## PACIFIC CIRCLE NEWSLETTER



No. 9

April 1991

ISSN 1050-334X

#### PACIFIC CIRCLE NEWS

XVII Pacific Science Congress. For the third time in its seventy-year history, the Pacific Science Association will hold its quadrennial congress in Honolulu. More than 300 sessions are currently planned, from the opening addresses on Monday, May 27, to the closing ceremony on Saturday, June 1st. Most congress events will take place at the host hotel, the Sheraton Waikiki.

Under the title "Towards the Pacific Century: The Challenge of Change," the XVII Congress has been organized around the following six themes:

Global Environmental Change
Population, Health and Social Change
Science and Culture
Biological Diversity
Technologies for Development: Prospects for the 21st Century
Dynamics of the Earth and Heavens: The Pacific Arena

Science and Culture will include 9 sessions of special interest to Pacific Circle members. See pages 2-5 for details.

General inquiries regarding the congress should be directed to:

XVII Pacific Science Congress Secretariat 2424 Maile Way, 4th Floor Honolulu, HI 96822 USA Phone: 808-956-7526 Fax: 808-956-3512

A pre-congress program for young scientists, engineers, technologists and first time travelers to Pacific meetings is also planned; details are available from PROF. ANNE B. PEDERSEN, Chairman, Science Education and Communications Committee, c/o IDDE, School of Education, Syracuse University, Syracuse, NY 13244-2340 USA. Fax: 315-443-5732



SCIENCE AND CULTURE, one of six major themes of the congress, encompasses the history, philosophy, and social studies of Pacific science and technology; cultural construction of knowledge; science education and communication; technology and cultural change; science, technology, and society; Pacific arts; and oral traditions of the Pacific Science Association. Theme coordinator is P.F. REHBOCK. A tentative program of the sessions co-sponsored by the Pacific Circle are listed below.

Sub-theme I. Scientific Change in the Pacific

Symposium A. 'Out of the South Seas': Pacific Influences in Natural History. Coordinator: Fritz Rehbock. Co-sponsor: Society for the History of Natural History

KEYNOTE SPEAKER: STANLEY GOLDBERG (Washington, D.C.)
"The History of Science and the Science of History"

Session 1. The Geologist and the Pacific (Mon. 5/27)
Chair: RACHEL LAUDAN (U. of Hawaii)

DAVID BRANAGAN (U. of Sydney), "'The Valuable Mines of the Sandwich Isles'- 19th Century Geological Illusions"

DAVID R. STODDART (UC Berkeley), "Alexander Agassiz and Coral Reef Controversy"

HOMER LE GRAND (U. of Melbourne), "Fragments and Flotsam on the Pacific Rim: The Development and Reception of the Accreted Terrane Concept"

Session 2. Geology and Culture (Mon. 5/27)
Chair: RACHEL LAUDAN (U. of Hawaii)

DENNIS R. DEAN, (U. Wisconsin-Parkside), "Geology and its Cultural Influence: the Case of Easter Island"

DAVID OLDROYD (U. of New South Wales), "Griffith Taylor and His Views on Race, Environment and Settlement: the Peopling of Australia"

WANG HONG-ZHEN (China U. of Geosciences), "A Brief Review on the History of Geology in China as Compared with Those in Japan and Southeast Asia" Session 3. The Botanist and the Pacific (Tue. 5/28)
Chair: CHARLES LAMOUREUX (U. of Hawaii)

RAY FOSBERG (Smithsonian Inst.), "Captain Cook's Voyages and Pacific Science"

DAVID GALLOWAY (Natural History Museum, London),
"Archibald Menzies MD, FLS (1754-1842), an Early
Pacific Lichenologist"

DUNCAN M. PORTER (Virginia Polytechnic Institute), "Botanists and the Galapagos Islands"

PAULINE PAYNE (U. of Adelaide), "New Settlements and New Plants: the Botanists' Role in 19th-Century Plant Transfer to Australia"

Session 4. The Zoologist and the Pacific (Tue. 5/28) Chair: E. Alison Kay (U. of Hawaii)

RON AMUNDSON (UH-Hilo), "John T. Gulick and the Active Organism: Adaptation, Isolation, and the Politics of Evolution"

KEITH R. BENSON (U. of Washington), "The Naturalist Confronts the Pacific: Marine Biology on the West Coast of North America, 1890-1930"

JOHN R.H. ANDREWS (Victoria U., N.Z.), "Acclimatisation versus Conservation - a New Zealand Conflict"

E. ALISON KAY (U. of Hawaii), "'Why Not Extend A Continent to Every Island in the Pacific?'"

Symposium B. Science, Technology and the Pacific War. Coordinator: Roy MacLeod

KEYNOTE SPEAKER: ROY MACLEOD (University of Sydney) "Knowledge and Power in the Pacific" (Thu. 5/30)

Session 1. Science and Technology Mobilized (Thu. 5/30)
Chair: FRITZ REHBOCK, (U. of Hawaii)

PAMELA HENSON (Smithsonian Archives), "The Smithsonian Goes to War: The Increase and Diffusion of Scientific Knowledge in the Pacific in World War II"

DONALD FITZGERALD (U.S. Army Corps of Engineers, Honolulu), "Airfield Construction in the South Pacific: The Machine in the Garden"

ROY MACLEOD (Univ. of Sydney), "Mobilizing Science for War: OSRD's Postscript in the Pacific"

Session 2. The Bomb and its Masters (Thu. 5/30)
Chair: ROY MACLEOD (U. of Sydney)

**STANLEY GOLDBERG** (Washington, D.C.), "Still So Secret After All These Years: Tales from the Manhatten Project"

MORRIS LOW (Monash Univ.), "The Japanese Atomic Bomb:
Fact or Fiction?"

BENGT E. DANIELSSON (Papeete), "Nuclear Colonialism: Enforced Acculturation in French Polynesia"

Symposium C. The Awakening of Consciousness about the Pacific in Latin American Science. Coordinator: Juan Jose SALDANA (Fri. 5/31)

JUAN JOSE SALDAÑA (Univ. Nacional Autonoma de Mexico), "The Awakening of Consciousnesss of Pacific Science: The Mexican Commission of 1874 to Observe the Venus Transit in Japan"

VIRGINIA GONZALEZ CLAVERAN (El Colegio de Mexico), "Acapulco and the Pacific in 1791"

JOSE ANTONIO GARCIA VERA (Lima Univ.), "The Historians and the Pacific"

PATRICIA ACEVES (Sociedad Mexicana de Historia de la Ciencia y de la Tecnologia), "Mariano Mocino's Enlightened Vision about the Pacific"

Subtheme III. Pacific Perspectives on Science Communication and Education. Coordinator: ANNE PEDERSEN, Chair, PSA Scientific Committee on Science Communication and Education

KEYNOTE SPEAKER: LYNTON CALDWELL (Indiana Univ.), "Comprehending Science" (Wed. 5/29)

Symposium E. Science Education in Historical Perspective Coordinator: FRITZ REHBOCK (U. of Hawaii) Chair: FRANCIS M. POTTENGER (U. of Hawaii) (Wed. 5/29)

JOHN DEKKERS (Univ. Coll. of Central Queensland), "School Science and Mathematics Enrollment and Curriculum Patterns and Trends in Australia"

F. SATOFUKA (Sagami Women's U.), "The Problem of Creativity in Japanese Science: A Civilizational Perspective"

- PNINA G. ABIR-AM (Northeastern & Johns Hopkins Univs), "Science Policy or Social Policy for Women in Science: Lessons from Historical Case-Studies"
- Symposium G. New Initiatives in Science Education Chair: DONALD B. YOUNG (UHM) (Wed. 5/29)
  - D. KING (Bishop Museum) et al, "Pacific Island Curriculum Development: Insights and Interpretations"
  - ED ARRIGONI (UH-CCECS), "The FACT Formula: Four Major Criteria for a Scientific Conclusion"
  - G. ARTHUR MIHRAM (Princeton) & DANIELLE MIHRAM (USC),
    "Teaching the Philosophy of Science, as Derived from the
    History of Science: A Necessary Condition for any Second
    Scientific Method"
  - O. Bakar (U. of Malaya), "The Cultural Context of Science Education: The Malaysian Experiment"
  - G. Boughton (U. of Guam), et al, "Distance Education in Micronesia"

PANEL: Scientists and the Media: New Ground Rules? Coordinator and chair: Shannon Brownlee (U.S. News & World Report) (Thu 5/30)

Panelists: Maurice Richter (SUNY, Albany)

Lawrence Badash (UC Santa Barbara)

Robyn Williams (Australian Broadcasting Co.)

Lawrence Miike (U. of Hawaii)

PANEL: Oral Traditions of the Pacific Science Association: A Panel of Personal Reflections. Coordinator: Norman Meller (U. of Hawaii) (Wed. 5/29)

Panelists: John Bardach (East-West Center)

I.M. Cowan (Former Pres., Pac. Sci. Council)
Roland Force (Museum of the American Indian)

F.R. Fosberg (Smithsonian Institution)

J. Miles (U. of Watago)

N.A. Shilo (Academy of Sciences, USSR)

W.G. Solheim (U. of Hawaii) D.R. Stoddart (UC Berkeley)

# OTHER CONFERENCES AND CALLS FOR PAPERS

4-5 May 1991. Annual meeting of the West Coast History of Science Society at Morro Bay, California. The program will include the following sessions: "Models, Metaphors, Myths;" "Modern Physics and Science Policy;" "Shifting Frames of Meaning in History of Biology;" and "The Social and Literary Technologies of 17th Century-Science." Inquiries:

WCHSS (c/o HSTP)
Bancroft Library
University of California
Berkeley, CA 94720

8 May 1991. "Getting the Big Picture, a meeting at the Science Museum, London, sponsored by the London Centre for the History of Science, Medicine and Technology. Inquiries:

Dr. J.A. Secord History of Science and Technology Group Sherfield Building Imperial College London SW7 2AZ, UK

9-12 May 1991. "Varieties of Sustainability: Reflecting on Ethics, Environment, and Economic Equity," the Third Conference of the Agriculture, Food and Human Values Society, Asilomar Conference Center, Pacific Grove, Calif. Inquiries:

Patricia Allen Agroecology Program Univ. of California Santa Cruz, CA 95064

17 May 1991. "Richard Spruce and the history of natural history in Amazonia" is the theme of a one-day meeting of the Society for the History of Natural History at the Royal Botanic Gardens, Kew. Inquiries:

Gina Douglas, SHNH Meetings Secy. The Linnean Society Burlington House, Piccadilly London W1V 0LQ, UK

25-28 June 1991. "Science and Discovery" is the general theme of a conference in Madrid commemorating the quincentennial of the European discovery of the New World. Co-sponsors are the History of Science Society and the Spanish and Latin American Societies for the history of science and technology. For local arrangements contact:

Maria Luisa Ortega Secretaría del Congresso "Ciencia y Descubrimiento" Edificio Central Segunda Planta Universidad Autónoma de Madrid 28049 Madrid, Spain Fax: 341-397-3891

July 1991. GASAT 6: Gender and Scienc and Technology Sixth International Conference, University of Melbourne. Inquiries:

Ms. Gaell Hildebrand
School of Education (Hoy)
Institute of Education University of Melbourne
Parkville, Victoria 3052

1-5 July 1991. "The Impact of the Past Upon the Present" is the theme of the Second National Conference of the Australian Society for the History of Medicine, at Perth, Western Australia. Inquiries:

Conference Office
University of Western Australia
Nedlands, WA 6009
Phone: (09) 389-1722

Fax: (09) 382-2029

29-31 July 1991. "The Pacific Child: Building Bridges for the Future," is the theme of the 8th Annual Pacific Educational Conference, Majuro, Marshall Islands. Inquiries:

PREL Conference 1164 Bishop St., Suite 1409 Honolulu, HI 96813 USA Fax: 808-532-1922

25-31 August 1991. Symposium on the Teaching of the History of Science, Moscow. Sponsored by the International Commission on the Teaching of the History of Science. Inquiries:

Dr. A.M. Duncan
Department of Library and Information Studies
University of Technology
Loughborough, Leicestershire LE11 3TU UK

30 October - 3 November 1991. Annual meeting of the History of Science Society, Madison, Wisconsin--a joint meeting with the Society for the History of Technology, and the HSS-SHOT Conference on Critical Problems and Research Frontiers in History of Science and Technology. Program chairs for the HSS meeting are ALBERT E. MOYER and RICHARD HIRSH, Department of History, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061-0117.

12-16 January 1992. Third Latin American Congress of the History of Science and Technology, in Mexico City. Inquiries:

Comité Organizador III CLAHCT Apartado postal 21-873 04000 México DF, Mexico

26-28 March 1992. "Cross-Cultural Encounters" will be the theme of the 1992 annual meeting of the Renaissance Society of America, at Stanford University. Deadline for submission of proposals for panels or papers is 30 April 1991. Inquiries:

Renaissance Society Program Committee Department of History Stanford, CA 94305

24-26 April 1992. The Vancouver Conference on Exploration and Discovery, at the Harbour Centre of Simon Fraser University's downtown campus, will commemorate the 200th anniversary of the arrival of Captain George Vancouver off the northwest coast of North America. Inquiries:

The Vancouver Conference Department of History Simon Fraser University Burnaby, B.C. Canada V5A 1S6

5-11 May 1992. Second meeting of the International History, Philosophy and Science Teaching Group, Queens University, Kingston, Ontario, Canada. Inquiries:

Dr. Michael R. Matthews
School of Education
University of New South Wales
P.O. Box 1
Kensington, NSW, Australia 2033

1-5 June 1992. "Pacon '92," the fifth Pacific Congress on Marine Technology, will be held in Honolulu. Sponsors are: PACON International, National Ocean Survey/NOAA, U.S. Geological Survey, and Japan Marine Science & Technology Association. Paper abstracts are due by 30 October 1991. Inquiries:

PACON
Dept. of Civil Engineering
Holmes 383
University of Hawaii
2540 Dole St.
Honolulu, HI 96822 USA

26-28 July 1992. Anglo/North- American Joint meeting of the History of Science Society, British Society for the History of Science, and the Canadian Society for

the History and Philosophy of Science, in Toronto. Theme of the meeting: "History of Laboratories and of Laboratory Science." Local arrangements chair is POLLY WINSOR, Institute for the History and Philosophy of Science and Technology, Victoria College, University of Toronto, Canada M5S 1K7. Proposals for sessions or papers are due by 1 October 1991 to one of the three program chairs: for HSS, ALAN ROCKE, Department of History Case Western Reserve University, Cleveland OH 44106; for BSHS, DAVID KNIGHT, Department of Philosophy, University of Durham, 50 Old Elvet, Durham DH1 3HN, UK; for CSHPS, TREVOR LEVERE and JED BUCHWALD, Institute for the History and Philosophy of Science and Technology, Victoria College, University of Toronto, Canada M5S 1K7.

22-29 August 1993. XIXth International Congress of History of Science, Zaragoza, Spain. The Congress will consist of Symposia which will address themes of special interest, Scientific Sections devoted to the various branches and periods of the history of science and technology as well as Poster Sesions. Official languages of the congress will be English, French and Spanish. The First Circular will be distributed by the National Committees of the IUHPS/DHS, or may be requested from the President of the Organizing Committee:

Prof. Mariano Hormigón Facultad de Ciencias (Matemáticas) Ciudad University E-50009 ZARAGOZA, Spain

FAX: (76) 565852

#### RECENT CONFERENCES

"Visions of Empire: Voyages, Botany and Representations of Nature" was the title of a conference held at the William Andrews Clark Memorial Library in Los Angeles, 17-19 January 1991. Sponsored by the Center for 17th-and 18th-Century Studies, UCLA, the conference was organized by SIMON SCHAFFER (Cambridge Univ.) and JOHN BREWER (UCLA), and generously funded by the Ahmanson Foundation of Los Angeles.

MARTIN KEMP (Univ. of St. Andrews) delivered the keynote address, entitled "'Implanted in Our Natures: Humans, Plants, and the Stories of Art."

The following papers ensued:
DAVID P. MILLER (Univ. of New South Wales), "Joseph Banks, Empire, and 'Centers of Calculation' in Late Hanoverian London;"

PHILIP F. REHBOCK (Univ. of Hawaii), "The Banksian Legacy in the Pacific: British Botanists from Brown to Moseley;"

MARY P. WINSOR (Univ. of Toronto), "Natural History and its Descendants: Science for Curiosity or Use;" JANET BROWNE (Darwin Letters Project), "Botany in the Boudoir and Garden: The Banksian Context;" ALAN J. BEWELL (Univ. of Toronto), 'On the Banks of the South Sea': Botany and Sexual Controversy in the Late Eighteenth Century;"

LISBET KOERNER (Harvard Univ.), "Nature and Nation in Linnean Travel:"

DAVID MACKAY (Victoria Univ. of Wellington), "Agents of Empire: The Banksian Collectors and Evaluation of New Lands;"

CHRISTOPHER J. LAWRENCE (Wellcome Institute for the History of Medicine), "Scurvy, the Navy, and Imperial Expansion;"

ALAN FROST (La Trobe Univ.), "The Antipodean Exchange: Botany and Empire;"



Simon Schaffer & Richard Sorrenson, "Visions of Empire" conference (photo by Fritz Rehbock)

MICHAEL DETTELBACH (Cambridge Univ.), "'This Calm View of Nature': Humboldt's Nature-Portrait and Consensus amidst the Ruins of the Holy Roman Empire;" BARBARA M. STAFFORD (Univ. of Chicago), "Visions of Microscopic Empire: Nature in its Vertical Descent;" INGJERD HOEM (Univ. of Oslo), "Social Organization of Goods Distribution on Tokelau: Conflicting Attitudes toward the Natural Environment;"

BRADD SHORE (Emory Univ.), "Samoan Cultural Geography: Island Visions and Revisions."

Commentators included: JOHN GASCOIGNE (Univ. of New South Wales), WILLIAM STERN (Univ. of Florida),

DANIEL R. HEADRICK (Roosevelt Univ.), ROY MACLEOD, (Univ. of Sydney), DEBORA L. SILVERMAN (UCLA), PETER H. REILL (UCLA), ALESSANDRO DURANTI (UCLA), MILDRED E. MATHIAS (UCLA) and SIMON SCHAFFER.

"Collection Building in Ichthyology and Herpetology in the 18th, 19th and 20th Centuries" was the title of the 5th North American Meeting of the Society for the History of Natural History, held in Charleston, South Carolina, 18-19 June 1990. Papers related to the Pacific included: J. RICHARD DUNN, "Charles Henry Gilbert (1859-1928): Pioneer Ichthyologist of the American West"; THEODORE W. PIETSCH and J. RICHARD DUNN, "Early Collection Building in Puget Sound and Adjacent Waters: the 1880 Expedition of David Starr Jordan and Charles Henry Gilbert"; and MARK R. JENNINGS, "John Van Denburgh (1872-1924), Pioneer Herpetologist of the American West."

The International Society for the History of East Asian Science, Technology and Medicine held its premier meeting in Cambridge, England, on 4 August 1990. Officers elected for 3-year terms were: President, NATHAN SIVIN (Univ. of Pennsylvania); Vice President, TSUN KO (Beijing Univ. of Science and Technology); Secretary, CHRISTOPHER CULLEN (School of Oriental and African Studies, London); and Treasurer, GEORGES METAILIE (Muséum National d'Histoire Naturelle, Paris).

The V. Gordon Childe Centenary Conference was held at the Australian Studies Centre, University of Queensland, 23-26 September 1990. The conference focussed on "the continuing importance of Childe as a theorist of the Labour Movement, and on the meaning and significance of Childe's contribution to archaeology and pre-history both in the past and the present time" (Centre for South Pacific Studies Newsletter, UNSW).

St. Hilda's College, University of Melbourne, sponsored a seminar on "Higher Education in the Post-colonial South Pacific," 24-27 September 1990. Results are to be published by the Centre for the Study of Higher Education, University of Melbourne, as Explorations in Higher Education: A South Pacific Critique.

The theme of the 8th Pacific History Association Conference was "Micronesia: Intellectual Images and Historical Discourses." The conference took place in Agaña, Guam, 4-7 December 1990.

The Society for the History of Natural History held an evening meeting on 27 February 1991 at the Natural History Museum, London. Professor A.M. LUCAS (Kings College, London) spoke on "Colonial Pride and Metropolitan Expectations: the British Museum and Melbourne's Meteorites;" and ANNE LARSEN (Princeton University) followed with "'Not gaudy, but correct delineations from nature': Technical Illustration in Zoology, 1810-1840."

"Industrial Society and its Museums: Social Aspirations and Cultural Politics" was an international colloquium held at La Cité des Sciences et de l'Industrie, 14-15 March 1991. Marking the fifth anniversary of La Cité, the colloquium was organized by the Centre de Recherche en Histoire des Sciences et des Techniques.



(photo by Maile Rehbock)

Asia-Pacific Comes of Age .

A belated congratualtions to the National Geographic Society for its publication of an "Asia-Pacific" map, distributed to members with the November 1989 issue.

On the reverse of the political map are economic, demographic and strategic views of the region.

#### **PRIZES**

The Society for Nautical Research marked its 75th anniversary in 1985 by creating the Anderson Prize. Honoring the historian and founder member, DR. ROGER CHARLES ANDERSON, the prize will next be awarded in 1992 for "the best essay comprising original research on any aspect of maritime history (naval, technical, commercial, economic and social)." The prizewinner will receive £500 and a medal. Typewritten contributions, in English, double-spaced and not exceeding 10,000 words, must reach the Honorary Secretary no later than 31 December 1991. Inquiries:

The Honorary Secretary
Society for Nautical Research
c/o National Maritime Museum
Greenwich, London SE10 9NF, UK

#### **MAJOR GRANT RECEIVED**

The Science Studies Program at the University of California, San Diego, has been designated a Research Training Group by the National Science Foundation. A 5-year grant of \$1.27 million will fund graduate student fellowships, one-year postdoctoral fellowships, and one-year distinguished visiting professorships, while supplementing the resources of the participating departments. Inquiries:

Program Coordinator Science Studies Program UCSD, La Jolla, CA 92093-0102.

#### **ROCKEFELLER GRANTEES**

The Rockefeller Archive Center awarded grants to 34 scholars in 1990, including the following projects related to the Asia-Pacific region:

JOSEPH EUGENE COTTER (UC-Santa Barbara), "Before the Green Revolution: Agricultural Research in Mexico, 1934-1948":

XIAO-YANG JIANG (Bowling Green State University)
"Modern Chinese Medical Culture: the Legacy of Peking
Union Medical College";

MARCIA R. RISTAINO (Library of Congres) "The Rockefeller Foundation and the Shnaghai American Medical Community";

XIAO HONG SHEN (Yale University) "Exporting American Culture: Yale-in-China, 1901-1937."

#### **DEGREE PROGRAM**

The London Centre for the History of Science, Medicine and Technology, created in 1987, offers an M.Sc. program in the following fields: History of Science; History and Philosophy of Science; History of Technology; History of Science and Technology; and History of Science and Medicine. Beginning 1 October 1991 the degree will last a full calendar year (two years part-time) and will include a written dissertation. Inquiries:

Dr. J.A. Secord
Lecturer in History of Science
Sherfield Bulding
Imperial College of Science, Technology
and Medicine
University of London
London SW7 2AZ UK

#### **EXHIBITION**

"Schmuck der Südsee--Ornament und Symbol" is the theme of an exhibition at the Stuttgart Linden-Museum, running through June 1st, 1991.

#### **NEW SERIALS**

The Bulletin of the History of Archaeology will begin publication in May 1991, carrying short essays, reports, discussion and news. Subscriptions: \$5.00 for US delivery, \$8.00 for airmail overseas. Editorial and subscription correspondence should be directed to:

Douglas R. Givens

Bulletin of the History of Archaeology

Department of Behavioral Science

Saint Louis Community College at Meramec

11333 Big Bend Blvd.

Saint Louis, MO 63122

#### **OTHER SERIALS RECEIVED**

Tok Blong SPPF, "a Quarterly of News and Views on the Pacific Islands," is published by the South Pacific Peoples Foundation of Canada (SPPF). Inquiries:

SPPF 415-620 View Street Victoria, B.C., Canada V8W 1J6 The Washington Pacific Report, "an insider's newsletter highlighting the latest developments of interest involving the insular Pacific," is published twice monthly by Washington Pacific Publications, s.m. Reese, Editor. Subscriptions:

Pacific House 1615 New Hampshire Ave. NW Washington, D.C. 20009

#### **RECENT BOOKS**

Black November: the 1918 Influenza Epidemic in New Zealand, by GEOFFREY RICE, with the assistance of LINDA BRYDER (Wellington, NZ: Allen & Unwin, 1988).

Chills and Fever: Health and Disease in the Early History of Alaska, by ROBERT FORTUINE (Fairbanks: Univ. of Alaska Pres,, 1989).

The Coming Quake: Science and Trembling on the California Earthquake Frontier, by T.A. HEPPENHEIMER (New York: Paragon House, 1990). \$US12.95.

Deutsche Ärzte in China, 1897-1914: Medizin als Kulturmission im Zweiten Deustchen Kaiserreich, by WOLFGANG U. ECKART (Stuttgart: Fischer, 1989).

Drifting Continents & Colliding Paradigms: Perspectives on the Geoscience Revolution, by JOHN A. STEWART (Bloomington: Indiana University Press, 1990). \$US35.00.

Dutch Medicine in the Malay Archipelago, 1816-1942. Articles presented at a symposium in honor of Prof. Dr. D. de Moulin, edited by G.M. VAN HETEREN, A. DE KNECHT-VANEEKELEN, M.J.D. POULISSEN (Amsterdam: Rodopi, 1989).

Edward Sapir: Linguist, Anthropologist, Humanist, by REGNA DARNELL (Berkeley/Los Angeles: University of Caifornia Press, 1990).

The Engineers: 200 Years at Work for Australia, by BRIAN CARROLL (Barton, Aust.: The Institution of Engineers, 1988).

European Voyaging Towards Australia, edited by JOHN HARDY and ALAN FROST (Canberra: Australian Academy of the Humanities, 1990).

La Expedición Botánica al Virreinato del Peru (1777-1788), 2 vols (Barcelona: Lunwerg, 1988).

The Facts on File Dictionary of Marine Science, by BARBARA CHARTON (New York: Facts on File, 1988). \$US12.95.

Fieldnotes: The Makings of Anthropology, edited by ROGER SANJEK (Ithaca, NY: Cornell University Press, 1990). \$US42.50/12.95.

Galapagos: Discovery on Darwin's Islands, by DAVID W. STEADMAN and STEVEN ZOUSMER (Washington, D.C.: Smithsonian Institution, 1988), \$US24.95.

Gijutsu Taikoku Hyakunen No Kei: Nippon No Kindaika To Kokuritsu Kenkyu Kikan (The Road to Technonationalism: Japanese Modernization and National Research Institutes from the Meiji Era), by CHIKATOSHI KAMATANI (Tokyo: Heibonsha, 1988).

Hanford and the Bomb: An Oral History of World War II, by S.L. SANGER, with ROBER W. MULL (Seattle: Living History Press, 1989).

A History of Japanese Economic Thought, by TESSA MORRIS-SUZUKI (London: Routledge, 1989).

The Idea of Race in Latin America, 1870-1940, edited by RICHARD GRAHAM (Austin: Univ. of Texas Press, 1990).

Life Among the Scientists: An Anthropological Study of an Australian Scientific Community, by MAX CHARLESWORTH, LYNDSAY FARRAL, TERRY STOKES and DAVID TURNBULL (Melbourne: Oxford Univ. Press, 1989).

Managing Madness: Psychiatry and Society in Australia, 1788-1980 by MILTON LEWIS (Canberra: Australian Government Publishing Service, 1988).

Marcus E. Jones: Western Geologist, Mining Engineer, and Botanist, by L.W. LENZ (Claremont, Calif: Rancho Santa Ana Botanic Garden, 1986).

Margaret Mead, by PHYLLIS GROSSKURTH (Harmondsworth, Eng.: Penguin Books, 1988).

Nature's Pilgrim by ROB LINN (Netley, South Australia: State Publishing, 1990). \$A39.95. The life and journeys of Captain S.A. White (1870-1954).

Observatory Seismology: A Centennial Symposium for the Berkeley Seismographic Stations, edited by JOE J. LITEHISER (Berkeley: Univ. of California Press, 1990). \$US25.

Physics in Australia to 1945. Bibliography and Biographical Register, by R.W. HOME (North Ryde, NSW: Thorpe, 1990). \$A55.00

Power Revolution in the Industrialization of Japan, 1885-1940, by RYOSHIN MINAMI (Tokyo: Kinokuniya, 1987).

A Republic of Rivers: Three Centuries of Nature Writing from Alaska and the Yukon, edited by JOHN A. MURRAY (New York: Oxford University Press, 1990). \$US19.95.

Samoan Medical Belief and Practice, by CLUNY and LA'AVASA MACPHERSON (Auckland: Auckland University Press, 1991). \$NZ32.95.

Science and Medicine in 20th-century China: Research and Education, edited by JOHN Z. BOWERS, J. WILLIAM HESS and NATHAN SIVIN (Ann Arbor: Center for Chinese Studies, Univ. of Michigan, 1988).

Science and the Navy: The History of the Office of Naval Research, by HARVEY M. SAPOLSKY (Princeton, NJ: Princeton University Press, 1990). \$US24.95.

Strukturwandel im Pazifischen Raum. Referate der Jahrestagung des Arbeitskreises Pazifik vom 9. - 11. September 1987 in Bremen, edited by WILFRIED WAGNER (Bremen: Verlag des Überse-Museums, 1988). DM42.

The Technological Transformation of China, by T. DAVID MCDONALD (Washington, D.C.: National Defense Univ. Press, 1990).

Technology in Australia, 1788-1988: A Condensed History of Australian Technological Innovation and Adaptation during the First Two Hundred Years (Melbourne: Australian Academy of Technological Sciences and Engineering, 1988).

Totality. Eclipses of the Sun, by MARK LITTMANN and KEN WILLCOX (Honolulu: University of Hawaii Press, 1991). \$US14.95.

Voyage to Atlantis: A Firsthand Account of the Scientific Expedition to Solve the Riddle of the Ages, by JAMES W. MAVOR JR. (Rochester, VT: Park Street Press, 1990). \$US14.95.

#### SOURCES, DOCUMENTS, FACSIMILES

The Birds of Australia by GREGORY M. MATHEWS, facsimile edition, 3 vols., 105 plates (Netley, South Australia: State Publishing, 1990-91). \$A495.

Mawson's Papers. A Guide to the Scientific, Personal and Business Papers of Sir Douglas Mawson OBE, BE, DSc, FRS, FAA, 1882-1958 Professor of Geology and Mineralogy, Antarctic Scientist and Explorer, compiled by MARGARET INNES (Adelaide: Mawson Institute for Antarctic Research, University of Adelaide, 1990). \$A45.00.

The Ornithology of Australia by SILVESTER DIGGLES, facsimile edition, 3 vols, 126 plates (Netley, South Australia: State Publishing, 1990-91). \$A495.

The Pacific Railway Surveys, 1853-1855. Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean. 7 rolls of 35mm microfilm (Wilmington, DE: Scholarly Resources, Inc., 1985). \$US315.00.

#### **DISSERTATIONS COMPLETED**

- "The Astronomy of Andean Myth: The History of Cosmology," by WILLIAM F. SULLIVAN, University of St. Andrews, 1988.
- "The Chinese Imperial Astronomical Bureau: Form and Function of the Ming Dynasty *Qintianjian* from 1365 to 1627," by THATCHER E. DEANE, University of Washington, 1989.
- "Ethos and Empire: The Ethnographic Expedition of the Imperial Russian Naval Ministry, 1855-1862," by CATHERINE B. CLAY, University of Oregon, 1989.
- "'Exploiting a Wonderful Opportunity': Stanford University, Industry and the Federal Government," by REBECCA S. LOWEN, Stanford University, 1990.
- "To Make A Spotless Orange: Biological Control in California," by RICHARD C. SAWYER, University of Wisconsin-Madison, 1990.
- "Mutation, Radiation, and Species Survival: The Genetics Studies of the Atomic Bomb Casualty Commission in Hiroshima and Nagasaki, Japan," by MARY S. LINDEE, Cornell University, 1990.

"The Transfer of Network Technologies to China, 1860-1898," by ZHONG ZHANG, University of Pennsylvania, 1989.

#### RECENT ARTICLES

- "Adam Smith and Yen Fu: Western Economics in Chinese Perspective," by CHENG-CHUNG LAI. Journal of European Economic History 18 (1989), 371-382.
- "Alfred Oswald Woodford: A California Centennial Celebration," by DOROTHY LALONDE STOUT. *Journal of Geological Education 37* (1989), 359-364.
- "Alfred Selwyn--19th Century Trans-Atlantic Connections via Australia," by D.F. BRANAGAN. *Earth Sciences History* 9 (1990), 143-157.
- "Andean Biology in Peru: Scientific Styles on the Periphery," by MARCOS CUETO. *Isis 80* (1989), 640-658.
- "Antipodal Expectations: Notes on the Formosan 'ethnography' of George Psalmanazar," by SUSAN STEWART, pp. 44-73 in GEORGE W. STOCKING, JR, ed., Romantic Motives: Essays on Anthropological Sensibility (Madison: Univ. of Wisconsin Press, 1989).
- "Australian Chemists at University College London, 1899-1988," by ALLAN MACCOLL. Ambix 36 (1989), 82-90
- "Bibliographie Concernant l'Histoire des Science en Chine." Revue d'Histoire des Sciences et de leurs Applicatons 43 (1990), 99-107.
- "Boasian Anthropology and the Critique of American Culture," by RICHARD HANDLER. American Quarterly 42 (1990), 252-273.
- "Bourgeois Expectations and Working Class Realities: Science and Politics in Sydney's Schools of Arts," by JOHN LAURENT. Journal of the Royal Australian Historical Society 75 (1989) 33-50.
- "Buying the 'Peacful Atom': The Development of Nuclear Power in Japan," by MORRIS F. LOW and HITOSHI YOSHIOKA. *Historia Scientiarum 38* (1989), 29-44.
- "Canal Builders of Pre-Inca Peru," by CHARLES R. ORTLOFF. Scientific American 259(6) (1988), 100-107.
- "La Cartographie Français des Côtes Cochinchinoises à la Fin du 18e Siècle: Jean-Marie Dayot et le *Pilote de*

- Cochinchine," by GILLES PALSKY. Imago Mundi 41 (1989), 59-?
- "Catching Up and Hanging On: The Formation of Science in Modern Japan," by IAN INKSTER. Annals of Science 47 (1990) 393-406.
- "Charles Fenner: Scientist Who Would Be an Administrator," by BERNARD HYAMS. *Biography 13* (1990), 57-75.
- "Chinese Marine Cartography: Sea Charts of Pre-modern China," by MEI-LING HSU. *Imago Mundi 40* (1988), 96-112.
- "Ciencia y Technología en America Latina a Principios del Siglo XX: Primer Congreso Científico Panamericano," by FRANCISCO R. SAGASTI and ALEJANDRA PAVEZ. Quipu 6 (1989), 189-216
- "The Clock-driven Celestial Globes of Qi Mei-lu and Others," by JOHN H. COMBRIDGE. *Antiquarian Horology* 17 (1987), 165-174.
- "Colleges Must Revitalize the Teaching and Study of World History, by WILLIAM H. MCNEILL. World History Bulletin 7 (3) (Fall/Winter 1990-1991), 1-2.
- "Concerning Derek Freeman's Comment on Holmes' Quest for the Real Samoa," by LOWELL D. HOLMES. American Anthropologist 91 (1989), 753-758.
- "The Controversy Over the Nationalisation of Medicine, 1941-1949," by AMY MCGARTH. Journal of the Royal Australian Historical Society 74 (1989), 348-359.
- "Creating Volcanoes Everywhere: Australia's Owen Gun Story," by R.G. HAYCOCK, in RONALD HAYCOCK, KEITH NEILSON, eds, *Men, Machines and War* (Waterloo, Ontario: Wilfred Laurier Univ. Press, 1988).
- "La Découverte Cartographique des Moluques," by HENRIETTE OZANNE, in MONIQUE PELLETIER, ed., Géographie du Monde au Moyen Age et à la Renaissance (Paris: Éditions de Comité des Travaux Historiques et Scientifiques, 1989).
- "The Dynamomenter and the Diemanese," by MIRANDA HUGHES, pp. 81-98 in H.E. LE GRANDE, ed., Experimental Inquiries: Historical, Philosophical, and Social Studies of Experimentation in Science. (Dordrecht: Kluwer Academic, 1990).

- "Early Environmentalists and the Battle Against Sewers in Sydney," by SHARON BEDER. Journal of the Royal Australian Historical Society 76 (1990), 27-43.
- "Establishing Administrative Standing: The Sierra Club and the Forest Service, 1897-1956," by SUSAN R. SCHREPFER. Pacific Historical Review 58 (1989), 55-81.
- "The Ethnographic Sensibility of the 1920s and the Dualism of the Anthropological Tradition," by GEORGE W. STOCKING JR., pp. 208-276 in GEORGE W. STOCKING JR., ed, Romantic Motives: Essays on Anthropological Sensibility (Madison: Univ. of Wisconsin Press, 1989).
- "La Expedicion Malaspina y su Instrumental Científico," by VIRGINIA GONZALEZ CLAVERAN. Quipu 5 (1988), 143-158.
- "The Form of Islands in 15th, 16th, and 17th Century Cartography," by WILCOMB E. WASHBURN, in MONIQUE PELLETIER, ed., Géographie du Monde au Moyen Age et à la Renaissance (Paris: Éditions de Comité des Travaux Historiques et Scientifiques, 1989).
- "La Formation des Communautés Scientifiques au Mexique (du XVIe au XXe Siecle)," by JUAN JOSE SALDANA, pp. 148-176 in XAVIER POLANCO, ed., Naissance et Développement de la Science-monde: Production et Reproduction des Communautés Scientifiques en Europe et en Amérique Latine (Paris: Éditions La Découverte; Strasbourg, UNESCO, 1989)
- "Forming New Physics Communities: Australia and Japan, 1914-1950," by R.W. HOME and MASAO WATANABE. Annals of Science 47 (1990), 317-345.
- "From Colonial Science to Scientific Independence: Australian reef geomorphology in the 19th Century," by D.R. STODDART, in KEITH J. TINKLER, ed., History of Geomorphology, from Hutton to Hack (Boston: Unwin Hyman, 1989).
- "Georg von Neumayers Geophysikalisches Projekt in Australien und Alexander von Humboldt," by KARL HEINRICH WIEDERKEHR and WILFRIED SCHRÖDER. Gesnerus 46 (1989), 93-115.
- "Harry Hammond Hess and the Theory of Sea-floor Spreading," by M. DANE PICARD. *Journal of Geological Education 37* (1989), 346-359.
- "A Historical Study in Japanese Nomenclature of Elements in the 1820s-1870s in Japan," by KUNICA

- SUGAWARA and KIYONOBU ITAKURA. *Kagakusi Kenkyu 28* (1989) 193-202; *29* (1990) 13-20. In Japanese.
- "History of Galapagos Geology: Darwin's Lost Galapagos Fossils," by JERE H. LIPPS. Abstracts with Programs, Geological Society of America 1990 Annual Meeting, 22 (7), p. A120.
- "Histories of Science, Exploration, and Scientific Institutions Around the Pacific Rim," by MICHAEL A. OSBORNE. Forest & Conservation History 35 (1991), 34-35. Essay review.
- "The History of Scientific and Technical Publishing in Australia." *Riverina Library Review 5* (1988), 263-328. Special issue.
- "The Hobart Typhoid Epidemic of 1887-88," by R.G. KELLAWAY. Social Science and Medicine 29 (1989), 953-958.
- "The Hygiene Program in the Netherlands East Indies: Roots of Primary Health Care in Indonesia," by TERENCE H. HULL, pp. 140-148 in PAUL COHEN and JOHN PURCAL, eds., The Political Economy of Primary Health Care in Southeast Asia (Canberra: Australian Development Studies Network, 1989).
- "Illuminating Incidents in Antipodean Astronomy: Philip Parker King and the Founding of the Sydney Observatory," by WAYNE ORCHISTON. Vistas in Astronomy 32 (1989), 285-301
- "Institutional Ecology, 'Translations,' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39," by SUSAN LEIGH STAR and JAMES R. GRIESEMER. Social Studies of Science 19 (1989), 387-420.
- "The Invertebrate Collections of the *Erebus* and *Terror* Antarctic Expedition: A Missed Oportunity," by J. DAVENPORT and G.E. FOGG. *Polar Record* 25 (1989), 323-327.
- "La Investigación e Technológia en Situaciones de Emergencia Social: El Caso de la Fiebre Aftose," by LETICIA C. MAYER. *Quipu* 5 (1988), 115-124.
- "'It is Besides a Pleasant English Word': Ruth Benedict's Concept of Patterns," by JUDITH MODELL.

  Anthropological Quarterly 62 (1989), 27-40.

- "The Japanese Reception of Alfred Wegener's Theory of Continental Drift," by TSUTOMU TANIMOTO. *Historia Scientiarum* 39 (1990), 15-27.
- "Japan's Secret War? 'Instant' Scientific Manpower and Japan's World War II Atomic Bomb Project," by MORRIS F. LOW. Annals of Science 47 (1990), 347-360.
- "José Celestino Mutis (1732-1808), l'Expédition Botanique (1783-1816) et la Naissance d'une Tradition Scientifique à la Nouvelle-Grenade," by LUIS CARLOS ARBOLEDA, pp. 92-121 in XAVIER POLANCO, ed., Naissance et Développement de la Science-monde: Production et Reproduction des Communautés Scientifiques en Europe et en Amérique Latine (Paris: Éditions La Découverte; Strasbourg, UNESCO, 1989).
- "Joseph Dombey (1742-1794), un Botaniste au Pérou et au Chili: Présentation des Sources," by CATHERINE LANG. Revue d'Histoire Moderne et Contemporaine 35 (1988), 262-274.
- "Kroeber's Theory of Culture Areas and the Ethnology of Northwestern California," by THOMAS BUCKLEY.

  Anthropological Quarterly 62 (1989), 15-26.
- "The Megalithic Astronomy of Easter Island: Orientations of *ahu* and *moai*," by WILLIAM LILLER. *Archaeoastronomy 13* (1989), 21-48.
- "Microwave Radar, the Atomic Bomb, and the Background to U.S. Research Priorities in World War II," by JOEL GENUTH. Science, Technology and Human Values 13 (1988) 276-289.
- "Museum Issues in the Pacific," Museum 165 (1) (1990).
- "'The Natural History of Melbourne': The Culture of Nature Writing in Victoria, 1880-1945," by TOM GRIFFITHS. Australian Historical Studies 23 (1989), 339-365.
- "Never the Twain Shall Meet: European Land Survey Techniques in Tokugawa Japan," by PHILIP C. BROWN. Chinese Science 9 (1989), 53-79.
- "The Nuclear Issue in the Pacific Islands," by STEWART FIRTH. Journal of Pacific History 21 (1986), 202-216.
- "Ozeanistische Ethnographie und Koloniale Praxis: Das Beispiel Augustin Kramer," by DIETRICH SCHLEIP. *Tribus* 38 (1989), 121-148.

- "El Padre Juan de Velasco: Historia Natural y Defensa del Indígena Americano," by EDUARDO ESTRELLA. Quipu 6 (1989), 135-150.
- "Pathways of Radioactive Contamination: Beginning the History, Public Enquiry, and Policy Study of the Hanford Nuclear Reservation," by MICHELE A. STENEHJEM. Environmental Review 13 (1989), 95-112.
- "La Pendule à Secondes et les Étalons de Longueur Utilisés par l'Expédition a l'Équateur: La Toise du Pérou," by LOUIS MARQUET, in HENRI LACOMBE, PIERRE COSTABEL, eds., La Figure de la Terre du XVIIIe Siècle a l'Ére Spatiale (Paris: Gauthier-Villars, 1988).
- "The Politics of Secondary Industry Research in Australia, 1926-1939," by A.T. ROSS. *Historical Records of Australian Science* 7 (1989), 373-392.
- "The Present State of the Teaching of History of Science in Japanese Universities," by MASAO WATANABE and HIDEO NISHIMURA. *TeaComNews*, no. 3 (Autumn 1990), [2-4].
- "Qui Si Sana: Finding Health on Lake Crescent," by RICHARD H. ENGEMAN. Pacific Northwest Quarterly 79 (1988) 18-25.
- "Riken from 1945 to 1948: The Reorganization of Japan's Physical and Chemical Research Institute under the American Occupation," by SAMUEL K. COLEMAN. *Technology and Culture 31* (1990), 228-250.
- "The Rockefeller Foundation's Medical Policy and Scientific Research in Latin America: the Case of Physiology," by MARCOS CUETO. Social Studies of Science 20 (1990), 229-254.
- "The Russian State, the British East India Company, and Rhubarb: European Trade in the Chinese Drug in the 18th Century," by CLIFFORD M. FOUST. Studies on Voltaire and the 19th Century 263 (1989), 124-127.
- "Schools of Mines in Australia, 1870-1920," by ADRIAN R. HAAS. Journal of the Royal Australian Historical Society 75 (1990), 275-294.
- "Science and Medicine in Chinese History," by NATHAN SIVIN, pp. 164-196 in PAUL S. ROPP, ed., Heritage of China: Contemporary Perspectives on Chinese Civilization (Berkeley: Univ. of California Press, 1990).

- "Science and Medicine in Imperial China: The State of the Field," by NATHAN SIVIN. *Journal of Asian Studies 47* (1988), 41-90
- "Science in Victorian Secondary Schools in the Late 19th Century," by IAN R. WILKINSON. History of Education Review 17(2) (1988), 63-78.
- "Scientists as Intellectuals," by JOAN CLARKE, pp. 88-108 in BRIAN HEAD, JAMES WALTER, eds, Intellectual Movements and Australian Society (Melbourne: Oxford Univ. Press, 1988).
- "Scottish Political Economy Comes to the Far East: The Burton-Chambers *Political Economy* and the Introduction of Western Economic Ideas into Japan and China," by PAUL B. TRESCOTT. *History of Political Economy 21* (1989), 481-502.
- "Searching for the Tree Vole: An Episode in the 1914 Biological Survey of Oregon," by GEORGE A. JOBANEK. Oregon Historical Quarterly 89 (1988), 369-400.
- "Seaweed For War: California's World War I Kelp Industry," by PETER NEUSHUL. *Technology and Culture* 30 (1989), 561-583.
- "Sex and Gestation: the Union of Opposites in European and Chinese Alchemy," by RICHARD K. PAYNE. *Ambix 36* (1989), 66-81.
- "The Spanish Influenza Epidemic in San Diego, 1918-1919," by RICHARD H. PETERSON. Southern California Quarterly 71, (1989), 89-105.
- "Symposium on teaching History of Science in Japan" (in Japanese). Kagakusi Kenkyu 28 (1989), 213-216
- "Thomas Starr King in California, 1860-1864: Forgotten Naturalist," by RICHARD PETERSON. California History 69, 12-21.
- "Until God Knows When: Smallpox in the Late-colonial Philippines," by KEN DE BEVOISE. *Pacific Historical Review 59* (1990), 149-185.
- "Useful in Many Capacities: An Early Career in American Physical Oceanography," by ERIC L. MILLS. Historical Studies in the Physical and Biological Sciences 20 (1990), 265-311. On George Francis McEwen (1882-1972).

"Les Voyageurs Français dans la Vice-royauté du Pérou au XVIII Siècle," by ANNE-MARIE BRENOT. Revue d'Histoire Moderne et Contemporaine 35 (1988), 240-261.

"'When Damns Weren't Damned': The Public Power Crusade and Visions of the Good Life in the Pacific

\*\*\*\*\*\*\*

The Pacific Circle Newsletter is the communication medium of the Pacific Circle, organized in 1985 to promote and assist scholarship in the history and social studies of Pacific science. The Pacific Circle is a Commission of the International Union of the History and Philosophy of Science.

The Newsletter is currently distributed twice a year with the assistance of the Departments of History and General Science, University of Hawaii. Membership in the Pacific Circle, which includes the Newsletter, is available at a cost of US\$10 per year or \$25 for three years. Additional contributions in any amount to support the costs of production will be gratefully accepted. Cheques or money orders should be made payable to "Pacific Circle Newsletter" and sent to the editor:

P. F. Rehbock

Pacific Circle Newsletter

History Department

University of Hawaii

2530 Dole St.

Honolulu, HI 96822, U.S.A.

Tel: (808) 956-6850

Fax: (808) 956-9600 E-Mail: U038990.@uhccmvs.bitnet Northwest in the 1930s," by WESLEY ARDEN DICK. *Environmental Review 13* (1989). 113-153.

"A Window on the East," by A. RUPERT HALL. Notes & Records of the Royal Society of London 44 (1990), 101-110.

News items are welcome at any time. Deadline for

after after

### NEWSLETTER STAFF

inclusion in the next issue: 1 August 1991.

Editor: I

Philip F. Rehbock Rov M. MacLeod

Editorial assistance from Karen M. Rehbock and Vance Fletcher is gratefully acknowledged.

#### **CORRESPONDENTS**

AUSTRALIA:

Roy MacLeod

CHILE:

Augusto Salinas Li Pei-shan

CHINA: ECUADOR:

Eduardo Estrella

GERMANY:

Walter Lenz

HOLLAND:

William Backhuys Fumihiko Satofuka

JAPAN: S.KOREA:

Sang-Yong Song

MEXICO: NEW ZEALAND: Juan José Saldaña A. D. Thomson

PERU:

Marcos Cueto Fernando Monge

SPAIN: U.S.S.R.:

V. I. Ilyichev