

Senckenberganlage 25 | D-60325 Frankfurt

Dr. Konstantin Lutenko
National Scientific Center of Marine Biology
Far Eastern Branch of Russian Academy of Sciences
17 Palchevskogo St.
690041 Vladivostok
Russia

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Betr.: Congratulations for your anniversary and thanks for a long-standing collaboration

Dear Dr. Lutenko!

I would like to thank you and all of your colleagues from your institution for the long-standing collaboration on various aspects of Northwest Pacific biogeography.

Our collaboration holds for 18 years now. In 2002 I met Dr. Marina Malyutina and I collaborate with her since then on isopod systematics (Crustacea). Marina and I have both been engaged in the steering committee of the field project Census of the Abyssal Marine Life (CeDAMar) during the Census of the Marine Life. During one of the steering committee meetings the idea was born to extend our collaboration and to include other colleagues and topics and following this I organized a workshop financed by the German Research Foundation together with Dr. Marina Malyutina in 2007. At the end of this workshop we finalized a Memorandum of Understanding, which has been renewed several times since then. In the past decade, the biology of the bathyal, abyssal, and hadal faunas of all size classes (meio- macro-, and megabenthos) of the NW Pacific have been intensively investigated based on a MoU (2007) between Russian and German partners. A total of four Russian-German and German-Russian expeditions with both RV Akademik M.A. Lavrentyev as well as RV Sonne have provided a wealth of data on the systematics, evolution and biogeography of the deep-sea faunas of the Sea of Japan (SojaBio, 2010) (Malyutina and Brandt 2013), Sea of Okhotsk (SokhoBio, 2015) (Malyutina et al. 2018), the Kuril-Kamchatka Trench (KKT), and the NW Pacific open abyssal plain adjacent to the KKT (KuramBio I and II, 2012 - 2016) (Brandt and Malyutina 2015; Brandt et al. 2018; Brandt et al., 2019). Goals of all of our joint expeditions were to study the biodiversity, biogeography, and evolution of the benthic organisms in different NW Pacific deep-sea environments. We aimed to compare more isolated deep-sea basins with more easily accessible ones (Sea of Japan vs. Sea of Okhotsk) and to test whether the hadal bottom of the trench of the KKT isolates the fauna from the Sea of Okhotsk to the fauna of the open NW Pacific area. Our collaboration was always very successful and data on the faunal composition of these areas, the systematics, ecology, biogeography, as well as evolution of protists, but mainly selected invertebrate taxa and fish has been published in four scientific volumes including the description of many new species, some general and a family (Malyutina and Brandt, 2013; Brandt and Malyutina, 2015; Malyutina et al., 2018; Brandt et al., 2020).

On the basis of these expeditions as well as the extensive data from previous expeditions with RV Vityaz in the past century, we have designed another joint project, the Beneficial project, "Biogeography of the northwest Pacific fauna. A benchmark study for estimations of alien invasions into the Arctic Ocean in times of rapid climate change". The main aims of the Beneficial project were to digitize the biodiversity and environmental data collected during our expeditions, to discover the deep-sea biogeography and biodiversity patterns along the NW

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world of biodiversity

Pacific, to predict the potential future distribution range shifts of the key species from the NW Pacific to the Arctic ocean under the rapid climate change, and to compile a novel book on taxonomy and biogeography of the highly abundant key species. All the data, publications, and the book coming out of this project are crucial benchmark information for any deep-sea biodiversity assessment and predict the future status of the Arctic marine ecosystem in a changing environment.

Until now our collaboration resulted in 41 reviewed papers, 4 special volumes, 1 book, 1 online dataset and 22 unreviewed papers.

In future we hope to expand our fruitful and successful collaboration into adjacent NW Pacific areas.

In the north, the KKT is connected to the Aleutian Trench (AT) and to the Bering Sea by the Kamchatka Strait (191 km wide and 4420 m depth). The aim of our future collaborations are to deliver a sound biogeographic baseline studies of the composition and distribution of benthic organisms in the northeastern (NE) part of the Kuril-Kamchatka Trench and the Aleutian Trench where only 6 stations were sampled in the past with RVs Vityaz and Akademik Mstislav Keldysh. We plan to sample three of the previously sampled stations in the NE Kuril-Kamchatka Trench, the Kamchatka Strait and in the AT from board of RV Sonne in summer of 2022 in order to complement our previous benchmark biodiversity studies which will serve as a background for future identifications of biogeographic changes in the NW Pacific.

Before our planned AleutBio expedition from board of RV Sonne, we plan a subsequent Russian-German expedition to the deep sea Commander Basin of the Bering Sea (BeringBio) which is applied for by Dr. Olga Golovan. For this expedition we hope for shiptime of RV Akademik M.A. Lavrentjev shall be granted for 2021. This expedition shall complement our investigations and extend our station plan into the NE KKT and the Kamchatka Strait into the southwestern Bering Sea. The study of these regions will largely help to explain the origin of the abyssal fauna of the NW Pacific and the extent of its biogeographic link to the NE Pacific as well as to the Arctic Ocean.

I herewith would like to thank you and your institution for the long-standing collaboration! We hope to continue this for decades!

With best wishes,



SENCKENBERG GESELLSCHAFT FÜR NATURFORSCHUNG

Prof. Dr. Angelika Brandt | Leiterin *Marine Zoologie*

Senckenberganlage 25 | D-60325 Frankfurt am Main

T +49 (0) 69 75 42 - 1240 F +49 (0) 69 75 42 - 1242 angelika.brandt@senckenberg.de www.senckenberg.de

SENCKENBERG Gesellschaft für Naturforschung | Senckenberganlage 25 | D-60325 Frankfurt am Main | Amtsgericht Frankfurt am Main HRA 6862

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