



SOCIEDAD INTERNACIONAL DE MALACOLOGIA MEDICA Y APLICADA

10th International Congress on Medical and Applied Malacology

Program and Abstract



**August 26–29, 2009, Busan, Korea
Novotel Ambassador Hotel**



Welcome Messages

Dear Colleagues,

The Tenth International Congress on Medical and Applied Malacology (10 ICMAM) will be held in Busan, Korea, 25-29 August 2009. The purpose of this Congress is to bring together scientists interested in various aspects of the biology of mollusks, including basic biology of mollusks, mollusks as mediators of parasitic diseases of humans and domestic and other animals, in the harvesting, culture and propagation of mollusks as food, and in mollusks as pests of agriculture, materials, etc. This Congress is being organized jointly by the International Society for Medical and Applied Malacology (ISMAM) and the Malacological Society of Korea (MSK).

Chair of Organizing Committee, Choi, Kwang-Sik





Organization

10th ICMAM Organizing Committee

Chair	Choi Kwang-Sik
Co-Chairs	Park, Young-Je and Kim, Jae-Jin
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International Advisory Committee (Chair: Burch, John B.)

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Lutaenko, Konstantin (Russia)	Mienis, Henk K. (Israel)	Naranjo, Edna (Mexico)
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Qi, Zhongyan (China)	Que, Hua-Yong (China)	Rollinson, David (UK)
Saoud, Mohamed Fathy (Qatar)	Soh, Chin-Thack (Korea)	Toba, Mitsuharu (Japan)
Upatham, Suchart (Thailand)	Vazquez Perera, Antonio A. (Cuba)	Walker, John C. (Australia)
Wu, Wen-Lung (Taiwan)	Zhang, Fusui (China)	

Local Organizing Committee

Honorary President	Soh, Chin-Thack
President	Park, Young-Je

Yong, Tai-Soon	Choi Jin-Woo	Lee, Jung Sick	Kim, Hyun-Woo
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Jeong, Woo-Geon	Park, Gab-Man	Shin, Hyun Chool	Park, Kwang-Jae
Lee, Jun-Sang	Oh, Bong Se	Shin, Yun Kyung	Kim, Yong-Min
Park, Mi-Seon	Han, Seock-Jung	Choe, Mi-Kyung	Cho, Sang Man
Kim, Yeong Hye	Kang, Kyoung-Ho	Ryou, Dong Ki	Choi, Ki Ho
Ahn, Choon Sik			



Acknowledgements

Organized by

The Malacological Society of Korea
International Congress on Medical and Applied Malacology (ICMAM)

Sponsored by

Inje University
National Research Foundation of Korea (NRF)
Busan Convention & Visitors Bureau (BUSAN CVB)
National Fisheries Research & Development Institute (NFRDI)

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Korea Professional Aquaculture Engineering Association
Marine Fish Seedling Association of Korea
Oyster Hanging Culture Fisheries Cooperatives



Program at a Glance

Tue 25	Wed 26		Thu 27	Fri 28		Sat 29
Registration	Registration					Gyeong-Ju Tour
	Grand Ballroom	Camellia Room	Grand Ballroom	Grand Ballroom	Camellia Room	
	Opening		Plenary lectures	Plenary lectures		
	Plenary lectures		Ecology and Biodiversity (2)	Genomics and Genetics (1)	Physiology and Pathology	
	Lunch					
	Aquaculture and Fisheries	Reproduction and Development (1)	Excursion to National Fisheries Research and Development Institute (NFRDI) and Busan City tour	Morphology and Systematics (1)	Reproduction and Development (2)	
	Breeding and Larval Development					
	Ecology and Biodiversity (1)	Medical and Veterinary Malacology		Morphology and Systematics (2)	Genomics and Genetics (2)	
	Welcome Reception			Summer Concert for 10 th ICMAM and Farewell Banquet		





Scientific Program

Wednesday 26 August 2009 at Grand Ballroom

08:30-09:30 Registration

09:30-09:50 Opening Address

Prof. Kwang-Sik Choi (Chair of the Organizing Committee of 10th ICMAM)

Welcome Addresses

Dr. Young-Je Park (President of the Korean Malacological Society)

Prof. Dr. John Burch (Chair of International Committee of ICMAM, University of Michigan, USA)

Dr. Kwang-Soo Lim (President of National Fisheries Research and Development Institute)

Dr. Kyeongho Lee (President of Inje University)

09:50-10:00 Group photo

Plenary lectures

Chair : Drs. Pyung-Rim Chung, William Head

10:00-10:40 Bivalve molluscan biogeography of the East/Japan Sea

Konstantin A. Lutaenko^o

Institute of Marine Biology, Far East Branch, Russian Academy of Sciences, Russia

10:40-11:20 The future of biodiversity

John B. Burch^o

University of Michigan, USA

11:20-12:00 Current status of shellfish aquaculture in Korea

Young-Je Park^o, Jae-Hee Song and Kwang-Sik Choi

Tidal Flat Research Institute of NFRDI, Republic of Korea

12:00-13:30 Lunch break (*Lunch will be provided*)

Session : Aquaculture and Fisheries

Chair : Drs. Kwang-Sik Choi, Aimin Wang

13:30-13:50 Growth and seasonal energetics of the ascidian *Styela clava* in Jindong bay, Korea

Nam Jung Kim, Eun Jung Choy, Hyun-Je Park, Jung-Hyun Kwak, Chang-Keun Kang^o

13:50-14:10 Study of correlation between organics and mineral in oyster shell formation

Seung Woo Lee^o, Kyu Bock Lee and Seung Bin Park





Session : Breeding and Larval Development

Chair : Drs. Kwang-Sik Choi, Aimin Wang

14:20-14:40 Effects of water current on the early nursery life of hatchery Japanese scallop *Patinopecten yessoensis*

Qtae Jo°, Su-Kyoung Kim, Chae Sung Lee, Jong Hwa Kim, Myoung Mo Ahn

14:40-15:00 Some new data on reproductive interrelations between cyprinid fishes (Cyprinidae: Acheilognathinae, Gobioninae) and freshwater bivalves (Unionidae) in the Amur river, Russia

Elena M. Sayenko°, Anna V. Khlopova

15:00-15:20 *Coffee break*

Session : Ecology and Biodiversity I

Chair : Drs. Takahiro Asami, Michael C. Dove

15:20-15:40 Biological environmental characteristics in habitat of an abalone *Haliotis diversicolor* in the eastern coastal waters of Jeju Island, Korea

Joon-Taek Yoo°, Young-Min Choi, Moon-Ho Yang, Joon-Chul Ko and Yang-Jae Im

15:40-16:00 Ontogenetic niche shifts of abalone *Haliotis discus hannai* in relation with population dynamics

Nam-Il Won°, Tomohiko Kawamura, Hideki Takami and Yoshiro Watanabe

16:00-16:20 Growth and survival of the freshwater pearl mussel *Chamberla iniahainesiana* (Lea,1856) from juvenile to adult reared in different sites and densities

Uthaiwan Kovitvadhi°, Satit Kovitvadhi

16:20-16:40 *Coffee break*

16:40-17:00 Freshwater malacofauna of the lake Baikal region: Biodiversity, origin and connections with adjacent faunas of Siberia, Mongolia and Southern Russian Far East

Prozorova Larisa A.°, Sitnikova Tatiana Ya.

17:00-17:20 Seashell food culture related to mollusk biodiversity in Korean coasts and islands

Jong Geel Je°, Sun-Kee Hong

17:20-17:40 The Molluscan diversity and malacofauna database in Taiwan

Wen-Lung Wu°

17:40-18:00 The mollusks of Seogundo, Jeju Island, South Korea

Ronald G. Noseworthy and Kwang Sik Choi





Wednesday 26 August 2009 at Camellia Room

Session : Reproduction and Development I

Chair : Drs. Toshie Kawano, Shu-Yin Chen

- 13:30-13:50 Ultrastructural studies of vitellogenesis in oocytes and oocyte degeneration associated with follicle cells in female *Sinonovacula constricta* (Bivalvia: Pharidae) in Western Korea**
Ee-Yung Chung^o, Young-Je Park
- 13:50-14:10 Effect of Temperature and salinity on early development in *Chlamys farreri* following inhibition of polar body 1**
Huayong Que^o, Linzhan Xue and Guofan Zhang
- 14:10-14:30 Reproductive behaviour of Sydney rock oysters, *Saccostrea glomerata*, selected for faster growth**
Michael C. Dove^o, Wayne A. O'Connor
- 14:30-14:50 Comparative study on the reproduction and physiological condition of *Marteilioides chungmuensis* infected oyster, *Crassostrea gigas* from Tongyong off the southern coast of Korea**
Yanin Limpanont^o, Bong-Kyu Kim and Kwang-Sik Choi
- 14:50-15:10 Comparative studies on the gametogenesis and condition of the Pacific oyster (*Crassostrea gigas*) exposed to Hebei Spirit oil spill along the Taean coast off the west coast of Korea**
Hee-Jung Lee^o, Je-Cheon Jun, Young-Je Park, Kee-Chae Cho and Kwang-Sik Choi
- 15:10-15:20 Coffee break**

Session : Medical and Veterinary Malacology

Chair : Dr. Shen Heding, Olga Yurchenko

- 15:20-15:40 Cercarial infections of freshwater snails family Thiariidae in the North Thailand**
Duangduen Krailas^o, Wivitchuta Dechruksa, Suluck Ukong, Wasin Inkapatanakul, Tunyarut Koonchornboon
- 15:40-16:00 Predation tactic of the snail eating snake, *Pareas carcarinatus***
Somsak Panha^o, Ratmanee Chanabun, Chirasak Sutcharit, Piyoros Tongkerd
- 16:00-16:20 Trematode infections of freshwater snails family Thiariidae in the Northeast of Thailand**
Duangduen Krailas^o, Sirilak Chotesaengsri, Wivitchuta Dechruksa, Suluck Ukong, Wasin Inkapatanakul, Tunyarut Koonchornboon





18:00-21:00 Welcome Reception

Dinner Speech

Prof. Dr. Key-Yong Kim (Dean of Inje University College of Medicine)

Dr. Chin Thack Soh (Honorary President of 10th ICMAM Local Organizing Committee)

Wednesday 27 August 2009 at Grand Ballroom

Plenary lectures

Chair : Drs. Kye-Heon Jeong, Konstantin A. Lutaenko

09:00-09:40 General profile of reproduction and recruitment of asari clam in Tokyo Bay, Japan

Mitsuharu Toba^o

Chiba Prefectural Fisheries Research Center, Tokyo Bay Laboratory, Japan

09:40-10:20 The bivalve *Laternula elliptica* as a sentinel organism for environmental monitoring in the Antarctic coastal waters

In-Young Ahn^o

Korea Polar Research Institute, Korea

10:20-10:40 Coffee break

Session : Ecology and Biodiversity II

Chair : Drs. Somsak Panha, Bong-Se Oh

10:40-11:00 Subfamily Nodulariinae (Unionidae, Bivalvia) from the Russian Far East: Myth or reality?

V. V. Bogatov^o

11:00-11:20 Broodstock transplantation in the rehabilitation of the depleted traditional grounds of *Pholas orientalis* in Western Visayas, Philippines

Liberato V. Laureta^o, Shirley M. Golez and Lily Anne G. Piñosa

11:20-11:40 Optimization of density and culture system for juvenile freshwater pearl mussels, *Chamberlainia hainesiana* (Lea, 1856)

Satit Kovitvadhi^o, Uthaiwan Kovitvadhi

11:40-12:00 Land snails of the southern Russian Far East: biodiversity, distribution, changes since Pleistocene

Kavun Kseniya V.^o

12:00-13:20 Lunch break (Lunch will be provided)

Excursion to National Fisheries Research Institute (NFRDI) and Busan City Tour





Friday 28 August 2009 at Grand Ballroom

Plenary lectures

Chair : Dr. Liberato Laureta

09:00-09:40 Fertilizing molluscs are genotypically hermaphroditic: a hypothesis (or fantasy)

William H. Heard^o

Florida State University, U.S.A.

09:40-10:20 *Coffeebreak*

Session : Genomics and Genetics I

Chair : Drs. Mitsuharu Toba, Ee-Yung Chung

10:20-10:40 Identification and expression pattern analysis of various genes from the Expressed Sequence Tag project of *Nesiohelix samarangae*

Se Won Kang^o, Byung-Jun Min, Sung-Hwa Chae, Sang-Haeng Choi, Hong-Seog Park, Mi

Seon Park, Yong-Hun Jo, Mi Young Noh, Yeon Soo Han, Chin Thack Soh, Kye-Heon Jeong

Yong Seok Lee

10:40-11:00 Karyotypes and fluorescence in situ hybridization of seven bivalves

Aimin Wang^o, Ming Li, Yan Wang, Yaohua Shi, Zhifeng Gu and Ximing Guo

11:00-11:20 Molecular phylogenetic study of *Nesiohelix samarangae* based on metallothionein gene

Jae Bong Lee^o, Jun-Seo Lee, Byung-Jun Min, Se Won Kang, Moon Ki Baek, Kwang-Jae

Park, Sang-Haeng Choi, Sung-Hwa Chae, Hong-Seog Park, Yeon Soo Han, Jun-Sang Lee,

Kye-Heon Jeong, Yong Seok Lee

11:20-11:40 Karyotype determination in the Southeast asian land operculate snail genus *Pollicaria* (Gould,1856)

Bangon Kongim^o, Chirasak Sutcharit, Piyoros Tongkerd, Somsak Panha

11:40-12:00 Current status of various Mollusks Expressed Sequence Tag (EST) projects and Mollusks genome research in Korea

Yong Seok Lee^o, Se Won Kang, Jae Bong Lee, Moon Ki Baek, Jun-Seo Lee, Hyon-Sob Han,

Young Je Park, Sung-Hwa Chae, Sang-Haeng Choi, Hong-Seog Park, Yeon Soo Han, Pyung

Rim Chung, Kye-Heon Jeong

12:00-13:10 *Lunch break (Lunch will be provided)*





Session : Morphology and Systematics I

Chair : Drs. Mitsuharu Toba, Kwang-Jae Park

13:10-13:30 Phylogenetic study of the 5S rRNA in some scallop species

Xiaoting Huang, Zhenmin Bao, Liping Hu

13:30-13:50 Mitogenomic comparison of six Asian *Crassostrea* oysters and phylogenetic analyses

Xiangyun Wu, Xiaodong Xu, Ziniu Yu°, Xiaoyu Kong, Jianjun Xia, Zhenpeng Wei

13:50-14:10 Analysis of COI gene for different shell shape in *Nassarius hepaticus*

Cai Li-Zhe°, Wang Wen

14:10-14:30 Morphogenesis of sinistral mutants in *Lymnaea stagnalis* L. (Gastropoda: Pulmonata)

Takahiro Asami, Eliana Nakano, Edmund Gittenberger, Toshie Kawano°

14:30-14:50 *Coffee break*

Session : Morphology and Systematics II

Chair : Drs. Piyoros Tongkerd, Qtae Jo

15:20-15:40 Classification of Onchidiidae (Gastropoda, Systellommatophora) in Chinese mainland inferred from morphology and molecular Study

Shen Heding°, Wang Ling, Wu Wenjian

15:40-16:00 The classification analysis in some ground dwelling pulmonates of Southeast Asia

Chirasak Sutcharit°, Somsak Panha

16:00-16:20 Molecular systematics of snorkel snail genus *Rhiostoma* (Caenogastropoda: Cyclophoridae) from Thailand: Do shell morphologies reflect phylogeny?

Piyoros Tongkerd°, Chirasak Sucharit, Somsak Panha

16:20-16:40 Fluorescent pigment distinguishes between sibling species of pulmonates

Takahiro Asami°, Keichi Seki and Amporn Wiwegweaw

16:40-17:00 Ultrastructure of the bivalves Sertoli cells as a possible indicator of a marine pollution

Yurchenko O. V.°





Friday 28 August 2009 at Camellia Room

Session : Physiology and Pathology

Chair : Drs. Xiaoting Huang, Yeonghye Kim

- 10:20-10:40 Relationship between cardiac activity and morphological parameters of blue mussel *Mytilus edulis* L. under different conditions: comparative analysis.**
Igor Bakhmet°
- 10:40-11:00 Report on the occurrence of *Perkinsus olseni* and Brown Ring Disease (BRD) in juvenile Manila clam, *Ruditapes philippinarum*, along the west coast of Korea**
Hyun-Sung Yang°, Yanin Limpanont, Jasim M. Uddin, Bong-Kyu Kim, Hyun-Ki Hong, Hee-Do Jeong, Hee-Joong Lee, Ji-Yeon Lee, Kwang-Jae Park, Young-Je Park, Kwang-Sik Choi
- 11:00-11:20 Flow cytometry studies on the populations and immune parameters of the hemocytes of the Suminoe oyster, *Crassostrea ariakensis* from Seomjin River, Korea**
Hyun-Ki Hong°, Ludovic Donaghy, Bong-Kyu Kim, Heung-Sik Park, Kwang-Sik Choi
- 11:20-11:40 Time series analysis of *Perkinsus olseni* infection in Manila clams (*Ruditapes philippinarum*) transplanted from a low to high infection area off the western coast of Korea**
Jee-Youn Lee°, Kwang-Jae Park, Young-Jae Park, Kwang-Sik Choi
- 11:40-12:00 Expression and localization of MC-sialec, a sialic acid specific lectin in manila clam (*Ruditapes philippinarum*) upon *Perkinsus olseni* infection**
Mausumi Adhya, Kwang-Sik Choi, Younghun Yu, Moonjae Cho°
- 12:00-13:10 Lunch break (Lunch will be provided)**

Session : Reproduction and Development II

Chair : Drs. Li-Zhe Cai, Yun-Kyung Shin

- 13:10-13:30 Purification and Characterizations of *Crassostrea ariakensis* vitellin and its immunological relatedness with other invertebrates**
Mausumi Adhya°, Kwang-Sik Choi
- 13:30-13:50 Development of Black lip pearl oyster (*Pinctada margaritifera*) egg-specific polyclonal antibody and its application**
Hee-Do Jeong°, Do-Hyung Kang, Heung-Sik Park, Adhya Mausumi, Kwang-Sik Choi
- 13:50-14:10 Comparative study on the gametogenesis, sex ratio and reproductive effort of diploid and triploid Pacific oyster, *Crassostrea gigas* in Korea**
Bong-Kyu Kim°, Standish K. Allen, Jr. Choong-Hoon Jeong, Kwang-Sik Choi





14:10-14:30 *Coffee break*

14:30-14:50 **Reproductive biology of the Purplish Washington clam, *Saxidomus purpuratus* in the East China Sea**

Yeonghye Kim^o, Jungjun Park, Jonbin Kim, Dongwoo Lee, Daesoo Chang

14:50-15:10 **Reproductive biology of the Swordtip squid, *Loligo edulis* in Jeju Island, Korea**

Hyunjung Kang^o, Yeonghye Kim, Eunhui Lee, Haekyoung Kim, Dongwoo Lee, Daesoo Chang

Session : Genomics and Genetics II

Chair : Drs. Duangduen Krailas, Larisa Prozorova

15:30-15:50 **Maternal inheritance of racemism in the land snail *Bradybaena similaris***

Hiroki Utsuno^o, Takahiro Asami

15:50-16:10 **Genetic divergence among the operculate land snail *Rhiostoma housei* from Thailand**

Pongpun Prasankok^o, Piyoros Tongkerd, Chirasak Sutchari, Somsak Panha

16:10-16:30 **Molecular phylogenetic study of *Pisidium (Neopisidium) coreanum* based on metallothionein gene**

Moon Ki Baek^o, Jun-Seo Lee, Se Won Kang, Jae Bong Lee, Jae Hee Song, Sang-Haeng Choi, Sung-Hwa Chae, Hong-Seog Park, Yeon Soo Han, Jung-Ha Kang, Jun-Sang Lee, Kye-Heon Jeong, Yong Seok Lee

16:30-16:50 **Genetic impacts of hybrid abalone farming (*Haliotis discus hannai* ♀ × *Haliotis discus discus* ♂) on native abalone populations in Northern China**

Mingling Wang^o, Zhenmin Bao

16:50-17:10 **Design and empolderation of the analysis and evaluation system for molluscan genetic breeding**

Yan Li^o, Hailin Su, Xijiang Yu, Zhenmin Bao

16:50-17:10 **Population genetic structure of blue mussel *Mytilus galloprovincialis* in China based on mitochondrial DNA**

Shen Yu-bang, Li Jia-le*, Feng Bing-bing

17:10-18:30 *Summer Concert for 10th ICMAM*

18:40-21:00 **Farewell Banquet**

Dinner Speech & Closing Remark

Dr. Kwang Sik Choi (Chair of the Organizing Committee of X ICMAM)

Dr. Pyung Rim Chung (International Advisory Committee Member of 10th ICMAM)

Saturday 29 August 2009

08:30-18:30 **Gyeong-Ju Tour**



POSTER PRESENTATION

- PS-1 Trace metals in Manila clam (*Ruditapes philippinarum*) and sediments of Gyeonggi Bay, Korea**
Pyoung-Joong Kim, Kwang-Jae Park, Kyoung-Ho An, Soung-Yun Park, Jae-Kyoung Shon, Seung Heo, E-Koo Yun and Sang-Back Jeon
- PS-2 Effect of temperature on induced sexual maturation of the hard clam, *Meretrix petechialis* (Lamarck) broodstock**
Byoung-Hak Kim, Ki Yeol Park, Hag Dong Ku, Pil Gue Jo and Tae Seok Moon
- PS-3 Source of organic matter of Oyster farm in Gamak Bay**
Sook-Yang Kim, Chang-gun Kang, Young-sik Lee
- PS-4 In vitro schistosomicidal activity of plants extracts from Piperaceae species**
de Moraes J, Lopes POMV, Nascimento C, Kato MJ, Yamaguchi, LF, Kawano T
- PS-5 Morphological characterization of some larval trematodes found in *Biomphalaria tenagophila* from Brazil**
de Moraes J, Nascimento-da-Silva MP, Ohlweiler FP, Kawano T
- PS-6 A comparison with survival rates of the ark shell between Gangjin and Gamak bay where used probiotics for the improvement of the sediment quality**
Choon-Goo Jung, Yoon-Seok Choi, Eung-O Kim, Sang-Gyu Son, Min-Yoo Park and Bong-Se Oh
- PS-7 Common oyster species and its distribution from North China**
Haiyan Wang, Guofan Zhang, Xiao Liu, Suping Zhang, Ximing Guo
- PS-8 Stock assessment and management implications of an abalone *Haliotis diversicolor* in the coastal waters of Jeju Island, Korea**
Joon-Taek Yoo, Young-Min Choi, Joon-Chul Ko, Jae-Woo Kim and Dae-Soo Chang
- PS-9 Copper toxicity on survival, respiration and organ structure of *Tegillarca granosa* (Bivalvia: Arcidae)**
Jung Jun Park, Young Guk Jin, Tae Woong Yun, Yun Kyung Shin and Jung Sick Lee
- PS-10 Survival, respiration and organ structure of *Macrura Veneriformis* (bivalvia:mactridae) exposed to copper**
Jung Jun Park, Young Guk Jin, Ae Jin Jung, Sun Mi Ju, Yun Kyung Shin and Jung Sick Lee
- PS-11 Ultrastructural and histochemical study on the foot of *Tegillarca granosa* (Bivalvia: Arcidae)**
Jung Sick Lee, Jung Jun Park, Ji Seon Park and Dong Geun Lee
- PS-12 Estimation of genetic parameters and breeding value for measurement traits of pacific oyster, *Crassostrea gigas* in F3**
Ki Yeol Park, Hyun Chul Kim, Byoung Hak Kim, Hag Dong Ku, Pil Gue Jo and Tae Seok Moon



- PS-13 Pathogenesis of mollusks shells (Bivalvia: Margaritiferidae, Unionidae) in conditions of environmental pollution by heavy metals**
Klishko Olga K
- PS-14 An biodiversity study on intertidal molluscs of shore wetlands in Meizhou Bay, Fujian province**
LI Rong-Guan, Huang Ya-Qin, JIANG Jin-Xiang
- PS-15 Effect of pipartine on Schistosomiasis vector *Biomphalaria glabrata*(Say, 1818)(Mollusca, Planorbidae)**
Ludmila Nakamura Rapado , Priscilla Orechio de Moraes Victor Lopes, Eliana Nakano, Fernanda Pires Ohlweiler, Massuo Jorge Kato, Lydia Fumiko Yamaguchi, and Toshie Kawano
- PS-16 Inducing sexual maturation of comb pen shell, *Atrina pectinata*, per micro-algae type**
Tae Seok Moon, Byoung-Hak Kim, Pil Gue Jo, Yun Kyung Shin, Ki Yeol Park, Young Sub Lym, Young Guk Jin
- PS-17 Changes of the main nutritional components and taste components of oyster during ice-temperature preservation**
Qin Xiao-ming, Zhang Chao-hua, Lin Hua-juan, Fei Xing
- PS-18 Freshwater family Pleuroceridae (Gastropoda, Ceritioidea): distribution and systematics based on anatomical data**
Prozorova Larisa A., Rasshepkina A.V.
- PS-19 Glochidial shell morphology of some Anodontinae and Pseudanodontinae (Unionidae) bivalves in Russia**
Elena M. Sayenko
- PS-20 Using ribosomal DNA ITS2 in detecting population genetic diversity of *Coelomactra antiquata* (Bivalvia: Veneroida)**
Shu-Yin Chen, Hong-Jiu Ji, Xue-Na Zhang, Han-Liang Cheng, Xiao-Feng Xu
- PS-21 Molecular analyses of the cryptic species complex *Sarasinula* based on cytochrome oxidase I (COI)**
Suzete Rodrigues Gomes, Ana Rita de Toledo-Piza, Toshie Kawano
- PS-22 The influencing factors of tube building behavior of *Polydora ciliate* Johnston, 1838 (Annelida, Polychaeta): a spionid polychaete infest scallops *Patinopecten yessoensis* in China**
Yan Gao, Tao Zhang, Hongsheng Yang, Xiaofang Zhang, Shihuan Wang
- PS-23 Establishment of the comet assay in the freshwater snail *Biomphalaria glabrata* (Say,1818)**
Vanessa Siqueira Grazeffe, Lenita de Freitas Tallarico, Alessandro de Sá Pinheiro, Toshie Kawano, Miriam Fussae Suzuki, Kayo Okazaki, Carlos Alberto de Bragança Pereira, Eliana Nakano





- PS-24 Three new species of genus *Cryptonatica* (Gastropoda, Naticidae) from cold water mass in Yellow Sea**
Zhang Su-Ping
- PS-25 Experiment about dysoxic tolerance of a Scallop**
Sang-Ho Back, Young-Je Park, Je-Cheon Jun, Kwang-Jae Park, Hee-Woong Kang, Kee-Chae Cho
- PS-26 Changes of living density of Manila clam, *Ruditapes philippinarum* beds according to environment and catch in the West coast of Korea**
Kwang-Jae Park, Seung Heo, Hyung-Chul Kim, Yong-Suk Choi
- PS-27 Influence of sowing density on growth and survival of Manila clam, *Ruditapes philippinarum* at the clam farming station in the West coast of Korea**
Kwang-Jae Park, Hong-In Song, Hye-Young Yun, Hee-Woong Kang, Duk-Young Kang, Kee-Chae Cho
- PS-28 Sexual maturation, morphologies of egg masses and larvae of *Glossaulax didymma* in Western Korea**
Ee-Yung Chung, Dae-Gi Kim, Young-Je Park and Kwang Je Park
- PS-29 Sexual maturation and artificial spawning in female *Meretrix petechialis* (Bivalvia: Veneridae) in Western Korea**
Yong-Min Kim, Jin-Woo Choi, Jae Hee Song, Tae-Hoo Kim and Ee-Yung Chung
- PS-30 Spermatogenesis and ultrastructural characteristics of partially modified spermatozoa in the brackish water diploid *Corbicula japonica* (Corbiculidae)**
Je-Cheon Jun, Hee-Woong Kang, Gab Man Park and Ee-Yung Chung
- PS-31 Ultrastructural characterics of spermatogenesis in male *Macra chinensis* in Western Korea**
Ki-Ho Choi, Eun-Jong Kim, Gab Man Park, Kwan-Ha Park and Ee-Yung Chung
- PS-32 Ultrastructural studies of vitellgenesis in oocytes and the functions of the follicle cells associated with oocyte degeneration in female *Chlamys (Azumapekten) farreri farreri* in Western Korea**
Ee-Yung Chung, Pyung-Rim Chung and William H. Heard
- PS-33 Reproductive ecology of *Neptunea (Barbitonia) arthritica cumingii* in Western Korea**
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- PS-34 Reproduction of the hard shelled mussel, *Mytilus coruscus* in Western Korea**
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North American elements in North Asian land snail fauna.

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To the recent time 105 land snail species, in 39 genera and 23 families are recorded from the Russian Far East. There are Holarctic, Palearctic, North Asian, South Asian, Asian-American, endemics, subendemics, introducents and species with disjunctive areas. Manchurian and circumboreal biogeographical groups prevail into Far Eastern mixed fauna. According to both original and literature data 14 from 105 species, in 12 genera appear to have narrow circumboreal areas, restricted by East Asia and North America. In Asia these species inhabit Chukotka, Kamchatka, Pacific islands southward Hokkaido, continental coast of Okhotsk Sea and Japan Sea. All of 14 circumboreal species (13%) originate from North America or Beringia. Six species belong to five (13% as well) North American genera and subgenera: *Planogyra*, *Pseudohyalina*, *Pristiloma*, *Hawaia*, *Toltecia*. Recently found in Asia *Planogyra clappi* occurs on south of Kuril Archipelago, southern Sakhalin, Moneron and continental shore of Tatar Strait. *Zonitoides chishimanus* described from Hokkaido is regarded to North American *Planogyra* because of small flattened, silky glossy subtransparent shell with widely spaced membranous periostracal ribs and embryonic whorls covered by indistinct microscopic granulation. *Pseudohyalina aperta* (Pisbry et Hirase) is transferred from the family Punctidae to Gastrodontidae on the basis of both shell microsculpture and copulative apparatus morphology. Its penis is supplied with epiphallus not typical for Punctidae. Amphipacific *Punctum conspectum* is regarded to North American subgenus *Toltecia* because of copulative apparatus morphology also. No distinct epiphallus; penial retractor arising from diaphragm, attached to penial sheath. As well two *Vertigo* species *V. gouldi* and *V. castanea*, previously known from North America, were recorded in Asia for the first time from Low Amur basin.

