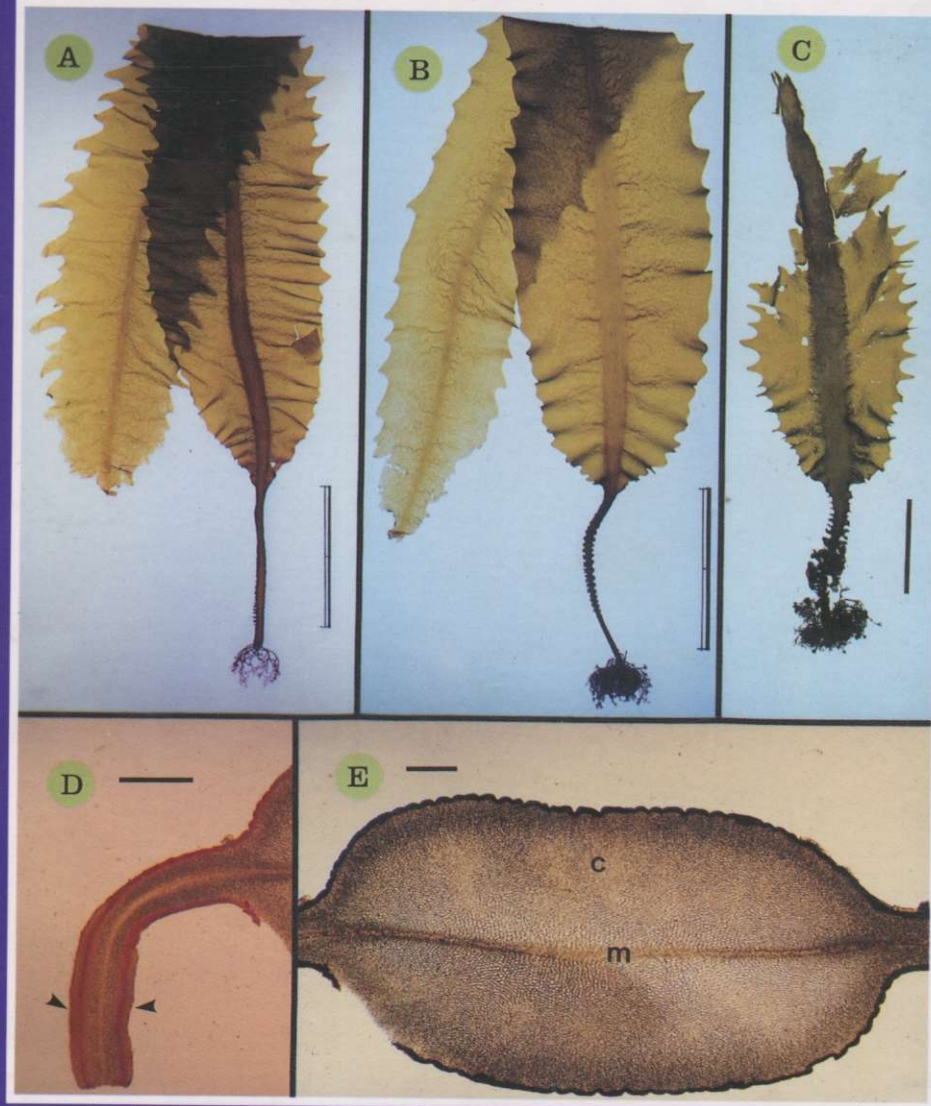


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## An Annotated Bibliography of Marine Macroalgae on Northwest Coast of the Bering Sea and the Southeast Kamchatka: the First Revision of Flora

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The first revision of marine macroalgal flora on the northwest coast of the Bering Sea and the southeast Kamchatka is given here. The present investigation is based on my own collections and on a critical study of all available literatures. The flora of marine macroalgae on northwest coast of the Bering Sea and the southeast Kamchatka is subdivided into ten different regions according to distributional characteristics. In this annotated bibliography, all scientific literatures are mentioned for each species. Furthermore, the list of the wrong identified and doubtful species is given.

Key Words: Bering Sea, Kamchatka, macroalgae, taxonomic revision

### INTRODUCTION

The western part of the Bering Sea and eastern Kamchatka are one of the few areas of the World Ocean with very high biological productivity of the sea coastal waters. The rich algal resources are concentrated here. For example, laminariacean algae are the valuable food raw and are widely used in the modern industry. As this area is situated on the junction of Asian and American continents and the Pacific and Arctic Oceans, its flora is presented by a mix of species of different origin and distribution. A lot of macrophytes are mainly distributed along the Aleutian, Commander, Kurile and Japanese Islands. Furthermore, flora of marine macrophytes is also rich in the southeast Kamchatka, which is the link between the Kurile and Commander Islands.

The study of marine benthic flora of the Russian Far East had begun from the coasts of Kamchatka. The seaweed collections of George Steller and Stepan Krashennikov, participants of the Second Kamchatka Expedition of Vitus Bering (1733-1743), had put the beginning of these investigations. The first data on the marine algae of Kamchatka were given in the well-known work by Stepan Krashennikov's "The Description of Kamchatka". The subsequent research of the Far Eastern marine flora took place during the time

of Eastern Military Expeditions. The most important expeditions were of Ivan Kruzenshtern and Fedor Litke. The participants were S. Gorner, L. Chamisso, A. Postels, G. Mertens, and F. Kastalsky, who collected macrophytes in Kamchatka and the Bering Sea. Some part of the collections from eastern Kamchatka had been given into the fund of the Imperial Botanical Garden (St. Petersburg). It was treated later by Samuel Gotlib Gmelin, Frantz Ruprecht, and other algologists in their investigations.

Then the expedition of A. Nordensheld worked in the Bering Sea in 1876. Results of treatment of the collected algological material were published later by its participant F. Kjellman (Kjellman 1889). Different expeditions worked near the coast of the northwest Pacific in our century: the complex expedition of the Geographical society (Kamchatka expedition of Ryabushinsky F.P., 1908-1909), and expedition of Gulten A. (1920-1922). In the Soviet period during three years (1928-1930) the iodine-algal expedition of G. Gayl worked on the Russian Far East including Kamchatka and the Commander Islands.

The Second World War had interrupted the algological investigations in the Bering Sea and at Kamchatka's coasts for many years. The expeditions were reorganized in 1960's by different scientific institutions: *All-Union Research Institute of Fishery and Oceanography* (Moscow),

Pacific Research Institute of Fishery and Oceanography (Vladivostok), its Division in Sakhalin, Institute of Oceanology of the Academy of Sciences (Moscow), Institute of Marine Biology of Far Eastern Branch of the Academy of Sciences (Vladivostok), Zoological Institute of the Academy of Sciences (St.-Petersburg), Far Eastern National University (Vladivostok). Materials of these expeditions were given for treatment to the marine algologists and used by them for realization of floristical researches and taxonomical revisions of separate groups of green, brown and red algae. In late 1980's the Kamchatka Institute of Ecology and Nature Management of Far Eastern Division of Russian Academy of Sciences was organized in Petropavlovsk-Kamchatsky. The marine benthic flora and fauna of shelf of the northwest part of the Bering Sea were studied in the Institute. The Laboratory on study of the resources of some seaweeds and valuable spineless animals was organized in Kamchatka in early 1990's in the *Institute of Fishery and Oceanography*.

This paper is the second floristic revision containing critical generalization of the previous data of algal flora on the Russian Far East. The first revision of flora on the northern part of the Sea of Japan (Tatars Strait) had been prepared by author (Klochkova 1994) and represented the analogical annotated bibliography. The more complete floristical data for this area were published later (Klochkova 1995).

Up to this time more than 530 species for the western part of the Bering Sea, southeast Kamchatka and the Commander Islands are mentioned in scientific literatures. The present annotated bibliography allows to understand which species are valid or their synonyms. Determination of the synonyms of valid species became impossible in many cases, when because of different reasons the materials of the earlier researchers have appeared inaccessible for the repeated critical study. Therefore, part of species, the distribution of which is not stacked into the frameworks of modern conception about systematics and distribution of seaweeds in the Far East and in the World Ocean was referred to the wrong defined and doubtful taxa.

The given list of flora of algae-macrophytes of this area is based on the published data on macrophytes of the western coast of the Bering Sea, eastern Kamchatka and the Commander Islands. The list is further complemented by results of author's own researches (Klochkova 1994; Klochkova and Berezovskaja 1997).

Before the annotated bibliography the systematic list is placed. Representatives of flora are presented in the

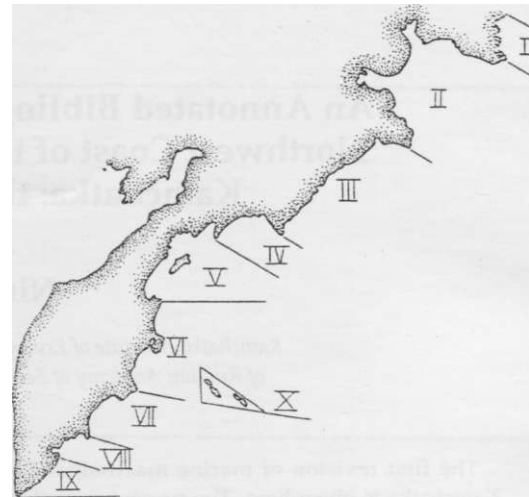


Fig. 1. The areas of the coast of the Bering sea, the southeast

Kamchatka and the Commander Islands:

Area I; Mechigmenskaya bay - Chaplina cape

Area II; Anadirskiy inlet

Area III; Navarina cape - Olyutorskiy cape

Area IV; Olyutorskiy inlet

Area V; Korfa inlet and Karaginskiy inlet

Area VI; Ozerniy inlet and Kamchatskiy inlet

Area VII; Kronotzkiy inlet

Area VIII; Avachinskiy inlet to Bezimyanniy cape on the south

Area IX; Bezimyanniy cape - Lopatka cape

Area X; Commander Islands

alphabetic order for each division: *Chlorophyta*, *Phaeophyta* and *Rhodophyta*. Papers cited for the species, containing information on their presence in the western part of the Bering Sea, at the eastern Kamchatka and the Commander Islands are given in the chronological order. Publications are cited as follows: the surname of the author, year of publication, page when there is the first mention of a species. The roman figures in brackets show sites of coast, for which the macrophyte is mentioned. If species were specified under the other generic name (or names), they are written after data on its distribution. In a case, when results of research of other authors were used in definition of synonyms of modern species, the references of their papers are given. If one species was indicated under several names including correct one, the correct name is given alongside with synonyms after the information on its distribution.

The list of wrong defined and doubtful species is also given here. The bibliography also enables to determine the state of research of the separate sites of the coast, geography of researches, contribution of the scientists into the investigations of algal flora of the area.

For the coast of the Bering Sea, southeast Kamchatka and the Commander Islands 10 areas are given: area I - Mechigmenskaya bay to Chaplina cape, area II - Anadirskiy inlet, area III - Navarina cape to Olyutorskiy cape, area IV - Olyutorskiy inlet, within the limits of geographical frontiers, area V - Korfa inlet and Karaginskiy inlet, within the limits of geographical frontiers, area VI - Ozerniy inlet and Kamchatskiy inlet, within the limits of geographical frontiers, area VII - Kronotzkiiy inlet, within the limits of geographical frontiers, area VIII - Avachinskiy inlet until Bezimyanniy cape on the south, area IX - Bezimyanniy cape to Lopatka cape, and area X - Commander Islands.

The frontiers of these areas are given in Fig. 1. In papers cited in the Bibliography, many areas of seaweed collection are mentioned: capes, small islands, bays *etc.* The exact locations can be determined on the sea navigation maps of large scale only. As far as such information is necessary for the geographical and horological investigations on marine macrophytes and is hard-to-reach at the same time, it is given in Fig. 2.

## SYSTEMATIC LIST OF FLORA

### Division CHLOROPHYTA

#### Class Siphonophyceae

##### Order Siphonales Wille

##### Family Bryopsidaceae Bory

*Derbesia marina* (Lyngb.) Sol.

*Halicystis ovalis* (Lyngb.) Aresch.

##### Family Codiaceae (Trevis.) Zanard.

*Codium ritteri* S. et G.

##### Order Siphonocladales (Blackm. et Tansl.) Oltm.

##### Family Cladophoraceae (Hass.) Cohn.

*Chaetomorpha linum* (Muell.) Kiitz.

*C. melagonium* (Web. et Mohr.) Kiitz.

*Cladophora speciosa* Sakai

*Rhizoclonium implexum* (Dillw.) Kiitz.

*R. riparium* (Roth) Harv.

*R. tortuosum* (Dillw.) Kiitz.

#### Class Chlorophyceae

##### Order Ulotrichales Borzi

##### Family Ulotrichaceae Kiitz.

*Ulothrix flacca* (Dillw.) Thur.

*U. implexa* (Kiitz.) Kiitz.

*U. pseudoflacca* Wille

##### Order Chaetophorales Wille

##### Family Chaetophoraceae Grev.

*Endophyton ramosum* Gardn.

*Entocladia frustrae* (Reinke) Batt.

*E. pterosiphonia* Nagai

*E. viridis* Reinke

*Zygomitus reticulatus* Born, et Flan.

##### Order Acrosiphoniales Jonsson

##### Family Acrosiphoniaceae Jonsson

*Acrosiphonia arcta* (Dillw.) J. Ag.

*A. duriuscula* (Rupr.) Yendo

*A. ochotensis* (Tokida) Vinogr.

*A. saxatilis* (Rupr.) Vinogr.

*Urospora elongata* (Rosenv.) Hagem

*U. penicilliformis* (Roth) Aresch.

*U. vancouveriana* (Tild.) Scagel

*U. wormskjoldii* (Mert.) Rosenv.

##### Order Chlorococcales Marchand *emend.* Pascher

##### Family Endosphaeraceae

*Chlorochytrium inclusum* Kjellm.

*C. schmitzii* Rosenv.

*Codiolum cylindraceum* Foslie

*C. gregarium* Braun

##### Order Ulvales Blackm. et Tansl.

##### Family Monostromataceae Kunieda *ex* Suneson

*Blidingia chadefaudii* (Feldm.) Blid.

*B. minima* (Nag.) Kylin

*B. subsalsa* (Kjellm.) Kornm. et Sahl.

*Monostroma crassidermum* Tokida

*M. grevillei* (Thur.) Wittr.

##### Family Kornmanniaceae Gold, et Cole

*Kornmannia zostericola* (Tild.) Blid.

##### Family Gayraliaceae Vinogr.

*Protomonostroma undulatum* (Wittr.) Vinogr.

##### Family Capsosiphonaceae Chapm.

*Capsosiphon groenlandicus* (J. Ag.) Vinogr.

##### Family Ulvaceae Lamour.

*Enteromorpha procera* Ahlner.

*E. clathrata* (Roth) Grev.

*E. flexuosa* (Wulf. *ex* Roth) J. Ag.

*E. linza* (L.) J. Ag.

*E. prolifera* (O.F. Mtill.) J. Ag.

*E. prolifera* f. *simplex* Vinogr.

*Percursaria percursa* (Ag.) Bory

*Ulva fenestrata* P. et R.

*Ulvaria splendens* Rupr.

##### Order Schizogoniales West.

##### Family Prasiolaceae (Rabenh.) Borzi

*Prasiola borealis* Reed

*Rosenvingiella constricta* (S. et G.) Silva

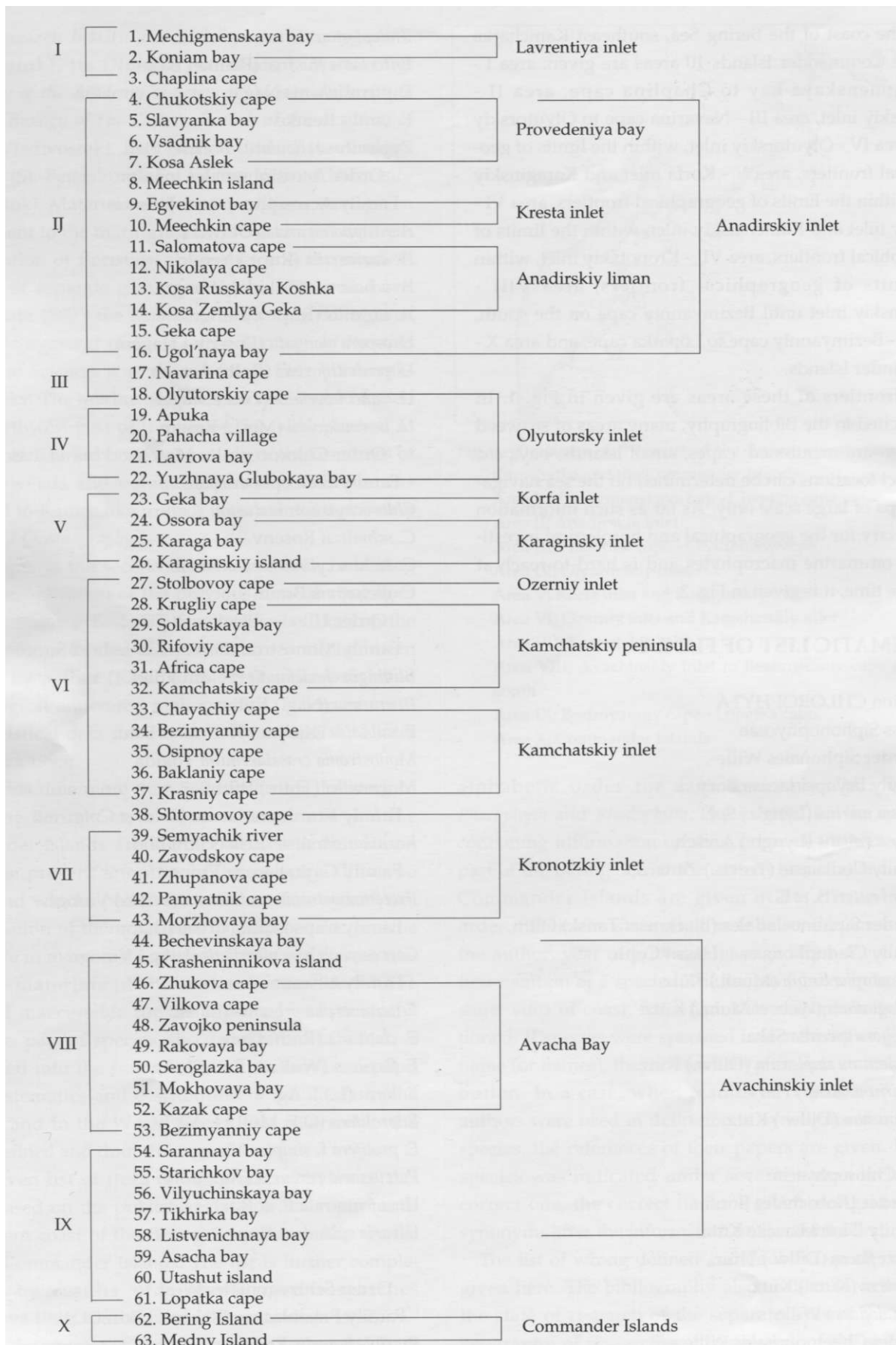


Fig. 2. The areas of the coast of the Bering Sea, the eastern Kamchatka and the Commander Islands.



*Schizogonium murale* Ktitz.

Division PHAEOPHYTA

Class Phaeosporophyceae

Order Ectocarpales Oltm.

Family Ectocarpaceae (Ag.) Kiitz.

*Ectocarpus siliculosus* (Dillw.) Lyngb. f. *arctus* (Kiitz.)

Kuckuck

*E. sensiangustata* Kloczc.

*Hinckia ovata* (Kjellm.) Silva

*Laminariocolax tomentosum* (Farl.) Kylin

*Pylaiella divaricata* Kloczc.

*P. gardneri* Coll.

*P. littoralis* (L.) Kjellm.

*P. varia* Kjellm.

*Streblonema corymbifera* S.etG.

*S. oligosporum* Stroemf.

Order Chordariales S. et G.

Family Elachistaceae Kjellm.

*Elachista tenuis* Yamada

*E.fucicola* Rupr.

*Halothrix lumbricalis* (Kiitz.) Reinke

*Leptonematella fasciculata* (Reinke) Silva

Family Corynophlaeaceae Oltm.

*Petrospongium rugosus* (Okam.) S. et G.

*Leathesia difformis* (L.) Aresch.

*L. nana* S. et G.

Family Chordariaceae (Ag.) Grev.

*Chordaria flagelliformis* (Mull.) Ag.

*C. gracilis* S.etG.

*Eudesme virescens* (Carm.) J. Ag.

*Polycerea borealis* Vinogr.

*Saundersella simplex* (Saund.) Kylin

*Sphaerotrichia divaricata* (Ag.) Kylin

Family Lithodermataceae (Kjellm.) Hauck

*Lithoderma fatiscens* Aresch.

*Pseudolithoderma rosenvingii* (Waern.) Lund

Order Ralfsiales Oltm.

Family Ralfsiaceae (Farl.) Hauck

*Analipus filiformis* (Rupr.) Wynne

*A. japonicus* (Harv.) Wynne

*Ralfsia fungiformis* (Gunn.) S. et G.

*R. verrucosa* (Aresch.) J. Ag.

Order Punctariales Kylin

Family Punctariaceae (Thur.) Kjellm.

*Melanosiphon intestinalis* (Saund.) Wynne

*Punctaria plantaginea* (Roth) Grev.

Family Delamareaceae A. Zin.

*Delamarea attenuata* (Kjellm.) Rosenv.

Family Striariaceae Kjellm.

*Stictyosiphon tortilis* (Rupr.) Reinke

Family Dictyosiphonaceae Kiitz.

*Coilodesme bulligera* Stroemf.

*C.fucicola* (Yendo) Nagai

*Dictyosiphon foeniculaceus* (Huds.) Grev.

*D. hispidus* Kjellm.

*D. hyppuroides* (Lyngb.) Kiitz.

Order Scytosiphonales Feldm.

Family Scytosiphonaceae (Thur.) Foslie

*Petalonia fascia* (Mull.) Kuntze

*P. zosterifolia* (Reinke) Kuntze

*Scytosiphon dotyi* Wynne

*S. lomentaria* (Lyngb.) Link

*Soranthera idvoidea* P. et R.

Order Desmarestiales S. et G.

Family Desmarestiaceae (Thur.) Kjellm.

*Desmarestia intermedia* P. et R.

*D. latifrons* (Rupr.) Kiitz.

*Dichloria viridis* (Mull.) Grev.

Order Laminariales Kylin

Family Chordaceae (Kiitz.) Reinke

*Chorda filum* (L.) Lamour.

Family Laminariaceae (Bory) Rostaf.

*Agarum clathratum* Dumortier

*A. turneri* P. et R.

*Cymathaere triplicata* (P. et R.) J. Ag.

*Laminaria appressirhiza* Petr. et Voz.

*L. bongardiana* P. et R.

*L. complanata* (S. et G.) Setch.

*L. dentigera* Kjellm.

*L. groenlandica* Rosenv.

*L. gurjanovae* A. Zin.

*L. longipes* Bory

*L. solidungula* J. Ag.

*L. yezoensis* Miyabe

*Talassiophyllum clathrus* (Gmel.) P. et R.

Family Lessoniaceae S.etG.

*Macrocystis pirifera* (Turn.) Ag.

*Nereocystis luetkeana* (Mert.) P. et R.

Family Alariaceae S. et G.

*Alaria angusta* Kjellm.

*A.fistulosa* P. et R.

*A. macroptera* (Rupr.) Yendo

*A. marginata* P. et R.

*A. ochotensis* Yendo

Family Arthrothamnaceae Ju. Petr.

*Arthrothamnus bifidus* (Gmel.) J. Ag.

Order Sphacelariales Oltm.

Family Sphacelariaceae Decne.  
*Halopteris dura* (Rupr.) Sinova  
*Sphacelaria arctica* Harv.  
*S. plumosa* Lyngb.

Class Cyclosporophyceae  
Order Fucales Kylin  
Family Fucaceae Ag.  
*Fucus evanescens* Ag.

Division RHODOPHYTA  
Class Bangiophyceae  
Order Erythropeltidales Kylin  
Family Erythropeltidaceae Skuja  
*Erythrocladia irregularis* Rosenv.  
*Erythrothrichia carnea* (Dillw.) J. Ag.  
Order Bangiales Schmitz  
Family Bangiaceae (S. F. Gray) Nag.  
*Bangia fusco-purpurea* (Dillw.) Lyngb.  
*Porphyra abbotiae* Krishn.  
*P. brumalis* Mumf.  
*P. bulbopes* (Yendo) Okam.  
*P. gardneri* (Smith *et* Hollenb.) Hawkes  
*P. kurogii* Lindstrom  
*P. miniata* (Ag.) Ag.  
*P. ochotensis* Nagai  
*P. pseudolinearis* Ueda  
*P. schizophylla* Hollenb.  
*P. tasa* (Yendo) Ueda  
*P. torta* Krishn.  
*P. umbilicalis* (L.) Kiitz. f. *pacifica* Perest.  
*P. variegata* (Kjellm.) Hus

Class Florideophyceae  
Order Acrochaetiales Garb.  
Family Acrochaetiaceae (Hamel.) Fritsch  
*Acrochaetium alariae* (Jonsson) Born.  
*A. arcuatum* (Drew.) Papenf.  
*A. moniliforme* (Rosenv.) Boerg.  
*A. parvulum* (Kylin) Hoyt  
*Audouinella concrescens* (Drew) Dixon  
*A. efflorescens* (J. Ag.) Papenf.  
*A. purpureum* (Lightf.) Woelkerl.  
*Chantransia microscopica* (Nag.) Foslie  
*Colaonema savianum* (Menegh.) Perest.  
Family Rhodophysemataceae Saund. *et* McLachlan  
*Meilodiscus spetsbergensis* (Kjellm.) Saund. *et* McLachlan  
*Rhodophysemma elegans* (Crouan *et* Crouan *ex* J. Ag.)

Dixon  
*R. nagaii* Masuda  
Order Nemaliales Schmitz  
Family Nemaliaceae (Farlow.) De-Toni *et* Levi-Morenos  
*Nemalion vermiculare* Suring.  
Order Bonnemaisoniales Feldm.  
Family Bonnemaisoniaceae Schmitz  
*Pleuroblephariella japonica* (Okam.) Wynne  
Order Hildenbrandtiales Pueschel *et* Cole  
Family Hildenbrandtiaceae (Trev.) Rabenh.  
*Hildenbrandtia rubra* (Sommer.) Menegh.  
*H. occidentalis* S. *et* G.  
Order Corallinales Silva *et* Johansen  
Family Corallinaceae Lamour.  
*Bossiella cretacea* (P. *et* R.) Johansen  
*B. compressa* Kloczc.  
*B. plumosa* (Manza) Silva  
*Clathromorphum circumscriptum* (Stroemf.) Foslie  
*C. compactum* (Kjellm.) Foslie  
*C. loculosum* (Kjellm.) Foslie  
*C. nereostratum* Lebedn.  
*C. reclinatum* (Foslie) Adey  
*Corallina frondescens* P. *et* R.  
*C. officinalis* L.  
*C. pilulifera* P. *et* R.  
*Leptophytum laeve* (Stroemf.) Adey  
*Lithothamnion sonderi* Hauck  
*Phymatolithon calcareum* (Pallas) Adey *et* McKibbin  
*P. lenormandii* (Aresch.) Adey  
*P. purpureum* (P. *et* H. Crouan) Woelkerl. *et* Irvine  
Order Gigartinales Schmitz  
Family Dumontiaceae Schmitz  
*Constantinea rosa-marina* (Gmel.) P. *et* R.  
*C. subulifera* Setch.  
*Dumontia contorta* (Gmel.) Rupr.  
*Neoabbottiella araneosa* (Perest.) Perest.  
*Neodilsea natashae* Lindstrom  
*N. yendoana* Tokida  
*Dilsea socialis* (P. *et* R.) Perest.  
Family Endocliadiaceae Kylin  
*Gloiopeltis furcata* (P. *et* R.) J. Ag.  
Family Kallymeniaceae Kylin  
*Callocollax acicularis* Wynne *et* Heine  
*C. beringensis* Perest.  
*C. platyna* Perest.  
*C. radula* Perest.  
*C. rhynchocarpa* Rupr.  
*Euthora cristata* (L.) J. Ag.

- Family Crossocarpaceae Perest.  
*Beringia castanea* Perest.  
*Crossocarpus lamuticus* Rupr.  
*Cirrucarpus gmelini* (Grun.) Tokida et Masaki  
*C. ruprechtiana* (Sinova) Perest.  
*Hommersandia palmatifolia* (Tokida) Perest.  
*Kallymeniopsis lacera* (Rupr.) Perest.  
*Velatocarpus kurilensis* Perest.  
*V. pustulosus* (P. et R.) Perest.
- Family Choreocolacaceae Sturch.  
*Harveyella mirabilis* (Reinsch.) Schmitz et Reinke
- Family Peyssonneliaceae Zanard. emend. Denizot  
*Peyssonnelia pacifica* Kylin
- Family Cruoriaceae Kylin  
*Cruoria pacifica* Kjellm.
- Family Nemastomataceae Schmitz  
*Schizymenia pacifica* Kylin
- Family Solieriaceae (Harv.) Kylin  
*Opuntiella ornata* (P. et R.) A. Zin.  
*Turnerella mertensiana* (P. et R.) Schmitz
- Family Cystocloniaceae Kiitz.  
*Fimbrifolium spinulosum* (Rupr.) Perest.  
*F. dichotomum* (Lepech.) Hansen subsp. *vepreculum* (Rupr.) Perest.
- Family Gigartinaceae Bory  
*Chondrus platynus* (Ag.) J. Ag.  
*Mazzaella cornucopiae* (P. et R.) Hommersand  
*M. phyllocarpa* (Rupr.) Perest.
- Family Petrocellidaceae Denizot  
*Mastocarpus pacificus* (Kjellm.) Perest. var. *ochotensis* (Rupr.) Kloczc.  
*M. papillatus* (Ag.) Kiitz.  
*M. pacificus* (Kjellm.) Perest. var. *unalaschkensis* (Rupr.) Kloczc.
- Family Phylloporaceae Nag.  
*Coccotylus truncatus* (Pallas) Wynne et Heine
- Order Ahnfeltiales
- Family Ahnfeltiaceae Maggs et Pueshel  
*Ahnfeltia fastigiata* (P. et R.) Makijenko  
*A. plicata* Fries
- Order Palmariales Guiry
- Family Palmariaceae Guiry  
*Devaleraea compressa* (Rupr.) Seliv. et Kloczc.  
*D. microspora* (Rupr.) Seliv. et Kloczc.  
*Halosaccion firmum* (P. et R.) Rupr.  
*H. hydrophorum* (P. et R.) Kiitz.  
*H. minjii* Lee  
*Palmaria marginicrassa* Lee  
*P. stenogona* (Perest.) Perest.
- P. callophyloides* Hawkes et Scagel
- Order Rhodymeniales Schmitz
- Family Rhodymeniaceae Nag.  
*Rhodymenia pertusa* (P. et R.) J. Ag.
- Order Ceramiales Oltm.
- Family Ceramiaceae S. F. Gray  
*Antithamnionella nagaii* Perest.  
*Callithamnion acutum* Kylin  
*C. pikeanum* Harv.  
*Ceramium cimbricum* Peters.  
*C. kondoi* Yendo
- Irtugovia shimamurana* (Nagai) Perest.  
*Microcladia borealis* Rupr.  
*Neoptilota asplenioides* (Turn.) Kylin  
*Pleonosporium kobayashi* Okam.  
*P. vancouverlanum* (J. Ag.) J. Ag.  
*Ptilota filicina* J. Ag.  
*P. pectinata* (Gunn.) Kjellm.  
*P. plumosa* (L.) J. Ag.  
*Scagelia breviarticulata* Perest.  
*S. pylaisaei* (Mont.) Wynne  
*Tokidea serrata* (Wynne) Lindstrom et Wynne
- Family Delesseriaceae (Nageli) Schmitz  
*Congregatocarpus pacifica* (Yamada) Mikami  
*Hidophyllum yezoense* (Yamada et Tokida) A. Zin.  
*Hymenena ruthenica* (P. et R.) A. Zin.  
*Laingia aleutica* Wynne  
*Membranoptera beringiana* (Rupr.) A. Zin.  
*M. dimorpha* Gardn.  
*M. multiramosa* Gardn.  
*M. serrata* (P. et R.) A. Zin.  
*M. spinulosa* (Rupr.) A. Zin.  
*Mikamiella ruprechtiana* (A. Zin.) Wynne  
*Myriogramme kjellmanianum* A. Zin.  
*Neohyppophyllum middendorphii* (Rupr.) Wynne  
*Nienburgia prolifera* Kylin  
*Pantoneura baerii* (Rupr.) Kylin  
*P. juregensii* (J. Ag.) Kylin  
*Phycodrys amchitkensis* Wynne  
*P. riggii* Gardn.  
*P. serratiloba* (Rupr.) A. Zin  
*P. vinogradovae* Perest. et Guss.  
*Polyneura latissima* (Harv.) Kylin  
*Tokidadendron kurilensis* (Rupr.) Perest.  
*Yendonia commandorensis* (Sinova) A. Zin.  
*Y. crassifolia* (Rupr.) Kylin
- Family Rhodomelaceae (Reichb.) Harv.  
*Beringiella labiosa* Wynne  
*Neorhodomela aculeata* (Perest.) Masuda



*N. lanx* (Turn.) Masuda  
*N. munita* (Perest.) Perest.  
*N. oregona* (Doty) Masuda  
*Odonthalia annae* Perest.  
*O. corymbifera* (Gmel.) J. Ag.  
*O. dentata* (L.) Lyngb.  
*O. floccosa* (Rupr.) J. Ag.  
*O. kamtschatica* (Rupr.) J. Ag.  
*O. kawabatae* Masuda  
*O. ochotensis* (Rupr.) J. Ag.  
*O. setacea* (Rupr.) Perest.  
*Polysiphonia japonica* Harv.  
*P. morrozvii* Harv.  
*P. urceolata* (Lightf.) Grev.  
*Pterosiphonia bipinnata* (P. et R.) Falkenb.  
*P. hamata* Sinova  
*P. pinnata* (Roth) Falkenb.  
*P. sp.*  
*Rhodomela pinnata* Perest.  
*R. sibirica* A. Zin. et Vinogr.  
*R. tenuissima* (Rupr.) Kjellm.  
*Tayloriella abyssalis* Wynne

#### Species of nondetermined systematic position

*Lukinia dissecta* Perest.  
*Reingardia laminariicola* Perest.

## ANNOTATED BIBLIOGRAPHIC LIST OF MARINE MACROALGAL FLORA

### Division CHLOROPHYTA - The Green Algae

#### *Acrosiphonia arcta* (Dillw.) J. Ag.

Kjellman 1889, p. 8, (X) as *Spongomorpha arcta* (Dillw.) Kiitz.; Voronihin 1914, p. 484, (VIII) as *Cladophora arctica* Dillw.; Savich 1914, p. 460, (VIII) as *C. arctica*; Sinova 1933, p. 13, (VIII), 1940, p. 182, (X), 1952, p. 85, (I), 1954a, p. 369, (VII-VIII), in all cases as *S. arcta*; Kardakova-Prejenzoffa 1938, p. 99, (X) as *S. arcta* and as *S. hystrix* Stroemf., cited on Sinova 1941; Spassky 1961, p. 292, (VII) as *S. arcta*; Rudjakova 1967, p. 5, (Kamchatka); Vinogradova 1978, p. 5, (IV), 1979, p. 86, (X, southeast Kamchatka, Bering Sea); Tarakanova 1978, p. 71, (X); Vinogradova *et al.* 1978, p. 151, (II, IV); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 85, (VIII), 1989, p. 93, (VIII); Klochkova and Berezovskaja 1997, supplement, (I, II, IV, VI-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

#### *Acrosiphonia duriuscula* (Rupr.) Yendo

Sinova 1940, p. 182, (X) as *Spongomorpha spinescens* Kiitz. pr. p., cited on Vinogradova 1979, 1954, p. 370, (VII) and as *S. duriuscula* (Rupr.) Collins; Tokida 1954, p. 43, (X) as *S. duriuscula* and as *S. mertensii* (Rupr.) S. et G.; Spassky 1961, p. 292, (VII) as *S. duriuscula*; Klochkova 1976, p. 21, (VI) as *Acrosiphonia sonderi* (Kiitz.) Kornm.; Vinogradova 1979, p. 83, (X, southeast Kamchatka, Bering Sea); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea) as *A. duriuscula* and as *A. mertensii*; Selivanova 1988a, p. 85, (VIII), 1989, p. 93, (VIII); Mihajlov 1989, p. 86, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X); Selivanova and Zhigadlova 1997a, p. 4, (X), as *S. duriuscula*-, Klochkova and Berezovskaja 1997, supplement, (IV-VIII, X).

#### *Acrosiphonia ochotensis* (Tokida) Vinogr.

Sinova 1940, p. 182, (X) as *Spongomorpha spinescens* Kiitz. pr. p., cited on Vinogradova 1979, and as *S. lanosa* (Roth) Kiitz., cited on Vinogradova 1979; Vinogradova 1979, p. 93, (X); Gusarova and Semkin 1986, p. 785, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997a, p. 4, (X).

#### *Acrosiphonia saxatilis* (Rupr.) Vinogr.

Voronihin 1914, p. 483, (VIII) as *Cladophora saxatilis* Rupr.; Savich 1914, p. 457, (VIII) as *C. saxatilis*; Sinova 1933, p. 13, (VIII) as *C. saxatilis*, 1940, p. 182, (X), 1954, p. 370, (VIII) as *Spongomorpha saxatilis* (Rupr.) Collins; Nagai 1940, p. 33, (Kamchatka) as *S. saxatilis* and as *S. mertensii* (Rupr.) S. et G.; Klochkova and Suhoveeva 1987, p. 75, (IV); Suhoveeva and Klochkova 1990, p. 43, (IV); Klochkova and Berezovskaja 1997, supplement, (VI-X).

#### *Blidingia chadefaudii* (Feldm.) Blid.

Sinova 1933, p. 10, (VIII), 1954, p. 368, (VIII) as *Enteromorpha micrococca* Kiitz., cited on Vinogradova 1974; Vinogradova 1974, p. 53, (VIII), 1978, p. 4, (V), 1979, p. 103, (southeast Kamchatka); Klochkova 1976, p. 21, (VI), 1977, p. 25, (VII); Vinogradova *et al.* 1978, p. 150, (V-VIII); Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (IV-IX).

#### *Blidingia minima* (Nag.) Kylin

Tokida 1954, p. 50, (Kamchatka, Bering Sea) as *Enteromorpha nana* (Somm.) Sjost.; Vinogradova 1973a, p.

34, (II), 1974, p. 50, (IV), 1978, p. 4, (IV-V), 1979, p. 102, (X, southeast Kamchatka, Bering Sea); Vinogradova and Perestenko 1978, p. 73, (X, Bering Sea); Vinogradova *et al.* 1978, p. 150, (II, IV-V, X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 23, (VII); Selivanova 1988a, p. 86, (VIII), 1989, p. 94, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-V, VII-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Blidingia subsalsa* (Kjellm.) Kornm. *et* Sahl.

Nagai 1940 p. 11, (Kamchatka) as *Enteromorpha micrococci* Kiitz.; Vinogradova 1973, p. 34, (II), 1974, p. 51, (II), 1978, p. 4, (IV), 1979, p. 103, (Bering Sea); Vinogradova *et al.* 1978, p. 150, (II, IV), in all cases as *B. minima* f. *subsalsa* (Kjellm.) Vinogr.; Klochkova and Berezovskaja 1997, supplement, (II, IV, VIII, X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Capsosiphon groenlandicus* (J. Ag.) Vinogr.

Kardakova-Prejzntzoffa 1938, p. 99, (X) as *Enteromorpha compressa* (L.) Grev., cited on Vinogradova 1974; Sinova 1940, p. 152, (X) as *Monostroma groenlandicum* J. Ag., cited on Vinogradova 1974; Spassky 1961, p. 292, (VII) as *E. intestinalis* (L.) Link, cited on Vinogradova 1974; Vinogradova 1973a, p. 34, (I, II), 1974, p. 60, (II, VII, X), 1978, p. 4, (IV), 1979, p. 106, (X, southeast Kamchatka, Bering Sea); Klochkova 1976, p. 21, (VI); 1977, p. 26, (VIII); Vinogradova *et al.* 1978, p. 150, (I-II, IV, VI - VIII, X); Kussakin and Ivanova 1978, p. 21, (I-II); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Chaetomorpha linum* (Miill.) Kiitz.

Sinova 1954, p. 369, (VII-VIII); Vinogradova 1979, p. 43, (IX); Gusarova and Semkin 1986, p. 784, (IX); Suhoveeva and Klochkova 1990, p. 42, (IV); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Chaetomorpha melagottium* (Web. *et* Mohr.) Kiitz.

Kjellman 1889, p. 8, (X); Kardakova-Prejzntzoffa 1938, p. 99, (X); Sinova 1940, p. 183, (X) as *C. melagonium*, as *C. spiralis* Okam. and as *C. torta* f. *moniliformis* Sinova pr. p., cited on Vinogradova 1979; Nagai 1940, p. 30, (Bering Sea); Ushakov 1953, p. 320, (IX-X, Bering Sea); Spassky 1961, p. 292, (VII) as *C. spiralis*; Klochkova 1977, p. 26,

(VII); Vinogradova 1979, p. 44, (X, Bering Sea); Vinogradova *et al.* 1978, p. 151, (V, VII-VIII); Kussakin and Ivanova 1978, p. 30, (II); Gusarova and Semkin 1986, p. 784, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II-X).

*Chlorochytrium inclusum* Kjellm.

Sinova 1940, p. 186, (X), 1954, p. 371, (VII-VIII); Spassky 1961, p. 292, (VII-VIII); Vinogradova 1973a, p. 35, (II), 1979, p. 52, (X, Bering Sea); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 84, (VIII), 1989, p. 93, (VIII); Suhoveeva and Klochkova 1990, p. 43, (VI); Klochkova and Berezovskaja 1997, supplement, (II, VI-X); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Chlorochytrium schmitzii* Rosenv.

Sinova 1933, p. 13, (VIII), 1940, p. 186, (X), 1954, p. 371, (VIII); Vinogradova 1979, p. 53, (VIII, X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VIII, X).

*Cladophora speciosa* Sakai

Sinova 1940, p. 182, (X) as *C. crispata* var. *virescens* Kiitz., 1954, p. 369, (VII-VIII) as *C. fracta* (Dillw.) Kiitz., cited on Vinogradova 1979; Spassky 1961, p. 292, (VII) as *C. fracta*; Klochkova 1976, p. 22, (VI); Vinogradova 1978, p. 5, (IV); 1979, p. 34, (VI, X); Vinogradova *et al.* 1978, p. 151, (II); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 23, (VII); Mihajlov 1989, p. 87, (VIII); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Codiolum cylindraceum* Foslie

Kardakova-Prejzntzoffa 1938, p. 98, (X); Sinova 1940, p. 186, (X); Klochkova and Berezovskaja 1997, supplement, (VIII, X).

*Codiolum gregarium* Braun

Kardakova-Prejzntzoffa 1938, p. 98, (X); Sinova 1940, p. 187, (X), 1954, p. 372, (VIII); Vinogradova 1979, p. 50, (X, Bering Sea); Gusarova and Semkin 1986, p. 785, (X, Bering Sea); Gusarova 1987, p. 23, (VIII); Ivanjushina *et al.* 1991, p. 164, (X); Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Codium Ritteri* **S. et G.**

Setchell and Gardner 1920, p. 169, (X); Gurjanova 1935, p. 70, (X); Kardakova-Prejzntzoffa 1938, p. 100, (X) as *C. Ritteri* and as *C. adhaerens* (Carb.) Ag.; Sinova 1940, p. 185, (X) as *C. adhaerens*, cited on Vinogradova 1979; Zauer 1977, p. 71, (X) as *C. mammosum* Harv., cited on Vinogradova 1979; Vinogradova and Perestenko 1978, p. 74, (X); Vinogradova *et al.* 1978, p. 151, (X); Vinogradova 1979, p. 22, (X); Gusarova and Semkin 1986, p. 784, (X); Ivanjushina *et al.* 1991, p. 162, (X); Oshurkov *et al.* 1991, p. 181, (X); Klochkova 1993, p. 152, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Derbesia marina* (**Lyngb.**) **Sol.**

Klochkova 1976, p. 21, (VI); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Endophyton ramosum* **Gardn.**

Vinogradova 1979, p. 64, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (IV).

*Enteromorpha clathrata* (**Roth**) **Grev.**

Sinova 1933, p. 10, (VIII), 1940, p. 178, (X); Nagai 1940, p. 14, (X, Kamchatka); Vinogradova 1978, p. 4, (V); Vinogradova *et al.* 1978, p. 151, (I-II, IV-VIII, X); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Enteromorpha flexuosa* (**Wulf. ex Roth**) **J. Ag.**

Savich 1914, p. 457, (VIII) as *E. compressa* Grev. pr. p., cited on Vinogradova 1974; Vinogradova 1973a, p. 34, (II), 1974, p. 108, (VIII), 1978, p. 4, (V), 1979, p. 115, (southeast Kamchatka); Vinogradova *et al.* 1978, p. 151, (VII-VIII); Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea); Selivanova 1989, p. 94, (VIII) as *E. blexnosa*; Klochkova and Berezovskaja 1997, supplement, (II, V, VII-VIII); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Enteromorpha linza* (**L.**) **J. Ag.**

Kjellman 1889, p. 52, (X); Voronihin 1914, p. 482, (VIII) as *E. compressa* Grev., cited on Vinogradova 1974; Savich 1914, p. 466, (VIII) as *E. compressa*, cited on Vinogradova 1974; Sinova 1933, p. 10, (VIII), 1940 p. 177, (X); Kardakova-Prejzntzoffa 1938, p. 98, (X); Nagai 1940, p. 7, (X, Kamchatka) as *Ulva linza* L.; Tokida 1954, p. 55, (Kamchatka); Vinogradova 1974, p. 90, (II, IV-V, VII-VIII,

X), 1978, p. 4, (IV-V), 1979, p. 111, (X, southeast Kamchatka, Bering Sea); Klochkova 1976, p. 21, (VI); Vinogradova *et al.* 1978, p. 150, (II, IV-V, VII-VIII, X); Tarakanova 1978, p. 73, (X); Demeshkina 1983, p. 425, (VII); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 23, (VII); Mihajlov 1989, p. 84, (VIII); Selivanova 1989, p. 94, (VII); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Enteromorpha procera* **Ahner.**

Vinogradova 1973a, p. 34, (II), 1974, p. 100, (II), 1979, p. 114, (Bering Sea); Vinogradova *et al.* 1978, p. 151, (IV); Gusarova and Semkin 1986, p. 785, (Bering Sea); Gusarova 1987, p. 24, (VII). The species was cited as *E. ahneriana* Blid. in all cases.

Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Enteromorpha prolifera* (**O.F. Miill.**) **J. Ag.**

Savich 1914, p. 456, (VIII) as *E. prolifera* and as *E. intestinalis* (L.) Link, cited on Vinogradova 1974; Sinova 1933, p. 9, 10, (VIII) as *E. intesti?ialis* and as *E. crinita* (Roth) J. Ag., cited on Vinogradova 1974, 1940, p. 178, (X) as *E. fascia* P. et R., cited on Vinogradova 1974; Vinogradova 1973a, p. 34, (II), 1974, p. 94, (II, IV, VII-VIII, X), 1978, p. 5, (IV-V), 1979, p. 112, (X, southeast Kamchatka, Bering Sea); Klochkova 1976, p. 21, (VI); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Vinogradova *et al.* 1978, p. 151, (IV-V); Kussakin and Ivanova 1978, p. 26, (II); Demeshkina 1983, p. 425, (VII); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 23, (VII); Selivanova 1989, p. 94, (VIII); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Enteromorpha prolifera* **f. simplex** **Vinogr.**

Vinogradova 1973a, p. 34, (II), 1974, p. 99, (II, IV, VII-VIII, X), 1979, p. 112, (IX-X, Bering Sea); Vinogradova *et al.* 1978, p. 151, (II, IV, VII-VIII); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 24, (VII).

*Entocladia flustrae* (**Reinke**) **Batt.**

Vinogradova 1978, p. 4, (IV), 1979, p. 67, (Bering Sea); Vinogradova *et al.* 1978, p. 150, (IV); Gusarova and Semkin 1986, p. 785, (Bering Sea); Suhoveeva and Klochkova 1990, p. 43, (VI) as *Epicladia flustrae* Reinke;

Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Entocladia pterosiphonia* **Nagai**

Vinogradova 1979, p. 67, (X); Vinogradova *et al.* 1978, p. 150, (X); Gusarova and Semkin 1986, p. 785, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Entocladia viridis* **Reinke**

Vinogradova 1973a, p. 33, (II), 1979, p. 66, (Bering Sea); Vinogradova *et al.* 1978, p. 150, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II, VI-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Halicystis ovalis* **(Lyngb.) Aresch.**

Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1993, p. 67, (X).

*Kornmannia zostericola* **(Tild.) Blid.**

Sinova 1933, p. 13, (VIII) as *Prasiola fluviatilis* (Somm.) Aresch., cited on Vinogradova 1974; Vinogradova 1974, p. 47, (VIII), 1979, p. 101, (southeast Kamchatka); Klochkova 1976, p. 21, (VI), 1977, p. 25, (VII); Vinogradova and Perestenko 1978, p. 74, (X); Vinogradova *et al.* 1978, p. 150, (VI-VIII, X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka); Selivanova 1988a, p. 85, (VIII), 1989, p. 93, (VIII); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997a, p. 5, (X) as *K. leptoderma* (Kjellm.) Blid.

*Monostroma crassidermum* **Tokida**

Vinogradova 1974, p. 44, (III), 1978, p. 4, (IV-V), 1979, p. 99, (Bering Sea); Klochkova 1976, p. 21, (VI); Vinogradova *et al.* 1978, p. 150, (IV-VI); Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea); Selivanova, 1989, p. 93, (VIII); Klochkova and Berezovskaja 1997, supplement, (III-IX).

*Monostroma grevillei* **(Thur.) Wittr.**

Voronihin 1914, p. 478, (VIII); Savich 1914, p. 465, (VIII); Sinova 1933, p. 11, 12, (VIII) as *M. grevillei* and as *M. arcticum* Wittr., cited on Vinogradova 1979, 1940, p. 179, (X) as *M. grevillei* and as *M. crispatum* Kjellm., 1954, p. 368, (VIII) as *M. arcticum*; Kardakova-Prejntzoffa 1938, p. 98, (X); Nagai 1940, p. 17, (Kamchatka) as *M. grevillei* and as *M. arcticum*; Spassky 1961, p. 292, (VII) as *M. arcticum*-, Rudjakova 1967, p. 5, (Kamchatka); Tolstikova

1971, p. 62, (II), 1973, p. 30, (II), 1974, p. 148, (II); Vinogradova 1973a, p. 34, (II), 1974, p. 39, (II, VIII, X), 1978, p. 4, (V), 1979, p. 97, (X, southeast Kamchatka, Bering Sea); Klochkova 1976, p. 21, (VI); Vinogradova *et al.* 1978, p. 150, (II, VI-VIII, X); Kussakin and Ivanova 1978, p. 19, (II), 1995, p. 101, (X); Tarakanova 1978, p. 70, (X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 23, (VII); Selivanova 1988a, p. 85, (VIII), 1989, p. 93, (VIII); Klochkova and Berezovskaja 1997, supplement, (II, V-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Percursaria percursa* **(Ag.) Bory**

Vinogradova 1973a, p. 34, (II), 1974, p. 63, (II), 1978, p. 4, (IV), 1979, p. 108, (X, Bering Sea); Vinogradova *et al.* 1978, p. 151, (IV, X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 23, (VII); Klochkova and Berezovskaja 1997, supplement, (II, IV, VII-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Prasiola borealis* **Reed**

Gurjanova 1935, p. 68, (X); Kardakova-Prejntzoffa 1938, p. 99, (X) as *P. borealis* and as *P. crispa* (Lightf.) Ag.; Sinova 1940, p. 180, (X) as *P. borealis* and as *P. crispa*, cited on Vinogradova 1979; Vinogradova 1973a, p. 36, (II), 1979, p. 118, (X, Bering Sea); Vinogradova and Perestenko 1978, p. 74, (X); Vinogradova *et al.* 1978, p. 151, (II, X); Gusarova and Semkin 1986, p. 785, (X, Bering Sea); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (II, VII-X) as *P. borealis* and as *P. crispa*; Selivanova and Zhigadlova 1997a, p. 5, (X).

*Protomonostroma undulatum* **(Wittr.) Vinogr.**

Klochkova 1976, p. 21, (VI); Vinogradova and Perestenko 1978, p. 74, (X); Vinogradova *et al.* 1978, p. 150, (VI, X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VI-X).

*Rhizoclonium implexutum* **(Dillw.) Kiitz.**

Vinogradova 1978, p. 5, (IV-V), 1979, p. 40, (Bering Sea); Vinogradova *et al.* 1978, p. 151, (II, IV-VIII); Gusarova and Semkin 1986, p. 784, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II, IV-IX).

*Rhizoclonium riparium* (Roth) Harv.

Sinova 1940, p. 185, (X), 1954, p. 370, (VII); Spassky 1961, p. 292, (VII); Vinogradova 1973a, p. 35, (II), 1978, p. 5, (IV), 1979, p. 40, (X, southeast Kamchatka, Bering Sea); Vinogradova *et al.* 1978, p. 151, (IV); Kussakin and Ivanova 1978, p. 26, (II); Gusarova and Semkin 1986, p. 784, (X, Bering Sea); Gusarova 1987, p. 23, (VII); Klochkova and Berezovskaja 1997, supplement, (II, IV-X); Selivanova and Zhigadlova 1997a, p. 3, (X).

*Rhizoclonium tortuosum* (Dillw.) Kiitz.

Kjellman 1889, p. 55, (X); Sinova 1940, p. 183, 184 (X) as *Chaetomorpha tortuosa* (Dillw.) Kiitz. and as *C. cannabina* (Aresch.) Kjellm.; Tolstikova 1971, p. 62, (II), 1973, p. 29, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 35, (II), 1978, p. 5, (IV-V), 1979, p. 42, (X, Bering Sea); Klochkova 1977, p. 26, (VII-VIII); Vinogradova *et al.* 1978, p. 151, (IV, VI-VIII, X); Kussakin and Ivanova 1978, p. 24, (II); Tarakanova 1978, p. 67, (X); Gusarova and Semkin 1986, p. 784, (X, southeast Kamchatka, Bering Sea); Selivanova 1989, p. 93, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X). Species was cited as *C. cannabina* in all cases.

Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997a, p. 3, (X) as *Chaetomorpha ligustica* (Kiitz.) Kiitz.

*Rosenvingiella constricta* (S. et G.) Silva

Vinogradova 1979, p. 122, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (IV, VIII).

*Schizogonium tnurale* Kiitz.

Vinogradova 1979, p. 123, (X); Gusarova and Semkin 1986, p. 785, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Ulothrix flacca* (Dillw.) Thur.

Rudjakova 1967, p. 5, (Kamchatka); Tolstikova 1971, p. 62, (II), 1973, p. 28, (II), 1974, p. 148, (II); Vinogradova 1973a, p. 33, (II), 1979, p. 56, (Bering Sea); Vinogradova *et al.* 1978, p. 150, (II); Kussakin and Ivanova 1978, p. 19, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Suhoveeva and Klochkova 1990, p. 43, (VI); Klochkova and Berezovskaja 1997, supplement, (II, VI-X); Selivanova and Zhigadlova 1993, p. 67, (X) as *U. pseudo-flacca* Wille 1997, p. 4, (X).

*Ulothrix implexa* (Kiitz.) Kiitz.

Vinogradova 1973a, p. 33, (I-II), 1978, p. 4, (IV), 1979, p. 55, (Bering Sea); Vinogradova *et al.* 1978, p. 150, (I-II, IV); Kussakin and Ivanova 1978, p. 33, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I, II, IV, V, VII, VIII).

*Ulothrix pseudoflacca* Wille

Tolstikova 1971, p. 62, (II), 1973, p. 28, (II), 1974, p. 148, (II); Vinogradova 1973a, p. 33, (I-II), 1978, p. 4, (IV), 1979, p. 56, (Bering Sea); Klochkova 1986, p. 21, (VI), 1977, p. 24, (VII-VIII); Vinogradova *et al.* 1978, p. 150, (I-II, IV, VI-VIII); Kussakin and Ivanova 1978, p. 33, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Gusarova 1987, p. 23, (VII); Selivanova 1988a, p. 85, (VIII), 1989, p. 93, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-VIII).

*Ulva fenestrata* P. et R.

Kjellman 1889, p. 53, (X) as *U. rigida* Ag.; Voronihin 1914, p. 480, (VII-VIII) as *U. lactuca* L.; Savich 1914, p. 454, (VIII) as *U. lactuca* f. *latissima* (L.) Le Jol.; Arwidsson 1932, p. 150, (Kamchatka); Sinova 1933, p. 12, (VIII) as *U. lactuca* f. *latissima* and as *U. lactuca* f. *rigida* (Ag.) Le Jol., 1940, p. 178, (X) as *U. fenestrata* and as *U. lactuca*, 1952, p. 84, (I) as *U. lactuca* f. *rigida* (Ag.) Le Jol., 1954, p. 368, (VII-VIII) as *U. lactuca*; Kardakova-Prejntzoffa 1938, p. 98, (X) as *U. lactuca*; Nagai 1940, p. 8, (Kamchatka); Ushakov 1953, p. 320, (X, southeast Kamchatka) as *U. lactuca*; Spassky 1961, p. 292, (VII-VIII) as *U. lactuca* f. *latissima* and as *U. lactuca* f. *rigida*; Blinova and Gusarova 1971, p. 142, (IX); Vinogradova 1973a, p. 35, (I-II), 1974, p. 70, (I-II, V, VII-VIII, X), 1978, p. 5, (IV-V), 1979, p. 108, (southeast Kamchatka, Bering Sea); Tolstikova 1973, p. 19, (II), 1974, p. 148, (II); Klochkova 1976, p. 21, (VI); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Vinogradova *et al.* 1978, p. 151, (I-II, IV-VIII, X); Kussakin and Ivanova 1978, p. 17, (I-II), 1995, p. 101, (X); Tarakanova 1978, p. 67, (X); Kizevetter *et al.* 1981, p. 94, (Bering Sea); Mihajlov and Blinov 1981, p. 31, (Bering Sea); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka); Selivanova 1988a, p. 86, (VIII), 1989, p. 94, (VIII); Mihajlov 1989, p. 84, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Ulvaria splendens* Rupr.

Kjellman 1889, p. 54, (X) as *Monostroma splendens* (P. et

R.) Wittr. and as *M. fuscum* Wittr.; Voronihin 1914, p. 479, (VII-VIII) as *M. fuscum* var. *splendens* Rosenv.; Savich 1914, p. 454, (VIII) as *M. fuscum* (P. et R.) Wittr.; Sinova 1933, p. 11, (VIII), 1940, p. 179, (X) as *M. fuscum* and as *M. splendens* (Rupr.) Wittr.; Kardakova-Prejzntzoffa 1938, p. 98, (X) as *M. crepidium* Farl., cited on Sinova 1941; Nagai 1940, p. 21, (X, Kamchatka) as *M. fuscum* var. *splendens*; Ushakov 1953, p. 320, (X, Bering Sea) as *M. fuscum* and as *M. splendens*; Tokida 1954, p. 64, (Kamchatka) as *M. fuscum*; Vinogradova 1967, p. 115, (I-VIII) as *Ulvaria fusca* (P. et R.) Rupr., 1973a, p. 35, (II), 1974, p. 77, (II, IV, VII-VIII, X), 1978, p. 5, (IV), 1979, p. 109, (X, southeast Kamchatka, Bering Sea); Rudjakova 1967, p. 5, (Kamchatka); Blinova and Gusarova 1971, p. 142, (IX) as *Ulva fusca* Rupr.; Tolstikova 1971, p. 62, (II), 1873, p. 19, (II), 1974, p. 148, (II); Klochkova 1976, p. 21, (VI); Vinogradova *et al.* 1978, p. 151, (I-II, IV, VI-VIII); Kussakin and Ivanova 1978, p. 20, (II), 1995, p. 101, (X); Tarakanova 1978, p. 68, (X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 86, (VIII), 1989, p. 94, (VIII); Mihajlov 1989, p. 87, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997a, p. 5, (X).

*Urospora elongata* (Rosenv.) Hagem

Vinogradova 1979, p. 79, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Gusarova 1987, p. 23, (VII); Klochkova and Berezovskaja 1997, supplement, (IV, VII).

*Urospora penicilliformis* (Roth) Aresch.

Kardakova-Prejzntzoffa 1938, p. 99, (X); Sinova 1940, p. 185, (X); Ushakov 1953, p. 320, (IX-X, Bering Sea); Rudjakova 1967, p. 5, (Kamchatka); Tolstikova 1971, p. 62, (II), 1973, p. 28, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 35, (I-II), 1978, p. 5, (IV-V), 1979, p. 78, (X, Bering Sea); Klochkova 1976, p. 21, (VI), 1977, p. 26, (VII-VIII); Vinogradova and Perestenko 1978, p. 73, (X, Bering Sea); Vinogradova *et al.* 1978, p. 151, (V); Kussakin and Ivanova 1978, p. 15, (II); Tarakanova 1978, p. 64, (X); Gusarova and Semkin 1986, p. 785, (X, Bering Sea); Gusarova 1987, p. 23, (VII); Selivanova 1988a, p. 85, (VIII), 1989, p. 93, (VIII); Ivanjushina *et al.* 1991, p. 164, (X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Urospora vancouveriana* (Tild.) Scagel

Sinova 1940, p. 184, (X) as *Chaetomorpha torta* f. *moniliformis* Sinova pr. p., and as *C. spiralis* f. *recta* Sinova, cited

on Vinogradova 1979, 1954, p. 369, (VII-VIII) as *C. spiralis* Okam.; Vinogradova 1979, p. 81, (X); Gusarova and Semkin 1986, p. 785, (X); Klochkova 1993, p. 54, (VII, VIII, X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Urospora wormskjoldii* (Mert.) Rosenv.

Tolstikova 1971, p. 62, (II), 1973, p. 19, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 35, (I-II), 1978, p. 5, (IV), 1979, p. 79, (X, Bering Sea); Klochkova 1976, p. 21, (VI), 1977, p. 27, (VII-VIII); Vinogradova *et al.* 1978, p. 151, (II, IV, VI-VIII, X); Kussakin and Ivanova 1978, p. 36, (I), 1995, p. 101, (X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997a, p. 4, (X).

*Zygomitus reticulatus* Born, et Flan.

Vinogradova 1973a, p. 33, (II) as *Entocladia codicola* S. et G., cited on Vinogradova 1979; Vinogradova *et al.* 1978, p. 150, (II); Vinogradova 1979, p. 69, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I, VIII).

**Division PHAEOPHYTA - The Brown Algae**

*Agarum clathratum* Dumortier

Kjellman 1889, p. 7, (I) as *A. turneri* P. et R., cited on Lindstrom 1977; Setchell 1899, p. 592, (I) as *A. turneri*, cited on Lindstrom 1977; Voronihin 1914, p. 494, (VII-VIII) as *A. turneri*; Savich 1914, p. 454, (VIII) as *A. turneri*; Arwidsson 1932, p. 150, (VIII) as *A. cribrosum* Bory; Sinova 1933, p. 26, (VIII) as *A. turneri* and as *A. gmelini* Mert., 1940, p. 195, (X) as *A. turneri* and as *A. pertusum* (Mert.) P. et R., 1952, p. 90, (I) as *A. turneri* and as *A. pertusum*, 1954, p. 373, (VII) as *A. turneri*, as *A. pertusum* and as *A. gmelini*, cited on Petrov 1974; Kongiser 1933, p. 117, (V) as *A. cribrosum*; Gayl 1936, p. 31, (V, VII, X) as *A. turneri*, (IV-V) and as *A. gmelini*; Kardakova-Prejzntzoffa 1938, p. 102, (X) as *A. turneri*.

Nagai 1940, p. 94, (Kamchatka, Bering Sea); Ushakov 1953, p. 320, (IX-X, Bering Sea); Tokida 1954, p. 121, (Kamchatka, Bering Sea); Blinova and Gusarova 1971, p. 142, (IX); Vozzhinskaja *et al.* 1971, p. 14, (Bering Sea); Tolstikova 1971, p. 63, (II), 1973, p. 19, (II), 1974, p. 150, (II); Vinogradova 1973a, p. 40, (I-II), 1978, p. 7, (IV-V); Petrov 1973a, p. 124, (I-X), 1975, p. 46, (I-X); Klochkova 1976, p. 23, (VI); Blinova 1979, p. 184, (Bering Sea); Kizevetter *et al.* 1981, p. 21, (Bering Sea); Gusarova 1982,



p. 32, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V); Selivanova 1987a, p. 77, (VIII), 1987b, p. 118, (X), 1988a, p. 88, (VIII), 1989, p. 95, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 40, (VI); Ivanjushina *et al.* 1991, p. 158, (X); Oshurkov *et al.* 1991, p. 180, (X); Oshurkov and Ivanjushina 1993, p. 99, (X); Zorina *et al.* 1993, p. 879, (X); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (1-X). Species was cited as *A. cribrosum*.

Selivanova and Zhigadlova 1997b, p. 11, (X).

#### *Agariim turneri* P. et R

Klochkova and Berezovskaja 1997, supplement, (VIII).

Notes: *Agarum turneri* has been regarded as synonym of *A. clathratum* by most phycologists, but my collections are grouped into two different forms. Each form is not ecological or local variation, but represents its own distinctiveness. On this basis I keep the independence of the species *A. turneri*.

#### *Alaria angusta* Kjellm.

Kjellman 1889, p. 36, 39, 40, (X) as *A. taeniata* Kjellm., as *A. lanceolata* Kjellm., and as *A. laticosta* Kjellm., cited on Petrov 1973b; Sinova 1940, p. 193, (X); Nagai 1940, p. 114, (X); Widdowson 1971, p. 25, (X); Petrov 1973a, p. 124, (VIII, X), 1973b, p. 56, (X, Kamchatka), 1975, p. 46, (VII-X); Klochkova 1976, p. 23, (VI); Vinogradova *et al.* 1978, p. 153, (VI-VIII, X); Vinogradova and Perestenko 1978, p. 73, (X); Tarakanova 1978, p. 72, (X); Kizevetter *et al.* 1981, p. 20, (Kamchatka); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Suhoveeva and Sarochan 1986, p. 81, (V, X); Selivanova 1987b, p. 118, (X); Suhoveeva 1987a, p. 125, (VI), 1987b, p. 38, (VI); Ivanjushina *et al.* 1991, p. 164, (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

#### *Alaria fistulosa* P. et R.

Postels and Ruprecht 1840, p. 11, (Kamchatka); Kjellman 1889, p. 7, (X); Voronihin 1914, p. 492, (VIII); Savich 1914, p. 454, (VIII); Arwidsson 1932, p. 150, (Kamchatka); Sinova 1933, p. 18, (VIII), 1940, p. 194, (X), 1954, p. 375, (VII-VIII); Kongiser 1933, p. 118, (V) as *A. fistulosa* P. et R.; Gurjanova 1935, p. 68, (X); Gayl 1936, p. 31, (V, VII, IX-X); Kardakova-Prejzntzoffa 1938, p. 102, (X); Nagai 1940, p. 105, (X, Kamchatka); Ushakov 1953,

p. 320, (IX-X, Bering Sea); Tokida 1954, p. 124, (X, Kamchatka); Spassky 1961, p. 293, (VII); Blinova and Gusarova 1971, p. 142, (IX); Vozzhinskaja *et al.* 1971, p. 15, (southeast Kamchatka); Petrov 1973a, p. 124, (IV-X), 1973b, p. 55, (X, eastern Kamchatka), 1975, p. 46, (IV-X); Gusarova 1977, p. 43, (X, eastern Kamchatka, Bering Sea), 1982, p. 36, (IX); Vinogradova *et al.* 1978, p. 153, (X); Vinogradova and Perestenko 1978, p. 73, (X); Tarakanova 1978, p. 65, (X); Kizevetter *et al.* 1981, p. 19, (X, Bering Sea); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V, X); Ivanjushina *et al.* 1987, p. 33, (eastern Kamchatka); Selivanova 1987a, p. 77, (VIII), 1988b, p. 88, (VIII), 1989, p. 95, (VIII); Suhoveeva 1987a, p. 125, (VI), 1987b, p. 38, (VI); Suhoveeva and Klochkova 1990, p. 45, (VI); Ivanjushina *et al.* 1991, p. 158, (X); Oshurkov *et al.* 1991, p. 171, (X); Usov and Klochkova 1994, p. 1236, (VIII); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

#### *Alaria macroptera* (Rupr.) Yendo

Nagai 1940, p. 108, (Kamchatka); Tokida 1954, p. 125, (Kamchatka); Tolstikova 1971, p. 63, (II), 1973, p. 19, (II), 1974, p. 150, (II); Vinogradova 1973a, p. 40, (II), 1978, p. 7, (IV-V); Vinogradova *et al.* 1978, p. 153, (II, IV); Kussakin and Ivanova 1978, p. 17, (II); Blinova 1979, p. 184, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II, IV-V).

#### *Alaria marginata* P. et R.

Kjellman 1889, p. 37, 86, (X) as *A. crispata* Kjellm., cited on Petrov 1973b; Sinova 1954, p. 376, (VII); Tokida 1954, p. 125, (Kamchatka) as *A. dolichoraches* Kjellm., cited on Petrov 1973b; Spassky 1961, p. 292, (VII); Vozzhinskaja *et al.* 1971, p. 15, (Bering Sea) as *A. tenuifolia*, cited on Petrov 1973b; Alfimov and Petrov 1972, p. 697, (X); Petrov 1973b, p. 57, (X), 1975, p. 46, (1-X); Vinogradova *et al.* 1978, p. 153, (VII-VIII, X); Kizevetter *et al.* 1981, p. 20, (Bering Sea); Mihajlov and Blinov 1981, p. 39, (eastern Kamchatka); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V); Ivanjushina *et al.* 1987, p. 33, (eastern Kamchatka); Suhoveeva 1987a, p. 125, (VI), 1987b, p. 38, (VI); Selivanova 1988a, p. 88, (VIII), 1989, p. 95, (VIII); Mihajlov 1989, p. 89, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 45, (VI); Ivanjushina *et al.* 1991, p. 158, (X); Oshurkov and Ivanjushina 1993, p. 98, (X); Zorina *et al.* 1993, p. 879, (X);

Usov and Klochkova 1994, p. 1236, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Alaria ochotensis* **Yendo**

Sinova 1954, p. 376, (VIII); Tokida 1954, p. 125, (Kamchatka); Ivanjushina *et al.* 1987, p. 33, (eastern Kamchatka); Selivanova 1989, p. 95, (VIII); Klochkova and Berezovskaja 1997, supplement, (VIII).

*Analipus filiformis* **(Rupr.) Wynne**

Kjellman 1889, p. 7, (X) as *A. fusiformis* Kjellm., cited on Wynne, 1971; Setchell 1899, p. 591, (X) as *A. fusiformis*, cited on Lindstrom 1977; Sinova 1940, p. 191, (X) as *Chordaria abietina* Rupr. pr. p., and as *A. fusiformis*, 1954, p. 374, (VII-VIII) as *C. abietina* pr. p.; Klochkova 1976, p. 22, (VI); Vinogradova 1978, p. 6, (IV-V); Vinogradova *et al.* 1978, p. 151, (II, IV-VIII); Vinogradova and Perestenko 1978, p. 72, (Bering Sea); Kussakin and Ivanova 1978, p. 30, (II) as *A. fusiformis*; Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II, IV-X).

*Analipus japonicus* **(Harv.) Wynne**

Voronihin 1914, p. 491, (VIII-IX) as *Chordaria abietina* Rupr.; Savich 1914, p. 465, (VIII) as *C. abietina*; Sinova 1933, p. 16, (VIII) as *C. abietina*, 1954, p. 374, (VII-VIII) as *C. abietina*; Kardakova-Prejzntzoffa 1938, p. 101, (X) as *C. abietina*; Nagai 1940, p. 51, (Kamchatka, Bering Sea) as *Heterochordaria abietina* (Rupr.) S. et G.; Ushakov 1953, p. 320, (IX-X, Bering Sea) as *C. abietina*; Tokida 1954, p. 93, (Kamchatka, Bering Sea) as *H. abietina*; Spassky 1961, p. 292, (VII) as *H. abietina*; Vinogradova *et al.* 1978, p. 151, (VI-VIII, X); Tarakanova 1978, p. 68, (X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Arthroliamnus bifidus* **(Gmel.) J. Ag.**

Voronihin 1914, p. 496, (VII-VIII); Sinova 1933, p. 26, (VII-VIII); Gayl 1936, p. 31, (VII-VIII, X); Nagai 1940, p. 101, (Kamchatka); Subbotina 1969, p. 25, (VII); Blinova and Gusarova 1971, p. 142, (IX); Vozzhinskaja *et al.* 1971, p. 132, (southeast Kamchatka); Petrov 1973a, p. 124, (VII-IX), 1975, p. 46, (VII-IX); Blinova, 1979, p. 184, (IX); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Suhoveeva and Sarochan 1986, p. 81, (V); Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva 1987a, p. 125, (VI), 1987b, p. 38, (VI);

Suhoveeva and Klochkova 1990, p. 44, (VI); Usov and Klochkova 1994, p. 1236, (VIII); Klochkova and Berezovskaja 1997, supplement, (V-X).

*Chorda filuin* **(L.) Lamour.**

Gayl 1936, p. 31, (V); Ushakov 1953, p. 320, (IX-X, Bering Sea); Tokida 1954, p. 112, (Kamchatka); Vozzhinskaja *et al.* 1971, p. 15, (Bering Sea); Tolstikova 1971, p. 63, (II), 1973, p. 23, (II), 1974, p. 150, (II); Vinogradova 1973a, p. 39, (II), 1978, p. 7, (IV-V); Petrov 1973a, p. 124, (I-II), 1975, p. 44, (I-IV); Vinogradova *et al.* 1978, p. 152, (II-IV); Vinogradova and Perestenko 1978, p. 74, (Bering Sea); Kussakin and Ivanova 1978, p. 18, (II); Gusarova and Semkin 1986, p. 786, (X, Bering Sea); Mihajlov 1989, p. 84, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-V, VIII-X).

*Chordaria flagelliformis* **(Müll.) Ag.**

Voronihin 1914, p. 490, (VII-VIII); Arwidsson 1932, p. 150, (VIII); Sinova 1933, p. 16, (VIII), 1940, p. 191, (X), 1952, p. 87, (I), 1954, p. 375, (VII-VIII) as *Chordaria flagelliformis* f. *typica* and as *Chordaria flagelliformis* f. *chordaeformis*; Kardakova-Prejzntzoffa 1938, p. 101, (X); Nagai 1940, p. 45, (Kamchatka, Bering Sea) as *C. flagelliformis* f. *chordaeformis*; Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 91, (Kamchatka, Bering Sea); Spassky 1961, p. 292, (VII) as *C. flagelliformis* f. *typica* and as *C. flagelliformis* f. *chordaeformis*; Blinova and Gusarova 1971, p. 149, (IX); Vozzhinskaja *et al.* 1971, p. 29, (Bering Sea) as *C. magellanica* Kylin; Tolstikova 1971, p. 63, (II), 1973, p. 19, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 37, (I-II), 1978, p. 6, (IV-V); Klochkova 1976, p. 22, (VI); Vinogradova *et al.* 1978, p. 152, (I, II, IV-VIII, X) as *C. flagelliformis* f. *typica* and as *C. flagelliformis* f. *chordaeformis*; Vinogradova and Perestenko 1978, p. 72, (Bering Sea); Kussakin and Ivanova 1978, p. 17, (II); Tarakanova 1978, p. 67, (X) as *C. magellanica*; Kizevetter *et al.* 1981, p. 24, (Bering Sea); Gusarova and Semkin 1986, p. 785, (IX-X, Bering Sea); Gusarova 1987, p. 24, (VII); Selivanova 1988a, p. 87, (VIII) as *C. flagelliformis* f. *typica* and as *C. flagelliformis* f. *chordaeformis*; Mihajlov 1989, p. 86, (VIII); Pereladov *et al.* 1991, p. 192, (X); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 9, (X).

*Chordaria gracilis* **S. et G.**

Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva and Klochkova 1990, p. 43, (VI); Usov and Klochkova

1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (VI, VIII).

*Coilodesme bulligera* **Stroemf.**

Kardakova-Prejntzoffa 1938, p. 100, (X); Sinova 1940, p. 188, (X); Tokida 1954, p. 110, (Kamchatka); Vinogradova *et al.* 1978, p. 152, (X); Vinogradova and Perestenko 1978, p. 74, (X); Gusarova and Semkin 1986, p. 785, (X); Klochkova 1993, p. 156, (VIII, IX); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Coilodesme fucicola* **(Yendo) Nagai**

Nagai 1940, p. 63, (X, Kamchatka); Tokida 1954, p. 110, (X, Kamchatka) as *C. bulligera* f. *fucicola* Yendo; Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka); Klochkova 1993, p. 156, (VIII-X); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Cymathaere triplicata* **(P. et R.) J. Ag.**

Kjellman 1889, p. 7, (X); Gayl 1936, p. 31, (X); Kardakova-Prejntzoffa 1938, p. 102, (X); Sinova 1940, p. 199, (X); Nagai 1940, p. 86, (X); Blinova and Gusarova 1970, p. 69, (VII), 1971, p. 142, (VII); Vozzhinskaja *et al.* 1971, p. 19, (southeast Kamchatka, Commander Islands); Petrov 1973a, p. 124, (VII-X), 1975, p. 45, (VII-X); Vinogradova *et al.* 1978, p. 152, (X); Kizevetter *et al.* 1981, p. 19, (southeast Kamchatka, X); Gusarova and Semkin 1986, p. 786, (IX-X); Suhoveeva and Sarochan 1986, p. 81, (V); Ivanjushina *et al.* 1991, p. 159, (X); Klochkova 1993, p. 162, (VII, IX-X); Oshurkov and Ivanjushina 1993, p. 98, (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Delamarea attenuata* **(Kjellm.) Rosenv.**

Vinogradova 1973a, p. 38, (II), 1978, p. 74, (Bering Sea); Vinogradova *et al.* 1978, p. 152, (II); Kussakin and Ivanova 1978, p. 30, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Selivanova 1988a, p. 87, (VIII), 1988b, p. 58, (VIII), 1989, p. 94, (VIII); Klochkova and Berezovskaja 1997, supplement, (II, VIII, X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Desmarestia intermedia* **P. et R.**

Postels and Ruprecht 1840, p. 13, (Kamchatka); Kjellman 1889, p. 7, (I); Setchell 1899, p. 591, (I);

Voronihin 1914, p. 489, (VII); Sinova 1933, p. 17, (VII), 1940, p. 190, (X), 1952, p. 86, (I), 1954, p. 373, (VII-VIII); Gayl 1936, p. 31, (V, VII, X); Kardakova-Prejntzoffa 1938, p. 100, (X); Nagai 1940, p. 53, (Kamchatka, Bering Sea); Ushakov 1953, p. 320, (IX-X, Bering Sea); Tokida 1954, p. 99, (Kamchatka, Bering Sea); Spassky 1961, p. 292, (VII-VIII); Blinova and Gusarova 1971, p. 142, (IX); Vozzhinskaja *et al.* 1971, p. 30, (Bering Sea); Vinogradova 1973a, p. 38, (I); Klochkova 1976, p. 22, (VI). Species was cited as *D. aculeata* (L.) Lamour. in all cases.

Vinogradova *et al.* 1978, p. 152, (I, IV-V, X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea) as *D. intermedia* and as *D. aculeata*; Selivanova 1988a, p. 88, (VIII), 1989, p. 95, (VIII); Ivanjushina *et al.* 1991, p. 158, (X); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 10, (X) as *D. aculeata*.

*Desmarestia latifrons* **(Rupr.) Kütz.**

Klochkova and Berezovskaja 1997, supplement, (X).

*Dichloria viridis* **(Mull.) Grev.**

Sinova 1940, p. 190, (X), 1952, p. 86, (I), 1954, p. 374, (VIII); Gusarova and Semkin 1986, p. 786, (IX-X, Bering Sea); Vozzhinskaja *et al.* 1971, p. 30, (Bering Sea). Species was cited as *Desmarestia viridis* (Müll.) Lamour. in all cases.

Oshurkov and Ivanjushina 1993, p. 98, (X); Klochkova and Berezovskaja 1997, supplement, (I, VIII-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Dictyosiphon foeniculaceus* **(Huds.) Grev.**

Kjellman 1889, p. 8, (X); Sinova 1933, p. 18, (VIII), 1940, p. 190, (X), 1952, p. 87, (I), 1954, p. 374, (VIII); Kardakova-Prejntzoffa 1938, p. 100, (X); Nagai 1940, p. 64, (X, Kamchatka, Bering Sea); Ushakov 1953, p. 320, (southeast Kamchatka, Bering Sea); Tokida 1954, p. III, (Kamchatka, Bering Sea); Blinova and Gusarova 1971, p. 142, (IX); Tolstikova 1973, p. 27, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 39, (II) as *D. foeniculaceus* f. *flacidus* (Aresch.) Kjellm., 1978, p. 7, (IV-V); Vinogradova *et al.* 1978, p. 152, (II, IV-V, VII-VIII, X); Kussakin and Ivanova 1978, p. 19, (I-II); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 24, (VII); Selivanova 1989, p. 95, (VIII); Suhoveeva and Klochkova 1990, p. 43, (VI); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and

Zhigadlova 1997b, p. 10, (X).

*Dictyosiphon hyppuroides* (Lyngb.) Kiitz.

Kjellman 1889, p. 50, (X); Setchell 1899, p. 591, (X); Sinova 1940, p. 190, (X) as *D. hippuroides*; 1952, p. 87, (I); Tokida 1954, p. III, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I, IV, X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Dictyosiphon hispidus* Kjellm.

Tolstikova 1971, p. 63, (II), 1973, p. 20, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 39, (I-II); Vinogradova *et al.* 1978, p. 152, (I-II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-II).

*Ectocarpus sensiangustata* Kloczc.

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Ectocarpus siliculosus* (Dillw.) Lyngb. f. *arctus* (Kiitz.)

**Kuckuck**

Rudjakova 1967, p. 8, (Kamchatka) as *E. confervoides* (Roth) Le Jol.; Vinogradova 1973a, p. 36, (I) as *E. confervoides*, 1978, p. 5, (IV-V) as *E. siliculosus* and as *E. confervoides*; Klochkova 1976, p. 22, (VI) as *E. confervoides*; Vinogradova *et al.* 1978, p. 151, (IV-VI) as *E. siliculosus* and as *E. confervoides*; Kussakin and Ivanova 1978, p. 36, (I-II) as *E. confervoides*; Mihajlov and Blinov 1981, p. 29, (Kamchatka, Bering Sea) as *E. confervoides*; Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea) as *E. siliculosus* and as *E. confervoides*; Mihajlov 1989, p. 84, (VIII) as *E. confervoides*; Selivanova 1989, p. 94, (VIII) as *E. confervoides*; Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 9, (X) as *E. arctus* Kiitz.

In treatment of species *E. siliculosus* and *E. confervoides* as single polymorphic species, I have followed Silva *et al.* (1996, p. 923), who discussed taxonomic limitation of *E. siliculosus*.

*Elachista tenuis* Yamada

Selivanova and Zhigadlova 1997b, p. 9, (X).

*Elachista fucicola* Rupr.

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Eudesme virescens* (Carm.) J. Ag.

Vinogradova 1973a, p. 37, (II); Vinogradova *et al.* 1978,

p. 152, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II).

*Fucus evanescens* Ag.

Voronihin 1914, p. 496, (VIII); Savich 1914, p. 454, (VIII); Arwidsson 1932, p. 150, (VIII); Sinova 1933, p. 28, (VIII) as *F. inflatus* (L.) Vahl. Fl. Dan., 1940, p. 203, (X) as *F. inflatus*; 1952, p. 91, (I), 1954, p. 382, (VII-VIII) as *F. evanescens* and as *F. inflatus*; Kongiser 1933, p. 117, (V); Gurjanova 1935, p. 70, (X); Kardakova-Prejenzoffa 1938, p. 102, (X); Nagai 1940, p. 119, (Kamchatka, Bering Sea); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 129, (Kamchatka, Bering Sea); Spassky 1961, p. 293, (VII); Vozzhinskaja *et al.* 1971, p. 25, (Bering Sea); Tolstikova 1971, p. 63, (II), 1973, p. 33, (II), 1974, p. 150, (II); Alfimov and Petrov 1972, p. 697, (X); Vinogradova 1973a, p. 40, (I-II), 1978, p. 7, (IV-V); Petrov 1975, p. 47, (I-X); Klochkova 1976, p. 23, (VI); Vinogradova *et al.* 1978, p. 153, (I-II, IV-VIII, X); Vinogradova and Perestenko 1978, p. 73, (X); Kussakin and Ivanova 1978, p. 17, (II), 1995, p. 101, (X); Tarakanova 1978, p. 65, (X); Blinova 1979, p. 184, (Bering Sea); Kizevetter *et al.* 1981, p. 21, (Bering Sea); Demeshkina 1983, p. 425, (VII); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V); Gusarova 1987, p. 24, (VII); Selivanova 1988a, p. 88, (VIII), 1989, p. 95, (VIII); Oshurkov *et al.* 1989, p. 11, (VIII); Ivanjushina *et al.* 1991, p. 164, (X); Pereladov *et al.* 1991, p. 192, (X); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Halopteris dura* (Rupr.) Sinova

Gusarova and Semkin 1986, p. 786, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (IV-V).

*Halothrix lumbricalis* (Kiitz.) Reinke

Vinogradova 1973a, p. 37, (II), 1978, p. 6, (IV-V); Klochkova 1976, p. 22, (VI), 1977, p. 28, (VII); Vinogradova *et al.* 1978, p. 152, (II, IV, VI-VIII); Kussakin and Ivanova 1978, p. 34, (II); Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II, IV-VIII).

*Hincksia ovata* (Kjellm.) Silva

Rudjakova 1967, p. 8, (on ships operated near Kamchatka and Kuril Islands) as *Giffordia ovata* (Kjellm.) Kylin; Klochkova and Berezovskaja 1997, supplement,

(VIII).

*Laminaria appressirhiza* **Ju. Petr. et V. Voz.**

Suhoveeva and Klochkova 1990, p. 44, (VI).

Note: This is the endemic species of the Sea of Okhotsk and is also described by us for the Bering Sea on the results of study of a single specimen collected in the Kamchatsky Inlet. The features of the specimen correspond well to the diagnosis of *L. appressirhiza*. Its presence far from the basic place of the distribution appears a casual flow.

*Laminaria bongardiana* **P. et R.**

Kjellman 1889, p. 7, (X) as *L. bongardiana*, as *L. bullata* Kjellm., and as *L. nigripes* J. Ag., cited on Petrov 1974; Voronihin 1914, p. 496, (VIII); Savich 1914, p. 454, (VIII); Okamura 1928, p. 30, (Kamchatka) as *Hedophyllum spirale* Yendo; Sinova 1933, p. 20, (VIII) as *L. bongardiana* f. *bifurcata* P. et R., as *L. bongardiana* f. *subsessilis* Aresch., and as *L. bongardiana* f. *elliptica* Kjellm., 1940, p. 195, 198, (X) as *L. bongardiana* and as *H. sessile* (Ag.) Setch., as *L. nigripes*, cited on Petrov 1974, 1954, p. 378, (VII-VIII) as *L. bongardiana* and as *H. sessile*; Gayl 1936, p. 31, (IV-V, VIII) as *H. sessile*, as *H. subsessile* (Aresch.) Setch. and as *H. bongardiana* (P. et R.) S. et G.; Kardakova-Prejenzoffa 1938, p. 101, (X) as *L. bongardiana* and as *H. subsessile*; Nagai 1940, p. 80, (X, Kamchatka) as *L. taeniata* P. et R., and as *Streptophyllum spirale* (Yendo) Myabe et Nagai; Spassky 1961, p. 293, (VII) as *L. bongardiana* f. *elliptica* Kjellm., and as *L. bongardiana* f. *subsessilis*; Blinova and Gusarova 1970, p. 69, (VII) as *L. taeniata*, 1971, p. 142, (IX) as *L. taeniata* pr. p.; Vozzhinskaja et al. 1971, p. 18, (southeast Kamchatka, Commander Islands); Tolstikova 1971, p. 63, (II), 1973, p. 23, (II), 1974, p. 150, (II); Alfimov and Petrov 1972, p. 697, (II, X); Petrov 1972, p. 55, (I-X), 1973a, p. 124, (I-X) as *L. bongardiana* f. *subsessilis* and as *L. bongardiana* f. *taeniata* (P. et R.) Petr., 1975, p. 45, (I-X); Vinogradova 1973a, p. 39, (II), 1978, p. 7, (IV-V); Klochkova 1976, p. 22, (VI); Vinogradova et al. 1978, p. 152, (II, IV-VII, X); Vinogradova and Perestenko 1978, p. 72, (X, Bering Sea); Kussakin and Ivanova 1978, p. 23, (II); 1995, p. 101, (X); Tarakanova 1978, p. 68, (X) as *H. sessile*; Blinova 1979, p. 184, (IX, Bering Sea); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V, X); Ivanjushina et al. 1987, p. 33, (eastern Kamchatka); Selivanova 1987a, p. 77, (VII), 1987b, p. 117, (X), 1989, p. 95, (VIII); Suhoveeva 1987a, p. 124, (VI), 1987b, p. 38, (VI); Oshurkov et al. 1989, p. 8, (VIII);

Suhoveeva and Klochkova 1990, p. 43, (VI); Ivanjushina et al. 1991, p. 158, (X); Oshurkov et al. 1991, p. 172, (X); Oshurkov and Ivanjushina 1993, p. 98, (X); Zorina et al. 1993, p. 879, (X) as *L. bongardiana*; Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (1-X); Selivanova and Zhigadlova 1997b, p. 11, (X) as *L. bongardiana* and as *H. sessile*.

*Laminaria complanata* **(S. et G.) Setch.**

Petrov 1975, p. 45, (I-III); Klochkova and Berezovskaja 1997, supplement, (I-III).

*Laminaria dentigera* **Kjellm.**

Voronihin 1914, p. 496, (VIII); Savich 1914, p. 454, (VIII); Setchell and Gardner 1925, p. 604, (Bering Strait); Sinova 1933, p. 19, (VIII) as *L. dentigera* f. *brevipes* S. et G., 1940, p. 195, (X) as *L. dentigera* and as *L. digitata* Kjellm., 1952, p. 90, (I), 1954, p. 379, (VII); Gurjanova 1935, p. 69, (X); Gayl 1936, p. 31, (I, VIII); Kardakova-Prejenzoffa 1938, p. 101, (X); Nagai 1940, p. 82, (X, Kamchatka); Tokida 1954, p. 120, (X, Kamchatka); Subbotina, 1969, p. 25, (VII) as *L. digitata*; Blinova and Gusarova 1971, p. 142, (IX); Vozzhinskaja et al. 1971, p. 18, (eastern Kamchatka, Commander Islands); Alfimov and Petrov 1972, p. 697, (X); Petrov 1973a, p. 124, (VIII-X), 1975, p. 45, (VII-X); Vinogradova et al. 1978, p. 152, (X); Blinova 1979, p. 184, (VII-X); Kizevetter et al. 1981, p. 13, (IX); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 83, (X); Suhoveeva and Klochkova 1990, p. 44, (VI); Ivanjushina et al. 1991, p. 158, (X); Oshurkov et al. 1991, p. 172, (X); Oshurkov and Ivanjushina 1993, p. 98, (X); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (I, VI-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Laminaria groenlandica* **Rosenv.**

Kjellman 1889, p. 7, (I) as *L. bullata* Kjellm., cited on Lindstrom, 1977; Klochkova and Berezovskaja 1997, supplement, (I).

*Laminaria gurjanovae* **A. Zin.**

Sinova 1933, p. 23, (VIII) as *L. saccharina* (L.) Lamour., 1940, p. 195, (X) as *L. bullata* Kjellm., 1952, p. 89, (I) as *L. saccharina* and as *L. bullata*, 1954, p. 378, (VIII) as *L. saccharina*; Kardakova-Prejenzoffa 1938, p. 101, (X) as *L. bullata*; Spassky 1961, p. 293, (VII) as *L. saccharina* f. *linearis* Ag.; Blinova and Gusarova 1971, p. 142, (IX); Tolstikova 1971, p. 63, (II), 1973, p. 20, (II), 1974, p. 150,

(II); Petrov 1972, p. 56, (II, V), 1973a, p. 124, (I-VI), 1974, p. 55, (I-VI), 1975, p. 45, (I-VI); Vinogradova 1973a, p. 39, (II), 1978, p. 7, (V); Vinogradova *et al.* 1978, p. 152, (II); Blinova 1979, p. 184, (IX, Bering Sea); Gusarova and Semkin 1986, p. 786, (southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V) as *L. cichorioides* Miyabe; Suhoveeva 1987a, p. 124, (VI), 1987b, p. 38, (VI); Mihajlov 1989, p. 84, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Selivanova 1989, p. 95, (VIII); Suhoveeva and Klochkova 1990, p. 44, (VI); Ivanjushina *et al.* 1991, p. 158, (X); Oshurkov and Ivanjushina 1993, p. 100, (X) as *L. gurjanovae*; Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Laminaria longipes* **Bory**

Kjellman 1889, p. 7, (X); Setchell 1899, p. 591, (X); Okamura 1928, p. 30, (X); Sinova 1933, p. 24, (VIII), 1940, p. 196, (X), 1954, p. 378, (VII); Gurjanova 1935, p. 69, (X); Gayl 1936, p. 31, (VIII, X); Kardakova-Prejenzoffa 1938, p. 101, (X); Nagai 1940, p. 67, (X, Kamchatka, Bering Sea); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 114, (Kamchatka, Bering Sea); Spassky 1961, p. 293, (VII); Blinova and Gusarova 1971, p. 142, (IX); Alfimov and Petrov 1972, p. 697, (X); Petrov 1973a, p. 124, (VII-X), 1975, p. 45, (VII-X); Vinogradova *et al.* 1978, p. 152, (X); Vinogradova and Perestenko 1978, p. 73, (X); Kussakin and Ivanova 1978, p. 23, (II), 1995, p. 101, (X); Tarakanova 1978, p. 72, (X); Blinova 1979, p. 184, (IX); Kizeveter *et al.* 1981, p. 14, (X, Kamchatka); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Suhoveeva and Sarochan 1986, p. 81, (V, X); Ivanjushina *et al.* 1987, p. 33, (eastern Kamchatka); Klochkova and Suhoveeva 1987, p. 75, (VI); Selivanova 1987a, p. 77, (VIII), 1987b, p. 117, (X), 1989, p. 95, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 43, (VI); Ivanjushina *et al.* 1991, p. 158, (X); Oshurkov *et al.* 1991, p. 181 (X) as *L. longipes (sinclarii ?)*; Oshurkov and Ivanjushina 1993, p. 98, (X); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Laminaria solidungula* **J. Ag.**

Vozzhinskaja *et al.* 1971, p. 18, (northern coast of the Bering Sea); Tolstikova 1971, p. 63, (II), 1973, p. 30, (II), 1974, p. 150, (II); Petrov 1973a, p. 124, (I-III), 1975, p. 44, (I-IV); Gusarova 1975, p. 41, (Bering Sea); Gusarova and Semkin 1986, p. 786, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-IV).

*Laminaria yezoensis* **Miyabe**

Okamura 1928, p. 30, (VIII) as *L. palmaeformis* Okam.; Arwidsson 1932, p. 150, (VIII) as *L. palmaeformis*; Kardakova-Prejenzoffa 1938, p. 101, (X) as *L. palmaeformis*; Nagai 1940, p. 83, (Kamchatka); Blinova and Gusarova 1970, p. 69, (VII-VIII), 1971, p. 142, (IX); Vozzhinskaja *et al.* 1971, p. 18, (eastern Kamchatka); Petrov 1973a, p. 124, (IV-VII, X), 1975, p. 44, (IV-VI, X); Vinogradova *et al.* 1978, p. 152, (X); Vinogradova and Perestenko 1978, p. 73, (X); Blinova 1979, p. 184, (IX); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (V); Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva 1987a, p. 124, (VI), 1987b, p. 38, (VI); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 44, (VI); Ivanjushina *et al.* 1991, p. 158, (X) as *L. yessoensis*; Oshurkov and Ivanjushina 1993, p. 99, (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (IV- X); Selivanova and Zhigadlova 1997b, p. 11, (X).

*Laminariocolax tomentosum* **(Farl.) Kylin**

Klochkova and Berezovskaja 1997, supplement, (VII-IX).

*Leathesia difformis* **(L.) Aresch.**

Klochkova 1977, p. 29, (VII); Vinogradova *et al.* 1978, p. 152, (VII-VIII); Gusarova and Semkin 1986, p. 785, (southeast Kamchatka); Selivanova 1987a, p. 77, (X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997b, p. 9, (X).

*Leathesia nana* **S. et G.**

Klochkova and Berezovskaja 1997, supplement, (VI-VIII).

*Leptonematella fasciculata* **(Reinke) Silva**

Vinogradova 1978, p. 6, (IV); Vinogradova *et al.* 1978, p. 152, (IV); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (IV, X); Selivanova and Zhigadlova 1997b, p. 9, (X).

*Lithoderma fatiscens* **Aresch.**

Kjellman 1889, p. 7, (I); Sinova 1933, p. 27, (VIII), 1940, p. 202, (X), 1954, p. 382, (VII-VIII); Ushakov 1953, p. 320, (IX-X, Bering Sea); Vinogradova 1973a, p. 36, (II); Vinogradova *et al.* 1978, p. 151, (II, VII-VIII); Vinogradova and Perestenko 1978, p. 72, (Bering Sea);



Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-II, IV, VII-X).

*Macrocystis pirifera* (Turn.) Ag.

Sinova 1933, p. 27, (Kamchatka); Vozzhinskaja *et al.* 1971, p. 20, (southeast Kamchatka, Commander Islands); Klochkova and Berezovskaja 1997, supplement, (VIII, X).

Note: This species is listed here on the basis of materials collected in the 19 century. Presently, *M. pirifera* does not occur on the Asiatic coast.

*Melanosiphon intestinalis* (Saund.) Wynne

Voronihin 1914, p. 487, (VIII) as *Myelophycus intestinalis* Saund; Savich 1914, p. 454, (VIII) as *M. intestinalis*; Sinova 1933, p. 14, (VIII) as *M. intestinalis* f. *complanata* Woron, 1954, p. 372, (VIII) as *M. caespitosus* Kjellm.; Tokida 1954, p. 102, (Kamchatka) as *M. intestinale*; Vinogradova 1973a, p. 38, (I), 1978, p. 7, (IV-V); Klochkova 1976, p. 22, (VI); Vinogradova *et al.* 1978, p. 152, (IV-VIII); Vinogradova and Perestenko 1978, p. 74, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I, IV-X).

*Nereocystis luetkeana* (Mert.) P. *et* R.

Gayl 1936, p. 31, (X); Kardakova-Prejenzoffa 1938, p. 102, (X); Sinova 1940, p. 201, (X); Vozzhinskaja *et al.* 1971, p. 21, (eastern Kamchatka, Commander Islands); Petrov 1973a, p. 124, (X), 1975, p. 47, (X); Klochkova and Suhoveeva 1987, p. 78, (VI); Miller and Ester 1989, p. 535, (X); Suhoveeva and Klochkova 1990, p. 45, (VI); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (VI, VIII, X); Selivanova and Zhigadlova 1997b, p. 11, (X).

Note: This species is listed here on the basis of materials collected in the 19 century. Presently, *N. lurykrsns* is rarely collected as drift only.

*Petalonia fascia* (Mull.) Kuntze

Sinova 1933, p. 15, (VIII), 1940, p. 188, (X), 1954, p. 372, (VII), in all cases as *Phyllitis fascia* (Mull.) Kiitz.; Kardakova-Prejenzoffa 1938, p. 100, (X) as *P. fascia*; Tokida 1954, p. 107, (Kamchatka) as *Ilea fascia* (Mull.) Fries; Vinogradova 1973a, p. 38, (II), 1973b, p. 30, (II, IV-V), 1978, p. 7, (IV-V); Tolstikova 1973, p. 23, (II), 1974, p. 149, (II); Klochkova 1976, p. 22, (VI); Vinogradova *et al.* 1978, p. 152, (II, IV-VIII); Vinogradova and Perestenko 1978, p. 72, (Bering Sea); Kussakin and Ivanova 1978, p.

17, (II); Mihajlov and Blinov 1981, p. 30, (Kamchatka, Bering Sea); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 87, (VII), 1989, p. 95, (VIII); Mihajlov 1989, p. 84, (VIII); Klochkova and Berezovskaja 1997, supplement, (II, IV-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Petalonia zosterifolia* (Reinke) Kuntze

Vinogradova 1973a, p. 38, (II), 1973b, p. 28, (II); Tolstikova 1973, p. 23, (II), 1974, p. 149, (II); Vinogradova *et al.* 1978, p. 152, (II); Kussakin and Ivanova 1978, p. 17, (II); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 87, (VIII), 1989, p. 95, (VIII); Mihajlov 1989, p. 84, (VIII); Usov and Klochkova 1994, p. 1236, (VIII); Klochkova and Berezovskaja 1997, supplement, (II, VIII, X).

*Petrospongium rugosum* (Okam.) S. *et* G.

Sinova 1940, p. 192, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X).

*Polycerea borealis* Vinogr.

Vinogradova 1973a, p. 37, (I-II), 1973c, p. 26, (I); Vinogradova *et al.* 1978, p. 152, (I-II); Vinogradova and Perestenko 1978, p. 74, (Bering Sea); Kussakin and Ivanova 1978, p. 36, (I); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-II).

*Pseudolithoderma rosenvingii* (Warn.) Lund

Rudjakova 1967, p. 8, (on ships operated near Kamchatka and Kuril Islands); Klochkova and Berezovskaja 1997, supplement, (VIII).

*Punctaria plantaginea* (Roth) Grev.

Vinogradova 1978, p. 7, (IV-V); Vinogradova *et al.* 1978, p. 152, (IV-V); Vinogradova and Perestenko 1978, p. 74, (Bering Sea); Gusarova and Semkin 1986, p. 785, (Bering Sea); Gusarova 1987, p. 24, (VII); Klochkova and Berezovskaja 1997, supplement, (IV-V, VII).

*Pilayella divaricata* Kloczc.

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Pilayella garaneri* Coll.

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Pilayella littoralis* (L.) Kjellm.

Kjellman 1889, p. 8, (I, X); Voronihin 1914, p. 486,

(VIII); Savich 1914, p. 455, (VIII); Sinova 1933, p. 14, (VIII), 1940, p. 187, (X); Nagai 1940, p. 37, (X, Kamchatka, Bering Sea); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 77, (Kamchatka, Bering Sea); Rudjakova 1967, p. 8, (Kamchatka); Vinogradova 1973a, p. 36, (I-II), 1978, p. 5, (IV-V); Tolstikova 1973, p. 20, (II), 1974, p. 149, (II); Klochkova 1976, p. 22, (VI); Vinogradova *et al.* 1978, p. 151, (I-II, IV-VIII, X); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Kussakin and Ivanova 1978, p. 17, (I-II); Tarakanova 1978, p. 68, (X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 24, (VII); Selivanova 1988a, p. 86, (VIII), 1989, p. 94, (VIII); Mihajlov 1989, p. 85, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Pilayella varia* **Kjellm.**

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Ralfsia fungiformis* (**Gunn.**) **S. et G.**

Kjellman 1889, p. 7, (X) as *R. deusta* (Ag.) J. Ag., cited on Lindstrom 1977; Kardakova-Prejenzoffa 1938, p. 101, (X) as *R. deusta* and as *R. clavata* (Carm.) Farl., cited on Sinova 1941; Sinova 1940, p. 202, (X), 1952, p. 91, (I), 1954, p. 382, (VIII), in all cases as *R. deusta*; Nagai 1940, p. 40, (Kamchatka); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea) as *R. deusta*; Vinogradova 1973a, p. 37, (II), 1978, p. 6, (IV-V); Klochkova 1976, p. 22, (VI); Vinogradova *et al.* 1978, p. 151, (II, IV, VI-VIII, X); Vinogradova and Perestenko 1978, p. 72, (Bering Sea); Kussakin and Ivanova 1978, p. 17, (II), 1995, p. 101, (X); Gusarova and Semkin 1986, p. 786, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Ralfsia verrucosa* (**Aresch.**) **J. Ag.**

Sinova 1933, p. 27, (VIII), 1940, p. 202, (X); Tokida 1954, p. 82, (Kamchatka); Klochkova 1976, p. 22, (VI); Vinogradova 1978, p. 6, (V); Vinogradova *et al.* 1978, p. 151, (V-VIII); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (V-X).

*Saundersella simplex* (**Saund.**) **Kylin**

Klochkova 1976, p. 22, (VI), 1977, p. 29, (VII-VIII); Vinogradova 1978, p. 6, (IV-V); Vinogradova *et al.* 1978, p. 152, (IV-VIII, X); Gusarova and Semkin 1986, p. 785, (X, eastern Kamchatka); Usov and Klochkova 1994, p. 1237, (VIII); Klochkova and Berezovskaja 1997, supplement, (IV-X).

*Scytosiphon dotyi* **Wynne**

Vinogradova 1973a, p. 38, (I-II), 1978, p. 6, (IV); Vinogradova *et al.* 1978, p. 152, (I-II); Kussakin and Ivanova 1978, p. 26, (II); Gusarova and Semkin 1986, p. 786, (Bering Sea); Klochkova 1993, p. 158, (VII); Klochkova and Berezovskaja 1997, supplement, (I-II, VI).

*Scytosiphon lomentaria* (**Lyngb.**) **J. Ag.**

Kjellman 1889, p. 7, (X); Setchell 1899, p. 591, (X); Voronihin 1914, p. 488, (VIII); Savich 1914, p. 460, (VIII); Sinova 1933, p. 15, (VIII), 1940, p. 189, (X), 1952, p. 86, (I); 1954, p. 372, (VIII); Kardakova-Prejenzoffa 1938, p. 100, (X); Nagai 1940, p. 58, (X, Kamchatka, Bering Sea); Ushakov 1953, p. 320, (X, Bering Sea); Tokida 1954, p. 104, (Kamchatka, Bering Sea); Klochkova 1976, p. 22, (VI); Vinogradova 1978, p. 6, (IV-V); Vinogradova *et al.* 1978, p. 152, (IV-VIII, X); Tarakanova 1978, p. 67, (X); Gusarova and Semkin 1986, p. 786, (southeast Kamchatka, Bering Sea); Gusarova 1987, p. 24, (VII); Selivanova 1988a, p. 87, (VIII); 1989, p. 95, (VIII); Mihajlov 1989, p. 85, (VIII); Klochkova and Berezovskaja 1997, supplement, (I, IV-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Soranthera ulvoidea* **P. et R.**

Kjellman 1889, p. 7, (X); Kardakova-Prejenzoffa 1938, p. 100, (X) as *Colpomenia sinuosa* (Roth) Derb. *et* Sol.; Sinova 1940, p. 189, (X); Nagai 1940, p. 57, (X); Blinova and Gusarova 1970, p. 69, (VII); Vinogradova *et al.* 1978, p. 152, (X); Vinogradova and Perestenko 1978, p. 74, (X); Gusarova and Semkin 1986, p. 785, (X, southeast Kamchatka); Selivanova 1988b, p. 58, (VII-VIII); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997b, p. 10, (X).

*Sphacelaria arctica* **Harv.**

Tolstikova 1971, p. 63, (II), 1973, p. 33, (II), 1974, p. 149, (II); Vinogradova 1973a, p. 38, (I-II), 1978, p. 6, (IV-V); Gusarova 1975, p. 41, (Bering Sea); Klochkova 1977, p. 29, (VII); Vinogradova *et al.* 1978, p. 153, (I-II, IV-V, VII); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Kussakin and Ivanova 1978, p. 20, (I-II); Gusarova and Semkin 1986, p. 786, (southeast Kamchatka, Bering Sea); Klochkova and Zhukov 1978, p. 74, (VII); Klochkova and Berezovskaja 1997, supplement, (I-II, VI-V, VII-VIII).

*Sphacelaria plumosa* **Lyngb.**

Sinova 1952, p. 86, (I) as *Chaetopterus plumosa* (Lyngb.) Kiitz.; Vinogradova, 1978, p. 6, (V); Vinogradova *et al.* 1978, p. 153, (V); Vinogradova and Perestenko 1978, p. 74, (Bering Sea) as *C. plumosa*; Gusarova and Semkin 1986, p. 786, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I, V).

*Sphaerotrichia divaricata* **(Ag.) Kylin**

Sinova 1954, p. 374, (VIII) as *Mesogloia decipiens* Suring.; Vozzhinskaja *et al.* 1971, p. 29, (Bering Sea) as *Sphaerotrichia dissessa* (S. *et* G.) A. Zin.; Gusarova and Semkin 1986, p. 785, (southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 86, (VIII); Klochkova and Berezovskaja 1997, supplement, (VIII).

*Stictyosiphon tortilis* **(Rupr.) Reinke**

Voronihin 1914, p. 488, (VIII); Sinova 1933, p. 16, (VIII), 1952, p. 86, (I); Ushakov, 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 103, (Kamchatka, Bering Sea); Vinogradova 1973a, p. 39, (II), 1978, p. 7, (IV); Tolstikova 1973, p. 20, (II), 1974, p. 150, (II); Vinogradova *et al.* 1978, p. 152, (II, IV); Vinogradova and Perestenko 1978, p. 72, (X, Bering Sea); Kussakin and Ivanova 1978, p. 17, (II); Gusarova and Semkin 1986, p. 785, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-IV, VIII-X).

*Streblonema corymbifera* **S. *et* G.**

Klochkova and Berezovskaja 1997, supplement, (VIII, X).

*Streblonema oligosporum* **Stroemf.**

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Thalassiohyllum clathrus* **(Gmel.) P. *et* R.**

Kjellman 1889, p. 7, (X); Setchell 1899, p. 591, (X); Voronihin 1914, p. 494, (VIII); Sinova 1933, p. 25, (VIII), 1940, p. 202, (X), 1954, p. 381, (VII-VIII); Gurjanova 1935, p. 69, (X); Gayl 1936, p. 31, (VIII, X); Kardakova-Prejzntzoffa 1938, p. 102, (X); Nagai 1940, p. 103, (X, Kamchatka); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Subbotina 1969, p. 25, (VII); Blinova and Gusarova 1971, p. 142, (IX); Vozzhinskaja *et al.* 1971, p. 39 (eastern Kamchatka, Commander Islands); Alfimov and Petrov 1972, p. 697, (X); Petrov 1973a, p. 124, (VII-X), 1975, p. 46, (VII-X); Klochkova 1976, p. 23, (VI); Vinogradova *et al.* 1978, p. 152, (VI, X); Blinova

1979, p. 184, (VII); Kizevetter *et al.* 1981, p. 21, (X, eastern Kamchatka); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Suhoveeva and Sarochan 1986, p. 81, (V); Ivanjushina *et al.* 1987, p. 33, (eastern Kamchatka); Klochkova and Suhoveeva 1987, p. 75, (VI); Selivanova 1987a, p. 77, (VIII), p. 118, (X), 1989, p. 95, (VIII); Suhoveeva and Klochkova 1990, p. 44, (VI); Ivanjushina *et al.* 1991, p. 158 (X); Oshurkov *et al.* 1991, p. 180 (X); Oshurkov and Ivanjushina 1993, p. 98, (X); Klochkova and Berezovskaja 1997, supplement, (V-X); Selivanova and Zhigadlova 1997b, p. 11, (X).

## Division RHODOPHYTA - The Red Algae

*Acrochaetium alariae* **(Jonsson) Born.**

Vinogradova 1978, p. 8, (IV); Vinogradova *et al.* 1978, p. 153, (IV); Gusarova and Semkin 1986, p. 786, (Bering Sea); Perestenko 1994, p. 45, (IV); Klochkova and Berezovskaja 1997, supplement, (IV).

*Acrochaetium arcuatum* **(Drew.) Papenf.**

Perestenko 1988, p. 55, (X) as *Chromastrum arcuatum* (Drew.) Papenf., 1994, p. 45, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Acrochaetium moniliforme* **(Rosenv.) Boe.**

Vinogradova 1978, p. 8, (V) as *Kylinia moniliformis* (Rosenv.) Kylin; Vinogradova *et al.* 1978, p. 153, (VII-VIII) as *K. moniliformis*; Gusarova and Semkin 1986, p. 786, (southeast Kamchatka, Bering Sea) as *K. moniliformis*; Suhoveeva and Klochkova 1990, p. 45, (VI); Klochkova and Berezovskaja 1997, supplement, (V-IX).

*Acrochaetium parvulum* **(Kylin) Hoyt**

Vinogradova 1973a, p. 40, (II), 1978, p. 8, (V); Klochkova 1976, p. 23, (VI); Vinogradova *et al.* 1978, p. 153, (II, V); Gusarova and Semkin 1986, p. 786, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II, V). Species was cited as *Kylinia parvula* (Kylin) Kylin. in all cases.

Perestenko 1994, p. 45, (II).

*Ahnfeltia fastigiata* **(P. *et* R.) Makijenko**

Makijenko 1970, p. 1086, (VIII), 1980, p. 11, (Kamchatka); Gusarova and Semkin 1986, p. 787, (southeast Kamchatka); Klochkova 1993, p. 164, (VIII); Perestenko 1994, p. 76, (VIII); Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and

Zhigadlova 1997c, p. 18, (X).

*Ahmfeltia plicata* (Huds.) Fries

Kardakova-Prejenzoffa 1938, p. 103, (X); Sinova 1940, p. 208. (X) as *A. plicata* (Huds.) Fries, pr. p. and as *Gymnogongrus griffithsiae* (Turn.) Mart. pr. p. cited on Makijenko, 1970, 1941, p. 130, (X); Nagai 1941, p. 181, (Bering Sea); Ushakov 1953, p. 320, (X, Bering Sea); Tokida 1954, p. 175, (Bering Sea); Makijenko 1970, p. 1086, (II), 1980, p. 9, (I, Bering Sea); Vinogradova 1973a, p. 42, (II); Tolstikova 1973, p. 20, (II), 1974, p. 151, (II); Gusarova and Semkin 1986, p. 787, (Bering Sea); Suhoveeva and Klochkova 1990, p. 46, (VI); Klochkova 1993, p. 164, (Kamchatka); Perestenko 1994, p. 76, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-VI, X).

*Antithamnionella nagaii* Perest.

Sinova 1940, p. 226, (X) as *Antithamnion densiusculum* Gardn., cited on Perestenko 1994; Perestenko 1994, p. 140, (X); Klochkova and Berezovskaja 1997, supplement, (VI, X).

*Audouinella concrescens* (Drew) Dixon

Klochkova and Berezovskaja 1997, supplement, (V, VIII).

*Audouinella efflorescens* (J. Ag.) Papenf.

Vinogradova 1973a, p. 40, (II); Gusarova 1975, p. 41, (Bering Sea); Gusarova and Semkin 1986, p. 786, (Bering Sea); Perestenko 1994, p. 48, (II); Klochkova and Berezovskaja 1997, supplement, (II).

*Audouinella purpureum* (Lightf.) Woelkerl.

Kardakova-Prejenzoffa 1938, p. 105, (X) as *R. rothii* (Turn.) Nag.; Sinova 1940, p. 227, (X), 1954, p. 395, (VII), in both cases as *R. rothii*.

Spassky 1961, p. 293, (VII); Vinogradova 1973a, p. 40, (II), 1978, p. 8, (IV); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Vinogradova *et al.* 1978, p. 153, (II, IV); Kussakin and Ivanova 1978, p. 26, (II); Gusarova and Semkin 1986, p. 786, (Bering Sea); Selivanova 1988a, p. 89, (VII), 1989, p. 96, (VIII); Perestenko 1994, p. 49, (II, IV). Species was cited as *Rhodochorton purpureum* (Lightf.) Rosenv. in all cases.

Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Bangia fusco-purpurea* (Dillw.) Lyngb.

Kardakova-Prejenzoffa 1938, p. 102, (X); Sinova 1940, p. 203, (X); Spassky 1961, p. 293, (VII); Vinogradova and Perestenko 1978, p. 74, (X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka) as *B. atropurpurea* (Roth) J. Ag.; Ivanjushina *et al.* 1991, p. 164, (X) as *B. atropurpurea*; Kussakin and Ivanova 1995, p. 101, (X) as *B. atropurpurea*; Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997c, p. 15, (X) as *B. atropurpurea*.

*Beringia costanea* Perest.

Perestenko 1975a, p. 1683, (X), 1994, p. 106, (VIII, X); Gusarova and Semkin 1986, p. 787, (X); Selivanova 1988b, p. 60, (IX); Ivanjushina *et al.* 1991, p. 164, (X); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Beringiella labiosa* Wynne

Perestenko 1994, p. 196, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Bossiella compressa* Kloczc.

Sinova 1954, p. 366, (VII) as *Amphiroa cretacea* Endlich. pr. p.; Klochkova and Berezovskaja 1997, supplement, (VII, X).

*Bossiella cretaceae* (P. et R.) Johansen

Kjellman 1889, p. 6, (X) as *Amphiroa cretacea* (P. et R.) Aresch.; Voronihin 1914, p. 514, (VIII) as *A. cretacea*; Savich 1914, p. 460, (VIII) as *A. cretacea*; Arwidsson 1932, p. 150, (VIII) as *Arthrocardia cretacea* (P. et R.) Web. van. Bosse; Sinova 1933, p. 39, (VIII) as *Amphiroa cretacea*, 1940, p. 234, (X) as *A. cretacea* and as *A. ephedrea* Yendo, 1954, p. 66, (VII) as *A. cretacea*. pr. p.; Kardakova-Prejenzoffa 1938, p. 105, (X) as *A. cretacea*; Nagai 1941, p. 166, (X, Kamchatka, Bering Sea) as *A. cretacea* Endl.; Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea) as *A. cretacea*; Tokida 1954, p. 160, (Kamchatka, Bering Sea) as *A. cretacea*; Tarakanova 1978, p. 67, (X); Klochkova 1980, p. 14, (southeast Kamchatka, X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Selivanova 1987b, p. 118, (X), 1989, p. 96, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 46, (VI); Oshurkov and Ivanjushina 1993, p. 98, (X); Perestenko 1994, p. 65,

(II, V, X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Bossiella plumosa* (Manza) Silva

Perestenko 1994, p. 66, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Callithamnion acutum* Kylin

Klochkova and Berezovskaja 1997, supplement, (X).

*Callithamnion pikeanum* Harv.

Kardakova-Prejntzoffa 1938, p. 104, (X) as *C. pikeanum* var. *pacificum* (Harv.) S. et G.; Sinova 1940, p. 225, (X) as *Callithamnion arbuscula* (Dillw.) Lyngb.; Vinogradova et al. 1978, p. 154, (X); Gusarova and Semkin 1986, p. 787, (X); Ivanjushina et al. 1991, p. 165, (X); Klochkova 1993, p. 174, (X); Perestenko 1994, p. 149, (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Callocollax acicularis* Wynne et Heine

Perestenko 1994, p. 101, (I); Klochkova and Berezovskaja 1997, supplement, (I).

*Callophyllis beringensis* Perest.

Perestenko 1994, p. 98, (I); Klochkova and Berezovskaja 1997, supplement, (I).

*Callophyllis platyna* Perest.

Sinova 1952, p. 92, (I) as *C. laciniata* Kiitz., cited on Perestenko 1994; Perestenko 1994, p. 101, (I); Klochkova and Berezovskaja 1997, supplement, (I).

*Callophyllis radula* Perest.

Usov and Klochkova 1992, p. 374, (VIII) as *Callophyllis* sp.; Perestenko 1994, p. 100, (VIII); Klochkova and Berezovskaja 1997, supplement, (VII-IX).

*Callophyllis rhynchocarpa* Rupr.

Kjellman 1889, p. 6, (X); Voronihin 1914, p. 505, (VII); Sinova 1933, p. 32, (VIII), 1940, p. 209, (X); Kardakova-Prejntzoffa 1938, p. 103, (X); Nagai 1941, p. 172, (X, Kamchatka); Tokida 1954, p. 167, (X, Kamchatka); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Perestenko 1988, p. 55, (IV-VI), 1994, p. 99, (IV-VIII, X); Oshurkov et al. 1989, p. 8, (VIII); Selivanova 1989, p. 96, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Selivanova and Zhigadlova 1997c, p. 17, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X).

*Ceramium cimbricum* Peters.

Vinogradova 1978, p. 9, (V); Vinogradova et al. 1978, p. 155, (V); Gusarova and Semkin 1986, p. 787, (Bering Sea); Perestenko 1994, p. 150, (V); Klochkova and Berezovskaja 1997, supplement, (V).

*Ceramium kondoi* Yendo

Nagai 1941, p. 214, (Bering Sea) as *C. rubrum* (Huds.) Ag.; Sinova 1954, p. 395, (VIII) as *C. rubrum*; Vinogradova 1973a, p. 43, (II), 1978, p. 9, (V); Tolstikova 1973, p. 20, (II), 1974, p. 152, (II); Vinogradova et al. 1978, p. 155, (I-II, V); Vinogradova and Perestenko 1978, p. 74, (Bering Sea); Gusarova and Semkin 1986, p. 787, (southeast Kamchatka, Bering Sea) as *C. rubrum* pr. p.; Perestenko 1988, p. 55, (IV), 1994, p. 100, (Bering Sea, southeast Kamchatka); Suhoveeva and Klochkova 1990, p. 47, (VI); Klochkova 1993, p. 196, (IV-I, VIII); Klochkova and Berezovskaja 1997, supplement, (I-VIII).

*Chantransia microscopica* (Nag.) Foslie

Sinova 1954, p. 385, (VII); Klochkova and Berezovskaja 1997, supplement, (VII).

*Chondrus platynus* (Ag.) J. Ag.

Postels and Ruprecht 1840, p. 18, (Kamchatka) as *Iridea platyna* (Ag.) P. et R.; Arwidsson 1932, p. 153, (Kamchatka) as *I. platyna*; Gusarova and Semkin 1986, p. 787, (southeast Kamchatka); Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva and Klochkova 1990, p. 46, (VI); Klochkova 1993, p. 194, (VI); Klochkova and Berezovskaja 1997, supplement, (VI).

*Cirrulicarpus gmelini* (Grun.) Tokida et Masaki

Blinova and Gusarova 1970, p. 69, (VII, IX), 1971, p. 143, (IX); Vozzhinskaja et al. 1971, p. 132 (southeast Kamchatka); Vinogradova 1973a, p. 41, (II), 1978, p. 9, (IV); Vinogradova et al. 1978, p. 154, (II, IV); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea); Klochkova and Suhoveeva 1987, p. 75, (VI); Perestenko 1988, p. 55, (II, V-VI); Suhoveeva and Klochkova 1990, p. 46, (VI); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Cirrulicarpus ruprechtianum* (Sinova) Perest.

Sinova 1940, p. 206, (X) as *Iridaea ruprechtiana* Sinova and as *Kallimonia lartheriae* Holm., cited on Perestenko 1994; Vinogradova et al. 1978, p. 154, (IV) as *Cirrulicarpus*

sp.; Tarakanova 1978, p. 71, (X) as *I. ruprechtiana*; Perestenko 1994, p. 108, (I-II, X); Klochkova and Berezovskaja 1997, supplement, (I-II, V, X).

*Clathromorphum circumscriptum* (Stroemf.) Foslie

Sinova 1940, p. 223, (X) as *Lithothamnion durum* Kjellm.; Klochkova and Demeshkina 1985, p. 74, (II, VII-VIII, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Selivanova 1988a, p. 89, (VIII), 1989, p. 96, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 46, (VI); Selivanova and Zhigadlova 1997c, p. 18, (X); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Clathromorphum compactum* (Kjellm.) Foslie

Sinova 1933, p. 39, (VIII) as *Phymatolithon compactum* (Kjellm.) Foslie, 1940, p. 233, (X) as *Lithothamnion compactum* Kjellm., 1954, p. 398, (VII-VIII) as *L. compactum*; Spassky 1961, p. 293, (VII) as *L. compactum*; Lebednik 1977, p. 69, (X, Kamchatka); Klochkova and Demeshkina 1985, p. 76, (II, V, VIII, X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Selivanova 1988a, p. 89, (VIII), 1989, p. 96, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII) as *C. sompactum*; Suhoveeva and Klochkova 1990, p. 46, (VI); Perestenko 1994, p. 56, (Bering Sea); Selivanova and Zhigadlova 1997c, p. 18, (X); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Clathromorphum loculosum* (Kjellm.) Foslie

Kjellman 1889, p. 6, (I, X) as *Lithothamnion loculosum* Kjellm.; Sinova 1940, p. 234, (X), 1952, p. 96, (I), in both cases as *L. loculosum*; Nagai 1941, p. 166, (Bering Sea) as *Phymatolithon (Clathromorphum) loculosum* (Kjellm.) Foslie; Lebednik 1977, p. 70, (X); Vinogradova 1973a, p. 41, (II); Vinogradova *et al.* 1978, p. 154, (II, IV-V, X); Vinogradova and Perestenko 1978, p. 72, (X, Bering Sea); Kussakin and Ivanova 1978, p. 33, (II), 1995, p. 101, (X); Klochkova and Demeshkina 1985, p. 78, (IV-V, VII, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Selivanova 1987b, p. 118, (X); Perestenko 1994, p. 56, (I, V, VIII, X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Clathromorphum nereostratutn* Lebedn.

Klochkova and Demeshkina 1985, p. 80, (VII, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Selivanova 1987b, p. 118, (X), 1988a, p. 89, (VIII), 1988b, p. 60, (VIII, X), 1989, p. 96, (VIII);

Ivanjushina *et al.* 1991, p. 159, (X); Oshurkov *et al.* 1991, p. 177, (X); Perestenko 1994, p. 55, (V, VIII, X); Selivanova and Zhigadlova 1997c, p. 18, (X); Klochkova and Berezovskaja 1997, supplement, (V-X).

*Clathromorphum reclinatum* (Foslie) Adey

Lebednik 1977, p. 94, (X); Vinogradova *et al.* 1978, p. 154, (X) as *Neopolyporolithon reclinatum* (Foslie) Adey *et* Johansen; Klochkova and Demeshkina 1985, p. 82, (VII-VIII, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Coccotylus truncatus* (Pallas) Wynne *et* Heinke

Gusarova and Semkin 1986, p. 787, (southeast Kamchatka, Bering Sea); Selivanova 1989, p. 97, (VIII); Klochkova 1993, p. 192, (VIII). Species was cited as *Phyllophora truncata* (Pallas) A. Zin. in all cases.

Perestenko 1994, p. 126, (II-V, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (II-V, VIII).

*Colaconema savianum* (Menegh.) Perest.

Vinogradova 1978, p. 8, (IV); Vinogradova *et al.* 1978, p. 153, (IV); Gusarova and Semkin 1986, p. 786, (Bering Sea). The species was cited as *Acrochaetium thuretii* (Born.) Coll. *et* Harv. in all cases.

Perestenko 1994, p. 47, (IV); Klochkova and Berezovskaja 1997, supplement, (IV).

*Congregatocarpus pacifica* (Yamada) Mikami

Nagai 1941, p. 216, (Kamchatka) as *Laingia pacifica* Yamada; Tokida 1954, p. 206, (Kamchatka) as *L. pacifica*; Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Constantinea rosa-marina* (Gmel.) P. *et* R.

Kjellman 1889, p. 6, (X); Setchell 1899, p. 595, (X); Kardakova-Prejenzoffa 1938, p. 105, (X); Nagai 1940, p. 161, (X, Kamchatka); Sinova 1940, p. 229, (X) as *C. rosa-marina* and as *C. sitchensis* P. *et* R., 1954, p. 396, (VIII-IX); Tokida 1954, p. 157, (X, Kamchatka); Vinogradova *et al.* 1978, p. 153, (X); Vinogradova and Perestenko 1978, p. 74, (X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Lindstrom and Scagel 1987, p. 2008, (VIII-IX); Selivanova 1988a, p. 89, (VIII), 1989, p. 96, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 99, (X); Perestenko 1994, p. 88, (X);



Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Constantinea subulifera* Setch.

Gusarova and Semkin 1986, p. 786, (X); Perestenko 1994, p. 89, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Corallina frondescens* P. et R.

Setchell 1899, p. 595, (X) as *Amphiroa frondescens* (P. et R.) Aresch.; Sinova 1940, p. 235, (X) as *A. tuberculosa* (P. et R.) Aresch., as *A. valonioides* Yendo, and as *Cheilosporum yessoensis* Yendo, 1954, p. 399, (VIII) as *C. yessoensis*; Vinogradova et al. 1978, p. 154, (VII-VIII, X); Vinogradova and Perestenko 1978, p. 73, (X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Selivanova 1987b, p. 118, (X); Klochkova 1993, p. 172, (VII-X); Perestenko 1994, p. 64, (VIII, X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Corallina officinalis* L.

Kardakova-Prejenzoffa 1938, p. 105, (X); Sinova 1940, p. 234, (X), 1954, p. 399, (VII); Spassky 1961, p. 293, (VII); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VII-X).

*Corallina pilulifera* P. et R.

Sinova 1940, p. 234, (X), 1954, p. 399, (VII-VIII) as *C. arbuscula* P. et R.; Spassky 1961, p. 293, (VII) as *C. arbuscula*; Klochkova 1976, p. 23, (VI); Vinogradova 1978, p. 8, (IV-V); Vinogradova et al. 1978, p. 154, (IV-VIII, X); Vinogradova and Perestenko 1978, p. 72, (Bering Sea); Tarakanova 1978, p. 67, (X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Selivanova 1987b, p. 118, (X), 1989, p. 96, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X); Perestenko 1994, p. 64, (VI-VIII, X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Croccocarpus lamuticus* Rupr.

Klochkova and Berezovskaja 1997, supplement, (VIII, X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Cruoria pacifica* Kjellm.

Sinova 1940, p. 231, (X); Klochkova and Berezovskaja

1997, supplement, (X).

*Devaleraea compressa* (Rupr.) Seliv. et Kloczc.

Sinova 1954, p. 391, (VIII) as *Halosaccion compressum* Rupr.; Spassky 1961, p. 293, (VII) as *H. ramentaceum* (L.) J. Ag. pr. p.; Vinogradova 1973a, p. 42, (II) as *H. compressum*, 1978, p. 9, (IV-V) as *H. compressum*; Klochkova 1976, p. 24, (VI) as *H. compressum*; Vinogradova et al. 1978, p. 154, (II, IV-VIII) as *H. compressum*; Vinogradova and Perestenko 1978, p. 72, (Bering Sea) as *H. compressum*; Kussakin and Ivanova 1978, p. 15, (II) as *H. compressum*; Gusarova and Semkin 1986, p. 787, (southeast Kamchatka, Bering Sea) as *H. compressum*; Klochkova and Selivanova 1989, p. 956, (VII-VIII); Usov and Klochkova 1992, p. 375, (VIII); Klochkova 1993, p. 168, (VI, VIII); Klochkova and Berezovskaja 1997, supplement, (II-IX).

*Devaleraea microspora* (Rupr.) Seliv. et Kloczc.

Voronihin 1914, p. 510, (VIII) as *Halosaccion microsporum* Rupr.; Savich 1914, p. 454, (VIII) as *H. microsporum* Rupr.; Sinova 1933, p. 33, (VIII), 1940, p. 215, (X), 1954, p. 390, (VII-VIII) as *H. microsporum* and as *H. ramentaceum* (L.) J. Ag., cited on Perestenko 1981; Nagai 1941, p. 204, (Kamchatka) as *H. microsporum* and as *H. ramentaceum*; Tokida 1954, p. 193, (X, Kamchatka) as *H. ramentaceum*; Spassky 1961, p. 293, (VII) as *H. microsporum*; Tolstikova 1971, p. 63, (II), 1973, p. 20, (II), 1974, p. 151, (II), in all cases as *H. microsporum*; Vinogradova 1973a, p. 42, (I-II), 1978, p. 9, (V), in both cases as *H. microsporum*; Klochkova 1976, p. 24, (VI) as *H. microsporum*; Vinogradova et al. 1978, p. 154, (I-II, V) as *H. microsporum*; Tarakanova 1978, p. 68, (X) as *H. microsporum*; Perestenko 1981, p. 24, (Bering Sea), 1988, p. 55, (IV, VI), 1994, p. 72, (Bering Sea, southeast Kamchatka), in all cases as *H. microsporum*; Gusarova and Semkin 1986, p. 787, (southeast Kamchatka, Bering Sea) as *H. microsporum*; Selivanova 1988a, p. 91, (VIII), 1989, p. 97, (VIII), in both cases as *H. microsporum*; Klochkova and Selivanova 1989, p. 956, (VIII); Usov and Klochkova 1992, p. 375, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Dilsea socialis* (P. et R.) Perest.

Kjellman 1889, p. 6, (X) as *Sarcophyllis arctica* Kjellm.; Sinova 1940, p. 230, (X) as *S. arctica*; Tolstikova 1971, p. 63, (II), 1973, p. 20, (II), 1974, p. 151, (II); Vinogradova 1973a, p. 41, (II), 1978, p. 8, (V); Vinogradova et al. 1978, p. 153, (II, V, X); Gusarova and Semkin 1986, p. 786, (X,

Bering Sea); Usov and Klochkova 1992, p. 374, (VIII). The species was cited as *Neodilsea integra* (Kjellm.) A. Zin. pr. p. in all cases.

Perestenko 1994, p. 91, (Bering Sea); Kussakin and Ivanova 1995, p. 101, (X) as *N. integra*; Klochkova and Berezovskaja 1997, supplement, (II-V, VII-X).

*Dumontia contorta* (Gmel.) Rupr.

Voronihin 1914, p. 514, (VIII) as *D. filiformis* (Fl. Dan.) Grev.; Sinova 1933, p. 39, (VIII) as *D. filiformis*; Nagai 1941, p. 158, (Kamchatka, Bering Sea) as *D. filiformis*; Tokida 1954, p. 154, (Kamchatka, Bering Sea) as *D. incrassata* (Mull.) Lamour.; Vinogradova 1973a, p. 41, (II), 1978, p. 8, (IV), in both cases as *D. incrassata*; Vinogradova et al. 1978, p. 153, (II, IV, VII-VIII, X) as *D. incrassata*; Vinogradova and Perestenko 1978, p. 73, (Bering Sea) as *D. incrassata*; Kussakin and Ivanova 1978, p. 34, (II) as *D. incrassata*, 1995, p. 101, (X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea) as *D. incrassata*; Klochkova and Suhoveeva 1987, p. 75, (VI) as *D. incrassata*; Suhoveeva and Klochkova 1990, p. 45, (VI); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Erythrocladia irregularis* Rosenv.

Selivanova and Zhigadlova 1993, p. 68, (X), 1997c, p. 15, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Erythrothricliia carnea* (Dillw.) J. Ag.

Rudjakova 1967, p. 9 (on the ships operated near Kamchatka and Kuril Islands).

*Euthora cristata* (L.) J. Ag.

Kjellman 1889, p. 6, (I); Kardakova-Prejenzoffa 1938, p. 103, (X) as *Plocamium coccineum* (Huds.) Lyngb., cited on Sinova 1941; Sinova 1940, p. 212, (X), 1941, p. 131, (X) as *E. fruticulosa* (Rupr.) J. Ag., 1952, p. 93, (I), 1954, p. 388, (VIII) as *E. cristata* and as *E. fruticulosa*; Nagai 1941, p. 175, (Kamchatka, Bering Sea) as *E. fruticulosa*; Tokida 1954, p. 166, (Kamchatka, Bering Sea) as *E. fruticulosa*; Blinova and Gusarova 1971, p. 143, (IX) as *E. fruticulosa*; Tolstikova 1971, p. 63, (II), 1973, p. 30, (II), 1974, p. 151, (II); Vinogradova 1973a, p. 41, (I), 1978, p. 8, (IV-V) as *Callophyllis cristata* (L.) Kitz.; Vinogradova et al. 1978, p. 154, (I, IV, X) as *C. cristata*; Tarakanova 1978, p. 71, (X) as *C. cristata*; Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea) as *C. cristata*; Klochkova and Suhoveeva 1987, p. 75, (VI) as *C. cristata*; Perestenko

1988, p. 55, (IV-V) as *C. cristata*, 1994, p. 102, (Bering Sea); Selivanova 1988a, p. 90, (VIII), 1989, p. 96, (VIII), in both cases as *C. cristata*; Suhoveeva and Klochkova 1990, p. 46, (VI) as *C. cristata*; Usov and Klochkova 1992, p. 374, (VIII) as *C. cristata*; Oshurkov and Ivanjushina 1993, p. 98, (X) as *C. cristata*; Selivanova and Zhigadlova 1997c, p. 17, (X) as *C. cristata*; Klochkova and Berezovskaja 1997, supplement, (I-X).

*Fimbrifolium dichotomum* (Lepech.) Hansen subsp. *vepreculum* (Rupr.) Perest.

Kjellman 1889, p. 6, (X); Setchell 1899, p. 593, (X); Sinova 1940, p. 212, (X), 1954, p. 389, (VIII-IX); Tokida 1954, p. 173, (Bering Sea, Kamchatka); Blinova and Gusarova 1971, p. 143, (IX). Species was cited as *Rhodophyllis dichotoma* (Lepech.) Gobi in all cases.

Vinogradova 1973a, p. 42, (II), 1978, p. 9, (IV-V), in both cases as *R. dichotoma* and as *R. veprecula*; Vinogradova et al. 1978, p. 154, as *R. dichotoma* (X), and *R. veprecula* (IV-V); Tarakanova 1978, p. 71, (X) as *R. dichotoma*; Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka) as *R. dichotoma* and as *R. veprecula*; Suhoveeva and Klochkova 1990, p. 46, (VI) as *R. veprecula*; Perestenko 1988, p. 55, (V) as *Fimbrifolium dichotomum*, 1994, p. 116, (II, IV-V, southeast Kamchatka); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X) as *Fimbrifolium dichotomum*; Selivanova and Zhigadlova 1997c, p. 18, (X) as *Fimbrifolium dichotomum*.

*Fimbrifolium spinulosum* (Rupr.) Perest.

Blinova and Gusarova 1970, p. 70, (VII), 1971, p. 143, (IX) as *Rhodophyllis capillaris* Tokida f. *robusta* A. Zin.; Gusarova and Semkin 1986, p. 787, (southeast Kamchatka) as *R. capillaris* Tokida; Selivanova 1988b, p. 61, (VIII) as *R. capillaris*; Usov and Klochkova 1992, p. 374, (VIII) as *Fimbrifolium capillaris* (Tokida) Perest. in Kloczc.; Selivanova and Zhigadlova 1997c, p. 18, (X) as *Rhodophyllis capillaris*; Klochkova and Berezovskaja 1997, supplement, (VIII-X).

*Gloiopeltis furcata* (P. et R.) J. Ag.

Kjellman 1889, p. 6, (X) as *G. furcata* and as *G. dura* (Rupr.) J. Ag.; Voronihin 1914, p. 519, (VIII) as *G. dura*; Savich 1914, p. 460, (VIII) as *G. dura*; Sinova 1933, p. 39, (VIII) as *G. dura*, 1940, p. 229, (X) as *G. furcata* and as *G. dura*, 1954, p. 396, (VIII) as *G. dura* and as *G. coliformis* Harv., cited on Perestenko 1975b; Kardakova-Prejenzoffa 1938, p. 105, (X); Nagai 1941, p. 169, (X,

Kamchatka); Tokida 1954, p. 163, (X) as *G. furcata* f. *coliformis* (Harv.) Okamura; Spassky 1961, p. 293, (VII) as *G. dura* and as *G. coliformis*; Perestenko 1975b, p. 157, (IV-V, VIII, X), 1994, p. 93, (southeast Kamchatka); Vinogradova 1978, p. 8, (IV-V); Vinogradova *et al.* 1978, p. 154, (IV-V, VII-VIII, X); Vinogradova and Perestenko 1978, p. 73, (X, Bering Sea); Tarakanova 1978, p. 64, (X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Klochkova 1990, p. 45, (VI); Ivanjushina *et al.* 1991, p. 164 (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Halosaccion firtnum* (P. et R.) Kiitz.

Voronihin 1914, p. 509, (VII-VIII); Savich 1914, p. 454, (VIII); Sinova 1933, p. 33, (VII-VIII), 1940, p. 215, (X), 1954, p. 390, (VII); Kardakova-Prejzntzoffa 1938, p. 103, (X); Nagai 1941, p. 202, (Kamchatka, Bering Sea); Spassky 1961, p. 293, (VII); Klochkova 1976, p. 24, (VI); Vinogradova 1978, p. 9, (IV); Vinogradova *et al.* 1978, p. 154, (IV, VI-VIII, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Usov and Klochkova 1992, p. 375, (VIII); Perestenko 1994, p. 73, (I, IV-V, X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Halosaccion hydrophortim* (P. et R.) Kiitz.

Kjellman 1889, p. 6, (X) as *H. fucicola* (P. et R.) J. Ag.; Voronihin 1914, p. 508, (VII-VIII) as *H. saccatum* Kiitz.; Sinova 1933, p. 33, (VII-VIII) as *H. hydrophora* (P. et R.) J. Ag., 1940, p. 215, 216, (X) as *H. glandiforme* (Gmel.) Rupr., and as *H. fucicola* Rupr., 1954, p. 389, (VII-VIII) as *H. hydrophora*; Kardakova-Prejzntzoffa 1938, p. 103, (X) as *H. fucicola*; Nagai 1941, p. 201, (X, Kamchatka) as *H. saccatum*; Ushakov 1953, p. 320, (IX-X, Bering Sea) as *H. hydrophora*; Tokida 1954, p. 191, (X, Kamchatka) as *H. saccatum*.

Spassky 1961, p. 293, (VII); Blinova and Gusarova 1971, p. 143, (IX); Tolstikova 1971, p. 63, (II), 1973, p. 27, (II), 1974, p. 151, (II); Vinogradova 1973a, p. 42, (II), 1978, p. 9, (IV-V); Klochkova 1976, p. 24, (VI); Vinogradova *et al.* 1978, p. 154, (II, IV-VIII, X); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Kussakin and Ivanova 1978, p. 15, (II), 1995, p. 101, (X); Tarakanova 1978, p. 68, (X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 25, (VII); Selivanova 1988a, p. 91, (VIII), 1989, p. 97, (VIII); Usov and Klochkova 1992, p. 375, (VIII); Selivanova and

Zhigadlova 1997c, p. 19, (X). Species was cited as *H. glandiforme* (Gmel.) Rupr. in all cases.

Perestenko 1994, p. 74, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II-X).

*Halosaccion minjaii* Lee

Klochkova and Suhoveeva 1987, p. 75, (VI); Klochkova and Selivanova 1989, p. 954, (VI, X); Suhoveeva and Klochkova 1990, p. 47, (VI); Klochkova 1993, p. 166, (VI, X); Perestenko 1994, p. 74, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Harveyella mirabilis* (Reinsch.) Schmitz et Reinke

Vinogradova 1973a, p. 42, (II), 1978, p. 9, (V); Vinogradova *et al.* 1978, p. 154, (II, V); Gusarova and Semkin 1986, p. 787, (Bering Sea); Perestenko 1988, p. 55, (IV), 1994, p. 111, (II, IV-V); Klochkova and Berezovskaja 1997, supplement, (II, IV-V).

*Hideophyllum yezoense* (Yamada et Tokida) A. Zin.

Sinova 1940, p. 219, (X) as *Polyneura latissima* (Harv.) Kiitz., cited on Perestenko 1994; Klochkova 1976, p. 24, (VI) as *Myriogramme yezoensis* Yamada et Tokida; Vinogradova *et al.* 1978, p. 155, (VI-VIII) as *M. yezoensis*; Gusarova and Semkin 1986, p. 788, (southeast Kamchatka) as *Nitophyllum yezoense* (Yamada et Tokida) Mikami; Perestenko 1988, p. 55, (IV-V, X), 1994, p. 170, (IV-V, southeast Kamchatka, X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Hildenbrandtia rubra* (Sommer.) Menegh.

Kardakova-Prejzntzoffa 1938, p. 105, (X); Sinova 1940, p. 232, (X), 1952, p. 96, (I), 1954, p. 398, (VIII); Vinogradova 1973a, 41, (II), 1978, p. 8, (IV-V); Klochkova 1976, p. 23, (VI); Vinogradova *et al.* 1978, p. 154, (II, IV-VIII, X); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Kussakin and Ivanova 1978, p. 17, (II); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka, Bering Sea). Species was cited as *H. prototypus* Nardo. in all cases.

Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Hildenbrandtia occidentalis* S. et G.

Klochkova and Berezovskaja 1997, supplement, (IV, VIII).

*Hommersandia palmatifolia* (Tokida) Perest.

Perestenko 1986, p. 96, (IV), 1988, p. 55, (II, V), 1994, p. 107, (I-V); Oshurkov and Ivanjushina 1993, p. 100, (X); Klochkova and Berezovskaja 1997, supplement, (I-V, VIII-X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Hymenena ruthenica* (P. et R.) A. Zin.

Postels and Ruprecht 1840, p. 15, (Kamchatka) as *Wormskioldia ruthenica* P. et R.; Kjellman 1889, p. 6, (X) as *Nithophyllum ruthenicum* (P. et R.) Kjellm. pr. p.; Setchell 1899, p. 594, (X) as *N. ruthenicum*, cited on Lindstrom 1977; Arwidsson 1932, p. 150, (Kamchatka) as *N. ruthenicum*; Sinova 1933, p. 33, (VIII), 1940, p. 219, (X), in both cases as *N. ruthenicum*; Zinova 1965, p. 94, (VIII); Wynne 1970, p. 133, (Kamchatka); Vinogradova 1978, p. 10, (IV-V); Vinogradova et al. 1978, p. 155, (IV, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva and Klochkova 1990, p. 47, (VI); Ivanjushina et al. 1991, p. 164, (X); Usov and Klochkova 1992, p. 375, (VIII); Perestenko 1994, p. 170, (IV, VIII, X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Irtugovia shimamurana* (Nagai) Perest.

Kardakova-Prejzntzoffa 1938, p. 105, (X) as *Antithamnion uncinatum* Gardn. pr. p.; Klochkova and Berezovskaja 1997, supplement (X).

*Kallymeniopsis lacera* (Rupr.) Perest.

Postels and Ruprecht 1840, p. 18, (Kamchatka) as *Iridaea affinis* P. et R.; Arwidsson 1933, p. 150, (Kamchatka) as *I. affinis*; Sinova 1940, p. 209, (X), as *Callymenia reniformis* f. *cuneata* J. Ag., cited on Perestenko 1994, 1954, p. 386 (VIII) as *C. reniformis* f. *cuneata* pr. p., cited on Perestenko 1994; Perestenko 1975a, p. 1679, (X, Kamchatka), 1988, p. 55, (II, IV), 1994, p. 103, 9 (I, IV, VIII, X); Vinogradova et al. 1978, p. 154, (X); Gusarova and Semkin 1986, p. 787, (X); Selivanova 1988a, p. 90, (VIII), 1989, p. 96, (VIII); Selivanova and Zhigadlova 1993, p. 68, (X) as *K. circinnata* Perest., 1997c, p. 17, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X).

*Laingia aleutica* Wynne

Selivanova 1987b, p. 116, (X); Ivanjushina et al. 1991, p. 165, (X) as *Congregatocarpus aleutica* (Wynne) Wynne; Selivanova and Zhigadlova 1993, p. 69, (X) as *C. aleutica*;

Perestenko 1994, p. 47, (IV) as *C. aleutica*.

Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Leptophytum laeve* (Stroemf.) Adey

Suhoveeva and Klochkova 1990, p. 46, (VI); Klochkova and Berezovskaja 1997, supplement, (V-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Lithothamnion sonderi* Hauk.

Perestenko 1994, p. 53, (eastern Kamchatka); Klochkova and Berezovskaja 1997, supplement, (IV-X).

*Lukinia dissecta* Perest.

Perestenko 1994, p. 129, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Mastocarpus pacificus* (Kjellm.) Perest.

Kjellman 1889, p. 31, (I) as *Gigartina pacifica* Kjellm.; Perestenko 1994, p. 125, (southeast Kamchatka).

*Mastocarpus pacificus* var. *ochotensis* (Rupr.) Kloczc. comb. nov.

Basionym: *Chondrus mamillosus* var. *ochotensis*. Ruprecht 1850, p. 126.

Voronihin 1914, p. 505, (VIII); Savich 1914, p. 460, (VIII); Sinova 1933, p. 30, (VIII), 1940, p. 208, (X), 1952, p. 91, (I), 1954, p. 385, (VIII); Kardakova-Prejzntzoffa 1938, p. 103, (X); Nagai 1941, p. 186, (Kamchatka); Tokida 1954, p. 181, (Kamchatka); Klochkova 1976, p. 23, (VI); Tarakanova 1978, p. 68, (X). Species was cited as *Gigartina ochotensis* (Rupr.) Kjellm. in all cases.

Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997c, p. 19, (X). Species was cited as *Mastocarpus ochotensis* (Rupr.) Makijenko in all cases.

*Mastocarpus pacificus* var. *unalaschkensis* (Rupr.) Kloczc. comb. nov.

Basionym: *Chondrus mamillosus* var. *unalaschkensis*. Ruprecht 1850, p. 126.

Kardakova-Prejzntzoffa 1938, p. 103, (X); Sinova 1940, p. 209, (X); Nagai 1941, p. 183, (X); Klochkova 1976, p. 24, (VI), 1977, p. 30, (VII). Species was cited as *Gigartina unalaschkensis* (Rupr.) Kjellm. in all cases.

Klochkova and Berezovskaja 1997, supplement, (VI-X) as *Mastocarpus unalaschkensis* (Rupr.) Makijenko.

*Mastocarpus papillatus* (Ag.) Kiitz.

Vinogradova *et al.* 1978, p. 154, (X) as *Gigartina sitchensis*; Perestenko 1988, p. 55, (X), 1994, p. 125 (X); Klochkova 1993, p. 176, (X); Klochkova and Berezovskaja 1997, supplement, (X),

*Mazzaella cornucopiae* (P. et R.) Hommersand

Sinova 1940, p. 206, (X), 1954, p. 386, (Kamchatka) as *Iridea laminarioides* Bory; Nagai 1941, p. 189, (Kamchatka) as *Iridophycus cornucopiae* (P. et R.) S. et G.; Tokida 1954, p. 183, (Kamchatka) as *I. cornucopiae*.

Vinogradova 1973a, p. 42, (II); Vinogradova *et al.* 1978, p. 154, (II, X); Vinogradova and Perestenko 1978, p. 73, (X); Kussakin and Ivanova 1978, p. 15, (II), 1995, p. 101, (X); Tarakanova 1978, p. 70, (X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Perestenko 1988, p. 55, (V-VI); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X). Species was cited as *Iridaea cornucopiae* P. et R. in all cases.

Perestenko 1994, p. 129, (V, VIII, X); Klochkova and Berezovskaja 1997, supplement, (II, V-X); Selivanova and Zhigadlova 1997c, p. 18, (X).

*Mazzaella phyllocarpa* (P. et R.) Perest.

Postels and Ruprecht 1840, p. 18, (Kamchatka) as *Iridea phyllocarpa* P. et R.; Sinova 1933, p. 30, (VIII) as *I. phyllocarpa*, 1940, p. 206, (X), 1954, p. 386, (VII-VIII) as *I. phyllocarpa*; Nagai 1941, p. 193, (Kamchatka) as *Rhodoglossum pulchrum* (Kiitz.) S. et G.; Tokida 1954, p. 185, (Kamchatka) as *R. pulchrum*; Zinova 1962, p. 71, (VIII) as *R. phyllocarpum* (P. et R.) A. Zin.; Perestenko 1967a, p. 151, (VII, X), 1988, p. 55, (IV-VI), in both cases as *R. phyllocarpum*; 1994, p. 121, (IV-VIII, X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea) as *R. japonicum* Mikami; Usov and Klochkova 1992, p. 374, (VIII) as *R. japonicum*; Oshurkov and Ivanjushina 1993, p. 98, (X) as *R. phyllocarpum*; Klochkova and Berezovskaja 1997, (supplement), (IV-X) as *Mazzaella phyllocarpa*, and as *M. japonica*; Selivanova and Zhigadlova 1997c, p. 19, (X).

*Meilodiscus spetsbergensis* (Kjellm.) Saund. et McLachlan

Vinogradova 1973a, p. 40, (I), 1978, p. 8, (IV); Klochkova 1976, p. 23, (VI), 1977, p. 30, (VII); Vinogradova *et al.* 1978, p. 153, (I, IV, VII-VIII); Kussakin and Ivanova 1978, p. 36, (I); Gusarova and Semkin 1986,

p. 786, (southeast Kamchatka, Bering Sea). Species was cited as *Rhodochorton penicilliformis* (Kjellm.) Rosenv. in all cases.

Perestenko 1994, p. 51, (I); Klochkova and Berezovskaja 1997, supplement, (I, IV-VIII).

*Membranoptera beringiana* (Rupr.) A. Zin.

Postels and Ruprecht 1840, p. 14, (Kamchatka) as *Delesseria alata* (Huds.) Lamour.; Voronihin 1914, p. 511, (VII) as *D. serrata* P. et R., cited on Zinova 1965; Sinova 1933, p. 34, (VII-VIII) as *D. alata*, as *D. serrata* and as *D. spinulosa* (Rupr.) J. Ag. pr. p., cited on Zinova 1965, 1954, p. 391, (VIII) as *D. alata*; Kardakova-Prejenzoffa 1938, p. 104, (X) as *D. alata*; Zinova, 1965, p. 81, (VII-VIII, X); Vinogradova 1978, p. 10, (IV-V); Vinogradova *et al.* 1978, p. 155, (IV); Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka, Bering Sea); Klochkova and Suhoveeva 1987, p. 75, (VI); Perestenko 1988, p. 55, (V), 1994, p. 155, (IV-VIII); Suhoveeva and Klochkova 1990, p. 48, (VI); Klochkova 1993, p. 178, (IV-V); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Membranoptera ditnorpha* Gardn.

Sinova 1940, p. 218, (X) as *Delesseria serrata* P. et R., cited on Perestenko 1994; Perestenko 1988, p. 55, (X), 1994, p. 155, (eastern Kamchatka, X); Klochkova and Berezovskaja 1997, supplement, (VIII-X).

*Membranoptera multiramosa* Gardn.

Sinova 1940, p. 218, (X) as *D. spinulosa* (Rupr.) J. Ag. pr. p., and as *D. alata* (Huds.) Lamour. pr. p., cited on Zinova 1965; Zinova 1965, p. 83, (X); Gusarova and Semkin 1986, p. 788, (X); Perestenko 1994, p. 155, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Membranoptera serrata* (P. et R.) A. Zin.

Postels and Ruprecht 1840, p. 15, (Kamchatka) as *Delesseria serrata* P. et R.; Sinova 1940, p. 218, (X) as *D. serrata*; Zinova 1965, p. 80, (VII); Wynne 1970, p. 99, (Kamchatka); Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka); Perestenko 1994, p. 155, (Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VII, X).

*Metnbranoptera spinulosa* (Rupr.) A. Zin.

Zinova 1965, p. 82, (IX, Bering Sea); Wynne 1970, p. 100, (Kamchatka); Blinova and Gusarova 1971, p. 143, (southeast Kamchatka).

*Microcladia borealis* **Rupr.**

Kardakova-Prejenzoffa 1938, p. 105, (X); Sinova 1940, p. 228, (X); Vinogradova *et al.* 1978, p. 155, (X); Vinogradova and Perestenko 1978, p. 74, (X); Gusarova and Semkin 1986, p. 787, (X); Ivanjushina *et al.* 1991, p. 165, (X); Perestenko 1994, p. 153, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Mikamiella ruprechtiana* (**A. Zin.**) **Wynne**

Zinova 1965, p. 90, (X) as *Hypophyllum ruprechtianum* A. Zin.; Wynne 1970, p. 119, (X); Vinogradova *et al.* 1978, p. 155, (X) as *H. ruprechtianum*; Gusarova and Semkin 1986, p. 788, (X); Klochkova and Suhoveeva 1987, p. 76, (VI); Perestenko 1988, p. 55, (IV), 1994, p. 167, (IV X); Suhoveeva and Klochkova 1990, p. 47, (VI); Oshurkov and Ivanjushina 1993, p. 98, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Myriogramme kjellmanianum* **A. Zin.**

Zinova 1965, p. 96, (X, Kamchatka); Wynne 1970, p. 133, (X, Kamchatka); Klochkova and Berezovskaja 1997, supplement, (X).

*Nemalion vermiculare* **Suring.**

Klochkova 1977, p. 30, (VII); Vinogradova *et al.* 1978, p. 153, (VII); Gusarova and Semkin 1986, p. 786, (southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VII).

*Neoabbottiella araneosa* (**Perest.**) **Perest.**

Perestenko 1975a, p. 1686, (X, Bering Sea) as *Abbotia araneosa* Perest., 1994, p. 87, (X); Gusarova and Semkin 1986, p. 786, (X); Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Neodilsea natashae* **Lindstrom**

Selivanova 1988b, p. 59, (VII-VIII); Perestenko 1994, p. 90, (V, VII-X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Neodilsea yendoana* **Tokida**

Blinova and Gusarova 1970, p. 69, (VII), 1971, p. 142, (IX); Tolstikova 1974, p. 151, (II); Vinogradova *et al.* 1978, p. 153, (VII-VIII); Gusarova and Semkin 1986, p. 786, (X,

southeast Kamchatka); Selivanova 1989, p. 96, (VIII); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Neohypophyllum middendorffii* (**Rupr.**) **Wynne**

Tokida 1954, p. 212, (Kamchatka) as *Hypophyllum middendorffii* (Rupr.) Kylin; Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva and Klochkova 1990, p. 47, (VI); Klochkova and Berezovskaja 1997, supplement, (VI).

*Neoptilota asplenioides* (**Turn.**) **Ag.**

Kjellman 1889, p. 7, (X); Voronihin 1914, p. 513, (VII-VIII); Savich 1914, p. 460, (VIII); Arwidsson 1932, p. 150, (VIII); Sinova 1933, p. 38, (VIII), 1940, p. 228, (X), 1952, p. 95, (I), 1954, p. 394, (VIII); Kongiser 1933, p. 117, (V); Kardakova-Prejenzoffa 1938, p. 104, (X); Nagai 1941, p. 210, (X, Kamchatka); Ushakov 1953, p. 320, (IX-X); Tokida 1954, p. 200, (Kamchatka, Bering Sea); Blinova and Gusarova 1971, p. 143, (IX); Vozzhinskaja *et al.* 1971, p. 132, (southeast Kamchatka); Vinogradova 1973a, p. 43, (II), 1978, p. 9, (IV-V); Klochkova 1976, p. 24, (VI); Vinogradova *et al.* 1978, p. 155, (II, IV-VIII, X); Kizevetter *et al.* 1981, p. 63, (Bering Sea). Species was cited as *Ptilota asplenioides* (Turn.) Ag. in all cases.

Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Suhoveeva and Sarochan 1986, p. 81, (X) as *P. asplenioides*; Selivanova 1987a, p. 77, (VII), 1988a, p. 91, (VIII), 1989, p. 97, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Ivanjushina *et al.* 1991, p. 58, (X); Oshurkov and Ivanjushina 1993, p. 98, (X); Usov and Klochkova 1992, p. 375, (VIII); Perestenko 1994, p. 148, (Bering Sea); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Neorhodomela aculeata* (**Perest.**) **Masuda**

Gusarova and Semkin 1986, p. 788, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (IV).

*Neorhodomela larix* (**Turn.**) **Masuda**

Kjellman 1889, p. 6, (X); Voronihin 1914, p. 512, (VII); Sinova 1933, p. 37, (VII), 1940, p. 219, (X), 1952, p. 94, (I), 1954, p. 392, (VII-VIII); Kardakova-Prejenzoffa 1938, p. 104, (X); Nagai 1941, p. 235, (X, Kamchatka, Bering Sea); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 221, (Kamchatka, Bering Sea); Spassky 1961, p. 293, (VII); Perestenko 1967b, p. 146, (I-VIII, X); Vinogradova 1973a, p. 43, (II), 1978, p. 10, (IV-

V); Tolstikova 1973, p. 20, (II), 1974, p. 152, (II); Vinogradova *et al.* 1978, p. 155, (II, IV-V, VII-VIII, X); Vinogradova and Perestenko 1978, p. 72, (X, Bering Sea); Tarakanova 1978, p. 65, (X); Kizevetter *et al.* 1981, p. 63, (Bering Sea). Species was cited as *Rhodomela larix* (Turn.) Ag. in all cases.

Usov and Klochkova 1992, p. 374, (VIII); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Neorhodomela munita* (Perest.) Perest.

Klochkova and Berezovskaja 1997, supplement, (VII-IX).

*Neorhodomela oregona* (Doty) Masuda

Selivanova 1987b, p. 116, (X), 1988a, p. 92, (VIII), 1988b, p. 62, (VIII); Perestenko 1988, p. 55, (X), 1994, p. 191, (southeast Kamchatka); Ivanjushina *et al.* 1991, p. 165, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Nienburgia prolifera* Wynne

Perestenko 1988, p. 55, (X), 1994, p. 168, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Odonthalia annae* Perest.

Sinova 1940, p. 220, (X) as *O. floccosa* Falkenb. pr. p., and as *O. ochotensis* Ag. pr. p., cited on Perestenko 1973; Perestenko 1973, p. 65, (X, Kamchatka), 1994, p. 186, (southeast Kamchatka, X); Klochkova 1976, p. 24, (VI), 1977, p. 31, (VII); Vinogradova *et al.* 1978, p. 155, (VI-VIII, X); Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Odonthalia corymbifera* (Gmel.) J. Ag.

Sinova 1933, p. 36, (VIII), 1940, p. 220, (X) as *Odonthalia kamtschatica* Ag. pr. p., cited on Perestenko 1977, 1954, p. 393, (VIII) as *O. corymbifera* and as *O. ochotensis* (Rupr.) J. Ag. pr. p., cited on Perestenko 1994; Nagai 1941, p. 237, (Kamchatka); Tokida 1954, p. 223, (Kamchatka); Blinova and Gusarova 1971, p. 143, (IX); Perestenko 1977, p. 38, (X, eastern Kamchatka), 1988, p. 55, (X), 1994, p. 185 (southeast Kamchatka); Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka); Selivanova 1989, p. 97, (VIII); Usov and Klochkova 1992, p. 374, (VIII);

Klochkova and Berezovskaja 1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Odonthalia dentata* (L.) Lyngb.

Kjellman 1889, p. 6, (X); Sinova 1933, p. 36, (VIII), 1952, p. 94, (I); Tokida 1954, p. 223, (Kamchatka, Bering Sea); Tolstikova 1971, p. 63, (II), 1973, p. 20; (II), 1974, p. 152, (II); Vinogradova 1973a, p. 44, (II), 1978, p. 10, (V); Perestenko 1977, p. 39, (eastern Kamchatka), 1988, p. 55, (II, IV), 1994, p. 90, (I-V); Vinogradova *et al.* 1978, p. 155, (II, V-VIII); Gusarova and Semkin 1986, p. 788, (southeast Kamchatka, Bering Sea); Selivanova 1988a, p. 92, (VIII), 1989, p. 97, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Odonthalia floccosa* (Rupr.) J. Ag.

Kjellman 1889, p. 6, (X) as *Rhodomela floccosa* Rupr.; Setchell 1899, p. 594, (X) as *R. floccosa* (Esper) Ag., cited on Lindstrom 1977; Arwidsson 1932, p. 150, (Kamchatka); Kardakova-Prejenzoffa 1938, p. 104, (X); Nagai 1941, p. 242, (X); Sinova 1954, p. 393, (Kamchatka); Tokida 1954, p. 225, (X) as *O. floccosa* (Esper) Falkenb.; Perestenko 1977, p. 40, (X), 1994, c. 187, (X); Vinogradova *et al.* 1978, p. 155, (X); Vinogradova and Perestenko 1978, p. 73, (X); Gusarova and Semkin 1986, p. 788, (southeast Kamchatka); Ivanjushina *et al.* 1991, p. 165, (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Odonthalia kamtschatica* (Rupr.) J. Ag.

Kjellman 1889, p. 6, (X); Sinova 1933, p. 36, (VIII), 1940, p. 220, (X), 1954, p. 393, (VII-VIII); Nagai 1941, p. 242, (X, Kamchatka); Tokida 1954, p. 224, (X, Kamchatka); Blinova and Gusarova 1971, p. 143, (IX); Masuda and Yamada 1981, p. 171, (V, VIII); Masuda and Selivanova 1989, p. 180, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Perestenko 1994, p. 185, (eastern Kamchatka); Klochkova and Berezovskaja 1997, supplement, (V, VII-X).

*Odonthalia kawabatae* Masuda

Klochkova and Suhoveeva 1987, p. 75, (VI); Klochkova and Berezovskaja 1997, supplement, (VI).

*Odonthalia ochotensis* (Rupr.) J. Ag.

Sinova 1940, p. 220, (X) as *O. ochotensis* and as *O. kamtschatica* (Rupr.) J. Ag. pr. p., cited on Perestenko

1977, and as *O. semicostata* (Mert.) J. Ag., 1952, p. 94, (I), 1954, p. 393, (VII-VIII); Spassky 1961, p. 293, (VII); Klochkova 1976, p. 24, (VI); Perestenko 1977, p. 37, (X, eastern Kamchatka), 1988, p. 55, (V), 1994, p. 183, (IV-V, southeast Kamchatka); Vinogradova 1978, p. 11, (VI-V); Vinogradova *et al.* 1978, p. 155, (IV, X); Gusarova and Semkin 1986, p. 788, (southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Odonthalia setacea* (Rupr.) Perest.

Sinova 1933, p. 35, (Kamchatka) as *O. aleutica* (Mert.) J. Ag., 1940, p. 220, (X) as *O. lyalii* (Harv.) J. Ag., as *O. kamtschatica* (Rupr.) Ag. pr. p. and as *O. aleutica*, cited on Perestenko 1977, 1954, p. 393, (VIII) as *O. aleutica*; Kardakova-Prejzntzoffa 1938, p. 104, (X) as *O. lyalii*; Nagai 1941, p. 240, (X, Kamchatka) as *O. aleutica*; Tokida 1954, p. 224, (X, Kamchatka) as *O. aleutica*; Blinova and Gusarova 1970, p. 71, (VII), 1971, p. 143, (IX), in both cases as *O. lyalii* Ag.; Perestenko 1977, p. 36, (X, eastern Kamchatka), 1988, p. 55, (IV-V), 1994, p. 182, (southeast Kamchatka, X); Vinogradova *et al.* 1978, p. 155, (X); Masuda 1981, p. 154, (X); Gusarova and Semkin 1986, p. 788, (southeast Kamchatka, X); Selivanova 1989, p. 97, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (IV-V, VII-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Opuntiella ornata* (P. et R.) A. Zin.

Kjellman 1889, p. 6, (X) as *Callymenia ornata* (P. et R.) J. Ag.; Sinova 1933, p. 32, (VIII) as *C. ornata*, 1940, p. 209, (X), as *C. ornata* and as *C. reniformis* J. Ag., 1954, p. 386, (VIII) as *C. ornata* and as *Sarcophyllis edulis* Ag., cited on Perestenko 1994; Nagai 1941, p. 175, (X, Kamchatka) as *C. ornata*; Perestenko 1976, p. 49, (VIII, X), 1988, p. 55, (IV-V), 1994, p. 115, (IV-V, VIII, X); Vinogradova and Perestenko 1978, p. 74, (X); Vinogradova *et al.* 1978, p. 154, (X); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Selivanova 1989, p. 97, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (IV-V, VIII-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Palmaria callophyllloides* Hawkes et Scagel

Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (XIII-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Palmaria marginicrassa* Lee

Sinova 1940, p. 213, (X) as *Rhodymenia palmata* (L.) Grev. pr. p.; Klochkova and Suhoveeva 1987, p. 74, (VI); Perestenko 1988, p. 55, (X); Suhoveeva and Klochkova 1990, p. 47, (VI); Perestenko 1994, p. 70, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Palmaria stenogona* (Perest.) Perest.

Kjellman 1889, p. 6, (X) as *Halosaccion tilesii* Kjellm.; Setchell *et* Gardner 1903, p. 316, (X) as *H. tilesii* and as *Rhodymenia palmata* (L.) Grev., cited on Lindstrom 1977; Voronihin 1914, p. 508, (VII-VIII); Voronihin 1914, p. 508, (VII-VIII) as *R. palmata*; Savich 1914, p. 454, (VIII) as *R. palmata*; Kardakova-Prejzntzoffa 1938, p. 103, (X) as *R. palmata*; Sinova 1933, p. 32, (VIII) as *R. palmata* pr. p., as *Gracilaria multipartida* Harv., and as *G. textorii* Suring., 1940, p. 213, (X) as *R. palmata* and as *G. textorii*, 1954, p. 389, (VII-VIII), in both cases as *R. palmata*; Nagai 1941, p. 195, (Kamchatka) as *R. palmata*; Tokida 1954, p. 187, (Kamchatka) as *R. palmata*; Spassky 1961, p. 293, (VII) as *R. palmata*; Blinova and Gusarova 1971, p. 143, (IX) as *R. palmata*; Vozzhinskaja *et al.* 1971, p. 132, (southeast Kamchatka) as *R. palmata*; Vinogradova, 1973a, p. 42, (II), 1978, p. 9, (IV-V) in both cases as *R. stenogona* Perest.; Perestenko 1973, p. 61, (Bering Sea) as *R. stenogona*; Klochkova 1976, p. 24, (VI) as *R. stenogona*; Vinogradova and Perestenko 1978, p. 72, (X, Bering Sea); Vinogradova *et al.* 1978, p. 154, (II, IV-VIII, X) as *R. stenogona*; Kussakin and Ivanova 1978, p. 20, (II) as *R. stenogona*; Tarakanova 1978, p. 75, (X) as *R. stenogona*; Kizevetter *et al.* 1981, p. 65, (Bering Sea) as *R. stenogona*; Gusarova 1982, p. 36, (X); 1987, p. 24, (VII); Gusarova and Semkin 1986, p. 787, (IX-X, Bering Sea); Selivanova 1988a, p. 91, (VIII), 1989, p. 97, (VIII); Mihajlov 1989, p. 85, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X); Perestenko 1994, p. 69, (Bering Sea, southeast Kamchatka, X); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Pantoneura juergensii* (J. Ag.) Kylin

Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka); Perestenko 1988, p. 55, (IV-V), 1994, p. 157, (IV-V); Klochkova and Berezovskaja 1997, supplement, (IV-V, VII-X).



*Pantoneura baerii* (Rupr.) **Kylin**

Perestenko 1994, p. 156, (V); Klochkova and Berezovskaja 1997, supplement, (V).

*Peyssonnelia pacifica* **Kylin**

Perestenko 1988, p. 55, (X), 1994, p. 109, (X); Klochkova and Berezovskaja 1997, supplement, (VI-X).

*Rhodophysema elegans* (Crouan et Crouan ex. J. Ag.)  
**Dixon**

Klochkova and Berezovskaja 1997, supplement, (VIII, X).

*Rhodophysema nagaii* **Masuda**

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Phycodrys amchitkensis* **Wynne**

Gusarova and Semkin 1986, p. 788, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Phycodrys riggii* **Gardn.**

Kjellman 1889, p. 25, (X) as *Delesseria sinuosa* (Good et Wood.) Lamour.; Sinova 1933, p. 39, (VIII), 1940, p. 218, (X) in both cases as *D. sinuosa*, cited on Perestenko 1994; Tokida 1954, p. 209, (Kamchatka, Bering Sea) as *P. rubens* (Huds.) Batt.; Zinova 1965, p. 86, (X, Kamchatka); Blinova and Gusarova 1970, p. 70, (VII); Wynne 1970, p. 112, (X, Kamchatka); Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka, Bering Sea); Klochkova and Suhoveeva 1987, p. 75, (VI); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X); Perestenko 1994, p. 164, (Bering Sea, X); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Phycodrys serratiloba* (Rupr.) **A. Zin.**

Zinova 1965, p. 84, (X, Kamchatka, Bering Sea); Blinova and Gusarova 1970, p. 70, (VII), 1971, p. 143, (IX); Vozzhinskaja et al. 1971, p. 132, (southeast Kamchatka); Tolstikova 1971, p. 63, (II), 1973, p. 24, (II), 1974, p. 152, (II); Vinogradova 1973a, p. 43, (I-II), 1978, p. 9, (IV-V); Klochkova 1976, p. 24, (VI); Vinogradova et al. 1978, p. 155, (I-II, IV, VI, X); Kussakin and Ivanova 1978, p. 36, (I).

*Phycodrys vinogradovae* **Perest. et Guss.**

Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka, Bering Sea); Klochkova and Berezovskaja

1997, supplement, (VIII-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Phymatolithon calcareum* (Pallas) **Adey et McKibbin**  
Klochkova and Berezovskaja 1997, supplement, (V).

*Phymatolithon lenormandii* (Aresch.) **Adey**  
Klochkova and Berezovskaja 1997, supplement, (V-IX).

*Phymatolithon purpureum* (P. et H. Crouan) **Woelkerl.**  
**et Irvine**

Sinova 1940, p. 232, (X); Vinogradova 1973a, p. 41, (II); Vinogradova et al. 1978, p. 154, (II); Gusarova and Semkin 1986, p. 787, (X, Bering Sea). Species was cited as *P. polymorphum* Foslie in all cases.

Perestenko 1994, p. 57, (II); Klochkova and Berezovskaja 1997, supplement, (II, X).

*Pleonosporium kobayashi* **Okam.**

Sinova 1940, p. 225, (X) as *P. abyssicola* Gardn., cited on Perestenko 1994; Perestenko 1988, p. 55, (X), 1994, p. 148, (southeast Kamchatka, X); Selivanova 1988a, p. 91, (VIII), 1988b, p. 61, (VIII-IX), 1989, p. 97, (VIII) as *Callithamnion* sp.; Klochkova 1993, p. 182, (VII-VIII); Oshurkov and Ivanjushina 1993, p. 98, (X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Pleonosporium vancouverianum* (J. Ag.) **J. Ag.**

Sinova 1940, p. 225, (X); Gusarova and Semkin 1986, p. 787, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Pleuroblepharidella japonica* (Okam.) **Wynne**

Sinova 1933, p. 221, (X) as *Odonthalia semicostata* (Mert.) J. Ag.; Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VII, X).

*Polyneura latissima* (Harv.) **Kylin**

Sinova 1940, p. 219, (X); Gusarova and Semkin 1986, p. 788, (X); Perestenko 1994, p. 167, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Polysiphonia japonica* **Harv.**

Perestenko 1988, p. 55, (V), 1994, p. 178, (V); Klochkova and Berezovskaja 1997, supplement, (V).

*Polysiphonia morrovii* **Harv.**

Sinova 1940, p. 222, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p.21,(X).

*Polysiphonia urceolata* (**Lightf.**) **Grev.**

Tolstikova 1971, p. 63, (II), 1973, p. 24, (II), 1974, p. 152, (II); Vinogradova 1973a, p. 43, (I-II), 1978, p. 10, (IV-V); Klochkova 1976, p. 24, (VI); Vinogradova and Perestenko 1978, p. 74, (Bering Sea); Vinogradova *et al.* 1978, p. 155, (I-II, IV-V, VII-VIII); Tarakanova 1978, p. 71, (X); Gusarova and Semkin 1986, p. 788, (southeast Kamchatka, Bering Sea); Oshurkov *et al.* 1989, p. 8, (VIII); Selivanova 1989, p. 97, (VIII); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Porphyra abbottae* **Krishn.**

Sinova 1940, p. 204, (X) as *P. perforata* J. Ag. pr. p., cited on Perestenko 1994; Klochkova 1976, p. 23, (VI) as *P. umbilicalis* (L.) J. Ag.; Vinogradova *et al.* 1978, p. 153, (VI-VII) as *P. umbilicalis*; Perestenko 1982, p. 19, (X), 1994, p. 32, (VIII, X); Gusarova and Semkin 1986, p. 786, (X); Selivanova 1988b, p. 58, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Porphyra brumalis* **Mumf.**

Sinova 1940, p. 204, (X) as *P. perforata* J. Ag. pr. p., cited on Perestenko 1982; Perestenko 1982, p. 23, (X), 1994, p. 35, (X); Gusarova and Semkin 1986, p. 786, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Porphyra bulbopes* (**Yendo**) **Okam.**

Nagai 1941, p. 154, (X); Vinogradova *et al.* 1978, p. 153, (X); Perestenko 1983, p. 37, (X), 1994, p. 41, (X); Gusarova and Semkin 1986, p. 786, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Porphyra gardneri* (**Smith et Hollenb.**) **Hawkes**

Sinova 1940, p. 204, (X) as *P. nereocystis* Anders., cited on Perestenko 1982; Perestenko 1982, p. 21, (X), 1994, p. 35, (X); Gusarova and Semkin 1986, p. 786, (X); Klochkova and Suhoveeva 1987, p. 75, (VI); Suhoveeva and Klochkova 1990, p. 45, (VI); Ivanjushina *et al.* 1991, p. 165, (X); Klochkova and Berezovskaja 1997, supplement, (VI, X); Selivanova and Zhigadlova 1997c, p. 16,

(X).

*Porphyra kurogii* **Lindstrom**

Vinogradova 1978, p. 8, (IV); Vinogradova *et al.* 1978, p. 153, (IV); Gusarova and Semkin 1986, p. 786, (Bering Sea); Perestenko 1988, p. 55, (X); Selivanova 1989, p. 95, (VIII). Species was cited as *P. purpurea* (Roth) Ag. in all cases.

Klochkova and Berezovskaja 1997, supplement, (IV-V, VII-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Porphyra miniata* (**Ag.**) **Ag.**

Voronihin 1914, p. 504, (VIII); Sinova 1933, p. 29, (VII) as *Diploderma miniata* (Ag.) Kjellm., 1940, p. 205, (X) as *D. amplissima* Kjellm.; Tokida 1954, p. 150, (Kamchatka) as *P. amplissima* (Kjellm.) Setch. *et* Hus.; Tolstikova 1974, p. 151, (II) as *P. variegata* Hus., cited on Perestenko 1983.; Klochkova 1976, p. 23, (VI) as *P. amplissima*; Vinogradova 1978, p. 7, (VI) as *P. amplissima*; Vinogradova *et al.* 1978, p. 153, (IV, VI-VIII) as *P. amplissima*; Gusarova and Semkin 1986, p. 767, (Bering Sea) as *P. miniata* and as *P. amplissima*; Gusarova 1987, p. 24, (VII); Selivanova 1989, p. 96, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Perestenko 1994, p. 41, (Bering Sea); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Porphyra ochotensis* **Nagai**

Gusarova and Semkin 1986, p. 786, (Bering Sea); Perestenko 1988, p. 55, (X), 1994, p. 38, (southeast Kamchatka); Selivanova 1988b, p. 59, (VIII); Mihajlov 1989, p. 84, (VIII); Klochkova and Berezovskaja 1997, supplement, (VI-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Porphyra pseudolinearis* **Ueda**

Sinova 1954, p. 383, (VIII) as *P. perforata* J. Ag., cited on Perestenko 1994; Vinogradova 1973a, p. 40, (II), 1978, p. 7, (IV-V); Klochkova 1976, p. 23, (VI), 1977, p. 30, (VII-VIII); Vinogradova and Perestenko 1978, p. 73, (Bering Sea); Vinogradova *et al.* 1978, p. 153, (II, IV-VIII); Perestenko 1982, p. 27, (Bering Sea), 1994, p. 39, (Bering Sea, southeast Kamchatka); Gusarova and Semkin 1986, p. 786, (southeast Kamchatka, Bering Sea); Selivanova 1989, p. 95, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (II-IX).

*Porphyra schizophylla* **Hollenb.**

Perestenko 1983, p. 39, (X), 1994, p. 41, (X); Gusarova and Semkin 1986, p. 786, (X); Ivanjushina *et al.* 1991, p. 165, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Porphyra tasa* **(Yendo) Ueda**

Vinogradova *et al.* 1978, p. 153, (X); Vinogradova and Perestenko 1978, p. 74, (X); Gusarova and Semkin 1986, p. 786, (X, southeast Kamchatka); Selivanova 1988b, p. 59, (southeast Kamchatka); Perestenko 1994, p. 42, (southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (IX-X).

*Porphyra torta* **Krishn.**

Sinova 1954, p. 383, (VIII) as *P. perforata* J. Ag. pr. p., as *P. laciniata* f. *tipica* Kjellm., and as *Diploderma variegata* Kjellm. pr. p., cited on Perestenko 1994; Vinogradova *et al.* 1978, p. 153, (X) as *P. perforata* J. Ag., cited on Perestenko 1982; Perestenko 1982, p. 21, (X), 1994, p. 33, (X); Gusarova and Semkin 1986, p. 786, (X); Klochkova 1993, p. 184, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Porphyra umbilicalis* **(L.) Kiitz. f. pacifica Perest.**

Perestenko 1994, p. 42, (X); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Porphyra variegata* **(Kjellm.) Hus.**

Perestenko 1994, p. 40, (IV, X); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 16, (X).

*Pterosiphonia bipinnata* **(P. et R.) Falkenb.**

Sinova 1933, p. 37, (VIII); Kardakova-Prejntzoffa 1938, p. 104, (X); Sinova 1940, p. 222, (X), 1952, p. 94, (I), 1954, p. 392, (VII-VIII); Nagai 1941, p. 230, (X, Kamchatka); Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Tokida 1954, p. 220, (X, Kamchatka); Spassky 1961, p. 293, (VII); Blinova and Gusarova 1971, p. 143, (IX); Tolstikova 1971, p. 63, (II), 1973, p. 29, (II), 1974, p. 152, (II); Vinogradova 1973a, p. 43, (I-II), 1978, p. 10, (IV-V); Klochkova 1976, p. 24, (VI); Vinogradova *et al.* 1978, p. 155, (I-II, IV-VIII, X); Kussakin and Ivanova 1978, p. 19, (I-II); Tarakanova 1978, p. 67, (X); Gusarova and Semkin 1986, p. 788, (X,

southeast Kamchatka, Bering Sea); Gusarova 1987, p. 25, (VII); Selivanova 1987a, p. 77, (VIII), 1987b, p. 118, (X), 1989, p. 97, (VIII); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 99, (X); Perestenko 1994, p. 174, (Bering Sea, southeast Kamchatka); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Pterosiphonia hatnata* **Sinova**

Kardakova-Prejntzoffa 1938, p. 104, (X) as *P. arctica* S. et G., and as *P. bipinnata* (P. et R.) Falkenb. pr. p., cited on Sinova 1941; Sinova 1940, p. 222, (X) as *Polysiphonia arctica* J. Ag., and as *Pterosiphonia hamata*; Tarakanova 1978, p. 67, (X); Selivanova 1987b, p. 118, (X), 1988a, p. 91, (VIII), 1989, p. 97, (VI); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 98, (X); Perestenko 1994, p. 175, (X); Klochkova and Berezovskaja 1997, supplement, (VII-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Pterosiphonia pinnata* **(Roth) Falkenb.**

Sinova 1933, p. 37, (Kamchatka); Klochkova and Berezovskaja 1997, supplement, (VIII-IX).

*Pterosiphonia* **sp.**

Usov and Klochkova 1992, p. 374, (VIII); Klochkova and Berezovskaja 1997, supplement, (VIII).

*Ptilota filicina* **J. Ag.**

Kardakova-Prejntzoffa 1938, p. 104, (X) as *P. plumosa* (L.) J. Ag. pr. p.; Sinova 1940, p. 227, (X) as *P. californica* Rupr. pr. p., 1954, p. 394, (VIII) as *P. californica*; Blinova and Gusarova 1970, p. 70, (VII), 1971, p. 143, (IX); Vozzhinskaja *et al.* 1971, p. 132, (southeast Kamchatka); Tolstikova 1971, p. 63, (II), 1973, p. 29, (II), 1974, p. 152, (II); Vinogradova *et al.* 1978, p. 155, (IV, VII-VIII, X); Kizevetter *et al.* 1981, p. 62, (Bering Sea); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Gusarova 1987, p. 25, (VII); Perestenko 1988, p. 55, (IV-V); Kussakin and Ivanova 1995, p. 101, (X); Klochkova and Berezovskaja 1997, supplement, (II-X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Ptilota pectinata* **(Gunn.) Kjellm.**

Kardakova-Prejntzoffa 1938, p. 105, (X); Sinova 1941, p. 131, (X) as *P. californica* Rupr. pr. p., 1952, p. 94, (I), 1954, p. 394, (VIII); Nagai 1941, p. 211, (Kamchatka, Bering Sea); Ushakov 1953, p. 320, (IX-X, Bering Sea);

Tokida 1954, p. 199, (Kamchatka, Bering Sea); Selivanova and Zhigadlova 1997c, p. 20, (X) as *P. serrata* Kiitz.; Klochkova and Berezovskaja 1997, supplement, (I, VI-X).

*Ptilota plumosa* (L.) J. Ag.

Kongiser 1933, p. 117, (V); Kardakova-Prejntzoffa 1938, p. 105, (X) pr. p.; Sinova 1941, p. 131, (X) as *P. californica* Rupr. pr. p.; Klochkova and Berezovskaja 1997, supplement, (V, VII-X).

*Reingardia laminariicola* Perest.

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Rhodomela tenuissima* (Rupr.) Kjellm.

Sinova 1940, p. 219, (X), 1952, p. 94, (I), 1954, p. 392, (VI) as *R. lycopodioides* f. *typica* Kjellm.; Nagai 1941, p. 235, (Bering Sea), as *R. subfusca* (Wood.) J. Ag.; Ushakov 1953, p. 320, (X, southeast Kamchatka, Bering Sea); Spassky 1961, p. 293, (VII) as *R. subfusca* and as *R. lycopodioides* (L.) Ag.; Tolstikova 1971, p. 63, (II), 1973, p. 20, (II), 1974, p. 152, (II); Vinogradova 1973a, p. 44, (I-II), 1973c, p. 22, (II), 1978, p. 10, (V); Klochkova 1976, p. 24, (VI), 1977, p. 31, (VII); Vinogradova *et al.* 1978, p. 155, (I-II, V-VIII); Kussakin and Ivanova 1978, p. 17, (I-II); Gusarova and Semkin 1986, p. 788, (X, southeast Kamchatka, Bering Sea); Usov and Klochkova 1992, p. 375, (VIII); Perestenko 1994, p. 193, (I-V, southeast Kamchatka); Klochkova and Berezovskaja 1997, supplement, (I-X).

*Rhodomela pinnata* Perest.

Sinova 1940, p. 219, (X), as *R. lycopodioides* f. *typica* Kjellm. cited on Perestenko 1994; Perestenko 1994, p. 194, (I, V-VI, X); Klochkova and Berezovskaja 1997, supplement, (I, V-VI, X).

*Rhodomela sibirica* A. Zin. et Vinogr.

Vinogradova 1973a, p. 44, (II), 1973c, p. 22, (II); Vinogradova *et al.* 1978, p. 155, (II); Gusarova and Semkin 1986, p. 788, (Bering Sea); Perestenko 1988, p. 55, (V), 1994, p. 195, (I, V-VI, X); Suhoveeva and Klochkova 1990, p. 48, (VI); Klochkova and Berezovskaja 1997, supplement, (I-VI).

*Rhodophysetna elegans* (Crouan et Crouan ex J. Ag.)  
Dixon

Perestenko 1988, p. 55, (X); Klochkova and Berezovskaja 1997, supplement, (VIII-X).

*Rhodophysetna nagaii* Masuda

Klochkova and Berezovskaja 1997, supplement, (VIII).

*Rhodymenia pertusa* (P. et R.) J. Ag.

Kjellman 1889, p. 6, (X); Sinova 1940, p. 214, (X), 1954, p. 389, (VII-VIII); Nagai 1941, p. 200, (X, Kamchatka); Tokida 1954, p. 186, (Kamchatka, Bering Sea); Spassky 1961, p. 293, (VII); Blinova and Gusarova 1971, p. 143, (IX); Kizevetter *et al.* 1981, p. 65, (Bering Sea); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Perestenko 1988, p. 55, (V); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 100, (X); Klochkova and Berezovskaja 1997, supplement, (V, VII-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Scagelia breviarticulata* Perest.

Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Scagelia pylaisaei* (Mont.) Wynne

Kardakova-Prejntzoffa 1938, p. 105, (X) as *Antithamnion boreale* f. *corallinae* Kjellm.; Sinova 1954, p. 395, (VIII) as *A. boreale* f. *corallina* (Gobi) Kjellm.; Vinogradova 1973a, p. 43, (I-II) as *A. subulatum* (Harv.) J. Ag.; Tolstikova 1974, p. 151 (II) as *A. subulatum*; Vinogradova *et al.* 1978, p. 155, (I-II) as *A. subulatum*; Kussakin and Ivanova 1978, p. 19, (I-II) as *A. subulatum*; Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka) as *S. corallina* (Kjellm.) Yoshida and as *Hollenbergia subulata* (Harv.) Woll.; Perestenko 1984, p. 47, (Bering Sea) as *Scagelia subnuda* (Rupr.) Perest., 1988, p. 55, (I-II, IV-V), 1994, p. 137, (V, VIII) as *S. pylaisaei* f. *subnuda* (Rupr.) Perest., and as *S. pylaisaei* f. *corallina* (Rupr.) Perest.; Klochkova 1993, p. 186, (IV-V, VIII, X); Selivanova and Zhigadlova 1997c, p. 20, (X) as *S. pylaisaei* and as *S. subnuda*; Klochkova and Berezovskaja 1997, supplement, (I-V, VII-X).

*Schizytnenia pacifica* Kylin

Sinova 1940, p. 230, (X) as *S. dubyi* (Chauv.) J. Ag.; Tarakanova 1978 p. 72, (X) as *S. dubyi*; Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka); Perestenko 1994, p. 112, (southeast Kamchatka, X); Klochkova and Berezovskaja 1997, supplement, (VII-X).

*Tayloriella abyssalis* Wynne

Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Tokidadendron kurilensis* (Rupr.) Perest.

Sinova 1940, p. 217, (X) as *Delesseria crassifolia* Rupr., and as *D. crassifolia* f. *pulcherrima* Sinova, cited on Perestenko 1994; Vinogradova and Perestenko 1978, p. 74, (X) as *T. bullata* (Gardn.) Wynne; Vinogradova *et al.* 1978, p. 155, (X) as *T. bullata*; Gusarova and Semkin 1986, p. 788, (X); Selivanova 1987b, p. 117, (X); Perestenko 1988, p. 55, (IV); Suhoveeva and Klochkova 1990, p. 48, (VI); Klochkova 1993, p. 188, (IV-VI, VIII, X); Oshurkov and Ivanjushina 1993, p. 98, (X); Perestenko 1994, p. 159, (IV, eastern Kamchatka, X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 21, (X).

*Tokidea serrata* (Wynne) Lindstrom *et* Wynne

Perestenko 1988, p. 55, (X), 1994, p. 145, (X); Klochkova and Berezovskaja 1997, supplement, (X); Selivanova and Zhigadlova 1997c, p. 20, (X).

*Turnerella mertensiana* (P. *et* R.) Schmitz

Kjellman 1889, p. 6, (X) as *Schizymenia mertensiana* (P. *et* R.) J. Ag.; Setchell and Gardner 1903, p. 307, (X); Voronihin 1914, p. 507, (VIII); Savich 1914, p. 460, (VIII); Kardakova-Prejzoffa 1938, p. 103, (X); Sinova 1933, p. 32, (VIII), 1940, p. 211, (X), 1954, p. 387, (VII) as *T. mertensiana*, and as *Callymenia reniformis* f. *cuneata* J. Ag.; Nagai 1941, p. 178, (X, Kamchatka); Tokida 1954, p. 172, (X, Kamchatka); Blinova and Gusarova 1971, p. 143, (IX); Vozzhinskaja *et al.* 1971, p. 132, (southeast Kamchatka); Perestenko 1976, p. 44, (X, Bering Sea), 1986, p. 97, (IV, X), 1988, p. 55, (V-VI), 1994, p. 113, (southeast Kamchatka, Bering Sea); Vinogradova 1978, p. 9, (IV); Vinogradova *et al.* 1978, p. 154, (IV, X); Gusarova 1982, p. 36, (IX); Gusarova and Semkin 1986, p. 787, (X, southeast Kamchatka, Bering Sea); Selivanova 1987b, p. 118, (X), 1988a, p. 90, (VIII), 1989, p. 97, (VIII); Oshurkov *et al.* 1989, p. 8, (VIII); Suhoveeva and Klochkova 1990, p. 47, (VI); Usov and Klochkova 1992, p. 37, (VIII); Oshurkov and Ivanjushina 1993, p. 100, (X); Klochkova and Berezovskaja 1997, supplement, (IV-X); Selivanova and Zhigadlova 1997c, p. 19, (X).

*Velatocarpus kurilensis* Perest.

Perestenko 1994, p. 105, (IV-V).

*Velatocarpus pustulosus* (P. *et* R.) Perest.

Postels and Ruprecht 1940, p. 18, (Kamchatka) as *Iridea pustulosa* P. *et* R.; Arwidsson 1932, p. 150 as *I. pustulosa*;

Sinova 1933, p. 30, (VIII) as *I. pustulosa*, 1941, p. 130, (X) as *Callymenia reniformis* (Turn.) J. Ag., 1952, p. 92, (I) as *C. shmitzii* (Schmitz) De-Toni; Kardakova-Prejzoffa 1938, p. 103, (X) as *I. pustulosa*; Perestenko 1975a, p. 1680, (VIII) as *Kallymeniopsis pustulosa* (P. *et* R.) Perest., 1988, p. 55, (I-II, IV), 1994, p. 104, (II-V, VIII); Gusarova and Semkin 1986, p. 787, (IX) as *K. pustulosa*; Selivanova 1988a, p. 90, (VIII); Suhoveeva and Klochkova 1990, p. 46, (VI); Usov and Klochkova 1992, p. 374, (VIII); Oshurkov and Ivanjushina 1993, p. 100, (X); Klochkova and Berezovskaja 1997, supplement, (I-X); Selivanova and Zhigadlova 1997c, p. 17, (X).

*Yendonia commandorensis* (Sinova) A. Zin.

Sinova 1940, p. 216, (X) as *Delesseria commandorensis* Sinova, cited on Zinova 1965; Zinova 1965, p. 87, (X); Klochkova and Berezovskaja 1997, supplement, (X).

*Yendonia crassifolia* (Rupr.) Kylin

Kardakova-Prejzoffa 1938, p. 104, (X) as *Delesseria crassifolia* Rupr.; Sinova 1940, p. 217, (X) as *D. crassifolia*; Vinogradova 1978, p. 10, (IV); Vinogradova *et al.* 1978, p. 155, (IV); Tarakanova 1978, p. 72, (X) as *D. crassifolia*; Gusarova and Semkin 1986, p. 788, (X, Bering Sea); Perestenko 1988, p. 55, (V); 1994, p. 166, (IV-X); Klochkova and Berezovskaja 1997, supplement, (IV-X).

## LIST OF WRONG DEFINED AND DOUBTFUL SPECIES

### Division Chlorophyta - Green algae

*Acrosiphonia mertensii* (Rupr.) Yendo (Gusarova and Semkin 1986)

*A. sonderi* (Kiitz.) Kornm. (Tolstikova 1971, 1973, 1974; Vinogradova 1973a, 1978; Vinogradova *et al.* 1978; Kussakin and Ivanova 1978; Tarakanova 1978)

*Cladophora crispata* (Roth) Kiitz. (Sinova 1940)

*C. fracta* (Dillw.) Kiitz. (Sinova 1954; Spassky 1961; Oshurkov and Ivanjushina 1993)

*C. stimpsonii* Harv. (Mihajlov 1989)

*C. utriculosa* Kiitz. (Sinova 1940)

*C. wrightiana* Harv. (Sinova 1952)

*Enteromorpha compressa* (L.) Grev. (Kjellman 1889; Arwidsson 1932; Sinova 1933, 1952; Kardakova-Prejzoffa 1938; Ushakov 1953)

*E. crinita* (Roth) J. Ag. (Sinova 1954)

*E. erecta* (Lyngb.) J. Ag. (Sinova 1954)

*E. fascia* P. *et* R. (Kjellman 1889)

*E. intestinalis* (L.) Link (Voronihin 1914; Sinova 1940,

1952; Nagai 1940; Ushakov 1953; Tokida 1954)  
*Monostroma crassiuscula* Kjellm. (Kjellman 1889; Sinova 1940)  
*M. crepidium* Farl. (Kardakova-Prejenzoffa 1938)  
*M. crispatum* Kjellm. (Kardakova-Prejenzoffa 1938; Sinova 1940)  
*M. vahlii* J. Ag. (Sinova 1940)  
*Spongomorpha hystrix* Stroemf. (Kardakova-Prejenzoffa 1938)  
*S. lanosa* (Roth) Kiitz. (Kardakova-Prejenzoffa 1938)  
*S. mertensii* Rupr. (Tokida 1954)  
*S. spinescens* Kiitz. (Sinova 1954)

#### Division Phaeophyta - Brown algae

*Maria crispa* Kjellm. (Kjellman 1889; Sinova 1952)  
*A. dolichoraches* Kjellm. (Setchel and Gardner 1903; Yendo 1912; Arwidsson 1932; Nagai 1940; Sinova 1952; Schapova 1948)  
*A. esculenta* (L.) Grev. (Setchell and Gardner 1903; Schapova 1948; Spassky 1961)  
*A. lanceolata* Kjellm. (Setchell and Gardner 1925; Kardakova-Prejenzoffa 1938; Sinova 1940,1954; Spassky 1961; Lindstrom 1977)  
*A. laticosta* Kjellm. (Kardakova-Prejenzoffa 1938; Sinova 1940)  
*A. praelonga* Kjellm. (Kjellman 1889; Voronihin 1914; Sinova 1933, 1954; Spassky 1961; Vozzhinskaja *et al.* 1971)  
*A. pylaii* (De la Pyl.) Grev. (Sinova 1933)  
*A. taeniata* Kjellm. (Voronihin 1914)  
*A. tenuifolia* Setch. (Voronihin 1914; Savich 1914; Arwidsson 1932; Nagai 1940)  
*A. valida* Kjellm. *et* Setch. (Schapova 1948)  
*Arthrothamnus kurilensis* Rupr. (Blinova 1979)  
*Coilodesme californica* (Rupr.) Kjellm. (Kjellman 1889; Sinova 1940; Gusarova and Semkin 1986)  
*Colpomenia perigrina* (Sauv.) Hamel (Gusarova and Semkin 1986)  
*C. sinuosa* (Roth) Derb. *et* Sol. (Nagai 1940; Tokida 1954)  
*Corynophlaea globulifera* (Rupr.) Perest. (Gusarova and Semkin 1986)  
*Costaria costata* (Turn.) Saund. (Nagai 1940; Tokida 1954)  
*C. mertensii* J. Ag. (Sinova 1933)  
*Cymathaere crassifolia* (P. *et* R.) De-Toni (Schapova 1948)  
*Cystophyllum geminatum* (Ag.) J. Ag. (Nagai 1940; Tokida 1954)

*Cystoseira crassipes* subsp. *geminata* (Ag.) J. Ag. (Petrov 1966,1973a; Vozzhinskaja *et al.* 1971)  
*Desmarestia ligulata* (Lightf.) Lamour. (Sinova 1952; Selivanova and Zhigadlova 1997b)  
*Ectocarpus fusiformis* Nagai (Gusarova and Semkin 1986)  
*Fucus myrica* Gmel. (Gmelin 1768; Arwidsson 1932)  
*F. turbinatus* Gmel. (Arwidsson 1932)  
*Laminaria agardhii* Kjellm. (Schapova 1948; Sinova 1952)  
*L. bullata* Kjellm. (Schapova 1948)  
*L. crassifolia* P. *et* R. (Arwidsson 1932)  
*L. cuneifolia* J. Ag. (Sinova 1940; Schapova 1948)  
*L. digitata* Kjellm. (Schapova 1948; Arwidsson 1932)  
*L. ensiformis* Ag. (Arwidsson 1932)  
*L. japonica* Aresch. (Schapova 1948; Sinova 1954; Spassky 1961; Mihajlov and Blinov 1981; Mihajlov 1989)  
*L. nigripes* J. Ag. (Gayl 1936)  
*L. ruprechtii* (Aresch.) De-Toni (Schapova 1948; Spassky 1961)  
*L. taeniata* P. *et* R. (Vozzhinskaja *et al.* 1971)  
*Lessonia laminarioides* P. *et* R. (Schapova 1948)  
*Sargassum fuligenosum* Kiitz. (Arwidsson 1932)  
*Sphacelaria cirrosa* (Roth) Ag. (Sinova 1940)  
*S. fulcigera* Kiitz. (Sinova 1940)  
*S. notata* (Ag.) Kjellm. (Kjellman 1889; Sinova 1952)  
*Turbinaria conoides* Kiitz. (Arwidsson 1932)

#### Division Rhodophyta - Red algae

*Callophyllis papulosa* Perest. (Selivanova 1988a)  
*Callymenia reniformis* (Turn.) J. Ag. (Sinova 1952)  
*C. schmitzii* (Schmitz.) De-Toni (Voronihin 1914; Savich 1914; Arwidsson 1932; Sinova 1933,1952)  
*Campylaephora hypneoides* J. Ag. (Sinova 1954)  
*Ceramium fastigiatum* (Roth) Harv. (Tolstikova 1973)  
*C. rubrum* (Huds.) Ag. (Sinova 1952)  
*Chondrus crispus* (L.) Lyngb. (Sinova 1940; Ushakov 1953)  
*C. pinnulatus* (Harv.) Okam. (Kizevetter *et al.* 1981)  
*Delesseria fimbriata* De la Pyl. (Sinova 1954)  
*D. montagnei* Kjellm. (Kjellman 1889)  
*Farlowia irregularis* Yamada (Blinova and Gusarova 1971; Gusarova and Semkin 1986)  
*Halosaccion ramentaceum* (L.) J. Ag. (Sinova 1952)  
*H. soboliferum* Kiitz. (Arwidsson 1932)  
*Hildenbrandtia rosea* Kiitz. (Sinova 1940,1952)  
*Iridea laminarioides* Bory (Kjellman 1889)  
*Kylinia virgatula* (Harv.) Papenf. (Rudjakova 1967)  
*Lithophyllum orbiculatum* Foslie (Sinova 1954)

*Lithothamnion incisum* Foslie (Sinova 1940)  
*Membranoptera denticulata* (Montag.) Kylin (Nagai 1941)  
*Mychodea carnosus* Harv. (Sinova 1954)  
*Peyssonnelia rubra* (Grev.) J. Ag. (Sinova 1940,1954)  
*Pleonosporum pinnatum* Okam. et Segawa (Sinova 1940)  
*Polysiphonia arctica* J. Ag. (Selivanova 1989)  
*Porphyra laciniata* (Lightf.) Ag. (Sinova 1933,1940)  
*P. umbilicalis* (L.) Ag. (Arwidsson 1932; Tokida 1954; Vozzhinskaja et al. 1971; Tarakanova 1978; Vinogradova et al. 1978; Vinogradova and Perestenko 1978; Gusarova and Semkin 1986)  
*P. vulgaris* P. et R. (Arwidsson 1932)  
*Rhodomela macrocantha* (Kiitz.) Setch. (Tokida 1954)  
*Scagelia occidentale* (Kylin) Woll. (Gusarova and Semkin 1986)

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