

第8回バイオミネラリゼーション国際 シンポジウム成功裏に幕をとじる

小林巖雄*・笹川一郎**

本会が共催団体となっている表記の国際シンポジウムが、去る9月25日から28日の4日間にわたり、新潟県黒川村の胎内ロイヤルパークホテルにて開催されました。直前にアメリカでテロ事件が勃発したため、国外参加者の大幅減少が危惧されましたが、結果的には4~5名のキャンセルにとどまり、シンポジウムは無事は予定どおり進行しました。基調講演、特別講演、6つのセッションに属した一般発表を合わせ演題数は120題、参加者数は国外44名、国内94名の計138名にのぼりました。化石研究会会員諸氏には、本シンポジウム開催にあたり多大なご協力をいただきました。

以下に最終的なプログラムを掲載します。

BIOM2001 Program 最終版

Scientific sessions

1. Origin and evolution of biomineralization and hard tissues (Evolution) S1
2. Physiological and molecular regulation of biomineralization (Regulation) S2
3. Biomineral crystallization for materials sciences (Crystallization) S3
4. Biomineralization: Microbes and environments S4
5. Bones and teeth S5
6. Biorhythm S6

Date and Place

Date: September 25-28, 2001

Place: Tainai Royal Park Hotel

Kurokawa village, Kitakanbara-gun, 959-2822,
Niigata-ken, Japan

Program

September 25, Tuesday

Early morning Mounting of all poster

08:30-08:45 Opening address

08:45-11:30 Plenary Lecture

Chairpersons: H. OZAWA and K. SAWADA

08:45-09:15 PL-1, The geologic history of calcification. P. WESTBROEK

09:15-09:45 PL-2, Mollusk shell structure and formation processes. S. WEINER, Y. LEVI-KALISMAN, B. GOTLIV, G. FALINI, S. RAZ and L. ADDADI

09:45-10:15 PL-3, The involvement of V-ATPASES in decalcification in two model systems. S. SALEUDDIN and E. CLELLAND

10:15-10:30 Coffee break

10:30-11:00 PL-4, Silicon biotechnology: proteins, genes and molecular mechanisms controlling biological nanofabrication with silicon. D. E. MORSE (キャンセル)

11:00-11:30 PL-5, From biomineralization to hard tissue engineering. Y. KUBOKI and H. TAKITA

11:30-13:00 Lunch time

13:00-16:25 Oral session, S1 Evolution

Chairpersons: H. MUTVEI and M. SHIMAMOTO

13:00-13:25 S1-1, Keynote Address

From corallite morphology to biomineralization unit in Scleractinia - Evolutionary and paleoenvironmental implications of microstructural analysis. J. P. CUIF, Y. DAUPHIN, A. DENIS and P. GAUTRET.

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- 13:25-13:40 S1-2, The origin of metazoan skeleton. F. MARIN, P. LAYROLLE, K. DE GROOT and P. WESTBROEK
- 13:40-13:55 S1-3, Iron mineralization in the feeding apparatus of marine invertebrates. R. CRUZ and M. FARINA (キャンセル)
- 13:55-14:10 S1-4, Microstructural distinctions between early mollusks and hyoliths with comment on their affinities. W. FENG and X. NU
- 14:10-14:30 Coffee break
- Chairpersons: J. P. CUIF and H. KAMIYA
- 14:30-14:55 S1-5, Keynote Address
Five critical points in the evolution of vertebrate tooth. M. GOTO
- 14:55-15:10 S1-6, The development of ameloblast grouping and dancing on the enamel structure evolution. Y. KOZAWA and K. SUZUKI
- 15:10-15:25 S1-7, Early loop stages in some recent long-looped brachiopods-taxonomic implications. D. GASPARD.
- Chairpersons: D. GASPARD and K. MANO
- 15:25-15:40 S1-8, Soluble organic matrices of the shells of modern cephalopods. Y. DAUPHIN.
- 15:40-15:55 S1-9, On the calcified stomach tooth of *Procambarus clarkii* - Analysis, histology, histochemistry-. H. CHISAKA, T. SAKAE and Y. KOZAWA
- 15:55-17:45 Poster session (S1, S2)
- Session 1
- S1-10, Evolution of biomineralized tissues. Y. DAI
- S1-11, Characterization of amorphous calcium carbonate in the gastrolith of a crayfish, *Procambarus clarkii*. T. HIKIDA, T. KOGURE and H. NAGASAWA
- S1-12, Comparison of enamel texture of the fossil elephant molars occurred from Japan and its neighbors. H. KAMIYA
- S1-13, Nacreous and crossed lamellar layers of bivalvia : diversity and evolution. I. KOBAYASHI
- S1-14, The ultrastructures of the ligament of fossil bivalvian species. K. MANO
- S1-15, The identification of molt stages in *Scylla serrata* based on cuticle morphology. B. PRATOOMCHAT, P. SAWANGWONG and J. MACHADO.
- S1-16, Evolutionary trend of venerids (Bivalvia) and their shell microstructural diversity. M. SHIMAMOTO and A. HIGANO
- S1-17, The preservation and valve structure of the fossil barnacle *Eolepas*. M. A. WHYTE
- S1-18, Organic matrix proteins preserved in fossil molluscan shells. H. ZHAO, T. SAMATA, D. TAKAKURA, R. HASHIMOTO, Y. MIYAZAKI, T. NOZAWA and Y. HIKITA
- Session 2
- S2-1, Study of the interaction between calcification, photosynthesis and respiration in the scleractinian coral *G. fascicularis* using microsensors. F. A. AL-HORANI, S. M. AL-MOHRABI and D. de BEER
- S2-2, In vitro production of CaCO₃ from Gorgonian cell culture. I. DURAND, A. BOUCHOT, I. GALGANI, Y. DAUPHIN and D. ALLEMAND
- S2-3, *Lymnea stagnalis* as a model organism for studying calcium carbonate biomineralization. K. ENDO, S. KATSUNO, O. MIYOSHI and I. SARASHINA
- S2-4, Profiles of proteins in radula of chiton, *Acanthopleura japonica*. M. HAMAGUCHI, M. SASAKI and C. NUMAKO
- S2-5, Solubilization of organic matrix of *Lingula unguis* with chitinase. Y. KUBOKI, H. TAKITA, M. MORITA, Y. KATO, L. DONG and T. OSAWA
- S2-6, Expression of Pearlin in *Escherichia coli*, a protein which participates in the nacreous layer formation of *P. fucata* pearls. T. MIYASHITA, H. MIYAMOTO and A. MATSUSHIRO
- S2-7, The action of induced acidosis on the calcification process of *Anodonta cygnea*. G. MOURA, M. J. ALMEIDA, M. J. C. MACHADO, L. VILARINHO and J. MACHADO
- S2-8, Characterization of silicate in from marine sponge, *Halichondria okadai*. K. MURAKAMI, H. FUSE, O. TAKIMURA, H. INOUE and Y. YAMAOKA
- S2-9, Molecular analysis of a soluble skeletal protein in the hermatypic coral *Galaxea fascicularis*. S. OOKI, T. FUJITA, E. MURAYAMA, Y. ISA, H. NAGASAWA and T. WATANABE
- S2-10, Primary structure on ferritin genes in chiton, *Acanthopleura japonica*. M. SASAKI and M. HAMAGUCHI
- S2-11, In corporation of strontium in the skeleton of reef building coral, *Stylophora pistillata* - Relationship with calcium. E. TAMBUTTE, F. BOISSON, S.

FOWLER, D. ALLEMAND and C. FERRIER-PAGES

S2-12, Sources of carbonate in fish otolith: incorporation from bicarbonate and glucose. H. TOHSE and Y. MUGIYA

18:00-20:30 Reception

(20:30-22:30 Poster session, free)

September 26, Wednesday

08:30-11:35 Oral Session, S3 Crystallization Biomaterial (apatite)

Chairpersons : M. YOSHIMURA and U. PLATE

08:30-08:55 S3-1, Keynote address

Soft solution processing for advanced inorganic materials: Its similarity and difference from biomineralization. M. YOSHIMURA

08:55-09:10 S3-2 Preparation of porous apatite/polymer composites using in-situ polymerization of ϵ -aprolactone or methyl methacrylate. D. WALSH, T. FURUZONO and J. TANAKA

09:10-09:25 S3-3, Biomineralization of paracrystalline apatitic nanometersized particles. U. PLATE, D. SOMMER, H. P. WIESMANN, U. JOOS, B. KREBS and H. J. HOHLING

09:25-09:40 S3-4, Solid-state NMR determination of the conformation of statherin and statherin N-terminal peptides adsorbed on hydroxyapatite crystals. W. J. SHAW, J. R. LONG, J. L. DINDOT, A. A. CAMPBELL, P. S. STAYTON and G. P. DROBNY (キャンセル)

09:40-09:55 S3-5, Examination of crystal structure in CaCO_3 biomineral. K. IWASE, T. KAMIYAMA and H. ASANO

09:55-10:25 Coffee break

Mechanisms of biomineral growth and formation

Chairpersons : T. AOBA and J. AIZENBERG

10:25-10:50 S3-6, Keynote address

Multilevel control of calcite crystallization by organized organic assemblies. J. AIZENBERG

10:50-11:05 S3-7, Organic hydrogels as matrices for

influencing the growth of calcium carbonate crystals. L. A. ESTROFF and A. D. HAMILTON

11:05-11:20 S3-8, Molecular regulation of avian eggshell biomineralization. J. L. ARIAS, J. P. WIFF, V. FUENZALIDA and M. S. FERNANDEZ

11:20-12:00 Poster Session (S3)

S3-9, Effects of co-existing monovalent cations on the precipitation and properties of carbonatoapatites. T. AOBA, Y. TAYA, H. YAGISHITA, Y. SHIMAZU and R. ENARI

S3-10, Stoichiometry and thermodynamic solubility of carbonated boneapatite. K. KANRI, Y. SOENO, K. SATO and T. AOBA

S3-11, Biomineralisation of fluorapatite in *Lingula analina* shells. I. LEVEQUE, S. DAVIS, M. CUSACK and S. MANN

S3-12, Oriented crystal growth of calcium carbonate on polymerized. L. B. FILMS, K. SATO, Y. KUMAGAI, T. KOGURE and J. TANAKA

S3-13, CaCO_3 aragonite thin films prepared by cooperative effects of inorganic ions and organic polymers. A. SUGAWARA, N. HOSODA and T. KATO

12:00-13:00 Lunch time

13:00-17:35 Oral Session, S2 (1) Regulation (1)

Keynote address

Chairpersons: T. SAMATA and C. NUMAKO

13:00-13:25 S2-13, Physiological mechanisms involved in biomineralization: inference from coral skeleton and fish otolith study. D. ALLEMAND

13:25-13:50 S2-14, Microarchitecture of the biomineralized radular teeth of chitons and limpets. J. WEBB, D. J. MACEY, A. LEE, L. R. BROOKER and W. VAN BRONSWIJK

13:50-14:00 Coffee break

Physiological and mineralogical regulation

Chairpersons: H. NAGASAWA and J. WEBB

14:00-14:15 S2-15, The calcification mechanism of perforate foraminifera is based on seawater vacuolization. J. EREZ, S. BENTOV and C. BROWNLEE

- 14:15-14:30 S2-16, Calcification by the scleractinian coral *Galaxea fascicularis*; Direct measurements on calicoblastic layer using microsensors. S. M. AL-MOGHRABI, F. A. AL-HORANI and D. de BEER
- 14:30-14:35 S2-17, Annual variation of some inorganic elements present in the biological fluids of *Anodonta cygnea* (L.) and possible effects on its calcification cycle. G. MOURA, M. J. ALMEIDA, M. J. do C. MACHADO and J. MACHADO
- 14:35-14:50 S2-18, Insights on nacre formation in the freshwater clam, *Anodonta cygnea*. G. MOURA, J. COIMBRA and J. MACHADO
- 14:50-14:55 S2-19, Pearl formation studies in vitro. A. MACHII
- 14:55-15:10 S2-20, Theoretical morphology of prismatic shell microstructures in bivalve molluscs. T. UBUKATA
- 15:10-15:15 S2-21, Analyses of hard tissue formation by fluorescent substances in mollusks. K. OKOSHI
- 15:15-15:20 S2-22, XAFS and SR-XRF study for biomineralization process of major lateral teeth of Japanese chiton, *Acanthopleura japonica*. C. NUMAKO, I. NAKAI, K. OKOSHI, T. ISHII and K. KOTO
- 15:20-15:35 S2-23, Strong correlation between the aragonite saturation state and pH in the endolymph of the trout otolith organ. Y. TAKAGI
- 15:35-16:05 Coffee break
- Molecular biology of organic matrices**
Chairpersons: T. WATANABE and J. MACHADO
- 16:05-16:10 S2-24, Cloning and expression of a coral calcium channel involved in biomineralization. D. ZOCCOLA, E. TAMBUTTE, C. GIRARD, F. LESAGE, G. ROMÉY and D. ALLEMAND
- 16:10-16:15 S2-25, Is H⁺-ATPase used for biomineralization? A. BOUCHOT, D. ZOCCOLA, É. TAMBUTTE and D. ALLEMAND
- 16:15-16:20 S2-26, Preliminary study of the organic matrix of the scleractinian coral *Stylophora pistilata*. S. PUVEREL, E. TAMBUTTE, A. BOUCHOT, D. ZOCCOLA, P. PAYAN, J. - P. CUIF and D. ALLEMAND (キャンセル)
- 16:20-16:35 S2-27, The presence of protein complexes formed between pearl and pearl keratin is prerequisite for induction of aragonite crystallization. A. MATSUSHIRO, T. MIYASHITA, H. MIYAMOTO, K. MORIMOTO, B. TONOMURA and K. SATO
- 16:35-16:50 S2-28, Molecular mechanism of the nacreous layer formation. T. SAMATA, M. KONO, T. HAYASHI, S. OYAMA and M. SUGANAGA
- 16:50-17:05 S2-29, Soluble proteins of the nacre from the giant oyster *Pinctada maxima* with highly hydrophobic amino acids : a biochemical study. L. PEREIRA, M. J. ALMEIDA, M. GAY, C. MILET and E. LOPEZ
- 17:05-17:20 S2-30, Molecular analysis of the genes expressed during the calcification of exoskeleton of decapod crustacean *Penaeus japonicus*. H. ENDO, P. PERSSON, T. IKEYA, Y. TAKAGI and T. WATANABE
- 17:20-17:35 S2-31, A bifunctional matrix peptide with anti-calcification and chitin-binding abilities from the exoskeleton of the crayfish. H. INOUE, N. OZAKI and H. NAGASAWA
- 18:00-19:30 Dinner time
- 19:30-21:00 Special Lecture
Chairperson: H. KOMATSU
- 19:30-20:00 SL-1, Recent advances in the chemistry of biomineralization. A look towards the future. G. NANCOLLAS and W. WU (キャンセル)
- 20:00-20:30 SL-1, Recent advances in studies on biominerals - structure and morphology. N. WATABE (キャンセル)
- 20:30-21:00 SL-2, Genomics, stem cells and the environment. K. SIMKISS
- (21:00-22:30 Poster session, free)
- September 27, Thursday**
- 08:30-09:40 Oral Session, S2 (2) Regulation (2)
Chairpersons: K. OKOSHI and D.

ALLEMAND

- 08:30-08:45 S2-32, Orchestin, a calcium binding phosphoprotein from a crustacean organic matrix, is a key molecule in a calcification process. A. HECKER, O. TESTENIERE, F. GRAF and G. LUQUET
- 08:45-08:50 S2-33, Possible involvement of carbonic anhydrase in the formation of barnacle shell. M. FUKUSHIMA, N. OZAKI, S. SAKUDA and H. NAGASAWA
- 08:50-09:05 S2-34, Expression and distribution of spicule matrix proteins in sea urchin skeleton. T. KITAJIMA, K. AKASAKA, K. MITSUNAGA - NAKATSUBO, A. HINO and H. URAKAMI
- 09:05-09:20 S2-35, Isolation, sequencing, protein localization and expression of Ovocalyxin-32, a novel chicken eggshell matrix protein. J. GAUTRON, M. T. HINCKE, K. MANN, M. D. MCKEE, M. BAIN, S. SOLOMON and Y. NYS
- 09:20-09:25 S2-36, Two matrix proteins from fish otoliths - How does the otolith grow? -. E. MURAYAMA, Y. TAKAGI and H. NAGASAWA
- 09:25-09:40 S2-37, The organic matrix associated with calcium oxalate crystallization in plants. A. STITZWORTH, J. CAVALETTO, P. KLANRIT, W. MCDOWELL, V. RACICOT and M. A. WEBB (キャンセル)
- 09:40-10:05 Coffee break
- 10:05-11:45 Oral Session, S4(1) Microbes and Environments (1)
Chairpersons: P. WESTBROEK and M. OKAZAKI,
- 10:05-10:30 S4-1, Keynote address
Biomineralization by photosynthetic organisms: its mechanism and relation to environment. Y. SHIRAIWA
- 10:30-10:45 S4-2, Calcification in coccolithophores: Calcium transport and homeostasis. A. R. TAYLOR and C. BROWNLEE
- 10:45-11:00 S4-3, A novel acidic polysaccharide from coccoliths of the coccolithophorid alga, *Pleurocystis carterae*. N. OZAKI, M. OKAZAKI, S. SAKUDA and H.

NAGASAWA

- 11:00-11:15 S4-4, The mechanism of precipitation and sealing of calcium carbonate. N. ABDEL-AAL, K. SATO and K. SAWADA
- 11:15-11:30 S4-5, Direct observation of iron associated with sulfur bacterial biomineralization. K. TAZAKI and T. KURIHARA
- 11:30-11:45 S4-6, Selenium biomineralization by selenate-reducing bacteria. T. SAKAGUCHI, N. KURIHARA, H. NIIYAMA, Y. MORITA and E. TAMIYA
- 11:45-12:30 Poster Session (S4)
- S4-7, Experimental study to grow stromatolite in circulated hot spring water. K. AKAI and J. AKAI
- S4-8, Si-biomineralization of microbial communities in cultivation vessels. R. ASADA and K. TAZAKI
- S4-9, Effect of (1-hydroxyethylidene) bisphosphonic acid (HEBP) on the formation of coccoliths of *Pleurocystis carterae*. M. ASAHINA and M. OKAZAKI
- S4-10, Bacterial influences on changes and formations of uranium minerals from Tohno, central Japan: Experimental study. M. HAYAKAWA and J. AKAI
- S4-11, Effect of high light intensity on the growth rate and the CaCO_3 production in a coccolithophorid, *Emiliania huxleyi*. Y. ICHIKAWA and Y. SHIRAIWA
- S4-12, The mechanisms of accumulation for uranium and toxic metals by lichen *Trapelia involuta*. T. KASAMA, T. MURAKAMI, T. OHNOKI and O. W. PURVIS
- S4-13, Shell microgrowth pattern in the freshwater bivalve *Margaritifera margaritifera* from north Sweden. H. MUTVEI, E. DUNCA and L. LUNDSTEDT
- S4-14, Regulation of intracellular calcification and algal growth by nutrient supply in coccolithophorids. Y. SHIRAIWA, Y. HATANO-SUGIMOTO and M. SATOH
- S4-15, Woodwardite mineralization related to the cyanobacterial cell. H. WATANABE and K. TAZAKI
- 12:30-13:30 Lunch time
- 13:30-18:00 Excursion

- 18:00-19:30 Dinner time
- 19:30-21:35 Oral Session, S6 Biorhythm
Chairpersons: Y. DAUPHIN and H. MISHIMA
- 19:30-19:55 S6-1, Keynote address
Daily growth increments and their environmental significance in shells of unionid bivalves. H. MUTVEI
- 19:55-20:10 S6-2, Growth of banded biomats record the environmental ecosystems. K. TAZAKI
- 20:10-20:25 S6-3, Characteristics of incremental lines in the cementum of Stejneger's beaked whale. K. ARAI, K. NAGASAWA, T. K. YAMADA and Y. TAKANO
- 20:25-20:40 S6-4, On the incremental lines of human dentine. S. TANAKA and K. KAWASAKI
- 20:40-20:55 S6-5, Effect of suprachiasmatic nucleus lesion on circadian dentin increments in rats. H. SHINODA, M. OHTSUKA-ISOYA and H. HAYASHI
- 20:55-21:10 S6-6, Clock mutation alters circadian dentin increments in the mouse. M. OHTSUKA-ISOYA, N. ISHIDA and N. SHINODA
- 21:10-21:25 S6-7, Seasonal zones, fortnightly rings and daily increments in recent and fossil fish otoliths. M. TAKAHASHI
- 21:25-21:30 S6-8, The incremental lines in dentin of alligator teeth. H. MISHIMA, Y. IAWASA, R. YOKOTA, R. M. ELSEY and Y. KOZAWA
- 21:30-21:35 S6-9, The rhythmical function of developing cells produce systematic structure on the tooth. Y. KOZAWA, H. MISHIMA and K. SUZUKI (キャンセル)
- (21:35-22:30 Poster session, free)
- September 28, Friday
- 08:30-11:25 Oral Session, S4(2) Microbes and Environments (2)
Chairpersons: T. HATTORI, Y. FUKUMORI and C. N. KEIM
- 08:30-08:50 S4-16, Bacterial activities as a key role in arsenic contaminations of ground-water in Bangladesh: Geomicrobial experiments. J. AKAI, K. IZUMI and H. FUKUHARA
- 08:50-09:05 S4-17, Studies of environmental history in the Baltic by means of elemental analysis of mussel shells. T. WESTEMARK, A. SEIREL, B. JOHANSSON, E. DUNCA, H. MUTVEI, B. CARELL and A. BIGNERT
- 09:05-09:20 S4-18, Time-laps imaging of biosilicification in the diatom, *Dithlum brightellii* using novel fluorescent tracers. K. OKANO, Z. LIANG, S. CHIBA, M. OGURO-OKANO, N. KATANO, S. NAGAI and K. SHIMIZU
- 09:20-09:35 S4-19, Bacteria in mineral particles - A close relationship between bacteria and fine mineral crystals. R. HATTORI, Y. KASAHARA and T. HATTORI
- 09:35-09:50 S4-20, Manganese oxidizing bacterium and its mediation on manganese oxide deposition at the "Yuno-taki Falls", Hokkaido, Japan. M. OKAZAKI and E. ISHIKAWA
- 09:50-10:20 Coffee break
- 10:20-10:45 S4-21, Keynote address
Molecular mechanism of bacterial magnetite formation. T. MATSUNAGA
- 10:45-11:00 S4-22, Heavy metals trapping by uncultured magnetotactic bacteria. C. N. KEIM, U. LINS and M. FARINA
- 11:00-11:15 S4-23, Enzymes for magnetite synthesis in *Magnetospirillum magnetotacticum*. Y. FUKUMORI
- 11:15-12:30 Lunch time
- 12:30-13:30 Poster session (S5)
- S5-1, Initial calcification of bone formation in ectopic and osteogenic tissue induced BMP-collagen composite. M. GUNDUZ, M. INOUE, H. TSUJIGIWA, E. GUNDUZ, Y. JINNOH, N. NAGAOKA, C. H. SIAR, I. VILORIA, R. Z. LEGEROS, H. NAGATSUKA and N. NAGAI
- S5-2, A human hereditary lesion, amelogenesis imperfecta, may be a standard feature in a whale family, Phocaenidae. M. ISHIYAMA
- S5-3, Expression and localization of estrogen receptor alpha and beta in chicken medullary bone. T. IMAMURA, T. SUGIYAMA and S. KUSUHARA
- S5-4, The retention of the dental follicle with using the collagen-apatite material "LitAr". S. D.

- LITVINOV, R. LB RAKHMOV, YU K. ARTEMYEV and T. V. SUDAKOVA (キャンセル)
- S5-5, Studies on matrix metalloproteinase-3 (MMP-3) in porcine cartilage degeneration. H. OHOTA, K. ZUSHIDA, A. KINOSHITA, K. MAEKAWA, T. SUGIYAMA and S. KUSUHARA
- S5-6, In vitro apatite induction by a phosphoprotein bound to lectin motif of amelogenin. T. SAITO, M. FUKAE, J. P. SIMMER, K. MATSUDA. And M. A. CRENSHAW
- S5-7, Fine structural and cytochemical studies of odontogenesis in *Polypterus*, a bony fish. I. SASAGAWA and M. ISHIYAMA
- 13:30-17:45 Oral Session, S5 Bones and Teeth
Bones Chairpersons: S. WEINER and H. KAWASHIMA
- 13:30-13:55 S5-8, Keynote address
Genes responsible for osteogenesis induced by mechanical stress in the mouse calvarial sutures in culture. H. KAWASHIMA
- 13:55-14:10 S5-9, In vitro study of the osteogenic activity of nacre protein matrix on cultured cells. E. LOPEZ, L. PEREIRA, M. J. ALMEIDA, M. ROUSSEAU and C. MLET (キャンセル)
- 14:10-14:25 S5-10, Molecular mechanisms of crystal formation and growth in bones. K. HOSHI, S. EJIRI and H. OZAWA
- 14:25-14:40 S5-11, Parathyroid hormone prevents calcification in joint cartilage submitted to unloading condition. T. OGAWA, K. TOKUNAGA, H. YAMAGIWA, T. HAYAMI, T. MURAI and N. ENDO
- 14:40-14:55 S5-12, Msx1 and Msx2 deficiency in mice causes defects in bone formation. I. SATOKATA, Y. KAWANO, T. ITO, M. NAKAYAMA, T. MAEDA, M. UCHIYAMA and R. MAAS (キャンセル)
- 14:55-15:20 Coffee break
- Teeth 1 Chairpersons: S. SALEUDDIN and Y. KOZAWA
- 15:20-15:45 S5-13, Keynote address
Biochemical characterization of mineralizing matrices: Enamel as a model system. J. P. SIMMER
- 15:45-16:00 S5-14, Expression of pig enamelin in bacteria using non-fusion, GST-fusion, and histotag-fusion strategies. J. C.-C. HU, O. H. RYU, X. CAO, C. H. ZHANG and J. P. SIMMER
- 16:00-16:15 S5-15, Protein-protein interactions of pig enamel proteins using a Far-Western method. Y. YAMAKOSI, O. H. RYU, J.C.-C. HU, T. TANABE, S. OIDA, M. FUKAE and J. P. SIMMER
- 16:15-16:30 S5-16, Characterization of recombinant pig amelogenin expressed from a baculovirus / insect-cell system. O. H. RYU, X. CAO and J. P. SIMMER
- 16:30-16:35 S5-17, Enamelysin and kallikrein-4 expression in the mouse incisor. J. P. SIMMER, X. SUN and J. C. -C. HU
- 16:35-16:50 Coffee break
- Teeth 2 Chairpersons: J. C.-C. HU and K. SUZUKI
- 16:50-17:05 S5-18, Graded microstructure and mechanical properties of human crown dentin. W. TESCH, N. EIDELMAN, P. ROSCHGER, F. GOLDENBERG, K. KLAUSHOFER and P. FRATZL
- 17:05-17:20 S5-19, Morphological and chemical analyses of calcospherites of dentin in man and other animals. H. MISHIMA, Y. IWASA, T. YAMAZOE and Y. KOZAWA
- 17:20-17:25 S5-20, Biominerals and their transition composing human dental calculus. M. TAKAHASHI and K. KOBAYASHI
- 17:25-17:30 S5-21, Ultrastructural studies on the lattice image of calcium phosphate minerals in dental fossil. M. KAKEI, H. NAKAHARA, M. KUMEGAWA, H. MISHIMA and Y. KOZAWA
- 17:30-17:35 S5-22, Arrangement of enamel prisms and pattern of Hunter - Schreger bands in mammalian tooth enamel. K. SUZUKI and Y. KOZAWA
- 17:45-18:00 Closing address
- 18:00-21:00 "Sayonara" (farewell) Party
- 21:00-22:30 Removal of all posters

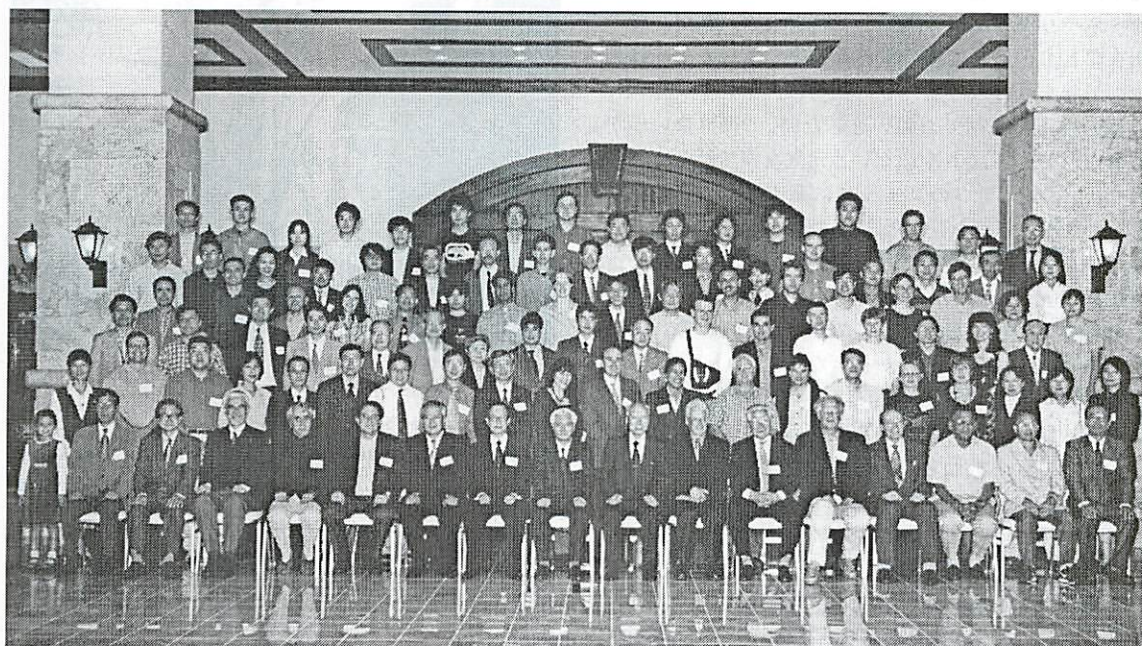
バイオミネラリゼーションのさまざまな側面にわたるホットな発表が続き、学術的に大きなインパクトがあったものと確信します。研究者間の交流も深まり、特に世代間の情報伝達にも大きく貢献したものと思います。次回開催候補地にはオーストラリアやチリなどの名があがり、今後への発展の足がかりもつかめました。

参加者は、エクスカーションでは米どころ新潟の豪農の館などを見学したり、最終日の黒川村主催のサヨナラパーティーではそろいの法被と豆絞りの手ぬぐい

の鉢巻で輪になって盆踊りを楽しみ、研究発表以外にも交流を深めました。

残された仕事としては、プロシーディングスの刊行があります。早めの発行をめざしておりますので、投稿された方々をはじめ会員諸氏には、今後ともご協力をよろしくお願いいたします。

共催、後援をいただいた化石研究会をはじめ、関係諸団体・機関、また新潟大学、黒川村をはじめ、諸財団、民間会社から経済的援助をいただきましたこと、厚くお礼申し上げます。



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