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Author

Reeburgh, William S

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Meeting Report

The Tenth International Symposium on Environmental Biogeochemistry (ISEB-10) was held in San Francisco, USA, 18-25 August 1991, at the Cathedral Hill Hotel. The theme was Global Change and the Biogeochemistry of Radiative Trace Gases. The meeting was chaired by Ron Oremland. More than 200 geochemists, microbiologists, atmospheric chemists, and climate modelers from 19 countries participated. A program consisting of some 90 papers and 80 posters filled the week. Financial assistance was provided by the U.S. Geological Survey, Environmental Protection Agency, National Oceanic and Atmospheric Administration, Department of Energy, National Aeronautics and Space Administration, Department of Agriculture, and National Science Foundation.

Sessions at ISEB-10 reviewed and reported new findings on the biogeochemistry of methane, carbon dioxide, nitrous oxide, and dimethyl sulfide. Each session involved an invited summary paper followed by contributed papers. Sessions covered paleoatmospheres and paleoclimates, global distributions and atmospheric reactions, terrestrial systems and land use change, fluxes and cycling in aquatic systems, biological mechanisms of formation and destruction, metals, organics and depositional environments, high-latitude systems, and global sources, sinks, and feedbacks. ISEB-10 also included two lively poster sessions. A volume of contributed papers, *The Biogeochemistry of Global Change: Radiative Trace Gases*, is being prepared for publication by Chapman and Hall.

Highlights among the invited papers included Ralph Cicerone's keynote lecture, which provided a background for the meeting with a physical perspective on the role of radiatively active trace gases in global change. Barrie Taylor's review and new data on bacterial transformations of organic sulfur compounds in marine environments showed that aerobic degradation of dimethylsulfoniopropionate (DMSP) produces dimethylsulfide (DMS) and methane thiol. Bob Harriss synthesized temperature records, high-latitude wetland methane fluxes, and flux temperature coefficients from several regions and concluded that regional temperature variations make a uniform global temperature-driven increase in boreal wetland-derived methane fluxes unlikely. Inez Fung's talk on models of terrestrial and oceanic carbon dioxide sinks provided a timely review of recent work.

A pair of contributed papers by Marc Alperin and Neal Blair neatly modeled and synthesized the pathways, production/consumption rates, and isotope fractionation of methane and carbon dioxide in Cape Lookout Bight sediments. George Moore's general circulation model (GCM) simulations of late Permian and Jurassic paleoclimates gave insights into the Earth with an elevated greenhouse effect.

Several themes emerged from the contributed papers. Microbially mediated methane oxidation was reported in various environments ranging from disturbed and natural terrestrial systems to aquatic systems. These papers suggest that microbially mediated methane oxidation may play a more important role in the global methane budget than previously believed. Land-use change, particularly fertilization and water table/moisture modification, was shown to have important effects on production and consumption of

carbon and nitrogen gases. Stable isotope measurements are seeing increasing application in studies of biogeochemical budgets and pathways.

The International Symposiums on Environmental Biogeochemistry, Inc., also sponsors the Wolf Vishniac Award, which recognizes the outstanding paper presented at the meeting by a young scientist. The ISEB-10 winner was Sergey Zimov of Chernsky, Yakutiya, Siberia, whose paper showed that metabolic activity in tundra soils maintained thawed conditions and high CO₂ fluxes well into the winter.

The next meeting, ISEB-11, is scheduled for 27-30 September 1993 in Salamanca, Spain. Juan Gallardo Lancho, Institute of Terrestrial Ecology/CSIC, Cordel de Merinas 40, Apartado 257, Salamanca 37071, Spain, should be contacted for further information.

William S. Reeburgh
University of Alaska
Fairbanks, AK