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## Two species of parasitic molluscs new for Russian seas

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**ABSTRACT.** Two parasitic gastropod species – *Eulima bilineata* Alder, 1848 and *Odostomia turrita* Hanley, 1844 – are recorded for the first time from the Murman coast of the Barents Sea. Brief species descriptions and their differences from similar species are provided. Certain hypotheses on frequent findings of new species on the Murman coast are discussed.

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Parasitic molluscs are widely distributed ecological group, which occurs in different marine basins. In the Russian part of the Barents Sea nowadays one species of parasitic gastropod – *Entocolax ludwigi* Voight, 1888 is known [Schwanwitsch, 1917; Kantor, Sysoev, 2006], and two species – *Menestho truncatula* Odhner, 1915 and *Aartsenia candida* (Møller, 1842) may also have parasitic mode of live. Having examined a number of benthic samples from the Barents Sea coast of Kola peninsula, I revealed that two more species of gastropods occur in the region. The aim of this study is to give an account of these findings.

### Materials and methods

Materials were collected along the Murman coast of the Barents Sea in 2006-2010 (Fig. 1). More detailed data about locations of findings are given in descriptions of species. Samples were collected by 0.1 m<sup>2</sup> van-Veen grab, or by divers with 0,625 m<sup>2</sup> frame. Molluscs were firstly fixed in 4% formaldehyde and then transferred to 70% alcohol for permanent storage. Shell measurements were carried out using MBS-10 stereo microscope with eyepiece micrometer.

### Results

#### Eulimidae Philippi, 1853

##### *Eulima* Risso, 1826

##### *Eulima bilineata* Alder, 1848

(Fig. 2, Table 1)

*Eulima bilineata*: G.O. Sars, 1878, 210-211, tab. 11, fig. 22;  
Fretter, Graham, 1982, 413-414, fig. 296.

**Material:** 1 specimen, 3.06.2009, R/V *Dalnie Zelentsy*, Yarnishnaya Bay, 69°07,802'N, 36°02,114'E; 4 specimens, 4.06.2009, R/V *Dalnie Zelentsy*, Dalnezelenetskaya Bay, 69°07,775'N, 36°06,854'E; 1 specimen, 4.06.2009, R/V *Dalnie Zelentsy*, Dalnezelenetskaya Bay, 69°07,917'N, 36°05,452'E; 4 specimens, 4.06.2009, R/V *Dalnie Zelentsy*, Dalnezelenetskaya Bay, 69°08,408'N, 36°04,540'E.

The teleoconch is smooth, tall, slender, semi-transparent, light-colored with two brownish closely-spaced spiral bands. The apical angle is about 17-25°. Whorls are very flat with indistinct suture. Umbilicus is closed. Protoconch is semi-transparent, without spiral bands, consists of about 3 whorls which are more convex than teleoconch whorls. Aperture is drop-shaped, tall, rounded in its basal part, with acute angle in the upper part. The outer lip is rounded in side view. More detailed description of this species is given by A. Warén [1983].

**Distribution:** from the Mediterranean to the Barents Sea [Fretter, Graham, 1982; Özütrk *et al.*, 2008; Høisæter, 2009; this paper].

**Ecology:** snails were found in 54 to 80.5 meters on sandy bottom with stones and empty bivalve shells. According to experimental data presented by A. Warén [1983] *Eu. bilineata* parasitizes ophiuroids *Ophiothrix fragilis* (Abildgaard in O.F. Müller, 1789), *Ophiactis balli* (W. Thompson, 1840) and *Ophiopholis aculeata* (Linnaeus, 1767). The latter one is common in the waters of Murman coast and especially in Yarnishnaya Bay [Anisimova, 2000].

#### Pyramidellidae Gray, 1840

##### *Odostomia* Felimng, 1817

##### *Odostomia turrita* Hanley, 1844

(Fig. 3, Table 2)

*Odostomia turrita*: G.O. Sars, 1878, 203, tab. 22, fig. 10;  
Fretter, Graham, 1986, 610-612, figs. 422, 431; Aartsen, 1987, 12, fig. 18.

**Material:** 1 specimen, 14.07.2006, R/V *GS-440*, Kola gulf near Murmansk, 69°02,272'N, 33°02,727'E; 4 specimens, 14.09.2007, R/V *GS-440*, Kola Gulf near Murmansk, 68°58,506'N, 33°02,407'E; 5 specimens, 3.06.2009, R/V *Dalnie Zelentsy*, Yarnishnaya Bay, 69°07,783'N, 36°01,507'E; 37 specimens, 4.07.2009, SCUBA, Dalne-zelenetskaya Bay, 69°07'27,5"N, 36°05'26,1"E; 16 specimens, 6.07.2009,

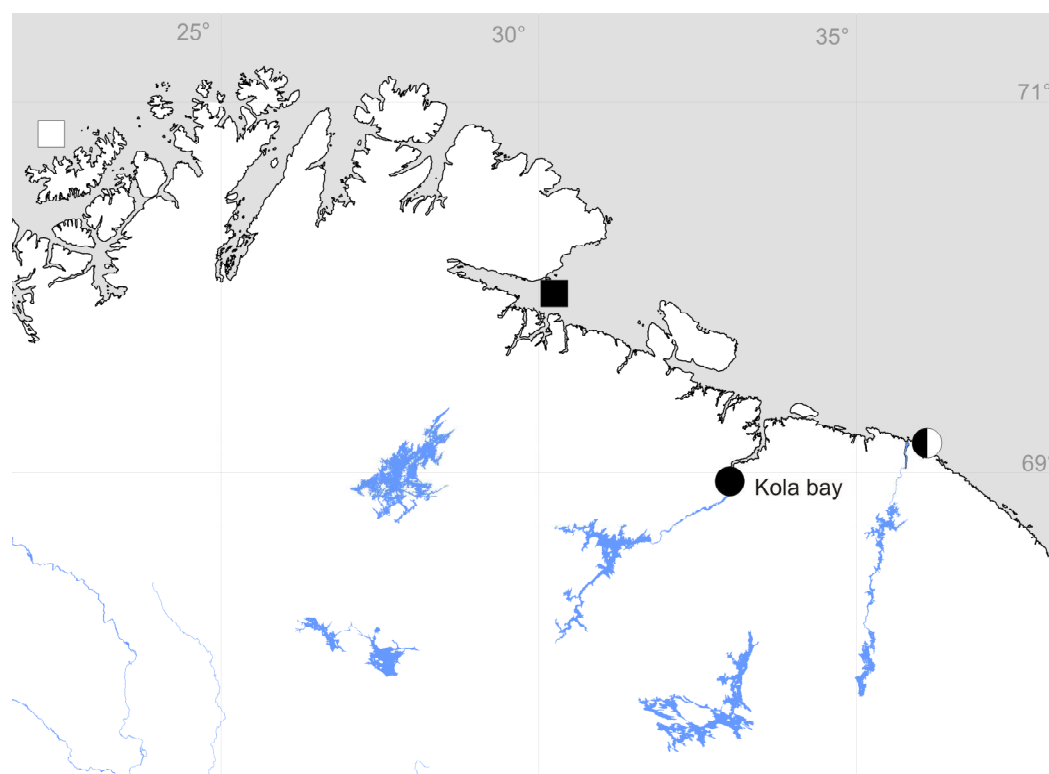


FIG. 1. Findings of *Eulima bilineata* (white) and *Odostomia turrita* (black), circles – findings reported here, squares – previous records.

РИС. 1. Находки *Eulima bilineata* (отмечено белым) и *Odostomia turrita* (отмечено черным), кругами отмечены находки, описанные в настоящей работе, квадратами – более ранние.

SCUBA, Dalnezelenetskaya Bay, 69°07'29,1"N, 36°05'00,2"E; 5 specimens, 6.07.2009, SCUBA, Dalnezelenetskaya Bay, 69°07'29,1"N, 36°05'00,2"E.

Shell is slender, white, semitransparent. The sculpture consists of thin prosocline growth lines and sometimes by poorly marked spiral lines. The apical angle is about 25-45°, it being highest in young specimens. The profile of last whorl is rounded but in young individuals it is usually angulated. The whorls are moderately convex with adpressed suture. The protoconch consists of about 2 whorls. Their axis is perpendicular to teleoconch axis. Umbilicus is practically not visible. The aperture is drop-shaped, with a triangular tooth. Inner lip is slightly concave.

In northern Norway waters *O. turrita* can be

Table 1. Morphometric characters of *Eulima bilineata* from Murman coast of the Barents Sea, n = 10

Shell characters	Mean	$\sigma$	Max	Min
Shell height, mm	3.85	1.07	5.55	2.80
Last whorl height, mm	2.15	0.53	2.95	1.60
Shell width, mm	1.27	0.25	1.65	1.00
Aperture height, mm	1.44	0.33	1.95	1.05
Aperture width, mm	0.65	0.14	0.90	0.50

confused with *O. acuta* Jeffreys, 1848. The former species may be distinguished by prosocline growth lines, poorly marked umbilicus and smaller size [Fretter, Graham, 1986; Aartsen, 1987].

**Distribution:** from the Mediterranean to the south-west part of the Barents Sea [Fretter, Graham, 1986; Høisæter, 2009; this paper].

**Ecology:** *O. turrita* was found in 3-41 m mainly on rocky substrates, rarely on sandy and silty substrates. The host of this species is unknown. Høisæter [2009] reported *O. turrita* from associations of polychaets *Pomatoceros* sp. which may be a host of mentioned species. Other species of the genus *Odostomia* parasitize polychaets, echinoderms, bivalves and gastropods [Cole, Hanckok, 1955; Fretter, Graham, 1986; Ward, Langdon, 1986].

Table 2. Morphometric characters of *Odostomia turrita* from Murman coast of the Barents Sea, n = 30

Shell characters	Mean	$\sigma$	Max	Min
Adult whorls number	3.97	0.53	5.00	2.60
Shell height, mm	2.24	0.39	2.83	1.30
Last whorl height, mm	1.44	0.23	1.73	0.85
Shell width, mm	1.22	0.15	1.55	0.88
Aperture height, mm	0.90	0.14	1.40	0.63
Aperture width, mm	0.62	0.07	0.78	0.45
Protoconch length, mm	0.31	0.02	0.34	0.26



FIG. 2. Shell of *Eulima bilineata*, Dalnezelenetskaya bay, scale bar = 1 mm.

РИС. 2. Раковина *Eulima bilineata* из Дальнезеленецкой губы, линейка – 1 мм.

## Discussion

The molluscan fauna of the Russian part of the Barents Sea coast is relatively well studied and has been presented in several catalogs and checklists [Golikov, 1995; Golikov *et al.*, 2001; Kantor, Syssoev, 2006]. Even more interesting that both species belong to genera not previously recorded in this region. Also, recently a number of new for fauna species has been added to fauna of the Russian part of the Barents Sea [Martynov *et al.*, 2006; Kantor *et al.*, 2008; Chaban, Nekhaev, 2010]. One may offer several possible explanations for this:

1. Current climatic changes. All the newly recorded for the Barents Sea species are associated with relatively warm waters and it is an evidence for this hypothesis. The same assumption has recently been proposed by Kantor *et al.* [2008]. Probably, some of firstly recorded for the Barents Sea species inhabited it earlier but this has not been detected due to its low abundance. Recent warming may contribute to the increase of their abundance.

2. Possibly, some of discussed species were not previously recorded from the Barents Sea due to taxonomic misidentifications. This hypothesis may be applied to *O. turrita* only. This species could has been misidentified by non-experienced taxonomist as there are some species having similar shell characters e.g. *Liostomia eburnea* (Stimpson, 1851)

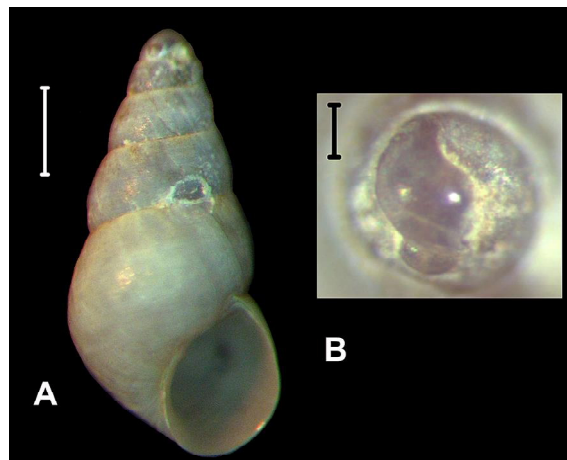


FIG. 3. Shell of *Odostomia turrita*, Dalnezelenetskaya bay, A – general view, scale bar = 0.5 mm, B – protoconch, scale bar = 0.1 mm.

РИС. 3. Раковина *Odostomia turrita* из Дальнезеленецкой губы, А – общий вид, линейка – 0,5 мм, В – протоконх, линейка – 0,1 мм.

and *Turboella interrupta* (J. Adams, 1800). On the contrary, there are no species in the Barents Sea similar to *Eu. bilineata*.

3. Accidental invasion by human activities. This phenomenon sometimes used to explain findings of gastropod species in areas far from their native range, e.g. *Rapana venosa* (Valenciennes, 1846) [Drapkin, 1961]. In our case this explanation seems unlikely.

So, the fauna of the Barents Sea molluscs is supplemented by two new species and two new genera.

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#### Два новых для морей России вида паразитических моллюсков

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**РЕФЕРАТ.** Два вида паразитических брюхоногих моллюсков – *Eulima bilineata* Alder, 1848 и *Odostomia turrita* Hanley, 1844 впервые отмечены для Мурманского побережья Баренцева моря. Для каждого вида приведены краткие видовые очерки. Обсуждаются различные гипотезы для объяснения находок новых видов брюхоногих моллюсков вдоль побережья Мурманска.

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