

**11.08–17.08.2017 pre-congress workshop “Comparative anatomy of invertebrates”**

17.08.2017 (Thu) Faculty of Biology, Lomonosov Moscow State University (MSU)

17:00 –20:00 REGISTRATION hall in front of BBA

18.08.2017 (Fri) Faculty of Biology, MSU

8:00 – 10:00 REGISTRATION hall in front of BBA

**10:00 – 10:20** Welcome address from Prof. Dr. Gerhard Scholtz and Dr. Natalia M. Biserova

**10:20 – 11:00** Prof. Dr. Andrew Ostrovsky "250 years of zoology in Russia: an invertebrate retrospect", BBA

P. 5

11:00 – 11:20 Coffee break, hall in front of M1

**M1**

**BBA**

**C6 Morphological diversity of the terrestrial invertebrates**  
Chair: Elena N. Temereva

**B1 Functional evolution and morphology of the nervous system**  
Chair: Leonid L. Moroz

11:20 – 11:50	<b>Dmitry Shcherbakov</b> Insects as flying shrimps, myriapods as arthropod snakes—A new synthesis	P. 333	11:20 – 11:50	<b>Detlev Arendt</b> From nerve net to nerve cord and brain: the evolution of centralized nervous systems	P.70
11:50 – 12:05	<b>Roman Rakitov</b> Piercing stylets of Hemiptera: appendages drawn into setae	P. 332	11:50 – 12:05	<b>Sabrina Kaul–Strehlow, Lisa AK Hack, Ulrich Technau</b> Evolution of the neuromuscular junction – insights from the anthozoan <i>Nematostella vectensis</i>	P.86
12:05 – 12:20	<b>Ivo de Sena Oliveira, Andreas Kumerics, Henry Jahn, Mark Müller, Jörg Hammel, Georg Mayer</b> Using an innovative nanoCT setup to reconstruct the leg musculature in velvet worms (Onychophora)	P. 321	12:05 – 12:20	<b>Hans–Joachim Pflueger</b> The tyraminerpic/octopaminergic system of insects: an evolutionary conserved system orchestrating neural and physiological behavior	P. 95
12:20 – 12:35	<b>Mihail Valuyskiy, Stanislav Melnitsky, Vladimir Ivanov</b> Diversity and distribution patterns of antennal sensilla in genus <i>Rhyacophila</i> (Trichoptera: Rhyacophilidae)	P. 334	12:20 – 12:35	<b>Katharina Jörger, Franziska Bergmeier, Timea Neusser, Gerhard Haszprunar</b> The enigmatic sensory world of solenogastres (Mollusca)	P. 84
12:35 – 12:50	<b>Carolin Haug</b> New insights into body organisation in chelicerates	P. 325	12:35 – 12:50	<b>Alexandra Kerbl, Gáspár Jékely, Katrine Worsaae</b> Mapping neuropeptide immunoreactivity in the nervous systems of three meiofaunal annelids reveals	P. 87

				unexpected variability	
12:50 – 13:05	<b>Nesrine Akkari</b> Novel approaches in morphology pushing boundaries in Myriapod systematics (Arthropoda, Myriapoda)	P. 317	12:50 – 13:05	<b>Anlaug Furu</b> , José M. Martín–Duran, Aina Børve, Henrike Semmler Lê, Andreas Hejnol Central nervous system anatomy and expression of mediolateral patterning genes in the rotifer <i>Epiphanes senta</i>	P. 80
13:05 – 13:20	<b>Anne–Sarah Ganske</b> , Gregory D. Edgecombe, Nesrine Akkari Using traditional and innovative imaging techniques to investigate internal cephalic structures in the highly diverse genus <i>Lithobius</i> (Chilopoda, Myriapoda)	P. 322	13:05 – 13:20	<b>Oleg Tolstenkov</b> , Irina Podvyaznaya, Natalia Biserova CPG from parasitic flatworm? TEM revealed a simple neural circuit in the tail of freely moving trematode larva	P. 102
13:20 – 14:20	<b>Lunch</b> (the workshop of Wiley at room 594 – 5 <sup>th</sup> floor Dept. Invert. Zool.)				
14:20 – 15:00	<b>Prof. Dr. Vladimir V. Malakhov "Tentacles, ciliary bands, and limbs in metazoan evolution", BBA</b>				P. 3
<b>M1</b>			<b>BBA</b>		
<b>B3 Form and function of invertebrates in extreme environments</b> Chair: Nadezhda N. Rimskaya–Korsakova			<b>B1 Functional evolution and morphology of the nervous system</b> Chair: Hans–Joachim Pflueger		
15:10 – 15:40	<b>Monika Bright</b> The giant tubeworm evolved to cooperate with its symbiont under extreme conditions at deep–sea hydrothermal vents	P.129	15:10 – 15:40	<b>Steffen Harzsch</b> Evolution of crustacean olfactory systems	P. 81
15:40 – 16:10	<b>Norio Miyamoto</b> Function and evolution of "root" in bone–eating worm <i>Osedax</i>	P. 137	15:40 – 15:55	<b>Stepan Vodopyanov</b> , Tim von Palubitzky, Günter Purschke The ultrastructure of the eyes of <i>Oweniidae</i> polychaetes	P. 103
			15:55 – 16:10	<b>Hannah Schmidbaur</b> , Thomas Schwaha, Gerhard Steiner The nervous system of Syllidae Grube, 1859 (Annelida: Phyllodocida): a comparative study using immunocytochemistry, clsm and light microscopy	P. 97

16:10 – 16:25	<b>Petr Kuznetsov</b> , Elena Temereva, Elizaveta Kiseleva First detailed description of morphology and microscopical anatomy of deep sea echiurid <i>Protononellia zenkevitchi</i>	P. 226	16:10 – 16:25	<b>Elizaveta Fofanova</b> , Tatiana Mayorova, Elena Voronezhskaya Are dinophilid worms archetypical Polychaete or neotenic trochophore? Insight from early neurogenesis	P. 79
16:25 – 16:40	<b>Tina Molodtsova</b> , Dennis Opresko, Dmitry Shvoev Diversity of colony form and functional morphology of the skeleton of black corals (Anthozoa: Antipatharia)	P. 138	16:25 – 16:40	<b>Jakob Krieger</b> , Andy Sombke, Steffen Harzsch Three somatotopic maps for one sensorial modality – Brain architecture of the banded cleaner shrimp <i>Stenopus hispidus</i> (Olivier, 1811); (Malacostraca, Stenopodidea).	P. 90
16:40 – 17:00	<b>Coffee break, hall in front of M1</b>				
<b>M1</b>			<b>BBA</b>		
<b>B3 Form and function of invertebrates in extreme environments Chair: Brett Gonzalez</b>			<b>B1 Functional evolution and morphology of the nervous system Chair: Hans-Joachim Pflueger</b>		
17:00 – 17:15	<b>Sabina Kondrateva</b> Extreme desiccation resistance in chironomid midges: linking molecular and morphological adaptations	P. 135	17:00 – 17:15	<b>Jérôme Delroisse</b> , Esther Ullrich-Lüter, Stefanie Blaue, Patrick Flammang, Jérôme Mallefet Bioluminescence of a brittle star, from luciferase homology to photocyte ultrastructure	P. 76
17:15 – 17:30	<b>Glafira Kolbasova</b> Sedentary polychaetes: hygiene of the tube	P. 134	17:15 – 17:30	<b>Katrin Braun</b> , Thomas Stach Phylogeny of Tunicata – a morphology based analysis	P. 74
17:30 – 17:45	<b>Elena Voronezhskaya</b> , Marina Khabarova, Timur Chernov Apical sensory organ and developmental regulation: insight from freshwater gastropod larvae	P. 143	17:30 – 17:45	<b>Caterina Biffis</b> , Gerhard Scholtz The development of the medulla terminalis in malacostracan crustaceans: a new look at the “lateral protocerebrum”	P. 73
17:45 – 18:00	<b>Sandra Franz-Guess</b> , J. Matthias Starck Microscopic anatomy of sensory organs in <i>Eukoenenia spelaea</i> (Chelicerata: Palpigradi)	P. 130	17:45 – 18:00	<b>Anna Zhadan</b> , Alexander Tzetlin, Elena Vortsepneva Innervation of unpaired branchial appendages in annelids <i>Terebellides cf. stroemi</i> (Trichobranchidae) and <i>Cossura pygodactylata</i> (Cossuridae)	P. 105

18:00 – 18:15	<b>Brett Gonzalez</b> Troglomorphism in cave scale worms: anophthalmia and elongation of body appendages (Aphroditiformia, Annelida)	P. 132	18:00 – 18:15	<b>Olga Zaitseva, Alexander Shumeev</b> Fluorescence imaging of nervous and muscular systems in juvenile <i>Cadlina laevis</i> (Nudibranchia) by confocal laser scanning microscopy	P. 104
18:15 – 18:30	<b>Alejandro Martinez</b> Do cave animals really look so weird? Unravelling adaptation using comparative methods in several anchialine exclusive lineages, mainly annelids and decapods	P. 136	18:15 – 18:30	<b>Clemens Döring, Harald Hausen</b> Phototaxis in bryozoan coronated larvae	P. 77
18:45 – 19:00	<b>Group Photo at the stairs of the Faculty entrance</b>				
19:00 – 19:10	<b>Reinhard Rieger Award</b> at the stairs of the right entrance of Faculty of Biology, MSU				
19:10 – 19:20	<b>Award of Financial Support for young researchers</b>				
19:20 – 19:30	<b>Memorial words about Rick Harrison</b>				
19:30 – 22:00	<b>Welcome Party</b> (hall of the right entrance of Faculty of Biology, MSU)				

19.08.2017 (Sat) Faculty of Biology, MSU					
<b>09:00 – 09:40</b>	<b>Prof. Dr. Leonid L. Moroz “Origins and Parallel Evolution of Neural Systems across Metazoa: From Ctenophora to Cephalopoda”, BBA</b>				P. 4
<b>M1</b>			<b>BBA</b>		
<b>D Advanced Microscopy and Morphology</b> <b>Chair: Julia Sigwart</b>			<b>C1 Minute metazoans: Little pigeons can carry great messages</b> <b>Chair: Vladimir V. Yushin, Alexei V. Tchesunov</b>		
09:50 – 10:20	<b>Lauren Sumner–Rooney, Julia Sigwart</b> Morphological lamarckisation: when new technology brings life to historical specimens	P. 342	09:50 – 10:20	<b>Katrine Worsaae, Nicolas Bekkouche, Alexandra Kerbl</b> A meiofauna perspective on nervous system evolution	P. 169
10:20 – 10:35	<b>Julia Sigwart</b> Ontogeny and form in chiton shell eyes (Mollusca, Polyplacophora)	P. 340	10:20 – 10:35	<b>Alexey Polilov, Sergey Farisenkov, Natalia Reshetnikova</b> Morphology of the wing apparatus and flight characteristics of featherwing beetles (Coleoptera: Ptiliidae), the smallest free-living insects	P. 162

10:35 – 10:50	<b>Suzanne Williams</b> Colourful shells: Investigating the evolution of shell colour in molluscs	P. 344	10:35 – 10:50	<b>India Stephenson</b> , Niels Van Steenkiste, Maria Herranz, Brian Leander Kleptoplasty in marine meiofaunal flatworms	P. 167
10:50 – 11:05	<b>Alejandro Grajales</b> , Estefania Rodriguez, Luciana Gusmão Sea Anemones through X-rays: Microcomputed tomography ( $\mu$ CT) of soft bodied Cnidaria, advantages, limitations and future perspectives for the taxonomy and systematics of the Class Anthozoa.	P. 336	10:50 – 11:05	<b>Izabela Beata Poprawa</b> , Kamil Janelt, Marta Jezierska, Sebastian Student The oogenesis of <i>Thulinus ruffoi</i> (Tardigrada, Eutardigrada)	P. 163
11:05 – 11:20	<b>Kharlampy Tiras</b> , Alexander Deev, Stanislav Klimenko, Leonid Mestetskiy, Valery Novochadov, Alexey Saniev, Anna Pidzhakova, Uliana Vorobeva Digital methods for the analysis of lifetime images of regenerating planaria	P. 343	11:05 – 11:20	<b>Magdalena Rost-Roszkowska</b> , Marta Jezierska, Florentyna Kaszuba, Izabela Poprawa Ultrastructure of the midgut epithelium of <i>Parachela</i> (Tardigrada) with the emphasis on its degeneration	P. 166
11:20 – 11:35	<b>Greg Edgecombe</b> Unlocking morphology in the arthropod fossil record	P. 335	11:20 – 11:35	<b>Margarita Yavorskaya</b> , Rolf Georg Beutel, Alexey Polilov A challenge in insect anatomy – the smallest beetles and suitable methods to study them	P. 170
11:35 – 11:50	<b>Maria Herranz</b> , Brian Leander How is the kinorhynch head wired? A FIB–SEM/CLSM–based 3D reconstruction	P. 337	11:35 – 11:50	<b>Mateusz Okrutniak</b> , Irena Grześ, Bartosz Rom, Filip Turza Does division of labour is size–dependent in monomorphic workers of <i>Lasius niger</i> ?	P. 331
11:50 – 12:10		<b>Coffee break, hall in front of M1</b>			
<b>M1</b>			<b>BBA</b>		
<b>A3 The genomic basis for morphological evolution</b> Chair: <b>Andreas Hejnol</b>			<b>C1 Minute metazoans: Little pigeons can carry great messages</b> Chair: <b>Alexei V. Tchesunov, Alexei A. Polilov</b>		
12:10 – 12:40	<b>Daniel Chourrout</b> An alternative fate of Chordate genomes exemplified by the rapidly evolving Larvaceans	P. 58	12:10 – 12:25	<b>Vladimir Yushin</b> , Myriam Claeys, Dieter Slos, Wim Bert Male gametes and evolution in nematodes: the case of the order Rhabditida (Nematoda)	P. 172

			12:25 – 12:40	<b>Myriam Claeys</b> , Vladimir Yushin, Jan Leunissen, Jef Claeys, Wim Bert Self-pressurised rapid freezing (sprf): an easy-to-use and low-cost alternative cryo-fixation method for minute metazoans	P. 157
12:40 – 12:55	<b>Jordi Paps</b> , Peter Holland Evolution of homeobox genes and the Animal Kingdom	P. 65	12:40 – 12:55	<b>Alexandra Petrunina</b> , Gregory Kolbasov Males of the Tantulocarida: what is in their heads?	P. 161
12:55 – 13:10	<b>Casey Dunn</b> Phylogenetic comparative methods are critical to the integrated study of morphological and genomic evolution	P. 59	12:55 – 13:10	<b>Anastasia Makarova</b> , Alexey Polilov Brain structure of tiny dipterans (Insecta: Diptera): comparative analyses to other microinsects	P. 160
13:10 – 13:25	<b>Christine Schnitzler</b> , Andreas Baxevanis Understanding differences in hydrozoan morphologies through the lens of genomics	P. 67	13:10 – 13:25	<b>Nicolas Tarik Bekkouche</b> , Katrine Worsaae New anatomical traits in Gastrotricha and potential impact on their phylogeny.	P. 155
13:25 – 13:40	<b>Ana Riesgo</b> , Nathan James Kenny, Vasiliki Koutsouveli, Sergio Taboada, Nadia Santodomingo, Carlos Leiva, Jasper de Goeij, Sally Leys The genomic bases of regeneration, development, growth and reproduction in sponges	P. 66	13:25 – 13:40	<b>Maria Fedyaeva</b> , Alexei Tchesunov Fine structure of the intestine of some marine nematodes – does it reflect systematic position or diet of species?	P. 158
13:40 – 13:55	<b>Patricia Álvarez-Campos</b> , Gonzalo Giribet, Ana Riesgo Stolonizing syllids: ultrastructural and transcriptomic approach	P. 56	13:40 – 13:55	<b>Nataliya Budaeva</b> , Conrad Helm An integrative molecular and morphological approach reveals new insights into the evolution of the enigmatic Charlie Chaplin worms (Histriobdellidae, Annelida)	P. 156
13:55 – 14:10	<b>Sergey Grebelnyi</b> The significance of acontia for the traditional classification of actiniaria. Conflict of morphological systematics and modern opinions based on the study of molecular markers	P. 61	13:55 – 14:10	<b>Anna Zofia Urbisz</b> , Łukasz Chajec, Szymon Gorgoń, Natalia Jarosz, Piotr Świątek Comparison of the ovary micromorphology in clitellate annelids	P. 303

14:10 – 14:25	<b>Andrei Makashov</b> , Andrei Kozlov The origin of bilateria is connected with a jump in the origin of orthologs of several functional classes of human genes including those specifically expressed in tumors	P. 62	14:10 – 14:25	<b>Yoko Matsumura</b> , Alexander E. Kovalev, Stanislav N. Gorb Bending stiffness gradient and a soft tip of a beetle intromittent organ and their role in the penetration mechanics	P. 330
14:25 –15:30	<b>Lunch</b>				
<b>M1</b>			<b>BBA</b>		
<b>B2 Modular organization in invertebrates: comparative morphological and functional analysis of superorganisms Chair: Igor A. Kosevich</b>			<b>C2 Structure of Parasitic Invertebrates: Plasticity, Adaptation, Evolution Chair: David Bruce Conn</b>		
15:30 – 16:00	<b>Igor Kosevich</b> , Nicolai Marfenin The concept of modular organisation: questions and problems	P. 113	15:30 – 16:00	<b>Daniel Mlocicki</b> Morphological features of tapeworms in relation to host–parasite interactions – from morphology to molecules	P. 189
16:00 – 16:15	<b>Alexander Ereskovsky</b> What can sponges tell us about modular and colonial organization?	P. 110	16:00 – 16:15	<b>David Bruce Conn</b> Cancer in cestodes (Platyhelminthes, Neodermata): morphology of neoplastic malignant transformation	P. 175
16:15 – 16:30	<b>Lars Kumala</b> , Josephine Goldstein, Katerina Charitonidou, Hans Ulrik Riisgård, Donald Eugene Canfield Osculum dynamics and filtration activity of single– and multi–osculum explants of the demosponge <i>Halichondria panicea</i>	P. 114	16:15 – 16:30	<b>Natalia Biserova</b> , Ivan Kutyrev Cellular sources of neuro– and immunomodulatory molecules of the cestodes regulating fish–host immunity	P. 174
16:30 – 16:45	<b>Andrey Lavrov</b> , Fedor Bolshakov, Igor Kosevich Behavior and fate of main cell types during <i>Halisarca dujardinii</i> cell reaggregation	P. 116	16:30 – 16:45	<b>Szymon Gorgoń</b> , Natalia Jarosz, Ewelina Plewniak, Piotr Świątek The apical cell – a peculiar component of leech ovaries, its morphology and ultrastructure	P. 178
16:45 – 17:00	<b>Alejandro Damian Serrano</b> The evolution and diversification of tentacle nematocyst batteries in siphonophores (Cnidaria : Hydrozoa)	P. 126	16:45 – 17:00	<b>Christina Nagler</b> , Henrik Glenner, Starck Matthias Microscopic anatomy of parasitic barnacles (Cirripedia: Rhizocephala: Sylon) infesting caridean shrimps	P. 190

17:00 – 17:15	<b>Nikolay Marfenin</b> Transport system predetermines some parameters of the modular organisms pattern (colonial hydroids <i>Gonothyraea loveni</i> and <i>Dynamena pumila</i> )	P. 118	17:00 – 17:15	<b>Larisa Poddubnaya</b> One unique ultrastructural character of the uterine epithelium of chimaericolid monogeneans shedding light on their possible origin	P. 193
17:15 – 17:30	<b>Ksenia Serova</b> , Andrey Vishnyakov, Olga Zaitseva, Olga Kotenko, Andrew Ostrovsky Neuroanatomy of polymorphic zooids in cheilostome Bryozoa: example of avicularia	P. 125	17:15 – 17:30	<b>Ivan Nekhaev</b> , Tsuyoshi Takano Parasitic gastropods of the genus <i>Entocolax</i> (Eulimidae) in the eurasian arctic: high morphological diversity, low genetic differentiation	P. 191
17:30 – 17:50	<b>Coffee break, hall in front of M1</b>				
<b>M1</b>			<b>BBA</b>		
<b>B2 Modular organization in invertebrates: comparative morphological and functional analysis of superorganisms</b> Chair: Igor A. Kosevich			<b>C2 Structure of Parasitic Invertebrates: Plasticity, Adaptation, Evolution</b> Chair: Natalia M. Biserova		
17:50 – 18:05	<b>Natalie Gawin</b> , Thomas Schwaha, Andreas Wanninger Reconstructing the bryozoan muscular ground pattern on the basis of three phylactolaemate species	P. 112	17:50 – 18:05	<b>J. Matthias Starck</b> , Lisa Mehnert, Anja Biging, Juliana Bjarsch, Sandra Franz–Guess, Daniel Kleeberger, Marie Hörnig Morphological responses to feeding in ticks ( <i>Ixodes ricinus</i> )	P. 197
18:05 – 18:20	<b>Uliana Nekliudova</b> , Thomas Schwaha, Daniela Gruber, Norbert Cyran, Andrew Ostrovsky Comparative ultrastructure of placental analogues in Bryozoa	P. 119	18:05 – 18:20	<b>Darya Krupenko</b> , Anna Gonchar, Andrei Dobrovolskij Attachment in Digenea: theory and practice	P. 183
18:20 – 18:35	<b>Thomas Schwaha</b> , Stephan Handschuh, Andrew Ostrovsky, Andreas Wanninger The neuromuscular system of cyclostome bryozoans shows more similarity to gymnolaemates than phylactolaemates, an example from <i>Cinctipora elegans</i>	P. 123	18:20 – 18:35	<b>Januscha Moll</b> , Annemarië Avenant–Oldewage Morphology of the digestive system of <i>Lamproglena clariae</i> Fryer, 1956 (Crustacea: Copepoda) a gill parasite of African catfish <i>Clarias gariepinus</i> (Burchell, 1822)	P. 186
18:35 – 18:50	<b>Alexander Notov</b> Pseudocycles concept as a method in the evolutionary morphology of modular invertebrates	P. 120	18:35 – 18:50	<b>Alexey Miroljubov</b> , Jens Thorvald Hoeg, Andrej Dobrovolskij Muscular system and some other aspects of internal organization of Rhizocephala.	P. 185



18:50 – 19:05	<b>Elena Belikova</b> , Thomas Schwaha, Andrew Ostrovsky Diversity of muscular systems in cheilostome bryozoa	P. 106	18:50 – 19:05	<b>Elena Kotikova</b> , Olga Raikova First insight into the nervous and muscular systems of a parasitic turbellarian <i>Notentera ivanovi</i> (Platyhelminthes, Fecampiida)	P. 181
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20.08.2017 (San) Faculty of Biology, MSU

<b>09:00 – 09:40</b>	<b>Prof. Dr. Peter Robin Hiesinger “Morphogenesis of Brain Wiring in Drosophila”, BBA</b>			P. 2	
<b>M1</b>			<b>BBA</b>		
<b>C3 Morphological diversity and evolution in freshwater and marine environment Chair: Alexey Kotov</b>			<b>C4 Embryonic and larval development of invertebrates: comparative morphology meets new technologies Chair: Yulia Kraus</b>		
09:50 – 10:20	<b>Diego Fontaneto</b> Different differentiation and speciation rates between sexual and asexual rotifers	P. 214	09:50 – 10:20	<b>Svetlana Maslakova</b> Evolution of larval development in ribbon worms (phylum Nemertea)	P. 293
10:20 – 10:35	<b>Sergio Stampar</b> , Thais Santos, Maximiliano Maronna, Marcelo Kitahara, Stefany Angelis, Celine Lopes, James Reimer, André Morandini, Alvaro Migotto Phenotypic plasticity in adults and larvae tricking traditional taxonomy: A case study in Ceriantharia (Cnidaria, Anthozoa)	P. 246	10:20 – 10:35	<b>Timur Magarlamov</b> , Alexey Chernyshev Can the larval apical organ still be present in an adult organism? The case of nemerteans	P. 291
10:35 – 10:50	<b>Andrey Porfiriev</b> , Anastasia Koroleva, Oleg Timoshkin Comparative morphology and molecular biology of <i>Microarchicotylus</i> (Plathelminthes, Tricladida, Paludicola), a new genus of dwarf planarians from lake Baikal	P. 164	10:35 – 10:50	<b>Carmen Andrikou</b> , Felipe Aguilera, Andreas Hejnlol Molecular characterization of protonephridia development in priapulids and evolutionary implications	P. 264
10:50 – 11:05	<b>Nina Aneli</b> , Valeria Vays, Maria Plyushcheva Morphological differences of bioluminescent and non-bioluminescent specimens of scale-worms, which structural loose arrived to functional loose	P. 199	10:50 – 11:05	<b>Olga Kotenko</b> , Andrew Ostrovsky Structural diversity of gymnolaemate larvae (Bryozoa): nervous and muscular systems	P. 283

11:05 – 11:20	<b>Alexei Chernyshev</b> , Timur Magarlamov Recent progress in understanding of morphology and evolution of the nemertean proboscis	P. 210	11:05 – 11:20	<b>Valeriia Khabibilina</b> , Viktor Starunov Simple vision system development in <i>Aurelia aurita</i> (Cnidaria: Scyphozoa)	P. 276
11:20 – 11:40 <b>Coffee break, hall in front of M1</b>					
<b>M1</b>			<b>BBA</b>		
<b>C3 Morphological diversity and evolution in freshwater and marine environment Chair: Alexey Kotov</b>			<b>C4 Embryonic and larval development of invertebrates: comparative morphology meets new technologies Chair: Carmen Andrikou</b>		
11:40 – 11:55	<b>Yuta Tamberg</b> , Natalia Shunatova Feeding behavior and tentacle structure in bryozoans: immovable floodlights and flickering flames	P. 251	11:40 – 11:55	<b>Andrew Ostrovsky</b> , Thomas Schwaha, Martin Moosbrugger Evolutionary transition from incipient to substantial placentotrophy in a genus of cheilostome bryozoa	P. 300
11:55 – 12:10	<b>Elena Vortsepneva</b> , Anna Mikhlina, Yuri Kantor, Alexander Tzetlin Radula of gastropoda: formation and renewal	P. 257	11:55 – 12:10	<b>Andreas Hejnol</b> , Bruno Vellutini, Jose Martin–Duran Cleavage patterns, fate maps and cell lineages: What can early developmental similarities tell us about the homology of larval structures?	P. 275
12:10 – 12:25	<b>Gerhard Steiner</b> Does mantle cavity morphology reflect the mode of reproduction in trochid gastropods?	P. 249	12:10 – 12:25	<b>Roman Kostyuchenko</b> , Darya Nikanorova Cell lineage and fate map of the primary somatoblast: the comparative aspects of annelid development	P. 282
12:25 – 12:40	<b>Natalia Mikhailova</b> , Sergei Demin, Andrei Granovitch New cyst type of testis organization in marine gastropods	P. 228	12:25 – 12:40	<b>Ariel Chipman</b> , Tzach Auman, Barbara Vreede Analyzing the dynamics of segmentation to understand the evolution of the arthropod body plan	P. 271
12:40 – 12:55	<b>Anna Mikhlina</b> , Irina Ekimova, Elena Vortsepneva, Alexander Tzetlin These annoying neighbours: a comparative analysis of feeding apparatus in two drilling nudibranch species	P. 229	12:40 – 12:55	<b>Franziska Meusel</b> , Gerhard Scholtz, Carsten Wolff First insights in the formation of ectoteloblasts of the woodlouse <i>Porcellio scaber</i>	P. 295
12:55 – 13:10	<b>Ksenia Shunkina</b> , Olga Zaitseva Recent data on the nervous system of some Lophophorata	P. 242	12:55 – 13:10	<b>Viviana Cetrangolo</b> , Andreas Hejnol Early development and gastrulation in the nematode <i>Pontonema vulgare</i>	P. 270
13:10 – 14:10 <b>Lunch</b>					

M1			BBA		
<b>C3 Morphological diversity and evolution in freshwater and marine environment</b> <b>Chair: Viatcheslav N. Ivanenko</b>			<b>C4 Embryonic and larval development of invertebrates: comparative morphology meets new technologies</b> <b>Chair: Viktor Starunov</b>		
14:10 – 14:25	<b>Nikolai Korovchinsky</b> , Olga Boikova Morphological analysis does not support monophyly of the gymnomera (orders Onychopoda and Haplopoda) (Crustacea: Branchiopoda: Cladocera)	P. 223	14:10 – 14:25	<b>Carsten Wolff</b> Light sheet meets water flea – live imaging morphogenesis in <i>Daphnia</i>	P. 307
14:25 – 14:40	<b>Zandra Sigvardt</b> , D. Christopher Rogers, Jørgen Olesen Clam shrimps (Crustacea, Branchiopoda) – functional morphology of male claspers and systematics of Laevicaudata	P. 243	14:25 – 14:40	<b>Juliane Vehof</b> , Gerhard Scholtz, Carola Becker The sperm storage organs of <i>Paradorippe granulata</i> (Crustacea; Decapoda; Brachyura; Dorippidae) an eubranchyuran crab with external fertilisation	P. 304
14:40 – 14:55	<b>Zinaida Starunova</b> , Andrei Granovitch Shape diversity of littorinid shell morphology by geometric morphometric and micro ct	P. 248	14:40 – 14:55	<b>Andreas Wanninger</b> The evolution of mollusks	P. 306
14:55 – 15:10	<b>Alexey Golikov</b> , Rushan Sabirov The reproductive system morphology and reproductive strategies of bobtail squids in the arctic (Cephalopoda: Sepiolida)	P. 217	14:55 – 15:10	<b>Emanuel Redl</b> , Andreas Wanninger, Hiroshi Saito Development of <i>Scutopus schanderi</i> (Mollusca, Caudofoveata)	P. 301
15:10 – 15:25	<b>Rushan Sabirov</b> , Alexey Golikov Morpho–functional features of spermatophores as a markers of the reproductive strategies in males of the squid (Cphalopoda: Myopsida, Oegopsida)	P. 241	15:10 – 15:25	<b>Nami Okubo</b> Restructuring the traditional suborders in the order Scleractinia based on embryogenetic morphological characteristics	P. 298
15:25 – 15:40	<b>Carola Becker</b> , Jaimie T. A. Dick, Julia Sigwart Age Determination of Crustaceans through Annual Growth Rings – Fact or Fiction?	P. 201	15:25 – 15:40	<b>Yulia Kraus</b> , Boris Osadchenko, Lucas Leclere Evolutionary changes of complex life cycles dramatically affect embryonic and larval development of cnidarians	P. 287
15:40 – 16:40	<b>Posters Session</b>				
16:40 – 17:00	<b>Coffee break, hall in front of M1</b>				
17:00 – 20:00	Excursion to the Main building of MSU				group 1
	Excursion to the Zoological Museum				group 2

21.08.2017 (Mon) Faculty of Biology, MSU

9:00 – 9:40		Prof. Dr. Stanislav N. Gorb “Biomimetic adhesive microstructures as an approach to understand functioning of biological systems”, BBA			P. 1
M1			BBA		
A2 Origin of Bilateria: achievements and contradictions Chair: Elena N. Temereva			A1 Morphology of recent invertebrates and paleontology: modern synthesis Chair: Sergei V. Rozhnov		
09:50 – 10:20	<b>Andreas Schmidt–Rhaesa</b> The transition to Bilateria – a review of thoughts and concepts	P. 48	09:50 – 10:20	<b>Pavel Parkhaev</b> Paleontology on the molluscs’ origin and basal radiation	P. 22
10:20 – 10:35	<b>Mark Martindale</b> Towards a cellular and molecular understanding for the embryonic origins of axial organization in the anthozoan <i>Nematostella vectensis</i>	P. 44	10:20 – 10:35	<b>Mikhail Fedonkin</b> Symmetry of gliding reflection in the Vendian (Ediacaran) invertebrates: A hint to the spiral mode of body growth, and probably, to the spiral cleavage of an egg in early metazoan evolution?	P. 12
10:35 – 10:50	<b>Claus Nielsen</b> , Thibaut Brunet, Detlev Arendt Protostomy, deuterostomy or amphistomy: Evolution of bilaterian mouth and anus	P. 46	10:35 – 10:50	<b>Min Xiao</b> , Hua Hong, Cai Yaoping The new material fossils of the Gaojiashan Biota of the Gaojiashan Member, Dengying Formation, Neoproterozoic in the South Shaanxi Province, China	P. 32
10:50 – 11:05	<b>Jose Martin–Duran</b> , Ralf Janssen, Graham Budd, Yale Passamaneck, Mark Martindale, Andreas Hejnol The role of the blastopore in the evolution of bilateria	P. 43	10:50 – 11:05	<b>Maria Zakrevskaya</b> , Andrey Ivantsov Ontogenetic development of <i>Dickinsonia</i> (Ediacaran macrofossil) and its possible implications for phylogeny	P. 33
11:05 – 11:20	<b>Vladimir Malakhov</b> Classical conceptions of the origin of bilateria in the light of the current ideas and findings	P. 42	11:05 – 11:20	<b>Xing Wang</b> , Jian Han, Jean Vannier, Qiang Ou, Xiaoguang Yang, Kentaro Uesugi, Osamu Sasaki, Tsuyoshi Komiya Anatomy and affinities of a new 535–million–year–old medusozoan from the Kuanchuanpu Formation, South China	P. 30
11:20 – 11:40		Coffee break, hall in front of M1			
M1			BBA		

A2 Origin of Bilateria: achievements and contradictions Chair: Elena N. Temereva			A1 Morphology of recent invertebrates and paleontology: modern synthesis Chair: Sergei V. Rozhnov		
11:40 – 11:55	<b>Vitaly Kozin</b> , Daria Guk, Roman Kostyuchenko Mesoderm development in annelids as a clue for understanding origin of the bilaterian body plan	P. 40	11:40 – 11:55	<b>Yu Wu</b> New anatomical information on <i>Anomalocaris saron</i> and <i>Amplectobelua symbrachiata</i> (Radiodonta; Arthropoda) and new possible radiodontan appendages from the Chengjiang Biota, South China	P. 31
11:55 – 12:10	<b>Viktor Starunov</b> Is the annelid pygidium a segment?	P. 51	11:55 – 12:10	<b>José Antonio Gámez Vintaned</b> , Eladio Liñán, Andrey Zhuravlev Cambrian <i>Banffia</i> —A basal deuterostomian or an aberrant ecdysozoan?	P. 28
12:10 – 12:25	<b>Bruno Vellutini</b> , Andreas Hejnol Are brachiopods segmented? Implications for the evolution of the bilaterian head/trunk boundary	P. 53	12:10 – 12:25	<b>Marie Hörnig</b> , Joachim Haug, Carolin Haug Raptorial behavior of extinct mantids—Clues from Cretaceous fossils	P.15
12:25 – 12:40	<b>Tatyana Kuzmina</b> , Elena Temereva, Vladimir Malakhov Data of classical comparative anatomy evidence the metamery in brachiopods	P. 41	12:25 – 12:40	<b>Ekaterina Sidorchuk</b> Dancing in the amber forest: Evolutionary story of a mite family (Acari: Oribatida: Collohmanniidae)	P. 27
12:40 – 12:55	<b>Thomas Stach</b> There and back again (and again) – evolution of bilaterality in deuterostomes	P. 50	12:40 – 12:55	<b>Igor Barskov</b> Conch ornamentation in nonammonoid cephalopods: Form and function	P. 7
12:55 – 13:10	<b>Joachim Haug</b> , Matthias Starck Morphological analysis of Ambulacraria	P. 39	12:55 – 13:10	<b>Zhifei Zhang</b> , Lars Erik Holmer The morphology and diversity of the lophophores in Cambrian (ca. 520 Ma) brachiopods and its phylogenetic implications	P. 34
13:10 – 14:10	<b>Lunch</b>				
<b>M1</b>			<b>BBA</b>		
A2 Origin of Bilateria: achievements and contradictions Chair: Elena N. Temereva			A1 Morphology of recent invertebrates and paleontology: modern synthesis Chair: Andrei Yu. Zhuravlev		

14:10 – 14:25	<b>Olga Raikova</b> , Inga Meyer–Wachsmuth, Ulf Jondelius Diversity of nervous system patterns in the earliest bilaterians, nemertodermatida and acoela	P. 47	14:10 – 14:25	<b>Anna Madison</b> , Tatyana Kuzmina, Vladimir Malakhov Pedicle sheath of strophomenids (Brachiopoda): True pedicle opening or an anus?	P. 19
14:25 – 14:40	<b>Pedro Martinez</b> , Elena Perea–Atienza, Brenda Gavilán The evolution of xenacoelomorph morphologies. A model to understand the origin of brains.	P. 45	14:25 – 14:40	<b>Jian Han</b> Meiofaunal deuterostomes from the basal Cambrian of China and their implications for Ur–deuterostomes	P. 13
14:40 – 14:55	<b>Aina Børve</b> , Kevin Pang, Anlaug Furu, Joie Cannon, Ulf Jondelius, Andreas Hejnol Neural patterning in xenacoelomorphs	P. 36	14:40 – 14:55	<b>Sergey Rozhnov</b> Origin and homology of segmented appendages of carpodid and pelmatozoan echinoderms	P. 24
14:55 – 15:10	<b>Yaroslav Zabotin</b> The ultrastructural organization of Acoela and their phylogenetic relationships	P. 54	14:55 – 15:10	<b>Vladimir Malakhov</b> , Olga Ezhova Metamerism in the Echinodermata	P. 11
15:10 – 15:40	<b>Gonzalo Giribet</b> What the phylogeny of Bilateria may and may not tell us about the bilaterian last common ancestor	P. 38	15:10 – 15:25	<b>Alexey Smirnov</b> Origin of the class Holothuroidea (Echinodermata)	P. 29
15:40 – 16:40	<b>Posters Session</b>				
16:40 – 17:00	<b>Coffee break, hall in front of M1</b>				
17:00 – 20:00	Excursion to the Paleontological museum				

## 22.08.2017 (Tue) Midcongress Tour and **Congress Dinner**

### Group 1

9:00–10:30	Transfer to Zvenigorod Biology Station (ZBS)
10:30–11:00	Breakfast at ZBS
11:00–14:00	Field practical course on Fresh water invertebrates
14.00–14.30	Lunch at ZBS
14.30–15.30	Field practical course on Fresh water invertebrates
15.30–16.00	Excursion around ZBS
16.00–20.00	<b>Congress dinner</b> at ZBS

### Group 2

10:00–11:00	Transfer to Zvenigorod
11:00–13:30	Excursion around Zvenigorod and Savva Storozhevskiy monastery
13.30–14.00	Free time to buy some souvenirs
14:00–15:30	Lunch, café Pristan'
15.00–15.30	Transfer to Zvenigorod Biology Station (ZBS)
15.30–16.00	Excursion around ZBS
16.00–20.00	<b>Congress dinner</b> at ZBS
<b>Group 3</b>	
14.00–15.30	Transfer to Zvenigorod Biology Station (ZBS)
15.30–16.00	Excursion around ZBS
16.00–20.00	<b>Congress dinner</b> at ZBS
19.00–20.00; 20.00–21.00	Transfer to metro station

23.08.2017 (Wed) Faculty of Biology, MSU

<b>M1</b>			<b>BBA</b>		
<b>B4 Invertebrate circulatory and excretory systems: comparative morphological and functional aspects</b> Chair: Tatyana V. Kuzmina			<b>C5 Symbiosis between animals: diversity, patterns and inference on processes</b> Chair: Temir A. Britayev		
10:00 – 10:30	<b>Günter Pass</b> Evolution of the circulatory system of Arthropoda	P. 149	10:00 – 10:30	<b>Daniel Martin</b> , Temir Britayev An overview of the biodiversity and adaptations of symbiotic scale-worms (Annelida, Polynoidae)	P. 312
10:30 – 10:45	<b>Andrey Shatrov</b> Coxal glands of the <i>Parasitengona</i> – their ultrastructure, functions and evolutionary implication	P. 152	10:30 – 10:45	<b>Viatcheslav Ivanenko</b> , Bert Hoeksema, Sofya Mudrova, Mikhail Nikitin, Alejandro Martínez García, Nadezhda Rimskaya–Korsakova, Michael Berumen, Diego Fontaneto Integrative taxonomy and host specificity of copepod	P. 310

				crustaceans living on mushroom corals (Scleractinia: Fungiidae)	
10:45 – 11:00	<b>Ekaterina Bogomolova</b> Segmental nephridia in protonymphon larva of <i>Phoxichilidium femoratum</i> (Pycnogonida)	P. 145	10:45 – 11:00	<b>Andrey Vishnyakov</b> , Nadezhda Karagodina, Olga Kotenko, Thomas Schwaha, Martin Moosbrugger, Andrew Ostrovsky Structural and transport adaptations for symbiosis between bryozoans and bacteria	P. 315
11:00 – 11:15	<b>Nina Alexeeva</b> , Natalia Shunatova Pycnogonid body cavity and transport – riddles and answers, answers and riddles	P. 144	11:00 – 11:15	<b>Rawadee Kumlert</b> , Tippawan Anantatat, Chamnarn Apiwathnasorn, Suchada Sumruayphol, Piengchan Sonthayanon, Serge Morand, Alexandr Stekolnikov, Anchana Prasartwit, Daniel H. Paris, Sungsit Sungvornyothin Chigger mite species (Acari: Trombiculidae) from Vientiane, Laos	P. 311
11:15 – 11:30	<b>Nadezhda Rimskaya–Korsakova</b> , Nadezhda Karaseva Circulatory and excretory system of vestimentiferan siboglinids (Annelida)	P. 150	11:15 – 11:30	<b>Vladimir Zolotarev</b> Special morphology of some aquatic protists with emphasis on water quality	P. 316
11:30 – 11:45	<b>Timea Neusser</b> , Gerhard Haszprunar, Michael Schrödl, Katharina Jörger Comparative microanatomy and ultrastructure of enigmatic 'dorsal vessel systems' in panpulmonate gastropods	P. 148	11:30 – 11:45	<b>Tatiana Shcherbakova</b> , Alexei Ippolitov, Nikolay Neretin, Alexander Tzetlin The fine structure of a palaeozoic polychaete tube helps to identify its systematic position	P. 25
11:45 – 12:00	<b>Natalia Shunatova</b> , Yuta Tamberg Bryozoan coeloms: a swim through a spelean river	P. 153	11:45 – 12:00	<b>Jean–François Flot</b> Through the looking–glass: the morphological basis for genome evolution	P. 60
12:00 – 12:20	<b>Coffee break, hall in front of M1</b>				
<b>12:20 – 13:00</b>	<b>Prof. Dr. Gerhard Scholtz “Morphology, transformation, and the art of tracking”, BBA</b>				P. 6
13:00 – 13:30	SPONSORS				
13:30 – 13:50	AWARDS				
<b>13:50</b>	<b>The ISIM Council election and closing ceremony of the 4th Congress</b>				



## POSTERS

### Morphology of Recent invertebrates and paleontology: Modern synthesis (A1)

poster A1.01	Ekaterina Egorova	Axial complex of two echinoderm classes: anatomical studies with 3D–reconstructions
poster A1.02	Natalia Ershova, Olga Ezhova, Vladimir Malakhov	Microscopic anatomy and ultrastructure of the axial complex and associated structures in the sea cucumber <i>Chiridota laevis</i> Fabricius, 1780 (Echinodermata, Holothuroidea)
poster A1.03	Joachim Haug, Carolin Haug	Unexpected fossil findings in arthropods
poster A1.04	Andrey Ivantsov	The most probable remains of the Eumetazoa among late Proterozoic microfossils
poster A1.05	Tatiana Leonova	Evolution of Palaeozoic ammonoid sutures
poster A1.06	Anna Madison, Tatyana Kuzmina	Possible structure of larva of the earliest strophomenids (Brachiopoda)
poster A1.07	Georgy Mirantsev	Morphological diversity of holdfasts in upper Paleozoic crinoids: New data from the carboniferous flexible crinoid <i>Synerocrinus</i>
poster A1.08	Tae–Yoon Park, Ji–Hoon Kihm, Sanghee Kim, Gianni Liu, Xingliang Zhang	Morphological comparison of tardigrades and Cambrian lobopodians
poster A1.09	Fedor Plandin, Elena Temereva	Coelomic system in brachiopods: Traditional opinions and novelties
poster A1.10	Yana Shurupova, Ekaterina Tesakova	Evolution of <i>Palaeocytheridea kalandadzei</i> (Ostracoda, Crustacea) carapace from Saratov during the terminal Bajocian – early Bathonian (Middle Jurassic)
poster A1.11	Chelaplackal Smitha , T. Raveendran, Philip Rosamma, R. Damodaran	First record of <i>Cossura aciculata</i> from Indian waters

### Origin of Bilateria: achievements and contradictions (A2)

poster A2.01	Ilya Aronov, Elena Temereva	Absence of tripartite coelom in chaetognath <i>Parasagitta elegans</i> : phylogenetic
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		implication
poster A2.02	Guzel Gazizova, Yaroslav Zabolin, Anatolii Golubev	Comparative morphology of parenchymal cells in Acoelomorpha and Plathelminthes
poster A2.03	Elena Temereva	Are the lophophorates monophyletic?
poster A2.04	Ekaterina Shafigullina, Yaroslav Zabolin	Main pathways of evolution of spermatozoa of Acoelomorpha and free-living Plathelminthes
poster A2.05	Oleg Zverkov, Kirill Mikhailov, Leonid Rusin, Vassily Lyubetsky, Vladimir Aleoshin	Phylogenomics suggests that Mesozoa are paraphyletic catastrophically reduced Bilateria

### **The genomic basis for morphological evolution (A3)**

poster A3.01	Ilya Borisenko, Marcin Adamski, Sven Leininger, Alexander Ereskovsky, Maja Adamska	Wnt pathway is implicated in axial patterning and regeneration in the demosponge <i>Halisarca dujardini</i>
poster A3.02	Yana Mikhaleva, Ragnhild Skinnes, Sara Sumic, Eric M. Thompson, Daniel Chourrout	The role of homeobox genes in the development of oikoplastic epithelium, the evolutionary novelty of larvaceans.
poster A3.03	Andrea Orús-Alcalde, Andreas Hejnal	Comparative study of the expression of candidate genes for hematopoiesis in different animal lineages
poster A3.04	Uliana Vorobeva, Anna Pidzhakova	Mechanism of peptide regulation of morphogenesis of animals and plants

### **Functional evolution and morphology of the nervous system (B1)**

poster B1.01	Nina Aneli, Ksenia Shunkina, Valeria Vays, Maria Plyushcheva	Ultrastructure and morphology of the elytrum of scale-worm <i>Lepidonotus squamatus</i> Linnaeus 1767 (Polychaeta, Polynoidae)
poster B1.02	Izabella Battonyai, Zsuzsanna Fekete, Réka Horváth, Károly Elekes	Neurotransmitters in the biofouling zebra mussel byssal system: an immunohistochemical study

poster B1.03	Caterina Biffis, Ekaterina Ponomarenko, Gerhard Scholtz, Carsten Wolff	The first sense of the nauplius
poster B1.04	Bastian Brenzinger, Timea Pamela Neusser, Michael Schrödl, Yasunori Kano	Characterization of a new heterobranch superfamily (Gastropoda)
poster B1.05	Vyacheslav Dyachuk	Neurochemical coding of central and peripheral nervous systems in larvae and adult Pacific oyster <i>Crassostrea gigas</i>
poster B1.06	Steffen Harzsch, Andy Sombke, Bill Hansson	Persistent neurogenesis in the adult crustacean brain: the neurogenic niche in <i>Coenobita clypeatus</i> and <i>Birgus latro</i> (Anomala, Coenobitidae)
poster B1.07	Réka Horváth, Izabella Battonyai, Károly Elekes	Senso–motor interactions in different peripheral organs of the pond snail, <i>Lymnaea stagnalis</i> . A chemical–neuroanatomical approach
poster B1.08	Nikolay Kamardin, Boris Sirenko	Ultrastructural study of the osphradia of representatives of the Polyplacophora
poster B1.09	Natalia Kreshchenko, Zakhar Sedelnikov, Angela Mousley, Aaron Maule	Morphological evidence of neuropeptide npf participation in planarians muscle function
poster B1.10	Suman Kumar, Harald Hausen	Evolution, development and function of eyes in a polychaete with a long pelagic larval phase
poster B1.11	Vitaly Kozin, Roman Kostyuchenko	Dynamics of the nervous and muscular system regeneration in the polychaete <i>Alitta virens</i>
poster B1.12	Tobias Lehmann, Roland Melzer	The visual system of <i>Neobisium carcinoides</i> (Hermann, 1804) (Chelicerata, Arachnida, Pseudoscorpiones)
poster B1.13	Christine Martin, Vladimir Gross, Lars Hering, Henry Jahn, Ivo de Sena Oliveira, Paul A. Stevenson, Georg Mayer	Evolution of the panarthropod nervous and visual system: Learning from onychophorans and tardigrades

poster B1.14	Mikhail Nikitin, Evgeny Ivashkin, Elena Voronezhskaya	Serotonin synthesis and secretion in basal metazoa <i>Trichoplax adhaerens</i>
poster B1.15	Irina Severina, I. Isavnina, A. Knyazev	Neuroanatomy of descending brain interneurons in dragonfly <i>Aechna grandis</i>
poster B1.16	Irina Severina, I. Isavnina, M. Zhemchuzhnikov, A. Knyazev	Location and structure of intersegmental thoracic interneuron in cockroach <i>periplaneta americana</i>
poster B1.17	Nataliya Shakurova, Aliya Gataullina	A comparative ultrastructural analysis of eyes in leeches (Hirudinea: Rhynchobdellida, Arhynchobdellida)
poster B1.18	George Slyusarev, Viktor Starunov	The Nervous System in Orthonectida

**Modular organization in invertebrates: comparative morphological and functional analysis of superorganisms  
(B2)**

poster B2.01	Elena Belikova, Natalia Shunatova	Shared colony-wide musculature – a journey through time
poster B2.02	Fyodor Bolshakov, Igor Kosevich	Different ways of hydranth formation in thecate and atecate hydroids
poster B2.03	Vitaly Dementyev, Vasily Kozhara, Nikolay Marfenin	Functional morphology of stolon in hydroid <i>Gonothyrea loveni</i> (Allman, 1859)
poster B2.04	Anny Carolina Forero Mejia, Carina Östman, Giorgio Bavestrello, Timothy Ravasi, Tina Molodtsova	Morphological support to the molecular phylogeny of ceriantharia (Cnidaria, Anthozoa)
poster B2.05	Daria Kupaeva, Yulia Kraus, Stanislav Kremnyov	Folding morphogenesis during anchoring disc formation of <i>Dynamena pumila</i> stolon.
poster B2.06	Andrey Lavrov, Igor Kosevich	Stolonial movement of demosponge <i>Amphilectus lobatus</i>

poster B2.07	Ekaterina Shevchenko, Daria Matvienko, Andrew Ostrovsky	Comparative ultrastructure of oogenesis in cheilostome Bryozoa with different reproductive patterns
poster B2.08	Celine Lopes da Silva Santos, Sérgio Nascimento Stampar	The genus ceriantheomorpha (Cnidaria; Ceriantharia) in the Western Atlantic: one or two species?
poster B2.09	Thomas Schwaha, Masato Hirose, Andreas Wanninger	Novel insight into the soft-body morphology of the phylactolaemate bryozoan <i>Stephanella hina</i>
poster B2.10	Dorian Schoenaers, Jérôme Delroisse, Dong Soo Hwang, Matt Harrington, Patrick Flammang	The smooth and the scaly: tunic morphology of two distant urochordates, <i>Ciona intestinalis</i> (ord. Phlebobranchia) and <i>Halocynthia roretzi</i> (ord. Stolidobranchia).
poster B2.11	Agniya Sokolova, Igor Pozdnyakov, Sergey Karpov, Alexander Ereskovsky	Transformation of the choanocyte kinetid in evolution of sponges (phylum Porifera) and the observed evolutionary tendencies

### **Form and function of invertebrates in extreme environments (B3)**

poster B3.01	Sandra Franz-Guess, J. Matthias Starck	Microscopic anatomy of <i>Eukoenenia spelaea</i> (Chelicerata: Palpigradi)
poster B3.02	Elizaveta Naduvaeva, Elena Vortsepneva	General morphology and ultrastructure of the circulatory and gonopericardial system of <i>Crystallophrisson nitens</i> (Mollusca: Aplacophora)
poster B3.03	Alexandra Obukhova, Evgeny Ivashkin, Marina Khabarova, Elena Voronezhskaya	Variable dopamine, stable serotonin: the morphological basis for optimal expansion of sea urchin larvae
poster B3.04	Mina Ramezani	<i>Artemia urmiana</i> hatching efficiency, growth and survival after cyclic hydration and dehydration
poster B3.05	Olga Vorobyeva	The morphology of cnidosacs in nudibranch mollusc <i>Aeolidia papillosa</i> (Gastropoda: Heterobranchia)

### **Invertebrate circulatory and excretory systems: comparative morphological and functional aspects (B4)**

poster B4.01	Henry Jahn, Jörg Hammel, Georg Mayer	Reconstruction of the blood circulatory system in the velvet worm <i>Euperipatoides rowelli</i> (Onychophora, Peripatopsidae)
poster B4.02	Tatyana Kuzmina, Elena Temereva, Vladimir Malakhov	Ultrastructure of the lophophoral coelomic lining in brachiopods <i>Hemithiris psittacea</i>
poster B4.03	Elizaveta Savochkina, Alexander Polevschikov	Analysis of the tunic recovery dynamics in ascidia <i>Halocynthia aurantium</i> (Pallas, 1787)

### Minute metazoans: Little pigeons can carry great messages (C1)

poster C1.01	Polina Avdeeva, Yaroslav Zabotin, Vladimir Evtugin	Light and electron microscopic investigation of morphology of the tardigrade <i>Macrobiotus hufelandi</i> (Tardigrada)
poster C1.02	Maria Fedyaeva, Alexei Tchesunov	Alimentary tract structure of two marine nematode species of the order Monhysterida
poster C1.03	Piotr Świątek, Pierre de Wit, Natalia Jarosz, Łukasz Chajec, Anna Z. Urbisz	Ovary structure and oogenesis in <i>Grania postclitellochaeta</i> (Clitellata: Enchytraeidae)
poster C1.04	Magdalena Rost-Roszkowska, Marta Jezierska, Kamil Janelt, Anna Ostróżka, Izabela Poprawa	Regenerative cells in Tardigrada digestive epithelia
poster C1.05	Hyunsu Yoo, Ivana Karanovic, Wonchoel Lee	A new species of <i>Xestoleberis</i> (Ostracoda: Podocopida: Xestoleberididae) from the east coast in south Korea.

### Structure of Parasitic Invertebrates: Plasticity, Adaptation, Evolution (C2)

poster C2.01	Irina Babkina, Georgii Kremnev, Arina Maltseva, Natalia Mikhailova, Andrei Granovitch	How <i>Microphallus metacercariae</i> (Trematoda: Microphallidae) from <i>Littorina</i> snails react to abrupt temperature rise related to host change.
poster C2.02	Anna Gonchar, Darya Krupenko	Morphological insights linked to behaviour of digenean larvae — cercariae
poster C2.03	Ilya Gordeev	Microscopic anatomy of the <i>Nybelinia surmenicola</i> Okada in Dollfus, 1929 (Trypanorhyncha: Lacistorhynchidae) plerocercoid scolex

poster C2.04	Alfia Mustafina	The ultrastructure of the tegument, glands and sensory organs of <i>Pyramicocephalus phocarum</i> (Cestoda: Diphylobothriidea)
poster C2.05	Elena Kornakova	The ultrastructure of the flame bulbs in parasitic turbellarian <i>Notentera ivanovi</i> (Platyhelminthes, Turbellaria, Fecampiidae) –novel filtration–secretory apparatus
poster C2.06	Janetta Korneva, Irina Yastrebova	Muscle system and frontal glands in proteocephalidean cestodes
poster C2.07	Georgii Kremnev, Sergei Shchenkov, Andrei Dobrovolskij	Morphology and functional dynamics of trematode ovaries: from genital system primordium in cercariae to adults germarium
poster C2.08	Svetlana Kuznetsova	Ultrastructure of the body wall of the cryobiotic leech <i>Ozobranchus jantseanus</i> (Annelida; Hirudinea; Rhynchobdellida)
poster C2.09	Alfiia Mustafina	The ultrastructure of the excretory system of <i>Pyramicocephalus phocarum</i> (Cestoda: Diphylobothriidea)
poster C2.10	Maxim Nesterenko, Sergei Shchenkov, Viktor Starunov, Valeriia Khabibulina	Does the blind trematod's larvae see the light?
poster C2.11	Irina Podvyaznaya	On the structure and development of the body cavity in parthenogenetic generations of trematodes
poster C2.12	Natalia Pospekhova	Location of the primary lacuna in the postembryonic development of selected Cyclophyllidea (Cestoda)
poster C2.13	Sergei Shchenkov, Georgii Kremnev, Anastasiya Smirnova, Alexandra Diumina, Andrei Dobrovolskij	Evolution of <i>Xiphidiocercariae</i> Luhe, 1909 (Trematoda: Plagiorchida): from where to where?

### **Morphological diversity and evolution in freshwater and marine environment (C3)**

poster C3.01	Elmira Alieva, Elena Temereva, Irina Ekimova, Anastassya Maiorova	First record of two <i>Urechis</i> species in the Vostok Bay Sea of Japan
poster C3.02	Ilya Aronov, Elena Temereva	Organization of the head musculature in chaetognath <i>Parasagitta elegans</i>

poster C3.03	<b>Polina Belova</b> , Anna Zhadan, Dimitry Schepetov	Comparative anatomy and phylogeny of Opheliidae and Trivisia (Annelida, Sedentaria)
poster C3.04	Ekaterina Bocharova	Species diversity and phylogeny of sea anemones in <i>Urticina</i> and <i>Cribrinopsis</i> genera
poster C3.05	Anastasia Borisanova, Vladimir Malakhov	Some ultrastructure details of entoproct reproductive system
poster C3.06	Polina Borisova, Nataliya Budaeva	Jaw structure in Lumbrineridae (Annelida) assessed by micro-computed tomography
poster C3.07	Friederike Brand, Gerhard Haszprunar, Francesca Leasi, Katharina Jörger, Timea Neusser	Integrative taxonomy of the first pseudvermis sea slug from the eastern pacific
poster C3.08	Elena Chaban, Alexey Chernyshev	The first experience in the morphological study of male copulatory system of cephalaspids (Gastropoda: Opisthobranchia) by means of CLSM
poster C3.09	Irine Cherneva	Recognizing the unrecognizable: nemertean species of the genus <i>Lineus</i> from the White Sea intertidal zone
poster C3.10	Irina Drobysheva	Ultrastructural features of ciliogenesis in the epidermis of <i>Notoplana humilis</i> (Polycladida, Plathelminthes)
poster C3.11	Christina Egger, Peter Kohnert, Michael Schrödl	Microanatomy and 3D-reconstruction of cliopsis <i>Krohnii troschel</i> , 1854 (Gymnosomata, Pteropoda, Euopisthobranchia)
poster C3.12	Irina Ekimova, Dimitry Schepetov, Anton Chichvarkhin, Ángel Valdés	What do you fancy for your dinner? The morphology of radula and food preferences as the key for unraveling <i>Dendronotus</i> (Gastropoda: Nudibranchia) evolutionary history
poster C3.13	Peter Funch, Nicklas Bisbo, Per Andersen	Functional morphology of feeding structures in choanoflagellates and sponges



poster C3.14	Aliya Gataullina	Functional evolution and morphology of the radula of Mollusks with various trophic specialization (Mollusca: Orthogastropoda, Littorinimorpha)
poster C3.15	Alina Ilyasova, Alexey Golikov, Rushan Sabirov	Comparative morphology of catching apparatus, jaws and radula of <i>R. palpebrosa</i> Owen, 1834 and <i>R. megaptera</i> Verrill, 1881 (Cephalopoda, Sepiolida) in the Barents Sea
poster C3.16	Heidi Jäger, Franziska Bergmeier, Gerhard Haszprunar, Katharina Jörger	The first <i>Pruvotina</i> (Mollusca: Solenogastres) from the pacific – a lost loner in the depths of the Sea of Okhotsk?
poster C3.17	Ji-Hoon Kihm, Sanghee Kim, Tae-Yoon S. Park	The preliminary study on the taxonomy of <i>Dactylobiotus</i> sp. (Parachela, Eutardigrada) from King George Island, Antarctica
poster C3.18	Jeongho Kim, Ivana Karanovic, Wonchoel Lee	A new species of the genus <i>Coxicerberus</i> Wägele, Voelz & McArthur, 1995 (Isopoda: Microcerberidae) from Australia
poster C3.19	Elena Kochanova, Elena Fefilova	Morphological variability and teratology morphology of Palearctic freshwater Harpacticoida (Crustacea: Copepoda)
poster C3.20	Alexey Kotov, Anna Neretina, Nikolai Smirnov	Morphological adaptation of the Cladocera (Crustacea: Branchiopoda) resting stages to zoochory: analogues with plant seeds
poster C3.21	Petr Kuznetsov, Elena Temereva	Morphology and microscopic anatomy of <i>Ochetostoma</i> sp. (Echiura: Thalamematidae)
poster C3.22	Somin Lee, Wonchoel Lee	New records of Recent Benthic Foraminifera from Korean Waters
poster C3.23	Juan Moles, Conxita Avila, Manuel Malaquias	Antarctic newnesidae (Gastropoda: Cephalaspidea): a study of the known species and a new bathyal species
poster C3.24	Piyada Ngernsounnern, Apichart Ngernsounnern	Structural study of the gastrointestinal tract of the golden apple snail

poster C3.25	Apichart Ngernsoungnern, Piyada Ngernsoungnern	Structural study of oocyte stages in the golden apple snail
poster C3.26	Ekaterina Nefedova, Alena Sukhoputova	The importance of conditions for the study of marine invertebrates in culture
poster C3.27	Ivan Nekhaev	Investigation of taxonomically significant morphological characters of the eurasian arctic Rissoidae (Gastropoda: Caenogastropoda)
poster C3.28	Boris Neklyudov, Elena Temereva, Anna Zhadan	First record on phoronid species from Persian Gulf
poster C3.29	Anna Neretina, Alexey Kotov, Wondie Zelalem	<i>Moina belli</i> Gurney, 1904 (Crustacea: Cladocera), a forgotten rare species from Africa
poster C3.30	Laura Núñez-Pons, Conxita Avila, Thierry Work, Robert Rameye, Juan Moles, Carlos Angulo-Preckler	An emerging disease in the Antarctic sea star <i>Odontaster validus</i>
poster C3.31	Nayeon Park, Wonchoel Lee	Distribution and diversity of jellyfish in Korean coastal waters
poster C3.32	Andrey Povetkin, Elena Temereva	New data on ultrasructure of the gonad in holothuria <i>Chiridota laevis</i>
poster C3.33	Andrey Povetkin	Peculiarities of the oogenesis in holothuria <i>Chiridota laevis</i>
poster C3.34	Zandra M. S. Sigvardt, Katrine Worsaae, Sukonthip Savatentalinton, Alexandra Kerbl, and Jørgen Olesen	Limb musculature of <i>Cyclestheria hislopi</i> (Crustacea: Branchiopoda) based on phalloidin staining and confocal microscopy
poster C3.35	Maria Stanovova, Igor Kosevich	Coelomocytes of <i>Arenicola marina</i> (Annelida, Polychaeta): morphology and functions
poster C3.36	Sergio Taboada, Juan Junoy, Carlos Leiva, Frances Alexander, Ana Riesgo	Never two without three: a new member of the genus <i>Antarctonemertes</i> (Hoploneurtea, Nemertea) from Antarctic waters

poster C3.37	Elena Temereva	First modern data on neuro–muscular system of the lophophore in adult phoronids
poster C3.38	Elena Temereva, Boris Neklyudov	New phoronid species from the South–China Sea and the problem of phoronid taxonomy
poster C3.39	Anna Zofia Urbisz, Łukasz Chajec, Mana Ito, Katsutoshi Ito	Ovary organization in the marine tubificin <i>Thalassodrilides</i> sp.
poster C3.40	Maxim Vinarski, Sergei Kramarenko, Arsenia Zharova	Spatial morphological variation in the dwarf pond snail ( <i>Galba truncatula</i> ): scale–dependence and non–linearity
poster C3.41	Stepan Vodopyanov, Robin Wilson, Lynda Avery	The epidermis modifications of different <i>Travisia species</i> (Annelida, Traviidae)
poster C3.42	Philipp Wagner, Joachim T. Haug, Carolin Haug	Morpho–ecospace concept: a comparison between larvae and adults in mantis shrimps
poster C3.43	Thamasak Yeemin, Makamas Sutthacheep, Watchara Samsuvan, Sittiporn Pengsakun	Reexamining morphological characteristics of the scleracinian coral <i>Pocillopora damicornis</i> in the gulf of Thailand
poster C3.44	Jisu Yeom, Mikhail A. Nikitin, Viatcheslav N. Ivanenko, Wonchoel Lee	A new laophontid (Copepoda, Harpacticoida) from the sea cucumber, <i>Eupentacta fraudatrix</i> collected from Vostok Bay, East Sea (Sea of Japan)
poster C3.45	Jisu Yeom, Wonchoel Lee	A New Miraciid (Copepoda, Harpacticoida) from Baekripo Beach in the West Coast of Korea
poster C3.46	Olga Yurchenko, Alexander Kalachev, Kristina Kolesnikova	Seasonal characters of specific storage cells in the gonadal tissue of the pacific oyster, <i>Crassostrea gigas</i>
poster C3.47	Ravil Zeleev	Parametric systematics of sea spiders (Arthropoda: Pycnogonida)

#### **Embryonic and larval development of invertebrates: comparative morphology meets new technologies (C4)**

poster C4.01	Sujeephon Athibai, Nattaporn Plangklang, Chaichat Boonyanusit	Ontogenetic development of Thai anostracan nauplius, <i>Brachinella thailandensis</i> Sanoamuang, Saengphan and Murugan, 2002 (Crustacea: Branchiopoda: Anostraca)
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poster C4.02	Tatiana Bagaeva, Sylvain Couvray, Jean–Luc Bonnefont, Nikoloz Tsikolia, Stanislav Kremnyov	Dynamics of archenteron ciliation during gastrulation of Echinoderms
poster C4.03	Carola Becker, Mathieu G. Lundy, Lawrence Eagling, Jaimie T.A. Dick, Julia Sigwart	Sperm storage and ovarian maturation in the Norway lobster ( <i>Nephrops norvegicus</i> )
poster C4.04	Nataliya Budaeva, Elena Vortsepneva	Spermatogenesis and sperm ultrastructure in <i>Mooreonuphis stigmatis</i> (Onuphidae, Annelida)
poster C4.05	Yuliya Burmistrova, Igor Kosevich	Characteristics of early development of <i>Ectopleura larynx</i> (Hydrozoa, Cnidaria).
poster C4.06	Alexander Ereskovsky, Ilya Borisenko, Andey Lavrov, Fedor Bolshakov, Daria Tokina, Maja Adamska	Body plan formation during regeneration in sponges
poster C4.07	Lyudmila Flyachinskaya, Petr Lezin	Embryonic and larval development of the soft–shell clam <i>Mya arenaria</i> in the White Sea
poster C4.08	Lyubov Gliznutsa, Alexander Kalachev	Serotonergic apical organ formation in pluteal larvae of echinoids and ophiuroids (Echinodermata).
poster C4.09	Yulia Khramova, Denis Nikishin, Polina Belova, Stanislav Kremnev, Tatyana Bagaeva, Nadezhda Rimskaya– Korsakova	Developmental stages of the white sea burrowing annelid <i>Ophelia limacina</i>
poster C4.10	Katja Kienbaum, Gerhard Scholtz, Carola Becker	The male copulatory and female reproductive system of <i>Percnon gibbesi</i> (Brachyura: Thoracotremata: Grapsoidea).
poster C4.11	Bo–Mi Kim, Hyun Park, Jae–Sung Rhee	Ecdysone content in developmental stages and effects of environmental fluctuations on the production of ecdysone and related pathway in the mysid crustacean
poster C4.12	Igor Kosevich	Embryonic development and larva nervous system organisation in <i>Sarsia lovenii</i> (M. Sars, 1846) (Cnidaria, Hydrozoa)

poster C4.13	Roman Kostyuchenko, Ekaterina Kupriashova	Molecular and cellular events in nauidid asexual reproduction
poster C4.14	Ioannis Kourtesis, Harald Hausen	Electron microscopy applications towards the understanding of cell type evolution
poster C4.15	Vasiliki Koutsouveli, Paco Cárdenas, María Conejero, Lindsay Beazley, Ana Riesgo	First insights into the reproduction of deep-sea sponges of the North Atlantic
poster C4.16	Vasiliki Koutsouveli, Sergio Taboada, Juan Moles, Javier Cristobo, Conxita Avila, Andrea Bertran, Joan Solà, Pilar Ríos, Ana Riesgo	Reproductive features of Antarctic demosponges from the orders Dendroceratida, Poecilosclerida and Haplosclerida (Porifera)
poster C4.17	Stanislav Kremnyov, Yulia Kraus	Embryonic development of a marine hydroid using very unusual morphogenetic toolkit
poster C4.18	Natalia Kreshchenko, Nadezhda Terenina	Regeneration of anterior end musculature in planarian monitored by phalloidine fluorescence and laser scanning microscopy
poster C4.19	Alexandre Lobo-da-Cunha, Ângela Alves, Elsa Oliveira, Manuel António Malaquias	Histological investigation of the male copulatory apparatus of <i>Haminoea navicula</i> (Gastropoda, Cephalaspidea)
poster C4.20	Anastassya Maiorova	The developmental modes in tentacular apparatus of sipunculans with special reference to the <i>Phascolosoma</i> genus
poster C4.21	Tatiana Mayorova, Boris Osadchenko, Yulia Kraus	How does staurozoan embryo with a low number of cells overcome the developmental constraints?
poster C4.22	Polona Mrak, Nada Žnidaršič, Urban Bogataj, Jasna Štrus	Cuticle morphogenesis during intramarsupial development in <i>Porcellio scaber</i> (Crustacea: Isopoda) as revealed by microscopy
poster C4.23	Ekaterina Nefedova, Elisaveta Gonobobleva, Ivan Tikhomirov	Ontogenesis of calcareous sponge <i>Sycon</i> sp. (Porifera, Calcarea) from aquaculture
poster C4.24	Boris Osadchenko, Yulia Kraus, Igor Kosevich	Development of <i>Aglantha digitale</i> , jellyfish without a polyp
poster C4.25	Alena Sukhoputova, Yulia Kraus	Three forms of strobilation in scyphozoan polyps: key stages and morphogenesis

poster C4.26	Andrey Vishnyakov, Tima Altié, Sandrine Chenesseau, Peter Yershov, Alexander Ereskovsky	Ultrastructure of oogenesis in <i>Paramuricea clavata</i> (Anthozoa, Octocorallia)
poster C4.27	Olga Yurchenko, Vasily Radashevsky	Fine organization of oocytes in spionid polychaetes (Annelida: Spionidae) with short-headed spermatozoa

### **Symbiosis between animals: diversity, patterns and inference on processes (C5)**

poster C5.01	Polina Dgebuadze, Elena Mekhova	Some features of gastropods morphology and behavior due to their symbiotic lifestyle
poster C5.02	Elena Mekhova, Temir Britayev	Body shape, coloration and location of some myzostomids (Annelida: Myzostomida) from central Vietnam
poster C5.03	Sofya Mudrova, Mikhail Nikitin, Michael Berumen, Viatcheslav Ivanenko	Combined analysis of morphological and molecular diversity of copepods (Crustacea) living in symbiosis with stony corals of the genus <i>Galaxea</i> in the Indo-Pacific

### **Morphological diversity and evolution in terrestrial invertebrates (C6)**

poster C6.01	Julia Anne-Sophie Bauder, Harald Wolfgang Krenn	Morphological fine tuning of the feeding apparatus of the Hesperidae (Lepidoptera)
poster C6.02	Makhosi Buthelezi	Phylogenetic and morphological relationships of the groundnut leaf miner, <i>Aproaerema modicella</i> (Deventer) and <i>Aproaerema simplexella</i> (Walker) (Lepidoptera: Gelechiidae) occurring in South Africa, Mozambique, India and Australia
poster C6.03	Elena Gorb, Stanislav Gorb	Sexual dimorphism in the attachment ability of <i>Coccinella septempunctata</i> beetles to smooth substrates
poster C6.04	Carolin Haug, Alejandro Izquierdo López, Marie Hörnig, Jakob Krieger, Joachim Haug	Convergent evolution of raptorial appendages in arthropods
poster C6.05	Christine Kiesmüller, Carolin Haug	Tagmatisation in camel spiders: how functional constraints shape a complex body organization

poster C6.06	Lisa Mehnert, Yentl Dietze, Carolin Haug, J. Matthias Starck	Microscopic anatomy of pseudoscorpions reveals new insights in segmental body organisation
poster C6.07	Lisa Mehnert, Carolin Haug, J. Matthias Starck	Morphology of the rostris and preoral cavity of pseudoscorpions
poster C6.08	Irena Grześ, Mateusz Okrutniak, Monika Gorzalczyk	Morphological diversity of monomorphic ant <i>Lasius niger</i> along metal–pollution gradient

### **Advanced Microscopy and Morphology (D1)**

poster D1.01	Valery Novochadov, Uliana Vorobeva, Stanislav Klimenko, Andrey Klimenko, Alexey Terpilovsky, Kharlampy Tiras	High–precision 3D imaging system for biological objects in virtual environment
poster D1.02	Brian Saltin, Carolin Haug, Joachim Haug	Lifting the transparent veil – opportunities for morphological observation using autofluorescence microscopy.
poster D1.03	Julia Sigwart, Lauren Sumner–Rooney, James Dickey, Nicholas Carey	The scaphopod foot is ventral: more evidence from the anatomy of <i>Rhabdus rectius</i> (Carpenter, 1864) (Dentaliida: Rhabdidae)
poster D1.04	Vladimir Mordukhovich, Julia Zograf, Nataliya Fadeeva	Potential of confocal laser scanning microscopy (CLSM) as a tool for morphological study of free-living marine nematodes including museum collection material