



M.V. Lomonosov Moscow State University
Biological Faculty



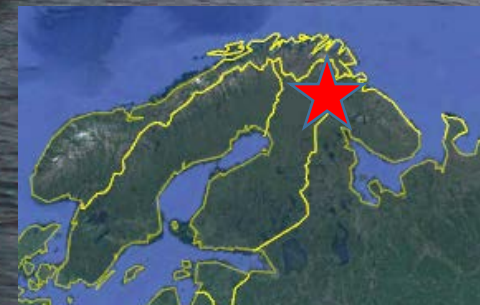
1. N.A. Pertsov White Sea Biological Station
2. Zoological Museum of Moscow University
3. Department of Higher Nervous Activity

WSBS MSU - NEW COLLECTION CENTER IN THE NORTHWEST OF RUSSIA



N.Y. Neretin¹,
A.E. Zhadan¹,
G.D. Kolbasova¹,
A.V. Kotenev³,
T.V. Neretina¹,
A.B. Tzetlin¹

N.A. Pertsov White Sea Biological Station of M.V. Lomonosov Moscow State University

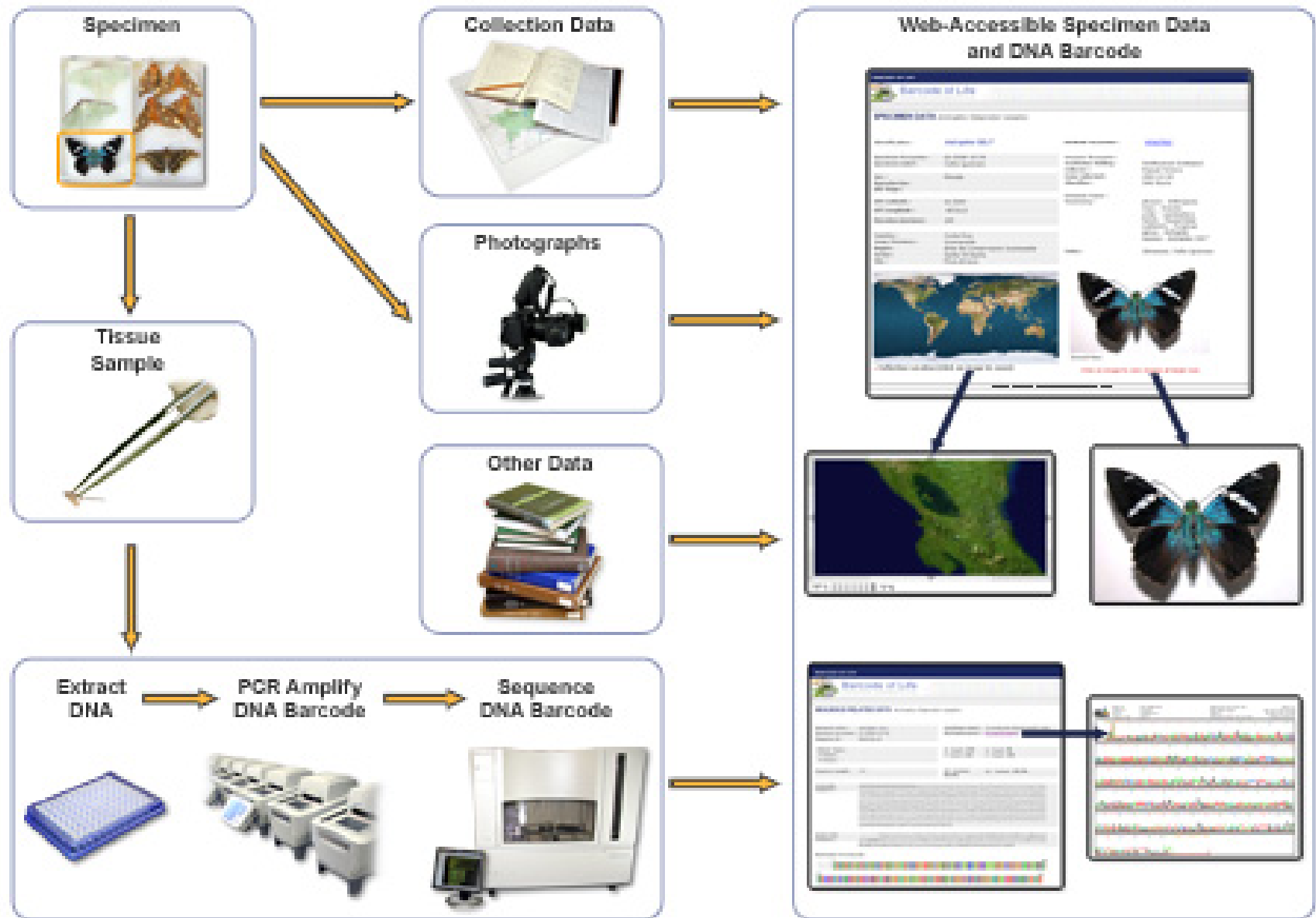


White Sea Branch of Zoological Museum of Moscow University

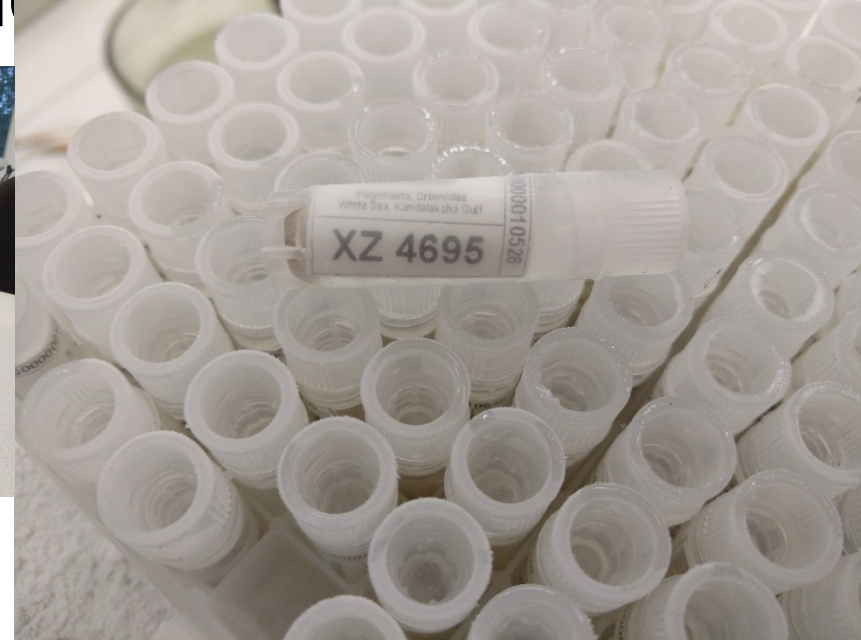
In 2011 WSBS started participating in
The International *Barcode of Life* Project (iBOL)

- CO1 sequencing
- Storing ethanol fixated animals or tissue fragment
- Storing DNA
- Photo, animal general view
- Paper Catalogue > MSExcel Catalogue > Online in iBOL
- Storing at a -80°C !!!

Barcoding of life



White Sea Branch of ZMMU: “Barcoding collection” now



WS 390	Protolhydra leuckartii N3	Hydrozoa	Дредягзе 30.06.11	o. Kact62H	0606
WS 391	Tubularia indivisa N1	Hydrozoa	Дредягзе 26.06.11	o. Kact62H	607
WS 392	Buccinum elatior N1	Gastropoda	Дредягзе 26.06.11	o. Kact62H	608
WS 393	Buccinum elatior N2	Gastropoda	Дредягзе 26.06.11	o. Kact62H	609
WS 394	Buccinum elatior N3	Gastropoda	Дредягзе 26.06.11	o. Kact62H	610
WS 395	Buccinum elatior N4	Gastropoda	Дредягзе 26.06.11	o. Kact62H	610

White Sea Branch of ZMMU: “Barcoding collection” now



- 4800 catalogue numbers. The most of them are represented as:
 - 1) Animal or fragment of tissue (in depends on size), -80 °C, 2ml tube
 - 2) DNA, -80 °C, 2ml tube
 - 3) Photo (general form)
 - 4) Row in paper register and in excel file, storing in private Dropbox paper

More than 500 species of Arctic invertebrates are presented

White Sea Branch of ZMMU:2016

problems and crisis

- 1) Some animals are big, refrigerator is small. How to keep big animals?
- 2) If there are many animals one species from same location.
 - There is not enough space for everyone!
 - There is not enough catalog# for everyone!
 - No entry for formaline-fixed specimens
- 3) Excel database service become harder as the table grows

White Sea Branch of ZMMU: new collection model: 2016-2018

1. Division into two informal parts(1) “barcoding collection” and (2) “resource collection”
2. Using special collection management software
3. Storing in systematic order
4. Organization of new low temperature storage, not -80°C, but -20°C

White Sea Branch of ZMMU: software:



Collections, using Specify Software



- completely free, open source, but since 2018 paid support

White Sea Branch of ZMMU: software:

- Remote MySQL server and client program on personal computers
- Data creating and editing using client program
- Instrument to excel import
- Instrument to automatic creating labels and reports
- Taxonomic, Storage and Geography “trees”
- Synonymy
- History of multiple identifications
- Users with different privileges
- Export to Global Resources
- Attachments (photos, pdf)

White Sea Branch of ZMMU: attachment server

Specify 6.7.01

File Edit Data System Tabs Help

Welcome Data Trees Reports Interactions Statistics Query Workbench BatchEdit Plugins Attachments

Actions

- Show All Attachments
- Show All Images
- Import Attachments
- Import Attachment Mapping File

1. Belyukina sp. ... 12.7.1964, Yuzhnyy ...

2. Syllidae Polynoidae ... 12.7.1964, Yuzhnyy ...

3. Amphipoda sp. ... 12.7.1964, Yuzhnyy ...

4. Spionidae ... 12.7.1964, Yuzhnyy ...

5. ... 12.7.1964, Yuzhnyy ...

6. ... 12.7.1964, Yuzhnyy ...

7. ... 12.7.1964, Yuzhnyy ...

8. ... 12.7.1964, Yuzhnyy ...

9. ... 12.7.1964, Yuzhnyy ...

10. ... 12.7.1964, Yuzhnyy ...

11. ... 12.7.1964, Yuzhnyy ...

12. ... 12.7.1964, Yuzhnyy ...

13. ... 12.7.1964, Yuzhnyy ...

14. ... 12.7.1964, Yuzhnyy ...

15. ... 12.7.1964, Yuzhnyy ...

16. ... 12.7.1964, Yuzhnyy ...

17. ... 12.7.1964, Yuzhnyy ...

18. ... 12.7.1964, Yuzhnyy ...

19. ... 12.7.1964, Yuzhnyy ...

20. ... 12.7.1964, Yuzhnyy ...

21. ... 12.7.1964, Yuzhnyy ...

22. ... 12.7.1964, Yuzhnyy ...

23. ... 12.7.1964, Yuzhnyy ...

24. ... 12.7.1964, Yuzhnyy ...

White Sea Branch of ZMMU: labels and reports:



<i>White Sea branch of ZMMU MSU</i>	
<i>Spio limicola</i> 5 specimen(s)	
Polychaeta, Spionidae White Sea, Kandalaksha Gulf 66.5307132° N, 33.2712593° E, depth 62.1m PZ-IV D-03(1), Grab Sampler EtOH96°, 18.09.2017 Coll.: Kokorin A.I., Makarov A., Gendlin N.V. Id. Tzetlin, Alexander	
2017-PZ-4-021	EtOH96°

WS00000009777





**Zoological Museum of Moscow State University,
White Sea Branch
N.A. Pertzov White Sea Biological Station
Biological Faculty of M.V. Lomonosov Moscow State
University**



Primorskiy village, Republic Karelia, Russia

119234, Russia, Moscow, Leninskie gory, 1-12, Biological Faculty, White Sea Biological
zoocollection@wsbs-msu.ru

DEED OF GIFT

Date Accessioned: 25.08.2018

Accession#: 2018-VN08-009

I. By these presents, I (We), Anna Zhadan, hereby irrevocably and unconditionally give, transfer and assign to the White Sea Branch of Zoological Museum of Moscow State University all right, title and interests (including all copyright, trademark and related interests), in, to and associated with the object(s) described below. I (We) affirm that I (we) own said object(s) and that to the best of my (our) knowledge I (we) have such right, title and interests to give and that said object(s) were collected or acquired in accordance with applicable laws.

Catalog#	Taxonomy, Type Status	Preparation - #spec	Country; Locality; Collectors
WS00000010959	<i>Perinereis</i> sp.	FA4%→EtOH70° - 1	null; Pacific Ocean, South China Sea, Nha Trang Bay, Hon Tre Island, Dam Bay; DB3 (12° 11' 813" N; 109° 17' 408" E); depth (min-max, m):1.4; Udalov

White Sea Branch of ZMMU: catalogisation:

- Remote catalogisation
- Simultaneous catalogisation by several people
- Cataloger $\neq$ curator



ЦМИ
МГУ

Specify 6.7.01

Welcome Data Trees Reports Interactions Statistics Query Workbench BatchEdit Plugins Attachments

Create/Update

Collection Object

Catalog Number: WS00000009244 Accession: 2017-AzAz-020 Number XZ: W146

Cataloged Date: 11.09.2017 Cataloger: Zhadan, Anna Field Number:

Determinations

Taxon: Laubieriopsis norvegica in Question

Preferred Taxon: Laubieriopsis norvegica Current Determination

Determined Date: 2012 Determiner: Zhadan, Anna Type Status: Paratype

DetRemarks:

1 of 1

Grid

Collecting Information

Collecting Event: St. 1-4, Atlantic Ocean, North Sea, 60° 34.59' N, 03° 39.45' E m, 305.0, 09.05.1998

Exact Depth: Reserved Text2:

Preparations

Prep Type: FA4%→EtOH70° Prepared Date:

Number of specim... 3 =number of Heads Prepared By:

Weight, g:

Pre

Specify Software: difficult now

- Not so easy to configure as most of everyday programs – “user-administrator” required
- IT-specialist really required to install attachment-server or web-client (Sp7)
- Problems with Cyrillic (not in fields! But in interface or reports)
- Sp6 demanding to the quality of communication (not Sp7)
- Paid

White Sea Branch of ZMMU: storages

1.1. refrigerator -80

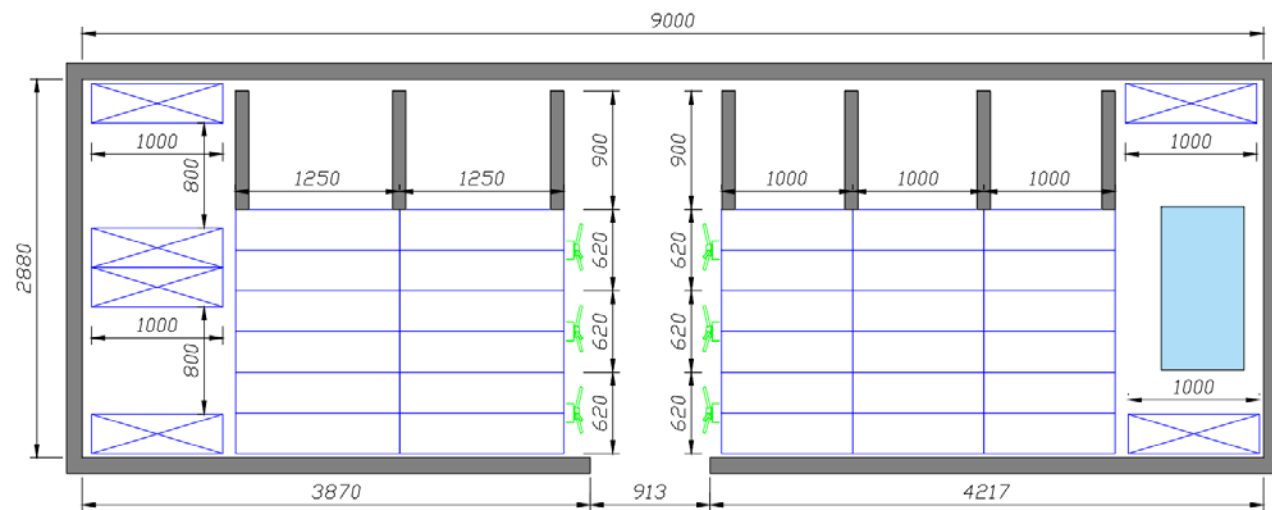
1.2. refrigerator -20 – for Ethanol collection

1.3. room +20 – for traditional formaldehyde collection

1.4. cupboard for micropreparates

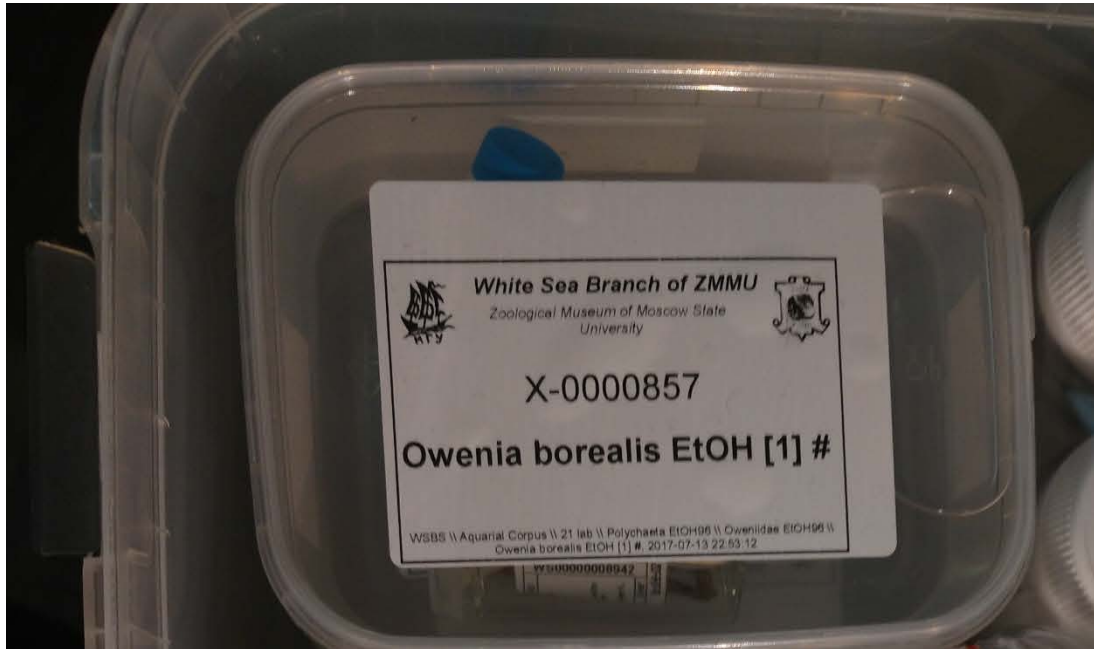
1.5. safe for type material

White Sea Branch of ZMMU: storage -20



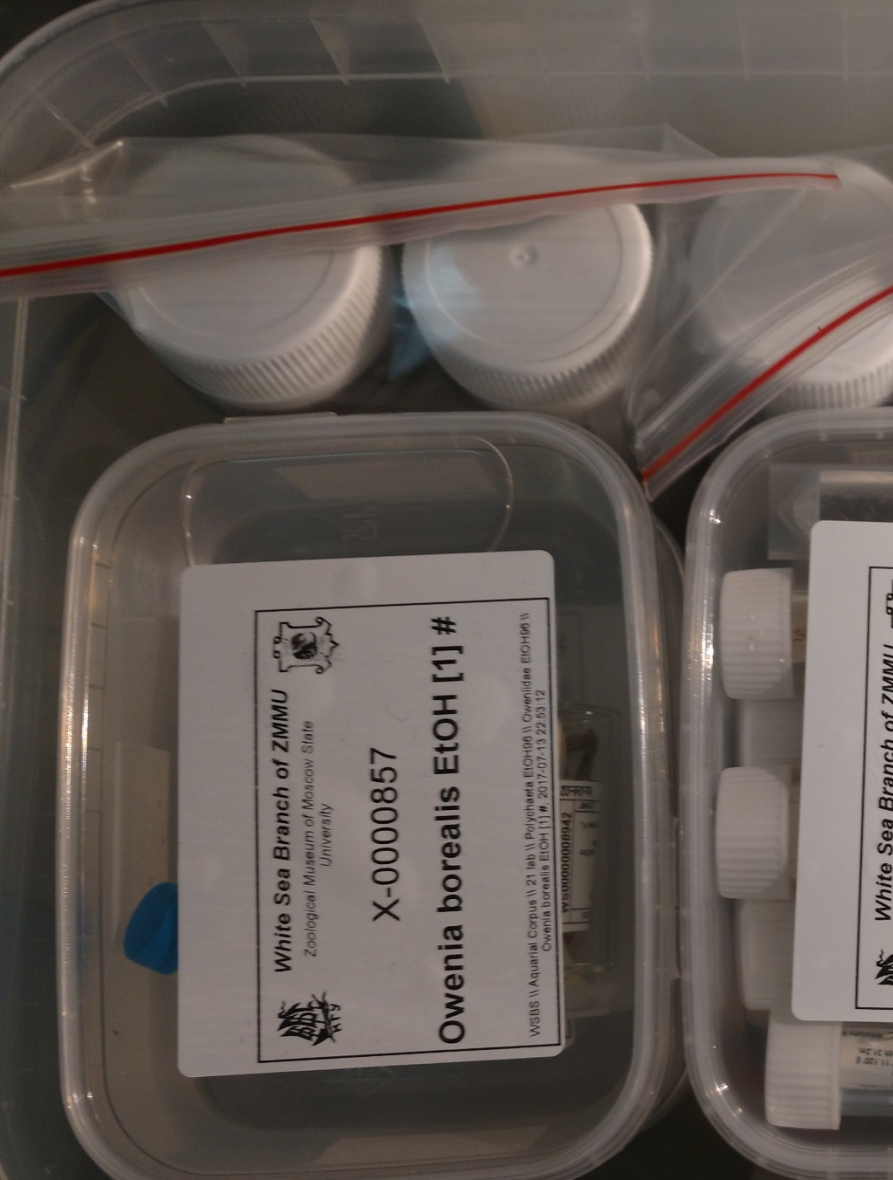
White Sea Branch of ZMMU: storage standards

1. Each storage has voluntary name
2. Each storage has unic automatically filled number
3. Each storage has printed label
4. Each tube or jar associated with storage in database



White Sea Branch of ZMMU: using plastic





White Sea Branch of ZMMU
Zoological Museum of Moscow State
University

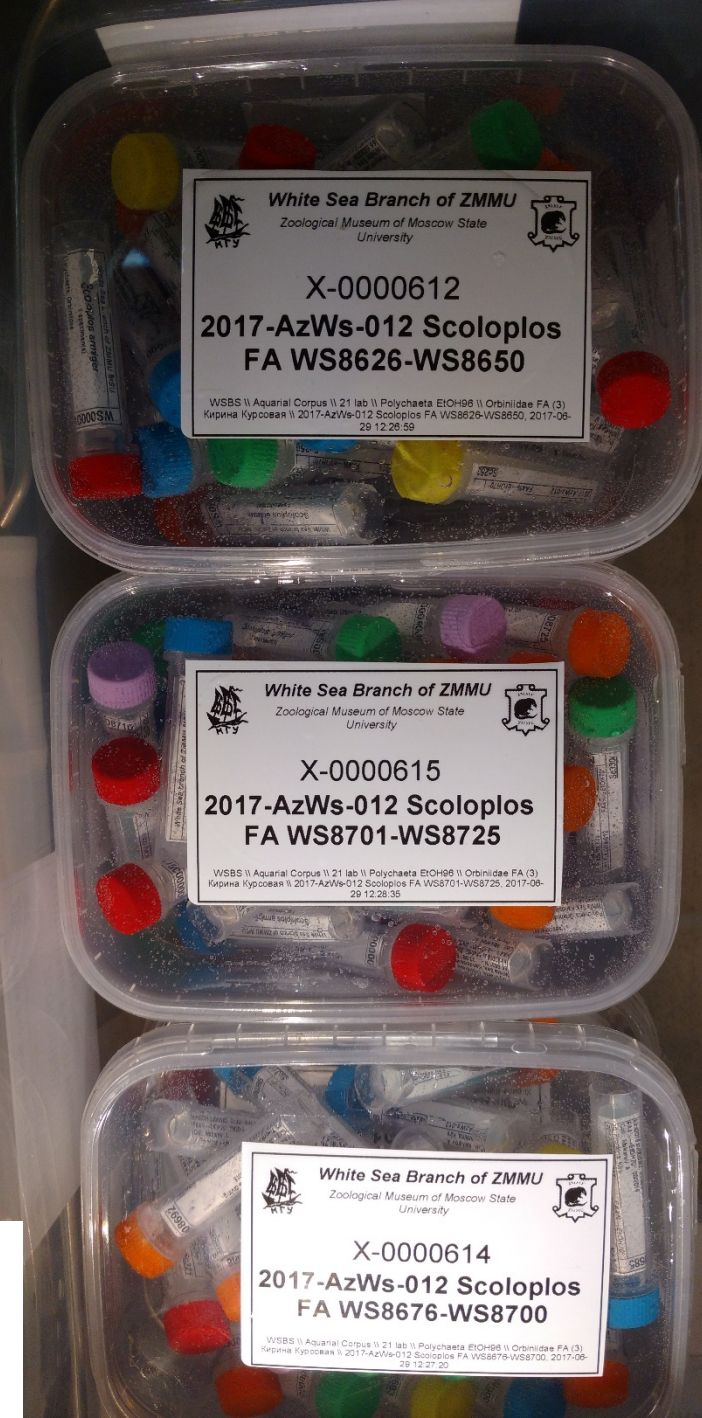
X-0000857

Owenia borealis EtOH [1] #

WSBS \Aquaria Corpus \21 lab \Polychaeta EtOH\Owenia borealis EtOH [1] # 2017-07-13 22:03:12

White Sea Branch of ZMMU

White Sea Branch of
ZMMU:
using plastic



White Sea Branch of ZMMU
Zoological Museum of Moscow State
University

X-0000612

2017-AzWs-012 Scoloplos
FA WS8626-WS8650

WSBS \Aquaria Corpus \21 lab \Polychaeta EtOH\2017-06-28 12:26:59

White Sea Branch of ZMMU
Zoological Museum of Moscow State
University

X-0000615

2017-AzWs-012 Scoloplos
FA WS8701-WS8725

WSBS \Aquaria Corpus \21 lab \Polychaeta EtOH\2017-06-28 12:26:59

White Sea Branch of ZMMU
Zoological Museum of Moscow State
University

X-0000614

2017-AzWs-012 Scoloplos
FA WS8676-WS8700

WSBS \Aquaria Corpus \21 lab \Polychaeta EtOH\2017-06-28 12:27:20

PZ-II 3-4(2)
hyperborea
WS004642

WSBS II
PZ-II 6-3(1)
hyperborea
WS005865

White Sea branch of ZMMU MSU

X-0001176

Pectinaria hyperborea EtOH
[3] #

WSBS II Aquarial Corpus II 21 lab II Polychaeta
EtOH96 II Pectinariidae EtOH II Pectinaria
hyperborea EtOH [3] #, 2017-11-11 19:51:39

White Sea branch of ZMMU MSU

X-0001177

Pectinaria hyperborea EtOH
[4] #

WSBS II Aquarial Corpus II 21 lab II Polychaeta
EtOH96 II Pectinariidae EtOH II Pectinaria
hyperborea EtOH [4] #, 2017-11-11 19:51:53

White Sea Branch of ZMMU: Results of restructuration

Increase in collection growth

09/2016 → 09/2018

Catalog Numbers 4000 → 11000

Quantity of specimens 4000 → 40000

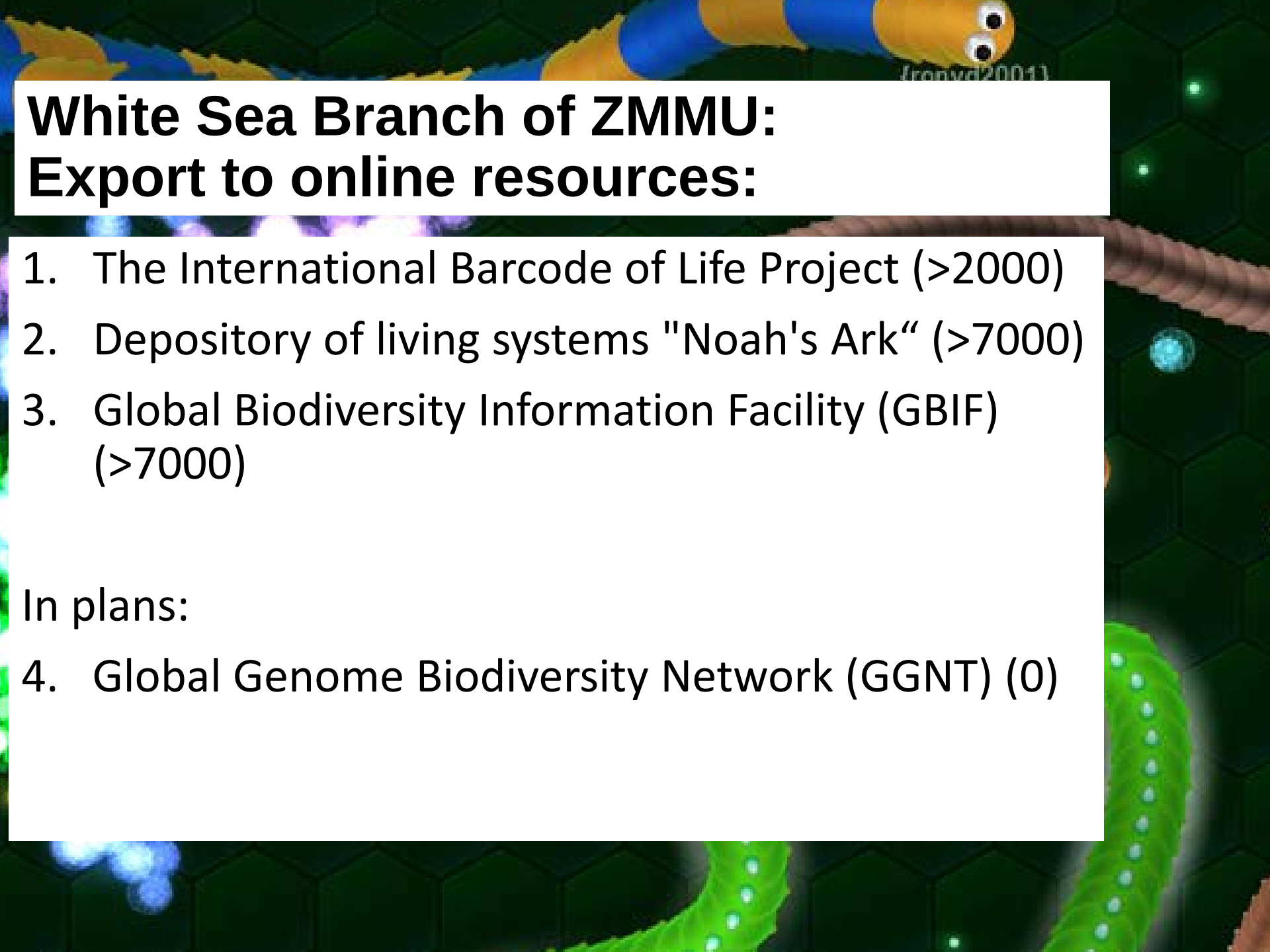
Need to be digitized ~3000

White Sea Branch of ZMMU: use of the collection (2017-2018):

- White Sea Metabarcoding project (RCF [18-05-60158](#))
- Arctic Biodiversity Project (RCF [15-29-02447](#))
- Phylogenetic problems - joining forces of zoologists and molecular biologists
 - WSBS staffs and students
 - Staffs of other organisations: Inv.Zool.Depart., Hydrobiology Department; A.N. Severtsov Institute of Ecology and Evolution RAS; IO RAS; Museum of the Institute of the Sea Biology of FEB RAS; NTNU University Museum (Norway)...
- Students education
- Loans for reidentification by taxonomists:

More than 20 current projects

About 20 finished and published projects over the past 5 years



White Sea Branch of ZMMU: Export to online resources:

1. The International Barcode of Life Project (>2000)
2. Depository of living systems "Noah's Ark" (>7000)
3. Global Biodiversity Information Facility (GBIF) (>7000)

In plans:

4. Global Genome Biodiversity Network (GGNT) (0)

White Sea Branch of ZMMU: iBOL:

Project - WSBP White Sea Biodiversity Project



Activity Report

Specimens

2154

Specimens



GPS:

897 / 2154



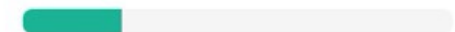
Country:

2154 / 2154



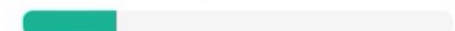
Images:

502 / 2154



Barcode Compliant:

486 / 2154



feedback

White Sea Branch of ZMMU:

Automatically export (each monday) to online resources:

1. Depository of living systems "Noah's Ark"

[https://animal.depo.msu.ru/module/collectionpublic?openparams=\[open-id=112770707\]](https://animal.depo.msu.ru/module/collectionpublic?openparams=[open-id=112770707])

Образец коллекции

Phyllodoce maculata [WS00000000070]

[Цитировать для публикации](#)

Общие характеристики

География

Название в коллекции

Род Phyllodoce

Вид Phyllodoce maculata

Определил Shcherbakova T.D.

Таксономический статус [Eukaryota](#), [Animalia](#), [Annelida](#), [Polychaeta](#), [Phyllodocida](#), [Phyllodocidae](#), [Phyllodoce](#), [Phyllodoce maculata](#) (Linnaeus, 1767)

Дата определения 19.06.2011

Предыдущие определения

Комментарии к определению

Хранение

Музейный номер экземпляра WS00000000070

Полевой номер

Коллектор Shcherbakova T.D.; Stupnikova A.N.

Дата сбора

19.06.2011

Форма препаровки EtOH96°-1;DNA-

Количество экземпляров 1

Пол

Возраст

Источник поступления

Примечания



White Sea Branch of ZMMU on GBIF

Automatically export (each monday) to online

Get data Share Tools Inside GBIF

OCCURRENCE DATASET | REGISTERED 19 JULY 2018

ZMMU MSU, White Sea Branch

Published by [Lomonosov Moscow State University](#)

Nikolai Neretin • Anna Zhadan • Glafira Kolbasova • Tatiana Neretina • Alexey Kotenev • Alexander Tzetlin • Mikhail Kalyakin • Andrey Klyukvin • ✉ Nikolai Neretin • Anna Zhadan

[DATASET](#) [PROJECT](#) [METRICS](#) [ACTIVITY](#) [DOWNLOAD](#)

7,168 OCCURRENCES

White Sea Branch of Zoological Museum of M.V. Lomonosov Moscow State University is based on the N.A. Pertsov White Sea Biological Station of M.V. Lomonosov Moscow State University (Primorskiy settlement, Republic Karelia, Russia). This is a collection of invertebrates, primarily from the White Sea and other seas of the Russian Arctic. The collection contains more than 11,000 collection items and over 40,000 invertebrate specimens, including type specimens. The collection includes: formalin and a... [More](#)

Metadata last modified: 8 October 2018

Data last changed: 8 October 2018

Hosted by: [Lomonosov Moscow State University](#)

License: [CC BY-NC 4.0](#)

[How to cite](#) [DOI](#) 10.15468/h3ee9d

7,168
Occurrences

99.9%
With taxon match

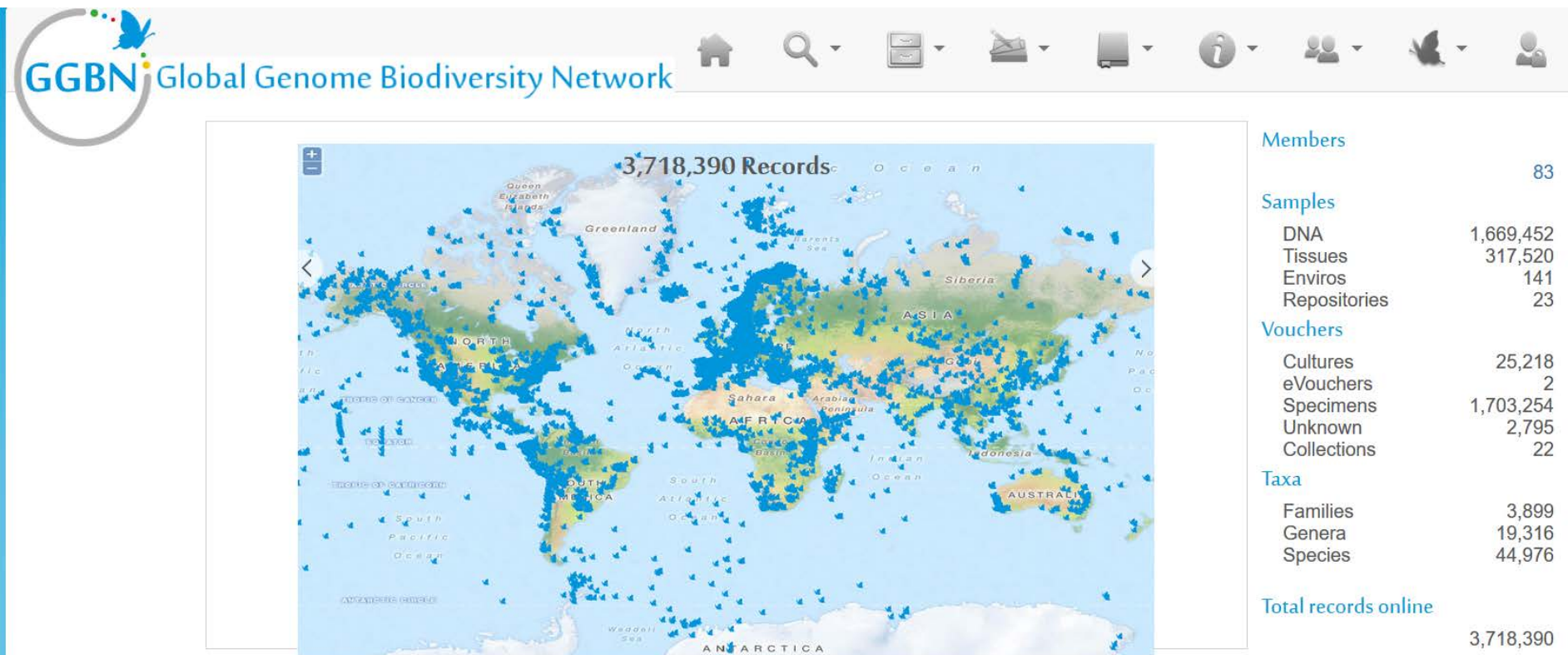
99.1%
With coordinates

99.0%
With year

7,102 GEOREFERENCED RECORDS



Global Genome Biodiversity Network (GGNT)



News

- 09 October 2018-The Biodiversity Research and Teaching Collections, Texas A&M makes genetic collections discoverable
- 14 September 2018-National Biodiversity Information Consortium joins GGNT
- 24 August 2018-Natural History Museum of Los Angeles County joins GGNT
- 23 August 2018-Southern China DNA Barcoding Center, Kunming Institute of Zoology, Chinese Academy of Sciences joins GGNT

2017-2018

Staff:

G.D. Kolbasova (-80, animals)

T.V. Neretina (DNA)

A.E. Zhadan (Polychaeta)

N.Y. Neretin

A.B Tzetlin

M.V. Kalyakin

IT:

A.V. Kotenev (server in Moscow and software development strategy)

D.N. Vershinin (server in WSBS)

Specify Software support team (T. Miller, G. Garrett)

IT-specialists of Living systems depository “Noah’s Ark” (O. Platko, A. Klyukvin)

Volunteers-specialists (2017-2018):

E.Nikitenko, V.Frolova, D.Yurikova, A.Babitskaya

Public works (2017): students of Biological Faculty and Faculty of Bioengineering and Bioinformatics

Internship (2017): students of Invertebrate Zoology Department

Благодарности

1. Russian Scientific Foundation, grant 14-50-00029

2. Russian Foundation of Basic Research, grant 15-29-02447

GBIF - FinBIF data mobilization grant for European Russia (Russia-02)

L.N. Mugue, A.N. Stupnikova, T.D. Shcherbakova

S.K. Garushyants, E. Zotova), A. Demkiv (MSU), V. Moskalenko (MSU), D. Ilyushin (MSU)

Catalogisation: E.A. Alieva, M. Chromova, E. Degtyareva, I.A. Ekimova, V. Emelianenko, M. Everett, N. Filippova, A.N. Isaychev, Yu. Khramova, A.I. Kokorin, G.D. Kolbasova, N. Kulikov, A. Martinez Garcia, A.L. Mikhlina, N.Y. Neretin, E Nikitenko, B.V. Osadchenko, M. Pronina, N.N. Rimskaya-Korsakova, T.D. Shcherbakova, A.N. Stupnikova, A.K. Tabachnick, D.D. Vinogradov, E.V. Vortcepneva, A. S. Yakusheff, D. Yurikova, A.E. Zhadan.





