BL CR
- Helicopsis gasprensensis* (Hesse 1934) CR(e)
Syn.: *H. paulhessei* (Lindholm 1936)
Known only from the type locality (Gasptra town). It is possible that *H. gasprensensis* is synonymous with *H. dejecta* or *H. retowskii* (Gural-Sverlova 2010, 2012).
- Helicopsis instabilis* (Rossmässler 1838) CA PU(w) BL?
- Helicopsis filimargo* (Krynicky 1833) CR(e)
- Helicopsis subfilimargo* Gural-Sverlova 2010 DU(e)
Known so far only from Belovodsk district in the Lugansk region (Gural-Sverlova, 2010).
- Helicopsis martynovi* Gural-Sverlova 2010 DU(e)
Known for certain only from a few localities in Sloviansk district of the Donetsk region (Gural-Sverlova, 2010).
- Helicopsis luganica* Gural-Sverlova 2010 DU(e)
A type series was collected near Novorozsosh village (Novopskov district, Lugansk region) in 2009. No other localities are known (Gural-Sverlova, 2010).

Genus *Xeropicta* Monterosato 1892

- Xeropicta krynickii* (Krynicky 1833) DU(i) BL(i) CR
- Xeropicta derbentina* (Krynicky 1836) MD(i) DU(i) BL(i) CR

Genus *Xerolenta* Monterosato 1892

- Xerolenta obvia* (Menke 1828) CA PU MD(i)
Syn.: *Helicella candicans* (L. Pfeiffer 1841)

Genus *Pseudotrichia* Likharev 1949

Pseudotrichia rubiginosa (Rossmässler 1838) WS
Syn.: *Trochulus czarnohoricus* (Poliński 1924)

Genus *Monachoides* Gude & Woodward 1921

Monachoides vicinus (Rossmässler 1842) CA PU VO

Monachoides incarnatus (O.F. Müller 1774) CA PU(w)

Genus *Perforatella* Schlüter 1838

Perforatella bidentata (Gmelin 1791) CA PU VO MD

Perforatella dibotrion (Bielz 1860) CA PU

Genus *Urticicola* Lindholm 1927

Urticicola umbrosus (C. Pfeiffer 1828) CA PU(w)?

Genus *Cernuella* Schlüter 1838

Cernuella virgata (Da Costa 1778) CR(i?)

Genus *Prostenomphalia* Baidashnikov 1985

Prostenomphalia carpathica Baidashnikov 1985 CA(e)

Genus *Harmozica* Lindholm 1927

Harmozica (Harmozica) ravergiensis (Férussac 1835) PU(i) DU(i?)

From the Podolian Upland only one locality is known so far (Ternopol region, material in the collection of SNHM).

Genus *Euomphalia* Westerlund 1889

Euomphalia strigella (Draparnaud 1801) WS excl. CR

Genus *Monacha* Fitzinger 1833

Monacha (Paratheba) fruticola (Krynicky 1833) BL(i) CR(e)

Previously considered a native species in the Crimea and Asia Minor. But Hausdorf (2000) has shown that in Asia Minor another species of *Monacha* occurs which was earlier erroneously determined as *M. fruticola*. As a result *M. fruticola* can be considered an endemic species of the Crimea.

Monacha (Monacha) cartusiana (O.F. Müller 1774) CA(i) PU(i?) VO(i) MD(i)
DU(i?) BL CR

Monacha (Monacha) claustralis (Menke 1828) CR (i?)

This species is not listed in the general works which deal with the terrestrial molluscs of Crimea and the Ukraine (Sysoev & Schileyko, 2009; Leonov, 2009). Nevertheless Hausdorf (2000) reported this species from Sevastopol city in Crimea.

Family Arionidae J. Gray 1840

Genus *Arion* Férussac 1819

Arion (Carinarion) circumscriptus Johnston 1828 CA PU MD(i?)

Arion (Carinarion) fasciatus (Nilsson 1823) CA(i?) PU(i?) MD(i?)

Arion (Carinarion) silvaticus Lohmander 1937 CA PU

Arion (Mesarion) subfuscus s.l. CA PU VO MD DU

To the present day in Ukraine this is viewed as a single species – *Arion subfuscus* (Draparnaud 1805). Therefore, it is not known which species of this complex occurs in Ukraine. From the data of other European countries (Jordans *et al.*, 2010), *Arion transylvanus* Simroth 1885 and *Arion fuscus* (O.F. Müller 1774) might be expected in Ukraine.

Arion (Kobeltia) distinctus Mabille 1868 CA(i) PU(i) MD(i) DU(i)

Arion (Arion) lusitanicus s.l.

CA(i) PU(i)

Slugs of the *Arion lusitanicus* complex were found for the first time in Ukraine at the beginning of twenty-first century in the territory of Lvov (Gural-Sverlova & Gural, 2011). It is not clear which species of this complex is involved. From the structure of the spermatophores they appear to differ from *Arion vulgaris* Moquin-Tandon 1855 from the United Kingdom and France but are identical to *Arion lusitanicus* s.l. from Poland (Gural-Sverlova & Gural, 2011).

Family Succineidae Beck 1837

Genus *Succinella* Mabile 1870*Succinella (Succinella) oblonga* (Draparnaud 1801) WSGenus *Succinea* Draparnaud 1801*Succinea (Succinea) putris* (Linnaeus 1758) WSGenus *Oxyloma* Westerlund 1885*Oxyloma (Oxyloma) elegans* (Risso 1826) WS*Oxyloma (Oxyloma) sarsii* (Esmark 1886) PU VO MD DU CRTERRESTRIAL MOLLUSCS WHOSE PRESENCE IN
UKRAINE IS DOUBTFUL1. *Pilorcula trifilaris* (Mousson 1856)

Erroneously reported for the fauna of Crimea (Sysoev & Schileyko, 2009; Leonov, 2009). In the vicinity of Sudak town (south-eastern coast of Crimea) Retowski (1883) reported that 6 shells were collected, washed ashore from the sea and recognized as *Pupa doliolum* (*Sphyradium doliolum*). One of these shells was described by Retowski as a new variety – *Pupa (Oracula) doliolum* var. *intermedia* (preoccupied name). Hausdorf (1996) reported this name as a synonym of his new subspecies *Pilorcula trifilaris longior* Hausdorf 1996 from Turkey. This probably provides a basis for the erroneous reports of *P. trifilaris* for the fauna of Crimea by other authors. It is necessary to refer to the works of Retowski (1883, 1887) where more than 70 species and forms of terrestrial molluscs were listed as collected washed up on the sea coast. Most of these do not occur naturally in the territory of Crimea.

2. *Chondrina avenacea* (Bruguière 1792)

Some authors report this species from the Carpathians instead of *C. arcadica* (Baidashnikov 1985). However these reports are based on an erroneous determination of *C. arcadica*.

3. *Abida secale* (Draparnaud 1801)

This species was reported twice from the vicinity of Kamienets-Podolsky (Podolian Upland) (Novitskiy, 1938). In both cases there was proba-

bly confusion with *Chondrina arcadica* or *Granaria frumentum*.

4. *Zebrina detrita* (O.F. Müller 1774)

One locality is reported by Zdun (1960) from the Transcarpathian Lowland (Carpathians). But this material has not been found in Zdun's collection. Identification was most probably based on shell characters only. Some species determinations of this author have been shown to be erroneous (Sverlova, 2006b). Presence of this species in Ukraine requires confirmation. In our opinion it is still possible that it occurs in the Transcarpathian Lowland, because of its presence in adjacent countries (Slovakia, Hungary and Romania).

5. *Zebrina dardana* (Philippi 1844)

This species was reported by Jaeckel (1950) from the vicinity of Sevastopol (Crimea) as an introduction. There are no other records.

6. *Chondrus zebrula* (Férussac 1821)

Reported from the Crimea as washed ashore on the sea coast (Sysoev & Schileyko, 2009). As indicated above, Retowski (1887) reported more than 70 species and forms of terrestrial molluscs collected in this way, many of which are not otherwise known in the area. We have decided that it is unsafe to list species in this category.

7. *Chondrus tournefortianus* (Férussac 1821)

Reported by Jaeckel (1950) from the vicinity of Sevastopol (Crimea) in synanthropic circumstances. There are no other records for Ukraine.

8. *Mastus pupa* (Linnaeus 1758)

Reported by Jaekel (1950) from the vicinity of Sevastopol city and Kerch city (Crimea) in synanthropic situations. There are no other records for Ukraine.

9. *Mastus caucasicus* (L. Pfeiffer 1852)

In their catalogue Sysoev & Schileyko (2009) note "occasional record from sea coast of Crimea between Feodosiya and Sudak". This report is probably based on shells which were washed ashore from the sea, collected by Retowski (1887) between these two settlements and described as *Buliminus ponticus* Retowski 1886 ("1887") (Schileyko, 1984).

10. *Cochlodina costata* (C. Pfeiffer 1828)

Syn.: *C. commutata* (Rossmässler 1836)

Reported from the Transcarpathian region and the west of the Podolian Upland. In one instance material was examined by us (from Transcarpathian region, Zdun's collection). It comprised erroneously determined shells of *C. orthostoma*. It is quite possible that other reports of this species in Ukraine are based on the misdetermination of other *Cochlodina* species (Sverlova, 2006b).

11. *Scrobifera taurica* (L. Pfeiffer 1848)

The type description lists "Tauria" (Crimea) as the type locality, perhaps mistakenly. There are no other records for Ukraine. Considered an endemic species of the Caucasus (Sysoev & Schileyko, 2009).

12. "*Poiretia* sp."

Reported in the checklist of terrestrial molluscs of the Crimea by the personal communication of A.A. Baidashnikov (Leonov, 2009). We checked out material in the collection of Dr. Baidashnikov ("*Poiretia* sp." in label) and it is *Cecilioides raddei* (height of shell is 7 mm at 6 whorls).

13. *Oxychilus subeffusus* (Boettger 1879)

Reported from the Crimea by Likharev & Rammelmeier (1952). The presence of this species in the Crimea is considered questionable (Riedel, 1998).

14. *Oxychilus cellarius* (O.F. Müller 1774)

Reported from Kiev without description of its reproductive anatomy (Tappert *et al.*, 2001). Most probably *O. diaphanellus* or *O. translucidus*, which occur in Kiev, have been confused with *O. cellarius*.

15. *Oxychilus alliarius* (Miller 1822)

Erroneously reported from the forests of the Ukrainian Carpathians (Yavornitsky, 1987). An examination of this material has shown that *Riedeliconcha depressa* was involved.

16. *Aegopis verticillus* (Lamarck 1822)

Reported in the checklist of terrestrial molluscs of the Crimea without comment (Leonov, 2009). There are no other reports from Ukraine.

17. *Helicigona cingulata* (Studer 1820)

Reported from Vinnitsa (east of the Podolian Upland) by Novitskiy (1938). Probably was confused with *Campylaea faustina* (Balashov & Baidashnikov, 2012).

18. *Causa holosericea* (Studer 1820)

Reported for Ukraine on the official website of IUCN Red List (iucnredlist.org) without specifying of information source (assessor Dr. Neubert). There are no other reports from Ukraine.

19. *Cornu aspersum* (O.F. Müller 1774)

This species is often spread by man and several times reported from different parts of Ukraine. But there are no known recent colonies in Ukraine. At the end of the nineteenth, beginning of the twentieth century, reported from Feodosiya (southeastern coast of Crimea), Odessa city and Kherson city (Black Sea Lowland) and from Pyatnichany village (which now belongs to Vinnitsa city, east of the Podolian Upland).

20. *Arion hortensis* Férussac 1819

Repeatedly reported from the Ukraine in the literature. Most probably these reports refer to the closely related *A. distinctus* (Sverlova, 2006b), and in publications of the nineteenth, beginning of the twentieth century also to other species of this genus.

21. *Arion ater* s.l.

In the literature of the nineteenth, beginning of the twentieth century *Arion empiricorum* Férussac 1819 is repeatedly reported from the Ukraine. This name has long been a collective term for large slug species belonging to *Arion ater* s.l. Currently there is no evidence for the presence of this species complex in the Ukraine. Outwardly these resemble slugs of the *Arion lusitanicus* complex which have appeared in Ukraine recently as a result of human activity (see above). Most probably large specimens of *Arion subfuscus* s.l. could also be erroneously determined as *A. empiricorum*.

22. *Oxyloma dunkeri* (L. Pfeiffer 1865)

In the first half of the twentieth century this was reported from the Black Sea Lowland without description of the reproductive anatomy (Lindholm, 1908; Likharev & Rammelmeyer, 1952). One snail, which was collected on the coast of Yalpug Lake (Odessa region) in 1999, has a shell shape close to *O. dunkeri* but reproductive anatomy close to *O. elegans* (Sverlova, 2004). The Presence of this species in Ukraine requires confirmation.

It also seems worth noting that the likely discovery of *Orcula dolium* (Draparnaud 1801), *Pagodulina pagodula* (Des Moulins 1830), *Bulgarica vetusta* (Rossmässler 1836), *Alopiu glauca* (Bielz 1853) and *Deroceras praecox* Wiktor 1966 in the Ukraine has been suggested by Sysoev & Schileyko (2009). None of these have been reported so far.

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