

Introduction to the Proceedings of the 49th European Marine Biology Symposium

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In September 2014 a group of 130 marine biologists from 26 countries assembled in the 49th European Marine Biology Symposium (EMBS) held in Saint Petersburg, Russia. The EMBS is a series of annual conferences providing presentations and dialogue in a fairly informal atmosphere – the perfect conditions for encouraging interactions on state-of-art issues in marine science in Europe and beyond. The 49th symposium, organized by the Zoological Institute of the Russian Academy of Sciences, included four keynote lectures, 65 oral presentations and 92 poster contributions under the overarching theme ‘A variety of interactions in the marine environment’.

Participants submitted 26 papers arising from the presentations, 13 of which, after rigorous peer review were selected for publication in this special section of this volume of the JMBA. The selection of papers for this volume represents the breadth of the topics covered at the conference from species, through population and community studies to major policy challenges. They also cover a wide geographic area with specific studies from the Barents and White Seas, South China Sea, Adriatic, Black Sea and Mediterranean.

The first conference topic had an autecological theme, i.e. dealing with the coupling between organisms and their environment. Within this topic Fokina *et al.* describe the variation in lipid composition of blue mussels from the White Sea in response to acute and prolonged changes in temperature. The effect of temperature is also shown by Lezin and Flyachinskaya for the shell sculpture formation in bivalve molluscs of the genus *Hiatella* in the White Sea. In fact the White Sea’s relatively non-anthropogenically impacted nature makes it is an ideal location for addressing questions around drivers of change and physiological processes.

The second conference topic ‘Demecology (population ecology)’ covered predator-prey, host-parasite, and other inter- or intraspecific interactions at the population level. Aristov *et al.* describe the results of field experiments on food preferences and prey consumption rates of the juvenile Iceland moonsnails *Amauropsis islandica* on mudflats in the White Sea. The occurrence of seasonality in host-parasite interrelationship in the mussel *Mytilus galloprovincialis* and the effect of host size on species composition of parasite

community are presented by Özer and Güneydağ for the Turkish Black Sea coasts. Mekhova *et al.* question whether the symbionts of crinoids in the South China Sea are capable of long-distance migrations, or stem from the sediments or from the water column. Abundance of the intertidal bivalves *Macoma balthica* and *Cerastoderma edule* along the Barents Sea coastline are examined by Nazarova *et al.* within the theoretical framework of the abundance-centre hypothesis. The distribution patterns of populations of hydrozoa are used by Antsulevich to describe the biogeographic and faunistic division of the Eurasian polar ocean.

The third conference topic explored the synecological level interrelationships in marine communities and food webs. Šolić *et al.* report their research on the effect of limitations by phosphorus on the estuarine microbial communities along the eastern Adriatic coast. The phytoplankton and microbial communities in the redox zone are studied by Krasnova *et al.* in meromictic lakes bordering the White Sea. Meiobenthic assemblages are examined by Russo *et al.* in Mediterranean submarine caves. Trabucco *et al.* monitored the anthropogenic impact of a liquefied gas terminal on the macrozoobenthic assemblages in the northern Adriatic Sea. Food web relationships are described by Demchuk *et al.* clarifying the food composition of juvenile three-spined sticklebacks *Gasterosteus aculeatus* in the White Sea.

Traditionally, at the EMBS, a session is dedicated to miscellaneous topics, now including strategic challenges and practical opportunities for marine science today. From this last topic the keynote presentation given by Hummel *et al.* and reported here looks at the status of the implementation of the EU Marine Strategy Framework Directive (MSFD).

In addition to the valuable contributions of the participants, the symposium was also made possible by the generous help and grants provided by the Russian Foundation for Basic Research, the Russian Academy of Sciences, the Marine Biological Association (MBA) and the European Foundation of Marine Research Institutes and Stations (MARS). The efforts of the local organizing committee headed by Dr Andrew Naumov, with Dr Daria Martynova as executive secretary and a tight-knit team of volunteers providing support, helped ensure the 49th EMBS was a great success.

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