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## *Neopilina starobogatovi*, a new monoplacophoran species from the Bering Sea, with notes on the taxonomy of the family Neopilinidae (Mollusca: Monoplacophora)

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**ABSTRACT.** *Neopilina starobogatovi* is a new species of monoplacophorans from the southwestern Bering Sea, living at the periphery of hydrothermal zone of Vulkanologov massif. This is the first representative of the class in Russian waters. The description is based on a single specimen found on alive branch of the gorgonian *Parastenella* sp., that was sampled by the deep-sea manned submersible «Mir-2» at the depth of 1200 m.

*oligotropha*): the first species has been found in crevices of the nodules [Urgorri et al., 2005]; the second — probably on the surface [Warén, Gofas, 1996]; the third — on a large basalt boulder covered by black uneven crust of ferromanganese deposits, with mollusc sitting on a slope of a small depression of the crust [Filatova et al., 1968, 1969]; the fourth was sampled together with red clay and manganese nodules, though McLean [1979] believes that it cannot be claimed that the specimen had been attached to a nodule. Thus the 19 species of Recent monoplacophorans live on substrates of four types: hard (sublittoral to upper abyssal species), soft (abyssal species), ferromanganese nodules and crust, and bio-substrates (*Rokopella segonzaki* on *Bathymodiolus* sp., hydrothermal area of Mid-Atlantic Ridge). The species under consideration belongs to the latter group. Moreover, it has been also found in the hydrothermal zone, even though at its periphery but not in the active part.

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### Introduction

Recent Monoplacophora consist of no less than 29 species (10 described by the shell only), assigned to 8 genera [Warén, Gofas, 1997]. The geographic and bathymetric distribution of molluscs of the class that live in all oceans and from the sublittoral down to the abyssal, has been repeatedly reviewed [Cesari, Guidastri, 1976; Moskaev et al., 1983; Warén, Hain, 1992; Lesicki, 1998], although many aspects of their ecology remain unstudied. It is known that monoplacophorans occur on very different kinds of bottom, though the bottom character was often not mentioned in descriptions of deep-sea species because the substrate has been washed off during lifting of the gear (a trawl or a dredge). The present paper is devoted to a mollusc occurring on a living biological substrate (gorgonarians), which is only the second case reported for monoplacophorans. Therefore, it seems appropriate to consider substrates reported for 19 species described not only by empty shell but also by soft parts, that have been often sampled being attached to the substrate (Table 1). The bottom character is unknown for at least four of them (*Velopilina veleronis*, *Adenopilina adenensis*, *Neopilina bruuni* and *Vema bacescui*) but, since these are abyssal species, it can be suggested that they live on a soft bottom [McLean, 1979]. It is interesting that four species are associated with ferromanganese nodules or crust (*Laevipilina cachuchensis*, *Vema levinae*, *Monoplacophorus zenkevitchi* and *Rokopella*

### Methods

Photography of the shell and soft body was done with a camera Canon 350D with Canon MP-E 65 mm lens; the drawings were prepared with a camera lucida and a stereomicroscope Zeiss Stemi SV-6.

### Taxonomy

Order Monoplacophorida

Wenz in Knight, 1952

Family Neopilinidae

Knight et Yochelson, 1958

**Remarks.** The system of 6 families of the Recent monoplacophorans offered by Russian zoologists [Moskaev et al., 1983; Starobogatov, Moskaev, 1987] was criticized by colleagues and has not been adopted [Warén, 1989; Warén, Bouchet, 1990; Warén, Hain, 1992; Warén, Gofas, 1997, etc.]. At