

## The 48th annual meeting of Japan Society of Protistology

### Oral presentations

Investigation of the condition inducing giant cell formation and the advantage of giant *Blepharisma* formed by cannibalism

○Yuna Ono<sup>1</sup>, Mayumi Sugiura<sup>2</sup>, Terue Harumoto<sup>2</sup>

<sup>1</sup>Dept. Biol. Sci., Grad. Sch. Culture and Humanities, Nara Women's Univ., <sup>2</sup>Research Group of Biol. Sci., Div. Natural Sci., Nara Women's Univ.

Reevaluation of classification in *Blepharisma hyalinum* based on the phylogenetic analysis and the ability of mating pair formation induced by gamone 2

○Mayumi Kobayashi<sup>1</sup>, Mayumi Sugiura<sup>2</sup>, Terue Harumoto<sup>2</sup>

<sup>1</sup>Dept. Biol. Sci., Grad. Sch. Humanities and Sci., Nara Women's Univ., <sup>2</sup>Research Group of Biol. Sci., Div. Natural Sci., Nara Women's Univ.

Mating type expression during sexual maturation and gene expression analysis between sexually immature and mature cells in *Blepharisma stoltei*

○Mayumi Sugiura, Terue Harumoto

Research Group of Biol. Sci., Div. Natural Sci., Nara Women's Univ.

Kinetoplastid flagellates overlooked by universal primers dominate in the oxygenated hypolimnion of deep lakes

○Indranil Mukherjee, Yoshikuni Hodoki, Shohei Fujinaga, Yusuke Okazaki, Shin-ichi Nakano  
Center for Ecol. Res., Kyoto Univ.

Comparative study of mixotrophic and heterotrophic conditions in *Paramecium bursaria*

○Masashi Hayakawa, Toshinobu Suzaki

Dept. Biol., Grad. Sch. Sci., Kobe Univ.

The space learning in a capillary and its mechanism in *Paramecium*

○Kaito Ohki<sup>1</sup>, Shigeru Kuroda<sup>2</sup>, Itsuki Kunita<sup>3</sup>, Toshiyuki Nakagaki<sup>2</sup>

<sup>1</sup>Grad. Sch. Life Sci., Hokkaido Univ., <sup>2</sup>RIES, Hokkaido Univ., <sup>3</sup>IRCMS, Kumamoto Univ.

The movement of mucilage related to the gliding diatoms

○Nozomi Yamaoka<sup>1</sup>, Takuya Iwata<sup>2</sup>, Tohru Yoshihisa<sup>1</sup>, Seiji Sonobe<sup>1</sup>

<sup>1</sup>Grad. Sch. Life Sci., Univ. Hyogo, <sup>2</sup>Dept. Life Sci., Univ. Hyogo

Predation mechanism of a suctorian, *Hypophrya* sp.

○Go Kobashigawa, Tohru Yoshihisa, Seiji Sonobe

Grad. Sch. Life Sci., Univ. Hyogo

Ultrastructural analysis of microtubule dynamics in *Raphidiophrys contractilis* without induction of rapid axopodial contraction under chemical fixation processes.

○Risa Inoue<sup>1,3</sup>, Kazuyoshi Murata<sup>2</sup>, Noboru Saito<sup>3</sup>, Motonori Ando<sup>1,3</sup>

<sup>1</sup>Lab. Animal Physiol. and Pharmacol., Grad. Sch. Environ. and Life Sci., Okayama Univ., <sup>2</sup>Natl. Inst. for Physiol. Sci., <sup>3</sup>Lab. Cell Physiol., Grad. Sch. Educ., Okayama Univ.

Identification of histone species that were imported into the endonuclear symbiotic bacterium *Holospora* from the host nucleus

○Ayano Uchida<sup>1</sup>, Murakami Takashi<sup>2</sup>, Yuuki Kodama<sup>3</sup>, Masahiro Fujishima<sup>2</sup>

<sup>1</sup>Course of Biol. Sci. and Biotechnol., Grad. Sch. Life and Environ. Sci., Shimane Univ., <sup>2</sup>Grad. Sch. Sci. Engin., Yamaguchi Univ., <sup>3</sup>Dept. Biol. Sci., Fac. Life and Environ. Sci., Shimane Univ.

Identification of IP<sub>3</sub> and Ryanodine receptor-like proteins in *Toxoplasma gondii*

○Ryuma Matsubara<sup>1,2</sup>, Takaya Sakura<sup>1</sup>, Kisaburo Nagamune<sup>1,3</sup>

<sup>1</sup>Dept. Parasitol., Natl. Inst. Infect. Dis., <sup>2</sup>Grad. Sch. Life and Environ. Sci., Univ. Tsukuba, <sup>3</sup>Fac. Life and Environ. Sci., Univ. Tsukuba

What is the physiological role of spazmoneme filament in eukaryotic cells ?

○Hiroshi Asai

Research Center of Sci. and Engin., Waseda Univ.

Hyper gene fragmentation found in the mitochondrial genome of *Hemistasia phaeocysticola*

○Akinori Yabuki<sup>1</sup>, Goro Tanifuji<sup>2</sup>, Chiho Kusaka<sup>1</sup>, Kiyotaka Takishita<sup>1</sup>, Katsunori Fujikura<sup>1</sup>

<sup>1</sup>Dept. Marine Biodiversity Res., Japan Agency for Marine-Earth Sci. and Tech., <sup>2</sup>Grad. Sch. Life and Environ. Sci., Univ. Tsukuba

Karyotype of germ nucleus of *Tetrahymena* and new method of chromosome preparation

○Toshiro Sugai, Osamu Numata

Life and Environ. Sci., Univ. Tsukuba

A novel formation of intrinsic DNA strand breaks in haploid micronuclei and its relation to chromatin remodeling in *Tetrahymena thermophila*

○Yasuhiro Fukuda<sup>1</sup>, Takahiko Akematsu<sup>2</sup>, Ronald E. Pearlman<sup>3</sup>, Josef Loidl<sup>2</sup>, Chika Tada<sup>1</sup>, Yutaka Nakai<sup>1</sup>

<sup>1</sup>Div. Biol. Resource Sci., Grad. Sch. Agric. Sci., Tohoku Univ., <sup>2</sup>Dept. Chromosome Biol., Univ. Vienna, Austria, <sup>3</sup>Dept. Biol., York Univ., Canada

Investigation for the understanding of the mechanism of host organelle recruitment by *Toxoplasma gondii*

Junpei Fukumoto<sup>1,2</sup>, Takaya Sakura<sup>2</sup>, Ryuma Matsubara<sup>1,2</sup>, Michiru Tahara<sup>2</sup>, ○Kisaburo Nagamune<sup>2,3</sup>

<sup>1</sup>Dept. Parasitol., Natl. Inst. Infect. Dis., <sup>2</sup>Grad. Sch. Life and Environ. Sci., Univ. Tsukuba, <sup>3</sup>Fac. Life and Environ. Sci., Univ. Tsukuba

## Poster presentations

Plastid genome of a new marine photosynthetic *Paulinella* and phylogenetic analysis of *Paulinella* strains

○Duckhyun Lee<sup>1</sup>, Myung Gil Park<sup>2</sup>, Hwan Su Yoon<sup>1</sup>

<sup>1</sup>Dept. Biol. Sci., Sungkyunkwan Univ., Korea, <sup>2</sup>Dept. Oceanography, Chonnam Natl. Univ., Korea

Investigation on the Heterokontophyta SI clade using multigene phylogeny

○Louis Graf<sup>1</sup>, Robert A. Andersen<sup>2</sup>, Hwan Su Yoon<sup>1</sup>

<sup>1</sup>Dept. Biol. Sci., Sungkyunkwan Univ., Korea, <sup>2</sup>Friday Harbor Lab., Univ. Washington, USA

Involvement of kinesin-14 in mitosis of ciliate *Tetrahymena*

○Yasuharu Kushida<sup>1,2</sup>, Masak Takaine<sup>1,3</sup>, Kentaro Nakano<sup>1</sup>, Toshiro Sugai<sup>1</sup>, Krishna Kumar Vasudevan<sup>4</sup>, Mayukh Guha<sup>4</sup>, Yu-yang Jiang<sup>4</sup>, Jacek Gaertig<sup>4</sup>, Osamu Numata<sup>1</sup>

<sup>1</sup>Grad. Sch. Life and Environ. Sci., Univ. Tsukuba, <sup>2</sup>Dept. Cell Physiol., Jikei Univ. Sch. Med.,  
<sup>3</sup>Gunma Univ. Initiative for Adv. Res., Gunma Univ., <sup>4</sup>Dept. Cell Biol., Univ. Georgia, USA

A deep-branching heterolobosean *Pharyngomonas turkanaensis* n. sp., isolated from Lake Turkana in East Africa

○Jong Soo Park<sup>1</sup>, Alastair GB Simpson<sup>2</sup>

<sup>1</sup>Dept. Oceanography and Kyungpook Inst. Oceanography, Sch. Earth Syst. Sci., Kyungpook Natl. Univ., Korea, <sup>2</sup>Dept. Biol., Dalhousie Univ. and Canadian Inst. Adv. Res., Program in Integrated Microbial Diversity, Canada

Cesium accumulation by *Paramecium bursaria*

○Kyoko Nakata, Toshinobu Suzaki  
Dept. Biol., Grad. Sch. Sci., Kobe Univ.

Isolation method and axenic cultivation method of *Paramecium*

○Masaki Ishida<sup>1</sup>, Manabu Hori<sup>2</sup>

<sup>1</sup>Sch. Sci. Educ., Nara Univ. of Educ., <sup>2</sup>Div. Environ. Sci. and Engin., Grad. Sch. Sci. and Engin., Yamaguchi Univ.

Possible involvement of a glucan binding protein in food capture of a heliozoan *Raphidiophrys contractilis*

○Mousumi Bhadra, Toshinobu Suzaki  
Dept. Biol., Grad. Sch. Sci., Kobe Univ.

Structure and composition of siliceous scales in the centrohelid heliozoan *Raphidiophrys contractilis*

○Akane Chihara, Toshinobu Suzaki  
Dept. Biol., Grad. Sch. Sci., Kobe Univ.

Symbiotic protist community structures of two *Reticulitermes* termites in Japan

○Risa Okada, Osamu Kitade  
Coll. Sci., Ibaraki Univ.

Relationship between cell membrane structure and dielectric property in *Euglena gracilis*

○Kaori Takayasu, Toshinobu Suzaki, Lin Chen  
Dept. Biol., Kobe Univ.

Waterborne protozoan monitoring in Korea major river and water resources

○Pyo Yun Cho<sup>1,2</sup>, Seong Kyu Ahn<sup>1</sup>, Seok Ho Cha<sup>1</sup>, Tong Soo Kim<sup>1</sup>  
<sup>1</sup>Dept. Parasitol. and Tropical Med., Inha Univ. Sch. Med., Korea, <sup>2</sup>Protist Resources Res. Team, Nakdonggang Natl. Inst. Biol. Resources, Korea

Free-living heterotrophic flagellates (Protists) from marine sandy sediments of Suma Beach (Osaka Bay), Japan

○Won Je Lee  
Dept. Urban Environ. Engin., Kyungnam Univ., Korea

Free-living heterotrophic flagellates (Protists) from Garorim Bay, Korea

○Won Je Lee  
Dept. Urban Environ. Engin., Kyungnam Univ., Korea

Changes in ultrastructure and chemical composition of the cell wall of *Chlorella* in concomitant with endosymbiosis in *Paramecium bursaria*

○Rina Matsumoto, Chihong Song, Toshinobu Suzuki  
Dept Biol., Grad. Sch. Sci., Kobe Univ.

Host digestion of algal endosymbionts induced by high light stress in *Paramecium bursaria*

Yoshiki Fujimori, Nami Kimura, ○Sosuke Iwai  
Fac. Educ., Hirosaki Univ.

Comparative proteomics between perisymbiont and digestive vacuole membrane fractions in *Paramecium bursaria*

Jun Makimoto, ○Toshinobu Suzuki, Masashi Hayakawa  
Dept. Biol., Grad. Sch. Sci., Kobe Univ.

*Euduboscquella costata* n. sp. (Dinoflagellata, Syndinea), an intracellular parasite of the ciliate *Schmidingerella arcuata*: morphology, molecular phylogeny, life cycle, prevalence, and infection intensity

○Jae-Ho Jung<sup>1,4</sup>, Jung Min Choi<sup>1</sup>, D. Wayne Coats<sup>2,3</sup>, Young-Ok Kim<sup>1</sup>  
<sup>1</sup>Korea Inst. Ocean Sci. and Tech. (KIOST), Korea, <sup>2</sup>Smithsonian Environ. Res. Ctr., USA, <sup>3</sup>Present address: 318 Bayard Rd, Lothian, Maryland 20711, USA; <sup>4</sup>Present address: Dept. Biol., Gangneung Wonju Natl. Univ., Korea

Temporal and spatial occurrence of aloricate ciliates parasitized by dinoflagellates in Korean coastal and offshore waters

○Jung Min Choi<sup>1</sup>, D. Wayne Coats<sup>2</sup>, Young-Ok Kim<sup>1</sup>  
<sup>1</sup>Korea Inst. Ocean Sci. and Tech. (KIOST), Korea, <sup>2</sup>Smithsonian Environ. Res. Ctr., USA

Subtropical culture conditions supported the best growth by a temperate strain of the marine endosymbiotic dinoflagellate *Symbiodinium voratum*

○Young Kyung Lee, Daewon Jeong, Wonho Yih, Hyung Seop Kim  
Kunsan Natl. Univ., Korea

Genetic diversity of glycoside hydrolase genes in the termite-gut protists

Shingo Yoneyama<sup>1</sup>, ○Kazuto Watanabe<sup>2</sup>, Masahiro Yuki<sup>2</sup>, Toshiya Iida<sup>3</sup>, Moriya Ohkuma<sup>2,3</sup>, Satoko Noda<sup>1</sup>  
<sup>1</sup>Fac. Life and Environ. Sci., Univ. Yamanashi, <sup>2</sup>Biomass res. platform team, RIKEN, <sup>3</sup>JCM, Bioresource Ctr., RIKEN

Pathologic survey of the protozoan parasite *Perkinsus olseni* and other parasites in Manila clam *Ruditapes philippinarum* from Korean water during post-spawning period

○Kwang-Sik Choi<sup>1</sup>, Hyun-Sil Kang<sup>1</sup>, Naoki Itoh<sup>2</sup>  
<sup>1</sup>Sch. Marine Biomed. Sci. (BK21 PLUS), Jeju Natl. Univ., Korea, <sup>2</sup>Lab. Fish Diseases, Grad. Sch. Agric. Sci. and Life Sci., Univ. Tokyo

DNA detection method of *Cryptosporidium parvum*, *Giardia lamblia*, and *Entamoeba histolytica* in environmental samples

○Eun-Hee Shin<sup>1,2</sup>, Kyoung-Ho Pyo<sup>1</sup>, You-Won Lee<sup>1</sup>, Ji-Hun Shin<sup>1</sup>  
<sup>1</sup>Dept. Parasitol. and Tropical Med., Seoul Natl. Univ. Coll. Med., Korea, <sup>2</sup>Seoul Natl. Univ. Bundang Hospital, Korea

Testate amoebae of the Imperial Palace, Tokyo

○Satoshi Shimano<sup>1</sup>, Anatoly Bobrov<sup>2</sup>, Yuri Mazei<sup>3</sup>

<sup>1</sup>Hosei Univ., <sup>2</sup>Lomonosov Moscow State University, Leninskie gory, Moscow, Russia, <sup>3</sup>Penza State University, Penza, Russia

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## **Memorial symposium for the late Dr. Soichi Imai, president of JSP “The Front Line of Parasitic Protistology”**

A memorial address for Dr. Soichi Imai

○Osamu Numata

An acting president of the Japan Society of Protistology

In Memoriam: Dr. Soichi Imai, Endocommensal ciliates in the digestive tracts of herbivorous mammals.

○Akira Ito

Ookusa Animal Clinic

Investigation on gliding motility of *Babesia bovis* merozoites using bioimaging analysis

Masahito Asada<sup>1</sup>, ○Shin-ichiro Kawazu<sup>2</sup>

<sup>1</sup>Inst. Tropical Med., Nagasaki Univ., <sup>2</sup>Natl. Res. Ctr. for Protozoan Diseases, Obihiro Univ. of Agric. and Vet. Med.

The highly divergent mitochondrion-related organelle in *Entamoeba histolytica*

○Takashi Makiuchi<sup>1</sup>, Fumika Mi-ichi<sup>2</sup>, Herbert J. Santos<sup>3,4</sup>, Kenichiro Imai<sup>5</sup>, Yuzuru Tozawa<sup>6</sup>, Hiroshi Tachibana<sup>1</sup>, Tomoyoshi Nozaki<sup>3,4</sup>

<sup>1</sup>Dept. Infect. Dis., Tokai Univ. Sch. Med., <sup>2</sup>Div. Mol. and Cell. Immunosci., Dept. Biomol. Sci., Fac. Med., Saga Univ., <sup>3</sup>Dept. Parasitol., Natl. Inst. Infect. Dis., <sup>4</sup>Grad. Sch. Life and Environ. Sci., Univ. Tsukuba, <sup>5</sup>Biotech. Res. Inst. for Drug Discov., Natl. Inst. Adv. Ind. Sci. and Tech., <sup>6</sup>Grad. Sch. Sci. and Engin., Saitama Univ.

Ca<sup>2+</sup> signaling in *Trypanosoma*: Identification and characterization of parasitic IP<sub>3</sub> receptor

○Muneaki Hashimoto<sup>1</sup>, Nagomi Kurebayashi<sup>2</sup>, Motomichi Doi<sup>3</sup>, Masahiro Enomoto<sup>4</sup>, Jorge Morales<sup>1</sup>, Hiroko Hirawake<sup>1</sup>, Koji Furukawa<sup>3</sup>, Haruki Uemura<sup>5</sup>, Mitsutaka Yoshida<sup>5</sup>, Tetsuo Hashimoto<sup>6</sup>, Takashi Sakurai<sup>2</sup>, Yoshihiro Ohmiya<sup>3</sup>, Toshihiro Mita<sup>1</sup>, Katsuhiko Mikoshiba<sup>4,7</sup>, Takeshi Nara<sup>1</sup>

<sup>1</sup>Dept. Mol. and Cell. Parasitol., Juntendo Univ. Sch. Med., <sup>2</sup>Dept. Pharmacol., Juntendo Univ. Sch. Med., <sup>3</sup>Biomed. Res. Inst., AIST, <sup>4</sup>Lab. for Dev. Neurobiol., RIKEN Brain Sci. Inst., <sup>5</sup>Dept. Protozool., Inst. Tropical Med., Nagasaki Univ., <sup>6</sup>Lab. Morphol. and Image Anal., Juntendo Univ. Sch. Med., <sup>7</sup>Inst. Biol. Sci., Univ. Tsukuba, <sup>8</sup>Calcium Oscillation Project, Int. Coop. Res. Project and Solution-Oriented Res. for Sci. and Tech., Japan Sci. and Tech. Agency

## **JSP-KSOP joint meeting 2015**

About the Japan Society of Protistology

○Osamu Numata

Grad. Sch. Life and Environ. Sci., Univ. Tsukuba

Protistological researches in Korea: progress and perspective

○Mann Kyoon Shin

Dept. Biol. Sci., Univ. Ulsan, Korea

The nuclear pore complex acts as a master switch for nuclear differentiation of ciliate *Tetrahymena*

○Masaaki Iwamoto

Adv. ICT Res. Inst., Natl. Inst. Inform. and Commun. Tech. (NICT)

Replaceable klepto-organelles in the marine mixotrophic ciliate *Mesodinium rubrum*

○Wonho Yih<sup>1</sup>, Hyung Seop, Kim<sup>1</sup>, Woongghi Shin<sup>2</sup>, Jung Rae Rho<sup>1</sup>, Gumog Myung<sup>1</sup>, Seung Won Nam<sup>2</sup>, Yeong Du Yoo<sup>1</sup>

<sup>1</sup>Kunsan Natl. Univ., Korea, <sup>2</sup>Chungnam Natl. Univ., Korea

Cellular shape deformation and locomotion of free-living amoeba, *Amoeba proteus*

○Yukinori Nishigami

Grad. Sch. Sci., Kyoto Univ.

*Trichomonas vaginalis*: host-parasite interaction

○Jae-Sook Ryu

Dept. Environ. Biol. and Med. Parasitol., Hanyang Univ. Coll. Med., Korea

### **Special lecture by a winner for the Award of the Japan Society of Protistology in the Field of Protistological Research**

Studies on the molecular mechanisms of motility in Protists

○Seiji Sonobe

Grad. Sch. Life Sci., Univ. Hyogo