

# **ТРУДЫ**

**Выпуск VIII**

**Биота острова Старичков  
и прилегающей к нему акватории  
Авачинского залива**

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**Biota of Starichkov Island  
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The collection of papers contains the data of studies of the scientists of KB PIG FED RAS and some other organizations carried out on the territory of a small Starichkov Islands and adjacent water areas of Avacha Gulf. The papers presented in this issue deal with studies on marine and terrestrial biota of this Island that has the status of the specially protected nature area – The Nature Monument of the regional significance «Starichkov Island» – since 1981.

The book can be recommended for ecologists, biologists, specialists in nature protection, teachers and students of institutes and colleges specializing in biology.

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# СОДЕРЖАНИЕ

• •	7
• •	
-	9
• •	
-	21
• •	
-	25
• •	
<i>Turnerella mertensiana</i> (P. et R.) Schmitz	58
• •	
-	67
• •	
(Cnidaria: Hydrozoa)	199
• •	
(Cnidaria: Anthozoa),	208
• •	
(Gastropoda: Opisthobranchia)	227
• •	
(Tunicata: Ascidiacea)	241
• •	
• •	250
• •	
• •	263
• •	
,	280
	341

## РЕФЕРАТЫ

- // -
- : , 2009. . VIII. . 9–20. - :
- . -
- // -
- : , 2009. . VIII. . 21–24. - :
- . -
- 200–300 , -
- , , -
- , , -
- //
- : , 2009. - :
- . VIII. . 25–57. -
- « » ,
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- , -
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- ,  
: *Acrochaete geniculata* (Gardn.) O’Kelly, *Pseudulvella prostrata* (Gardn.) Setch. et Gardn. :  
*Phycodrys valentinae* Seliv. et Zhigad., *Erythrocladia irregularis* Rosenv.,  
*Palmaria mollis* (Setch. et Gardn.) Van der Meer et Bird, *Acrochaetium parvulum* (Kylin) Hoyt. , -

*Fucus evanescens.*

(P. et R.) Schmitz . //

VIII. . 58–66.

*Turnerella mertensiana*

*T. mertensiana*

: .  
 , 2009. . VIII. . 67–198.

(Cnidaria: Hydrozoa)

, 2009. . VIII. . 199–207.

1998–2009 . 30 , 8

20

, *Monocoryne* sp., *Halecium* sp., *Symplectoscyphus* sp.,

(Cnidaria:  
Anthozoa), // : .  
2009. . VIII. . 208–226. Anthozoa ( ), 33 .  
17 , Sideractiidae

(Gastropoda: Opisthobranchia)  
// : .  
. 227–240. , 2009. . VIII.  
17 , 6  
, 4

(Tunicata: Ascidiacea)  
// : .  
VIII. . 241–249. , 2009. .  
18 (10 8  
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// : .  
. 250–262. , 2009. . VIII.  
1998–2006 .  
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## ABSTRACTS

**Physical and geographic description of Starichkov Island and adjacent shelf areas // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 9–20.**

Short physical and geographic characteristics of Starichkov Island are given. Geomorphologic description and history of development of the Island and adjacent shelf areas are presented.

**Starichkov Island as a historical monument // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 21–24.**

Brief historical review of human activity on the Island is presented. Known historical information and personal archaeological data of the author are adduced. Methods of fowling are described based on the data from the ethnographic sources. Presumably ancient people visited the Island seasonally 200–300 years ago. The traces of the present-day and past human activity marked on the Island make it possible to treat it not only as a nature monument but also as a historical monument.

**Marine algae-macrophytes of the coastal waters of Starichkov Island // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 25–57.**

A detailed annotated species list of the algae-macrophytes of the coastal waters of the Nature Monument «Starichkov Island», including data on their distribution and fertility, is given. The list is updated taking into account new information on the algal taxonomy appeared with the advent of molecular-genetic studies and is expanded with the species previously unknown from the Pacific coasts of Kamchatka: *Acrochaete geniculata* (Gardn.) O’Kelly, *Pseudulvella prostrata* (Gardn.) Setch. et Gardn. The areas of the previously known species are extended: *Phycodrys valentinae* Seliv. et Zhigad.,

*Erythrocladia irregularis* Rosenv., *Palmaria mollis* (Setch. et Gardn.) Van der Meer et Bird, *Acrochaetium parvulum* (Kylin) Hoyt. The data on ecology, biology and genetics of some mass species of algae are presented. The results of the studies on age and life time estimation, and reproduction of brown alga *Fucus evanescens* are discussed. It is shown that the only reliable method of *Fucus* age estimation is a chronometric one. The significance of Starichkov Island for study and conservation of Kamchatka biodiversity is noted.

**Some observations on the morphogenesis and season variability of the red alga (P. et R.) Schmitz from the coasts of Starichkov Island // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 58–66.**

The results of the studies on growth biology of red alga *Turnerella mertensiana* at the coasts of Starichkov Island are presented. On the basis of the research data the author comes to a conclusion that the representatives of the gametophytic stage of *T. mertensiana* have at least three-year-long life period at the coasts of the south-eastern Kamchatka.

**Species composition and peculiarities of vegetation on the algae-macrophytes at the coasts of Starichkov Island // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 67–198.**

The species list of the macrophytic algae collected by the authors during a long-term period from the intertidal and subtidal zones of Starichkov Island and also cast ashore algae is given. Although some of the deep water species of red algae included in this list were met at the opposite coasts in Spaseniya Bay, their permanent presence among cast ashore algae after strong storms makes it possible to suppose that they might be met in the deep water phytobenthos of Starichkov Island as well. The description of each species contains anatomic characteristics and detailed data on ecology and peculiarities of development. Besides that the species sketch is accompanied with the algal image photos and in some cases with microphotos showing the species-specific features.

**Hydroids (Cnidaria: Hydrozoa) from the coastal area of Starichkov Island: an annotated species list // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 199–207.**

An annotated species list of the hydroids collected in 1998–2009 at the coasts of Starichkov Island from the intertidal zone to the diving

depths is given. Thirty species are recorded representing 8 families of two orders. Twenty species have been identified, the remaining 10 species need additional studies and in some cases additional sexually mature samples for correct identification. Representatives of the three genera: *Monocoryne* sp., *Halecium* sp., *Symplectoscyphus* sp., have not been found before in the north-western Pacific.

**Anthozoans (Cnidaria: Anthozoa) found at the coasts of Starichkov Island // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 208–226.**

The review on fower animals (Anthozoa) found in the coastal waters of Starichkov Island from the intertidal zone to the depth of 33 m is given in the paper. Seventeen species have been registered, three of which are described by the authors as new ones. The member of the family Sideractiidae has been found in the Pacific Ocean for the first time and some other species need more detailed studies and description.

**Opisthobranch mollsucs (Gastropoda: Opisthobranchia) from the coastal waters of Starichkov Island // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 227–240.**

An annotated species list of the opisthobranch mollsucs collected at the coasts of Starichkov Island from the intertidal zone to the diving depths is given. Seventeen species of opisthobranch mollsucs have been found, six of which are new for the fauna of Kamchatka, four are described by the authors as new for science, and also a new genus is described that represents a transitional stage in the evolution of the two large groups of sea slugs (Nudibranchia).

**Sea squirts (Tunicata: Ascidiacea) of the coastal waters of Starichkov Island // Biota of Starichkov Island and adjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 241–249.**

An annotated species list of the sea squirts found in the coastal waters of Starichkov Island is given. Eighteen species of the sea squirts have been recorded (10 colonial and 8 solitary ones). A sea squirt has been found as a member of the interstitial fauna for the first time in the Pacific Ocean.

**Contribution to the knowledge on ichthyofauna of the coastal waters of Starichkov Island // Biota of**

**Starichkov Island and anjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 250–262.**

The data on the species composition of fsh in the 3-miles protected area near the Nature Monument «Starichkov Island» located in the Avacha Gulf (south-eastern Kamchatka) based on the materials of 1998–2006 are given. It is shown that there are 24 species of fsh from 12 families met at the coasts of Starichkov Island (from the intertidal zone to the depth of 25 m) from May to October. The basis of the ichthyofauna of this protected area (about 67 % of the number of registered species) is formed by the members of 5 families of bottom and near-bottom fsh – chabots (Cottidae) (7 species), fatfsh Pleuronectidae (3 species), combfsh (Hexagrammidae), big-mouthed sculpins (Hemitriptidae), lumpfsh (Cyclopteridae) (in twos of each family). The information on comparative number of fsh met from May to October at the coasts of Starichkov Island is given.

**Flora and vegetation of Starichkov Island // Biota of Starichkov Island and anjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 263–279.**

The results of botanical studies on Starichkov Island carried out in 2002, 2004, 2006 and 2008 have been summarized. An annotated species list of vascular plants and schematic map of vegetation of this Nature Monument are presented. There are on the total 105 species of the vascular plants belonging to 81 genera and 39 families. The vegetation scheme was compiled which is represented by 11 profiles. The distribution of the species diversity is determined mostly by the predominance of poor in floristic aspect ornithogenic communities in vegetation. More diverse species composition is observed on raw screes and rocks in the lower parts of the northern and western slopes, at the brook watercourse on the eastern slope and especially in «foristic oasis» on the north-western cape where fragments of dry motley grass-cereal meadows remain.

**Fauna, population of birds and their role in the ecosystem of Starichkov Island // Biota of Starichkov Island and anjacent waters of Avacha Gulf : proceedings of Kamchatka Branch of Pacific Institute of Geography, Far Eastern Division, Russian Academy of Sciences. – Petropavlovsk-Kamchatskii : Kamchatpress, 2009. Issue 8. Pp. 280–340.**

Data on the avifauna species composition of Starichkov Island (67 species) based on the surveys of 1995–2009 are presented. The species list includes the data on the number of nesting birds, their distribution on the Island during reproductive period. Assessment of the current state of the bird population

and human impact on Starichkov Island is given. Seasonal dynamics of bird population, their trophic movements and role in the ecosystem of the Island are discussed. Main ecological groups of birds and their trophic relations are marked out. Recommendation on organization of ornithologic excursions to this Nature Monument are proposed that will help to avoid irreversible changes in the bird populations and also transformations and even total loss of the unique natural complex of the Island.

# ТРУДЫ

## Выпуск VIII

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