

ECOLOGY AND DIVERSITY OF MICROORGANISMS

**A Minisymposium, organized by the Students of the
International Postgraduate Course at the
University of Concepción, Departments of Oceanography and Microbiology**

Thursday and Friday, October 18 and 19, 2001

Lecture Room of the Oceanography and Natural Sciences Department

Objectives and Scope

For a long time, the microorganism's role in geochemical cycles has been largely underestimated. In order to understand global environmental changes and the way the biosphere will respond to them, it becomes more and more apparent that a better understanding of microbial processes and the ecology of the microbes mediating them is essential.

The students of the Postgraduate Course on the "Ecology and Diversity of Microorganisms" have chosen exam papers which will illustrate these objectives. They will present the papers listed below and respond to questions related to the contents of the paper and related matters. The student presentations will be evaluated for grading and credits.

It is the goal of the Student Minisymposium to also contribute to a better appreciation of interdisciplinary outlooks on geochemical and ecological biology.

Guests are welcome to attend

PROGRAM

Thursday, October 18

09.30 **Kurt Hanselmann** Introduction

Section 1: Involvement of Microbes in the Cycling of Matter

chaired by **Sergio Gandara** and **Patricio Muñoz**

- 09.35 **Claudia Piccini** Natural assemblages of marine Proteobacteria and members of the *Cytophaga-Flavobacter* cluster consuming low- and high-molecular weight dissolved organic matter. *Applied and Environmental Microbiology* 66/4, 2000, 1692-1697. Cottrell M.T., D. Kirchman
- 10.00 **Verónica Molina** The role of microbial mats in the production of reduced gases on the early earth. *Nature* 412, 2001, 324-327. Hoehler T.M., B.M.Bebout, D.J. Des Marais
- 10.25 Intermission Coffee and tea will be served
- 10.50 **Julio Sepúlveda** A marine microbial consortium apparently mediating anaerobic oxidation of methane. *Nature* 407, 2000, 623-626. Boetius, A., K. Ravenschlag, C.J.Schubert, D. Rickert, F. Widdel, A. Gieseke, R. Amann, B.B. Jorgensen, U. Witte, O. Pfankuchen
- 11.15 **Pamela Rossel** Intense hydrolytic enzyme activity on marine aggregates and implications for rapid particle dissolution. *Nature* 359, 1992, 139-141. Smith, D.C., M. Simon, A.L. Alldredge, F. Azam
- 11.40 **Juan Ivan Cañete** Oxygen-minimum zone sediments in the northeastern Arabian Sea off Pakistan: a habitat for the bacterium *Thioploca*. *Marine Ecology Progress Series* 211, 2001, 27-42. Schmaljohann R., M Drews, S. Walter, P. Linke, U. Von Rad, J.F. Imhoff
- 11.55 Lunch Break

Section 2: Microbial Abilities and Ecotypes

chaired by **Juan Ivan Cañete** and **Gisella Lorca**

14.30 **Juan Ivan Cañete** Introduction

14.35 **Hinsby Cadillo** Bacterial functional redundancy along a soil reclamation gradient. *Applied and Environmental Microbiology*, 66/10, 2000, 4361-4365. Yin B., D. Crowley, G. Sparovek, W.J. de Melo, J. Borneman

- 15.00 **Juan Placencia** Dibiphytanyl ether lipids in non-thermophilic Crenarchaeotes. Applied and Environmental Microbiology 64/3, 1998, 1133-1138. De Long, E.F., L.L. King, R. Massana, H. Cittone, A. Murray, Ch. Schlepfer, St.G. Wakeham
- 15.25 **Gloria Sanchez** Effects of cultivation parameters on growth and pigment biosynthesis in flagellated cells of *Haematococcus pluvialis*. Journal of Applied Phycology 13, 2001, 79-87. Hagen Ch., K. Grünwald, M. Xyländer, E. Rothe
- 15.50 Intermission Coffee and tea will be served
- 16.10 **Patricio Muñoz** *Shewanella putrefaciens* adhesion and biofilm formation on food processing surfaces. Applied and Environmental Microbiology 67/5, 2001, 2319-2325. Bagge D., M. Hjelm, Ch. Johansen, I. Huber, L. Gram
- 16.35 **Sergio Gándara** Endosymbiotic sulphate-reducing and sulphide-oxidizing bacteria in an oligochaete worm. Nature 411, 2001, 298-302. Dubillier N., C. Mülders, T. Ferdelman, D. deBeer, A. Pernthaler, M. Klein, M. Wagner, C. Erséus, F. Thiermann, J. Krieger, O. Giere, R. Amann

Friday, October 19

Section 3: Special Aspects of Nitrogen Cycling

chaired by Hinsby Cadillo and Juan Placencia

- 09.30 **Hinsby Cadillo** **Introduction**
- 09.35 **Gisella Lorca** Marine dissolved organic nitrogen. Science, 281, 1998, 231-234. McCarthy, M.D., J.I. Hedges, R. Benner
- 10.00 **Luis Antonio Cuevas** A possible nitrogen crisis for Archaean life due to reduced nitrogen fixation by lightning. Nature 412, 2001, 61-64. Navarro-Gonzalez R., Ch.P. McKay, D.N. Mvondo
- 10.20 Intermission Coffee and tea will be served
- 10.45 **Ricardo Silva** Unicellular Cyanobacteria fix N₂ in the subtropical North Pacific Ocean. Nature 412, 2001 635-638. Zehr, J.P., J.B. Waterbury, P.J. Turner, J.P. Montoya, E. Omoregie, G.F. Steward, A. Hansen, D.M. Karl
- 11.10 **Farid A. Tabash** **Impact of the "white spot syndrome (wss)" viral disease on shrimp farming in Central America: epidemiology, diagnostic and prophylaxis**
- 11.35 **Julio Sepúlveda** **Summary of Minisymposium**
- 11.45 End of Minisymposium