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## On the forgotten species from the Russian Far-East seas, *Plicifusus olivaceus* Bartsch, 1929

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**ABSTRACT.** *Plicifusus olivaceus* Bartsch, 1929, described from the Sea of Japan in the vicinities of Vladivostok was never recorded or mentioned since original description. The species is re-described. *Mohnia okhotskana* Tiba, 1981 is considered as junior subjective synonym. The species is attributed to *Retimohnia* McLean, 1995. This genus was synonymised with *Retifusus* Dall, 1916 by Kosyan [2007] and Kosyan and Kantor [2009]. The synonymisation is here considered invalid and *Retimohnia* is re-established.

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In 1925 and 1926 K.M. Derjugin, professor of the Leningrad State University collected some molluscs in Peter the Great Bay (Japan Sea) in vicinities of Vladivostok. Facing problems with the species identifications, he sent a selection of shells to Paul Bartsch, curator of the Mollusca of the U.S. National Museum (Smithsonian Institution). On the basis of this collection Bartsch published a paper [1929] in the series *Explorations des mers d'U.S.S.R* (Исследования морей С.С.С.Р.), published by the State Hydrological Institute in Leningrad (presently St.-Petersburg). The manuscript was published in Russian (pp. 129 and 130 — extended abstract ) and English (the rest of the text, including descriptions of the new taxa). Bartsch also prepared a manuscript that was never published but was stored in the library of the Zoological Institute of the USSR Academy of Sciences in Leningrad. In this manuscript Bartsch described some new species and later few of them were validated by Golikov and Gulbin [1977], e.g. *Oenopota valentina* Bartsch in Golikov et Gulbin, 1977 and *Oe. kinkasanensis* Bartsch in Golikov et Gulbin, 1977. Bartsch published one more paper on Oenopotinae from the Japan Sea [1941], based on the materials of K.M.Derjugin.

While the latter publication was well known to the western Malacological community, the former one was scarcely known to American malacologists, probably due to the difficulties in obtaining the copy of the publication (Fig. 1). Bartsch described 13 species of bivalves and gastropods. Most of the species were later considered as junior synonyms by Soviet (Russian) malacologists:

### Bivalvia

*Felaniella olivacea* Bartsch, 1929 — as junior synonym of *F. usta* (Gould, 1861) [Scarlato, 1981];

*Soletellina (Nuttalia) petri* Bartsch, 1929 — as junior synonym of *Nuttalia commoda* (Yokoyama, 1925) [Scarlato, 1981];

*Spisula vladivostokensis* Bartsch, 1929 — as junior synonym of *Macromeris polynyma* (Stimpson, 1860) [Scarlato, 1981];

*Corbula vladivostokensis* Bartsch, 1929 — as junior synonym of *Potamocorbula amurensis* (Schrenck, 1862) [Scarlato, 1981].

Only single species of Bivalvia, *Macoma lama* Bartsch, 1929 is presently considered valid.

The situation was not better with gastropods:

*Chrysodomus vladivostokensis* Bartsch, 1929 was considered as a junior synonym of *Neptunea constricta* (Dall, 1907) [Golikov, 1963]. Recently it was re-established without any discussion by Fraussen and Terryn [2007].

*Buccinum derjugini* Bartsch, 1929 — as junior synonym of *Buccinum verkruzeni* Kobelt, 1882 [Golikov, 1980];

*Turbonilla (Pyrgolampros) petri* Bartsch, 1929 and *Turbonilla (Pyrgolampros) vladivostokensis* Bartsch, 1929 — as junior synonyms of *Pyrgolampros rufofasciata* (E. A. Smith, 1875) [Golikov, Scarlato, 1985];

*Alaba vladivostokensis* Bartsch, 1929 — as junior synonym of *Difalaba picta* (A. Adams, 1861) [Golikov, Scarlato, 1967];

*Gibbula derjugini* Bartsch, 1929 — as junior synonym of *Lirularia iridescens* (Schrenck, 1863) [Galkin, 1955].

Nevertheless one species described by Bartsch — *Plicifusus olivaceus* missed attention of Russian malacologists and was never mentioned since original publication, even in Kantor and Sysoev catalogue [2006].

During visiting curatorship in the Natural History Museum, Smithsonian Institution, Washington DC (USNM), I have examined the holotype of *Plicifusus olivaceus*. Below is the re-description of the species with the remarks on its taxonomy.

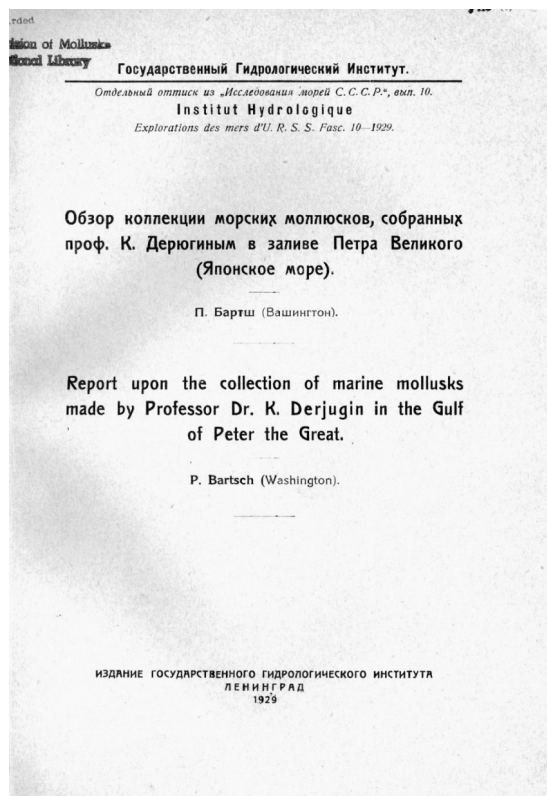


FIG. 1. The cover of the reprint of the Bartsch paper [1929] from the library of Malacology of USNM.

РИС. 1. Обложка отдельного оттиска статьи Барша [Bartsch, 1929] из библиотеки отдела малакологии Музея Естественной Истории Смитсоновского института.

## Systematics

Buccinidae Rafinesque, 1815

Colinae Gray, 1857

*Retimohnia olivacea* (Bartsch, 1929)

(Fig. 2)

*Plicifusus olivaceus* Bartsch, 1929: 138-139, pl. 4, fig. 8.

*Mohnia okhotskana* Tiba, 1981: 86, pl. 30, figs. 6-7, **syn. nov.**

**Material examined:** type material.

**Type material:** holotype, USNM 369037.

**Type locality:** at Vladivostok.

**Description:** shell of medium size, relatively thick, solid, elongate ovate in outline with attenuated conical spire, which seems short due to erosion of protoconch and upper teleoconch whorls. Teleoconch of 4+ remaining evenly convex whorls, separated by deep, slightly adpressed suture. Axial sculpture of well pronounced rounded and curved, nearly

coaxial ribs, 14 on the last whorl and 12 on the penultimate. Interspaces between ribs are approximately twice wider than the ribs. Spiral sculpture of thin unevenly spaced grooves, covering entire shell surface, 19 on last whorl and 9 on penultimate. Aperture moderately high, oval, tapering posteriorly beneath suture. Outer lip evenly rounded. Columella about  $\frac{1}{2}$  aperture length, slightly concave, with strong siphonal fold. Callus of thin transparent glaze overlying the parietal region, siphonal fasciole. Siphonal canal rather narrow, very slightly dorsally recurved, with straight columellar and rounded apertural margins, deflected to the left. Shell color pale brown, outer shell lip and columellar white. Shell covered with thin and smooth olive periostracum. Operculum unknown.

**Measurements:** shell length (SL) 23.1 mm, body whorl length 6.6 mm, aperture length (with the canal) 13.4 mm; shell diameter 11.4 mm.

**Remarks:** although the species name is not used in current literature, the species was recorded in the Far-East seas of Russia under other name, *Mohnia okhotskana* Tiba, 1981. The species was described from north-western part of Okhotsk Sea (near Kamchatka Peninsula) (Fig. 2D), also found in the Kurile Islands (Fig. 2E-F) and in the Japan Sea (type locality of *Plicifusus olivaceus* Bartsch). Unfortunately neither radulae, nor operculums were originally described for *olivaceus* and *okhotskana*. Radulae of several specimens were examined and illustrated by Kosyan [2007] (Fig. 2G) under the name of *Retifusus jessoensis*. The lateral teeth are tricuspid with the outermost cusp being the longest and innermost being slightly shorter than the intermediate. The rachidian is with three major robust cusps. The central one being the longest. Abutting the lateral cusps there are small denticles, which can become nearly completely obsolete.

## Discussion

It is not easy to assign "*Plicifusus*" *olivaceus* to recognized genera of Buccinidae. There are several conchologically similar genera in the North-Western Pacific. Recently they were reviewed by Kosyan [2007]. The species of *Plicifusus* are characterized by larger shells with well attenuated siphonal canal and numerous axial folds. The lateral radular teeth are tricuspid with the median cusp being the shortest, that differentiate the radula from that found in *P. olivaceus*. Conchologically the species under consideration is much closer to genera *Retifusus* Dall, 1916 [type species *Tritonium (Fusus) jessoensis* Schrenck, 1863 in 1862-1863] or *Retimohnia* McLean, 1995 (type species *Mohnia frielei* Dall, 1891). Species attributed to both genera are characterized by small or medium sized shell with strong axial sculpture and pronounced spiral sculpture with re-



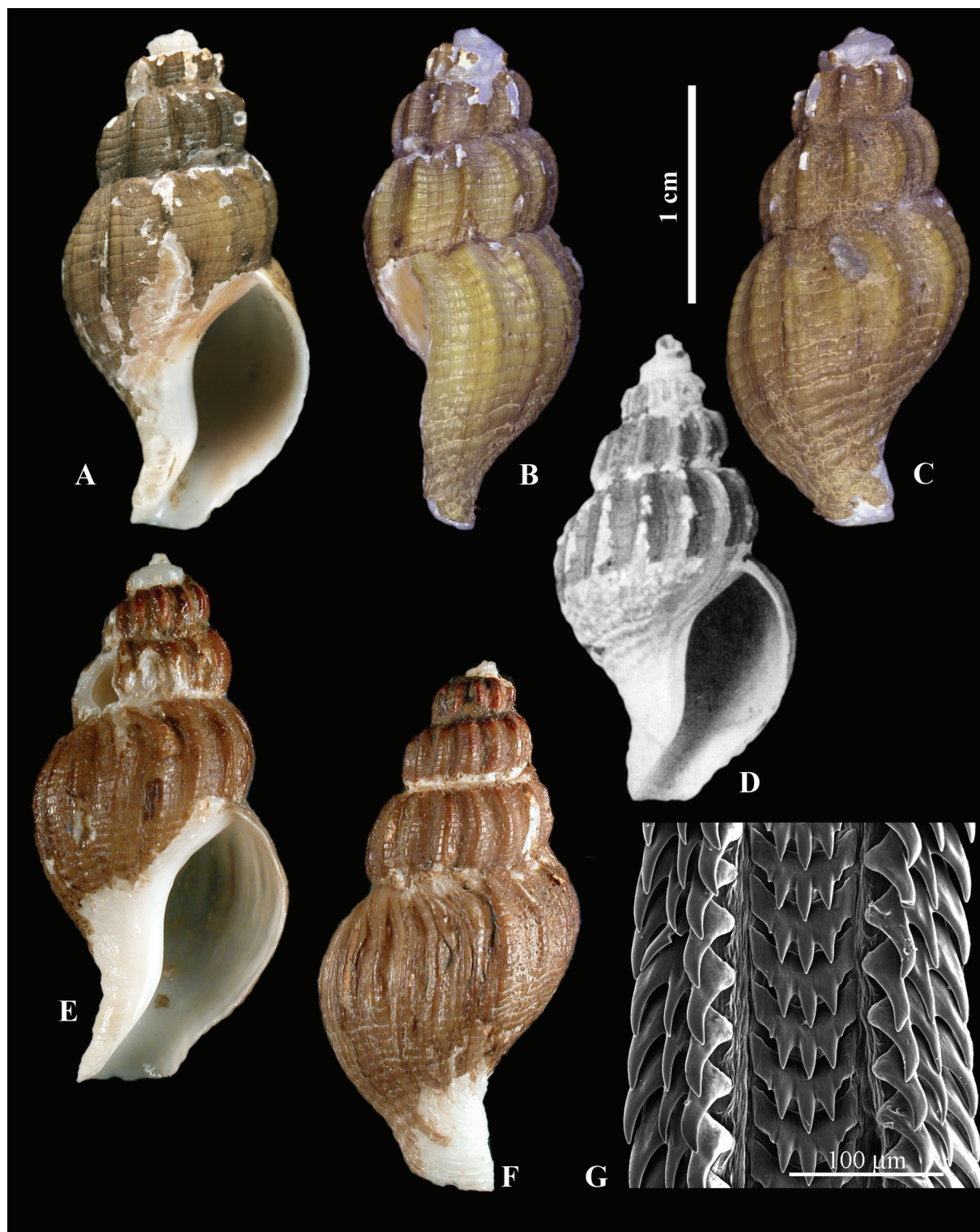


FIG. 2. *Retimohnia olivacea* (Bartsch, 1929). A-C — holotype, USNM 369037, SL 23.1 mm. D — holotype of *Mohnia okhotskana*, Institute of Malacology, Tokyo, Japan, IMT-81-2 [after Tiba, 1981]. E-G — ZIN 28437/12, Kurile Islands, 76 m, 33.7 mm, E-F, after Kantor, Sysoev, 2006, pl. 101L, as *Mohnia okhotskana* Tiba, 1981, G — dorsal view of the central part of the radular membrane [after Kosyan, 2007].

РИС. 2. *Retimohnia olivacea* (Bartsch, 1929). A-C — голотип, USNM 369037, SL 23.1 mm. D — голотип *Mohnia okhotskana*, Институт Малакологии, Токио, Япония, IMT-81-2 [по Tiba, 1981]. E-G — ZIN 28437/12, Курильские острова, 76 м, SL 33.7 mm, E-F, по Kantor, Sysoev, 2006, pl. 101L, как *Mohnia okhotskana* Tiba, 1981, G — дорсальный вид среднего участка радулярной мембраны [по Kosyan, 2007].

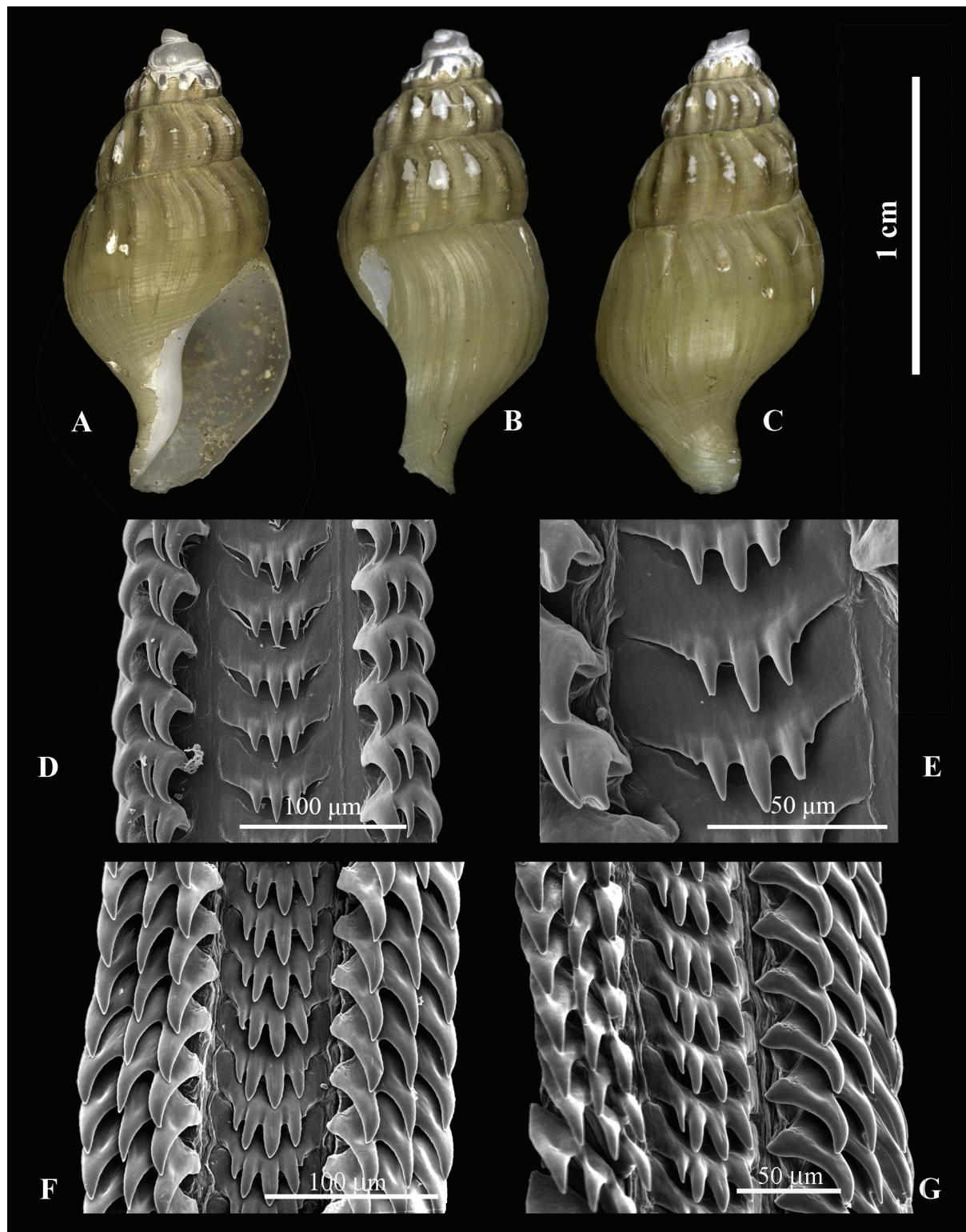


FIG. 3. A-E — *Mohnia frielei* Dall, 1891, syntype, USNM 122653, off Queen Charlotte Island, British Columbia, 876 fms., Albatross sta. 2860, 51°23'00''N, 130°34'00''W, SL 15.8 mm. D-E — dorsal view of the central part of the radular membrane. F-G — *Retifusus jessoensis* (Schrenck, 1863), northern Kurile Islands, Paramushir Id., 156-165 m, SL 21.0 mm. Dorsal (F) and right lateral (G) views of the central part of the radular membrane [after Kosyan, 2007].

РИС. 3. A-E — *Mohnia frielei* Dall, 1891, синтип, USNM 122653, у Queen Charlotte Island, Британская Колумбия, 1603 м, Albatross ст. 2860, 51°23'00''N, 130°34'00''W, SL 15.8 мм. D-E — дорсальный вид среднего участка радулярной мембраны. F-G — *Retifusus jessoensis* (Schrenck, 1863), северные Курильские острова, Парамушир, 156-165 м, SL 21.0 мм. Дорсальный (F) и правый латеральный (G) виды среднего участка радулярной мембраны [по Kosyan, 2007].



lately short siphonal canal. Kosyan [2007] and later Kosyan and Kantor [2009] synonymised both genera on the basis of the similarity of the radula of *Retifusus jessoensis* and *Retimohnia frielei*, which they considered as synonyms. Both radulae described were characterised by rachidian bearing 5 or 6 subequal in size cusps.

Nevertheless recently the new data were obtained on the radula of *Mohnia frielei* Dall, 1891 (the type species of *Retimohnia* McLean) (Fig. 3). I was able to extract and examine the radula of the syntype (Fig. 3 A-E) that was stored in the USNM with the dried body inside the shell. The radula appeared to be very similar to that found in *olivaceus* (= *okhot-skana*) in the shape of the rachidian, including the presence of the small denticles abutting the lateral cusps. The major differences are the greater overlap of the teeth (especially well seen on rachidians) in *olivaceus* comparing to *Retimohnia frielei*. At the same time it is rather different from the radula, found in *Retifusus jessoensis* (Fig. 3 F-G). This may suggest that Kosyan [2007] and Kosyan and Kantor [2009] erroneously identified the specimen of *frielei*

for which the radula was examined. It is also possible that two species with very similar shell exist in NW Pacific that differ in radular morphology. The situation is not uncommon in Neogastropoda [e.g., Kantor *et al.*, 2008].

In any case the synonymisation of *Retifusus* and *Retimohnia* may appear to be premature and some more research are necessary to clarify this situation. Therefore I prefer to re-establish *Retimohnia* as valid and include into it *Plicifusus olivaceus*. It should be noted, that the radula of this species was illustrated under erroneous name *Retifusus jessoensis* in Kosyan and Kantor [2009] (Fig. 37).

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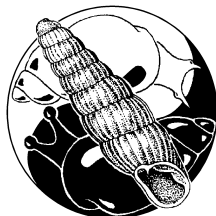


О забытом виде из дальневосточных морей России, *Plicifusus olivaceus* Bartsch, 1929

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**РЕЗЮМЕ.** *Plicifusus olivaceus* Bartsch, 1929, описанный из Японского моря из окрестностей Владивостока, ни разу не отмечался в литературе с момента первоописания. На основании исследования типового материала приведено переописание вида. *Mohnia okhotskana* Tiba, 1981 признана младшим субъективным синонимом. Вид отнесен к роду *Retimohnia* McLean, 1995. Этот род был синонимизирован с *Retifusus* Dall, 1916 Косьян [2007] и Kosyan и Kantor [2009]. Это синонимизация признана в настоящей работе невалидной и род восстановлен.



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