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PACIFIC CIRCLE NEWS

Members' News

Congratulations to Donna C. Mehos on the recent publication of *Science and Culture for Members Only: The Amsterdam Zoo in the Nineteenth Century*, Amsterdam University Press, 2006.

Kern Kenyon is currently researching ocean currents in the North Pacific. Can anyone share with him information collected and written down on the east bound voyages (*tornviaje*) of the Spanish galleons? Do any log books, or other primary sources exist for the successful return voyages, particularly those from Manila to Acapulco crossing the ocean at about 40°N? Please respond to Kern at Kernken@aol.com.

Linden Gillbank is preparing a history of the Melbourne University Botany School under its first two professors, Alfred J. Ewart (1906-37) and John S. Turner (1938-73). He is particularly interested in contacting those who studied or worked in the Botany School during those years, or anyone who might have recollections about the School during the Ewart and Turner tenures. Why did men and women choose to study botany and undertake botanical research? How did those experiences shape subsequent careers? Please contact Linden at lindenrg@unimelb.edu.au.

Recent Meetings and Business

The Circle's web site is up: <http://www.csulb.edu/~jhamblin/pacificcircle.htm>.

HISTORY OF SCIENCE SOCIETY NEWS

Upcoming History of Science Society meetings are planned for November 2-5, 2006, in Vancouver, British Columbia (held jointly with the Philosophy of Science Association and the Society for Social Studies of Science); November 1-4, 2007, in Washington, D.C.; and November 6-9, 2008, in Pittsburgh, PA (jointly with the Pacific Science Association). For more information, please visit http://www.hssonline.org/meeting/mf_annual.html.

FUTURE CONFERENCES, SEMINARS, and CALLS FOR PAPERS

4-7 May 2006. American Association for the History of Medicine Annual Meeting, to be held in Halifax, Nova Scotia. For information, please visit <http://histmed.org>.

9-12 May 2006. Seventh International Conference on Environmental Management of Enclosed Coastal Seas and 40th Symposium of the Estuarine and Coastal Science Association, to be held in Caen, France. The theme of the joint conference is: "Sustainable Co-Development of Enclosed Coastal Seas: Our Shared Responsibility." The Plenary session will consider European coastal seas and the technical session themes include "Recent Advances in Coastal Marine Sciences,"

“Ecological Quality: Concepts and Case Studies;” “New Concepts and Innovative Experiences in Coastal Management;” “Co-Management and Community Involvement: Sustainability and Awareness to Environmental Issues;” and “Networking and 21st Century Education: The Communication Challenge.” Special session themes will be scheduled concerning “The Asia-Pacific Coast” and “Students and Schools Partnership.” For further information, contact m.brochereux@caen-expo-congress.com.

25-28 May 2006. Second Plenary Conference of the Tensions of Europe Network, to be held at the South Karelia Institute at the Lappeenranta University of Technology, Lappeenranta, Finland. Graduate students, post-doctoral scholars and senior researchers are invited to consider the history of technology in the making of modern Europe and to participate in the Tensions of Europe Research Program (www.histech.nl/tensions). Central topics at the conference will include: networks and infrastructures; circulation and localization of knowledge, skills and people; cooperation and competition between and among regions and nations; and the reworking of consumer goods and artifacts. For additional information, visit www.lut.fi/cki/TOE2006 or agricola.utu.fi/nyt/pyynnot/ilmoitukset/33.html.

29-31 May 2006. Annual Conference of the Canadian Society for History and Philosophy of Science, to be held at York University, Toronto. Further information about themes and panels is available at <http://www.yorku.ca/cshps1/>.

22-25 June 2006. 15th Annual World History Association Conference, to be held at California State University–Long Beach. The dual themes will be “Americas in World History” and “Teaching World History.” For more information, visit www.thewha.org. Once there, follow the link to visit the website and read more about the conference.

28-30 June 2006. The Society for the Social History of Medicine Annual Conference, to be held at the University of Warwick. The conference theme is “Practices and Representations of Health: Historical Perspectives.” Contact Molly Rogers, Centre for the History of Medicine, University of Warwick, Coventry CV4 7AL, England. Email: molly.rogers@warwick.ac.uk.

6-8 September 2006. “The Arboretum: Conversing with Other Nations,” organized by the Linnean Society. This conference will examine the cultural history and geography of tree collections and the different types of arboretum. If interested in giving a paper or in attending, please contact Dr. Paul Elliott (paul.elliott@nottingham.ac.uk) and/or Prof. Charles Watkins (charles.watkins@nottingham.ac.uk).

21-24 September 2006. 16th International Meeting of the Society for the History of Natural Science, to be held at the Redpath Museum of Natural History, McGill University, Montreal, Canada. The theme will be: “Natural Science in the New World: The Descriptive Enterprise.” For additional information, please contact Ingrid Birker, Paleontology Curator, Redpath Museum. Email: ingrid.birker@mcgill.ca.

2-4 November 2006. “Health and Medicine in History: East-West Exchange,” the Asian Society for the History of Medicine Conference, to be held at the School of Social Sciences, Jawaharlal

Nehru University, New Delhi. The meeting proposes to understand the significance of issues related to health and medicine in Asia with emphasis on the exchange of medical ideas, techniques and tools between Asia and Europe. Focus can be on exchange not only in terms of Asia and Europe, but also within Asia and different cultural zones constituting a particular region. Papers will consider the following guidelines: Medical Traditions and Practices in Different Cultural Zones; Comparative Study of Medical Ideas and Institutions; Medical Education and Research; Perceptions of Epidemics and Disease; Health and Population Discourse; Sanitation and Healthcare; Medical Technology—Tools and Techniques; Pharmacology and Drug Development; Mental Health and Sickness; and Medical Ethics. Please contact ashm2006@rediffmail.com or Deepak Kumar, Z. H. Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi, India 110067.

12 November 2006. “Medicalization of Spaces, Spaces of Medicalization” one-day conference, to be held at the University of Kent, Canterbury, England. This conference will address in an interdisciplinary way spaces of medicine and science: geographic, physical, imagined, or other. For information, please contact Dr. Patty Baker (P.A.Baker-3@kent.ac.uk) or Tal Bolton (tb40@kent.ac.uk).

16 November 2006. “Navigational Instruments as a Source of Historic Information,” one-day symposium at the National Maritime Museum, Greenwich, England. This meeting will explore the use of navigational instruments for historical research and the organizers invite papers and participation from maritime historians, historians of science and exploration, museum curators, and, among others, maritime archaeologists. Please send paper proposals and/or questions to Mrs. Janet Norton, Research Administrator, National Maritime Museum, London SE10 9NF, England. Email: jnorton@nmm.ac.uk. Please note that the deadline for paper proposals is May 1, 2006, and that the papers should be a maximum of 30 minutes.

12-15 February, 2007. Second International Conference to Review Research in Science, Technology and Mathematics (STM) Education, to be held at the Homi Bhabha Centre for Science Education (TIFR), Mumbai, India. The conference will focus on three broad strands that influence STM education: the history and philosophy of STM; cognitive bases of STM learning; and STM curriculum and its transaction. General information about the Centre and conference is available at <http://www/hbcse.tifr.res.in/episteme>. Proposals for paper and/or poster presentations should be sent in the form of an extended abstract of 1500 to 2000 words no later than May 31, 2006 to Chitra Natarajan, Convener (episteme@hbcse.tifr.res.in).

EXHIBITIONS and MUSEUMS

“The Duchess of Curiosities: The Noble Naturalist, Forgotten By History,” exhibition narrating the life of Margaret Cavendish, Duchess of Portland, will be held by The Harley Gallery, Welbeck, Worksop, Nottinghamshire, England, through March 1, 2008. A patron of Captain Cook, the Duchess assembled the Portland Museum and was well known for her collection of natural history specimens, including shells.

Living in, or visiting Philadelphia? The schedule of medical history events at the College of Physicians is available at <http://www.hssonline.org/profession/news/index.html>.

The Honolulu Academy of Arts presents an exhibition of Pacific objects collected during the voyages of Captain Cook between 1768 and 1779. "Life in the Pacific of the 1700s: The Cook/Forster Collection of the George August University of Gottingen" runs between February 23 and May 14, 2006. The displays represent a comprehensive scientific and artistic presentation of eighteenth-century cultural objects from the Pacific, perhaps the most comprehensive ever formally collected and publicly presented in Hawai'i, or the Pacific. There are nearly 500 objects from New Zealand, Tonga, Tahiti and the Society Islands, the Marquesas, Vanuatu, New Caledonia, Hawai'i, and the Northwest Pacific Coast.

The American Museum of Natural History in New York City presents "Darwin," the most extensive museum exhibit dedicated to the naturalist and his theory of evolution. The exhibition is part of a continuing series on major thinkers and explorers; past exhibitions have been devoted to Einstein, Da Vinci, and Shackleton. The exhibit runs through May 29, 2006. Please visit <http://www.amnh.org/> or http://www.amnh.org/exhibitions/darwin/?src=h_h.

The Museum's Research Library is pleased to announce the launch of the Darwin Digital Library of Evolution at <http://darwinlibrary.amnh.org>. The goal is to make the full literature of evolution available online within an historically and topically coherent structure. Whereas Darwin's work is the focal point, the framework includes materials from the 17th century to the present concerning the history of evolution as a scientific theory.

EMPLOYMENT, GRANTS, EDUCATION, and PRIZES

The Forest History Society announces the availability of Alfred D. Bell, Jr. Travel Grants for 2006. Researchers using the collections of the Society's library and archives may receive up to US\$950 in support of travel and lodging. The Society's holdings are particularly strong in the areas of North American forest, land use, and conservation histories. Between five and eight grants are awarded annually. For additional information, please contact Cheryl Oakes, Forest History Society, 701 Wm. Vickers Avenue, Durham, NC 27701. Email: coakes@duke.edu.

The Bakken Library and Museum of Electricity in Life offers Visiting Research Fellowships and Research Travel Grants to assist research in its collection of books, journals, manuscripts, and instruments. Visiting Research Fellowships up to a maximum of US\$1,500 are to help defray expenses for travel and subsistence, as well as other direct costs of conducting research on site. The minimum period of residence is two weeks. Travel grants up to a maximum of US\$500 (domestic) and US\$750 (overseas) are to help defray similar expenses. The minimum period for those grants is one week. For additional information about the Bakken collections, please visit www.thebakken.org and click on "Library," or "Research." For application guidelines, please contact Elizabeth Ihrig, Librarian, The Bakken Library and Museum, 3537 Zenith Avenue South, Minneapolis, MN 55416 USA. Email: lhrieg@thebakken.org.

The Sea Education Association's new Maritime Environmental History Semester offers students the opportunity to explore the ways that humans shaped the eastern equatorial Pacific.

The program in the History of Ocean Sciences focuses on the linkages between human activities, environmental concerns, and the changing understandings of nature. Questions? Contact Matthew McKenzie at mmckenzie@sea.edu, or visit <http://www.sea.edu/academics/programs.asp>.

The Royal Society continues to offer grants to support research in the history of science, technology, and medicine. It is now able to also offer grants to support publication in those fields. The new grants are intended primarily to help with the costs of publishing scholarly books that are likely to have only a limited sale, or which need, for example, to be supported by expensive illustrations. The grants will be awarded when the book is close enough to completion for its worth to be judged by referees and for the author to have established that there is a practical route to publication. The Royal Society also offers Research Grants for the fields of the history of science, technology, and medicine, as well as funding to attend overseas conferences. Additional information and online applications can be accessed at www.royalsoc.ac.uk

The British Society for the History of Science (BSHS) awards the Singer Prize every two years to the writer of an unpublished essay based in original research into any aspect of the history of science, technology, or medicine. The Prize is intended for younger scholars or recent entrants into the profession. Essays on offer or in press will not be eligible. Candidates must be registered for a postgraduate degree or have been awarded such a degree in the two years prior to the closing date of December 15, 2006. Entry is not limited to British nationals. Essays must not exceed 8,000 words, including footnotes in the style of articles in the *British Journal for the History of Science*, submitted in English, and typewritten with double-line spacing. Please ensure that the submission arrives no later than the closing date. Essays must not bear any reference to the author, either by name or department, and candidates should send a cover letter with documentation of their status and details of any publications. Please send entries to BSHS Secretary, Centre for Health, Medicine and Society, Tonge Building, Oxford Brookes University, Gypsy Lane, Oxford, England OX3 0BP. Do not send entries as email attachments. Email queries can be directed to: secretary@bshs.org.uk.

The Andrew W. Mellon Foundation has made it possible for the Needham Research Institute (NRI), home of the Science and Civilization in China project, to offer a number of one-semester fellowships for U.S.-based scholars and researchers working within the broad field of the history of science, technology, and medicine in East Asia. Recipients should normally be engaged in research using primary materials in East Asian languages. This is not intended to exclude candidates using Western-language materials to research contacts between China and other countries. Recipients must either hold academic posts in a U.S. university, or be registered for a research degree in a U.S. university. Preference will be given to scholars visiting the Institute during the University terms which run from January through March and April through June. Applications should include a resume, description of the work that will be done during the period of the fellowship, and two letters of recommendation from qualified persons. The project description should include why it would be particularly helpful for the applicant to be able to work at the NRI. The deadline for applications is June 30, 2006. Please send applications and inquiries to: The Administrator, Needham Research Institute, 8 Sylvester Road, Cambridge CB3 9AF, United Kingdom. Email: admin@nri.org.uk.

The National Museum of Australia has joined with the Australian Academy of Science and its National Committee for History and Philosophy of Science to establish two essay prizes, to be known respectively as "The National Museum of Australia Student Prize for the History of Australian Science" and "The National Museum of Australia Student Prize for Australian Environmental History." The prizes will be awarded for original unpublished research undertaken while enrolled as a postgraduate or undergraduate student at any tertiary educational institution. The research should be presented as an essay not exceeding 8,000 words exclusive of endnotes. Essays must be written in English and fully documented following the style specified for the Australian Academy of Science's journal, *Historical Records of Australian Science*. In the case of the history of science prize, essays may deal with any aspect of the history of Australian science, pure or applied, or its cultural influences. Entries must be accompanied by a letter from the candidate's academic supervisor confirming that the entry meets the eligibility criteria. Please send entries to: The Librarian, Australian Academy of Science, GPO Box 783, Canberra, ACT 2601, Australia. The cover sheet should include full name, postal and email addresses, telephone number(s), title of submission, university course, and year of the course. For information, contact rosanne.walker@sci.org.au.

RESEARCH, ARCHIVES, and COLLECTIONS: PRINT & ELECTRONIC

"Some Biogeographers, Evolutionists and Ecologists: Chronological Biographical Sketches" is up now up and running at <http://www.wku.edu/~smithch/chronob/homelist.htm>. The web site provides nearly 250 profiles of leading naturalists.

The Smithsonian Institution Archives will be relocating this spring/summer to new offices at the Capital Gallery (7th and Maryland Avenue, SW) a few blocks away from its current home in the Arts and Industries Building. Reference services and requests to consult records in the holdings will cease before the end of April. For information about services during and after the transition, please consult the updates at <http://siarchives.si.edu>.

BOOK, JOURNAL and PUBLICATION NEWS

Archives of Natural History 32:2 (October 2005) is devoted to "A Century of Discovery: Antarctic Exploration and the Southern Ocean," the papers presented at the international symposium on the Discovery held at the Southampton Oceanography Centre, June 28-30, 2004. Nineteen papers are edited and reproduced in this issue, available from The Society for the History of Natural History, The Natural History Museum, Cromwell Road, London SW7 5BD.

Itinerario 29:3 (December 2005) includes two review articles of possible interest: "The Lewis and Clark Expedition" and "Colonial Botany and Tropical Agriculture."

The Yearbook for European Culture of Science is a new peer-reviewed international journal publishing original research on the processes and histories forming European science. The main focus is on developments since 1700. The upcoming volume concentrates on the history of evolutionary theory in the twentieth century, including the impact of such theory on the social sciences and the interconnections between evolutionary theory and social-political history.

The current issue of *The Bulletin of the History of Medicine* (Spring 2006) includes several articles and book reviews of possible interest, including Pratik Chakrabarti, "'Neither of Meate nor Drinke, but what the Doctor Alloweth:' Medicine Amidst War and Commerce in Eighteenth-Century Madras" and Christian Hochmuth, "Patterns of Medical Culture in Colonial Bengal, 1835-1880." There is also a book review of Thomas P. Lowry, *Venereal Disease and the Lewis and Clark Expedition* (also reviewed below by Keri Inglis).

The History of Oceanography Newsletter is available online via the website of the International Journal of Naval History. Please visit: www.ijnhonline.org.

The History of Meteorology 2 is now available on line. The peer-reviewed journal of the International Commission on History of Meteorology is available at the Commission's home page: <http://www.meteohistory.org>. Papers on the history of meteorology, climatology, and related sciences are now being accepted for consideration in volume 3. Articles should be based on original research and present a novel thesis. The deadline for submissions is September 1, 2006. Direct queries and manuscripts to the editor, James R. Fleming. Email: jfleming@colby.edu.

SELECT RECENT PACIFIC BIBLIOGRAPHY

Books and Book Chapters

America's Curious Botanist: A Tercentennial Reappraisal of John Bartram, 1699-1777, ed. by **Nancy E. Hoffmann** and **John C. Van Horne** (Philadelphia: American Philosophical Society, 2006).

Building a Modern Japan: Science, Technology, and Medicine in the Meiji Era and Beyond, ed. by **Morris Low** (New York: Palgrave Macmillan, 2005).

Colonial Botany: Science, Commerce, and Politics in the Early Modern World, by **Londa Schiebinger** and **Claudia Swan** (Philadelphia: University of Pennsylvania Press, 2005).

An Element of Hope: Radium and the Response to Cancer in Canada, by **Charles Hayter** (Montreal/Kingston: McGill-Queens University Press, 2005 as *McGill-Queen's Associated Medical Services Studies in the History of Medicine, Health, and Society*, volume 22).

Islands in a Far Sea: The Fate of Nature in Hawai'i, by **John L. Culliney** (Honolulu: University of Hawai'i Press, revised edition, 2005).

The Oxford Companion to Ships and the Sea, 2nd edition, edited by **I. C. B. Dear** and **Peter Kemp** (New York: Oxford University Press, 2005).

Plant Names of Eastern Polynesia, by **Karl H. Rensch** (Canberra: Archipelago Press, 2005).

Reef Madness: Charles Darwin, Alexander Aggassiz, and the Meaning of Coral, by **David Dobbs** (New York: Pantheon, 2005).

Seven Deadly Colors: The Genius of Nature's Palette and How it Eluded Darwin, by **Andrew Parker** (New York: The Free Press, 2005).

Articles and Essays

"Commemorating Darwin," by **Janet Browne**, *British Journal of the History of Science* 38 (2005), 251-274.

"Conservation genetics of *Hebe speciosa* (Plantaginaceae) and Endangered New Zealand Shrub," by **Tristan T. J. Armstrong** and **Peter J. De Lange**, *Botanical Journal of the Linnean Society* 149:2 (October 2005), 229-239.

"Genetic Engineering Regulation in Australia: An 'Archaeology' of Expertise and Power," by **Richard Hindmarsh**, *Science as Culture* 14:4 (December 2005), 373-392.

"A New Species of *Viola L.* (Violaceae) from Sichuan, China," by **You-Sheng Chen** and **Qin-Er Yang**, *Botanical Journal of the Linnean Society* 149:3 (November 2005), 365-368.

"The Recognition of Silicosis: Labor Unions and Physicians in the Chilean Copper Industry, 1930s-1960s," by **Angela Vergara**, *Bulletin of the History of Medicine* 79:4 (Winter 2005), 723-748.

"Science, Suffrage and Experimentation: Mary Putnam Jacobi and the Controversy over Vivisection in Late Nineteenth-Century America," by **Carla Bittel**, *Bulletin of the History of Medicine* 79:4 (Winter 2005), 664-694.

"Seedcoat Micromorphology of *Impatiens* (Balsaminaceae) from China," by **Yi Song**, **Yong-Ming Yuan** and **Philippe Kupfer**, *Botanical Journal of the Linnean Society* 149:2 (October 2005), 195-208.

Doctoral Dissertations

"Of Birds, Guano, and Man: William Vogt's 'Road to Survival'," by **Maureen A. McCormick**, The University of Oklahoma, 2005.

"Concepts of Infinity in Chinese Mathematics," by **Yibao Xu**, The City University of New York, 2005.

"Science, Medicine, and Criollo Culture in Late-Colonial New Spain," by **Evan Widders**, University of California-Santa Barbara, 2005.

BOOK REVIEWS

Capt. Clarence Edward Dutton, *Hawaiian Volcanoes*. William R. Halliday, ed. Honolulu: University of Hawaii Press, 2005. Pp. xix + 81=235. B/W illustrations. Appendices. Paper: US\$22.00 and ISBN 0824829603. [A Latitude 20 Book and Originally published by the U S Department of Interior in the 4th *Annual Report of the U. S. Geological Survey*, 1883]

Volcanoes remain a powerful mental image conjured by the mere mention of the Hawaiian Islands. Their tantalizing topography holds majestic—sometimes mystical—appeal. Now readers have the opportunity to delve into a modern reprinting of the first systematic study of the volcanoes of these islands; a work that initially appeared in 1884 in the 4th *Annual Report of the U.S. Geological Survey*. Unlike other scientific writings of that period, this work was delivered in a manner that appealed to a wide audience, and it deserves to expand its readership now. The author, Clarence Edward Dutton (1841-1912), wrote with, according to one contemporary, a remarkable “ease of expression”—something “very few American men of science have possessed to so marked a degree”—such that the complexities of geography are “easily grasped” by all readers.¹

In his newly compiled forward and appendices, William R. Halliday, MD, helpfully offers key insights into Dutton’s career and the context within which his 1882 geohistorical observations of the Hawaiian Islands began. For example, Appendix I records that Dutton’s four-month scientific mission to Hawaii was but another of his assignments from John Wesley Powell as a member of Powell’s U.S. Geographical and Geological Survey. Dutton noted that “well-founded criticism” could have been raised for Powell entrusting the important assignment of the Hawaiian Islands “to one who had never seen a live volcano” (221). But such criticism is not well founded. For Dutton, after studying the geomorphology of the eastern US as part of the Army Ordnance Corps during the US Civil War, had surveyed the volcanic structures of Utah’s Henry Mountains and investigated in particular their source of heat. Dutton was also well versed in the work of other volcano naturalists, in part through regular meetings of the Cosmos Club. This enormously popular Club, still operating in Washington, D.C., was founded by Dutton to be an “inter-disciplinary mix of individuals” who met socially and “embraced the sciences and the arts,” freely exchanging ideas such that “vitality could grow from the mixture of disciplines” (222).

In many ways, Dutton’s *Hawaiian Volcanoes* exemplifies the Cosmos Club’s ideology of a vital “mixture of disciplines.” Indeed, it represents the successful combination of travelogue, history, ethnography, geology, mineralogy, and geography—all told with a literary finesse—that makes this a work of enduring importance. In it, we envision the islands appearing around us—just as they do to all first-time visitors. Their dimensions are apportioned, both statistically and in comparison to peaks and volcanoes in the Americas, Europe, and Asia that readers were much more likely to have witnessed first hand. Climate and vegetation are also compared in terms analogous to more familiar regions. Regarding Hawai’i’s climate, Dutton—who spent his formative years in Connecticut—claimed that in respect to “human comfort the climate is perfection. . . . The air is health itself” (89).

¹ George F. Becker, “Major C.E. Dutton,” *American Journal of Science*, 4th ser., 33 (1912): 387.

Following Dutton's scientific eye, we are led from Hilo to Kīlauea—the typical route of travelers—recounting distance, variations in lava fields, and all of the topographical features that one encounters when trekking up and into volcanic structures. For example, he compares a *ʻā* flow with that of a glacier and distinguishes it from *pāhoehoe*, and “Pele's hair” in easily visualized language for his readers. The existence and formation of lava tubes are also explained in detail. Readers are led alongside Dutton as he investigates four other volcanoes of the islands—Mauna Loa, Mauna Kea, Kohala, and Hualālai. Along the journey, we discover how Dutton's keen observations of lava flow patterns allow him to ascertain that Kīlauea and Mauna Loa are separate volcanoes.

Although not mentioned by Halliday, Dutton is typically credited as the first to use the term ‘caldera’ in reference to those great summit depressions atop Kīlauea and Mauna Loa. According to Dutton (in Chapter III—arguably the most important natural history section of the book), unlike the many craters and “crateriform depressions,” caldera are relatively rare, and he distinguishes at length the processes by which each are formed. The topography as represented by earlier explorers to the area is routinely noted and, in general, the wisdom of the native Hawaiians is acknowledged, particularly in regard to their experience as travelers across their lands. However, at one point, Dutton uncharacteristically lashes out at Hawaiians as being questionable witnesses of volcanic activity. Noting their reliance upon myth and their “addict[ion] to the grossest exaggeration,” he concluded that the Native Hawaiians were “quite incapable of describing any natural phenomenon with accuracy” (113). Yet elsewhere, though admitting his reluctance to “attach much weight to primitive traditions,” he accepts the native explanation about the timing of previous volcanic eruptions “because the statements it contains seem so intrinsically probable” (114).

Given Halliday's liberal additions of appendices to this work, a few gaps remain troublesome. For example, why omit the chapter known as “The Volcanic Problem” in which Dutton speculated upon the thermodynamics of volcanic action? We appreciate, as Halliday explains, that “the knowledge necessary to discuss ‘the volcanic problem’ intelligently did not exist” (xvii), but it would certainly have shown us the level at which Dutton and his contemporaries speculated about this important issue. Elsewhere, as Halliday makes several references to Dutton's critical opposition to some of James Dwight Dana's authoritative geological explanations of Hawaiian volcanoes, it would have helped at least some readers if Dutton's brief letter, published in the *American Journal of Science* in 1883, would have been included in an additional appendix. In that way, all of Dutton's comments about this subject would have been made readily available in one place for readers today. Finally, the addition of an index would have made this valuable reprinting an even more useful scholarly tool.

In comparing his own findings with those of earlier explorers, Dutton acknowledged that he “made no grand discoveries,” yet claimed to “have picked up much knowledge of small details . . . no nuggets but a good deal of fine gold.”² This reprinting, with its shimmering front cover, represents a golden opportunity for any serious minded reader of geohistory and of Hawai'i. The book's thirty plates provide a convenient source of many choice early survey maps, engravings, and photographs of Hawai'i's volcanic wonders. Moreover, it remains a valuable companion book to any contemporary roadside geology book, from which one can gain a great depth of understanding purely from following Dutton's careful observations and

² C.E. Dutton, “Recent Explorations of the Volcanic Phenomena of the Hawaiian Islands,” *American Journal of Science*, 3rd ser., 15 (1883): 226.

comparisons about Hawaiian volcanoes. This fine quality work also nicely anticipates and serves as a model for reprinting other key nineteenth- and twentieth-century works on the natural history of Hawaiian volcanoes.

Philip K. Wilson
 Pennsylvania State College of Medicine

Thomas P. Lowry, *Venereal Disease and the Lewis and Clark Expedition*. Lincoln, NE: University of Nebraska Press, 2004. Pp. xvii + 117. Illus. Cloth: US\$ 21.95 and ISBN 9780803229594.

Thomas P. Lowry's latest book highlights an often over-looked aspect of the Lewis and Clark expedition—sex and the incidence and treatment of venereal disease during the journey. Lowry is a retired physician with an enthusiastic interest in the history of medicine and an equally passionate admiration for Lewis and Clark. His research and presentation take the reader through an understanding of venereal disease today, what was understood of the disease in the early 1800s, how the explorers prepared medically for their journey, medical and cultural incidents during the expedition, and finally through some medical conclusions based on the aftermath of the journey.

Lowry seems particularly preoccupied by Meriwether Lewis's death in 1809. Was it murder? Was it suicide? Was it the result of "a man suffering from the ravages of late syphilis" (93)? Lowry's conclusions on the matter are interesting, though speculative at best. But whether or not these questions intrigue any reader, the integral part that disease has played in frontier history should be enough to draw our attention to this subject, and this book.

Lowry does build a strong case for interest in this aspect of the Lewis and Clark expedition, stating plainly that "The evidence—not mere opinion, but real evidence from the primary sources—strongly suggests the centrality of sex and venereal disease in the great exploration" (xvi). Yet, his analysis of the evidence will likely lead most readers to more questions than answers. That venereal disease was of primary concern to the captains of the expedition is certainly substantiated by the evidence. Lowry states that because of the prevalence of gonorrhea and syphilis "Lewis and Clark faced a major threat to their Corps, one that was in many ways as dangerous as grizzly bears, snakes, warfare, and slippery trails" (13). The extent to which venereal diseases affected the lives and contributed to, or caused the eventual deaths of many of the men of the expedition remains debatable, based on the evidence that is offered.

Lowry's second chapter is especially good at assessing the historical context and stigma attached to syphilis and gonorrhea during Lewis and Clark's time, suggesting why the subject was not always a part of the public discourse at that time and perhaps why it still receives little attention in our own. As the author explains, "diseases arising from venereal activities have always had a dual life: a medico-biological life of objective facts and a culturally defined life of moral judgments" (17). Yet there are aspects in the history of medicine and disease (such as the origin of syphilis) that Lowry addresses only at the surface; relying heavily on only a few sources, his bibliography does not include many of the authorities in the field.

Perhaps the best chapter in the book is the third, entitled "The Famous Shopping List." Focusing his analysis and discussion on an examination of Lewis's list of "medicines" and

associated supplies, Lowry offers the reader some wonderful insight into medical practices of the early 1800s. The necessity of these supplies is reinforced by the understanding that "it is obvious that Lewis and Clark, professional soldiers, were expected to function as pharmacists and physicians to a large expedition (and numerous Indian patients) for two years, without professional training in the medical arts" (42). Only 15 percent of the list pertains to the treatment of venereal diseases, and thus to Lowry's discussion. The other 85 percent (medicines and their uses) are just as intriguing and worthy of further analysis.

The following two chapters "Indian Medicine" (Ch. 4) and "The Voyagers Speak" (Ch. 5) are equally intriguing in subject matter, but lacking in their depth of analysis. What is included in these chapters is certainly worthwhile reading, but "Indian Medicine" is disappointingly short. There is a great deal of potential in this layer of the story but it is not explored and Lowry relies almost entirely on one secondary source for his treatment of this aspect of the subject. "The Voyagers Speak" doesn't truly get us into the minds or lives of the voyagers. Further, while some interesting observations are shared from the journals of some of the men of the expedition, more questions arise than answers. Indeed, there is a need for a deeper cultural analysis of the material presented in both of these chapters.

The final chapter details the lives of the men of the expedition after their return. A lack of evidence, or a lack of concrete conclusions based on the evidence, tends to detract from Lowry's central thesis. As he summarizes the return lives of the men involved in the expedition, Lowry has to continually conclude that based on the evidence "...we have very little on which to base any conclusions about tertiary syphilis" (91) and even further, that "Again, nothing is known that is relevant to the theme of this study" (91). Unfortunately, the book's final portion remains highly speculative, with conclusions often based on a lack of evidence. Lowry is aware of this, and while this weakness does detract from his central thesis, it does not take away from the primary premise of the book that "the role of venereal disease has been given insufficient weight in understanding the challenges and dangers faced by the justly famous Corps of Discovery. The hardships they endured and the completion of their trip with only one death are almost unparalleled in the history of exploration" (101).

Lowry's writing presumes at least a minimal acquaintance with the history of the Lewis and Clark expedition. Thus this book would work well as a supplemental reading within a history course. And, as it also addresses a neglected aspect in the history of the expedition, it will be useful to anyone with an interest in the history of medicine and disease. Many of the conclusions are speculative and Lowry has relied heavily upon secondary sources—perhaps indicative of a physician writing history, rather than an historian writing about the history of medicine (which may have its own comparable weaknesses). Overall, *Venereal Disease and the Lewis and Clark Expedition* is a worthwhile read and much will be learned from it. Hopefully future readers will also be inspired to take a deeper look into this subject so that some of the questions Lowry has left for us will be answered.

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George Seddon, *The Old Country: Australian Landscapes, Plants and People*.
Melbourne: Cambridge University Press, 2005. Pp. xvii + 270. Color Illus. Cloth: AUSS\$49.95
and ISBN 0521843103.

On the southwestern edge of the Pacific Ocean is a very old landmass—the island-continent of Australia. It has outcrops of fossil stromatolites which, at about 3.5 billion years old, are amongst the world's oldest known evidence of living organisms. Born as a chunk of the ancient mega-continent, Gondawana, Australia, has been traveling persistently, yet imperceptibly, northward for millions of years. Because of Australia's Gondwanan origins, her plants have Pacific cousins—in New Zealand, New Caledonia, and Chile. So writes Prof. Seddon in the introduction to this beautiful and engaging book.

George Seddon is Emeritus Professor of Environmental Science at the University of Melbourne and Professorial Associate at the University of Western Australia. As well as spanning the Australian continent, the very broad spectrum of his expertise includes English and geology, from which he has long inspired listeners and readers to see landscapes and their histories anew.

In *The Old Country* Seddon weaves together ideas and images of Australia's living landscape with geological and written records to reveal various aspects of Australia's indigenous flora—its evolution, documentation, and cultivation. His love of geology, geography, and gardening, language and literature shine through the nine chapters which explore and link these aspects, beginning with the first known European encounters with western Australia in the late seventeenth century and ending with Australia's current pesky panoply of weeds.

In telling the Gondwanan story of Australia's continental origin, Seddon shows how the indigenous flora has evolved to be so well adapted to nutrient-poor soils and infrequent and unpredictable rainfall, with pollinators, including small birds and mammals, evolving with the nectar-rich plants. To avoid ambiguity, Seddon bravely and sensibly uses taxonomic plant names throughout the text.

The early scientific documentation of Australia's indigenous flora was a collateral consequence of exploration. In the late eighteenth and early nineteenth century novel plants attracted intense scientific and horticultural interest in Europe, and many specimens collected during exploratory expeditions were used to name new species. Seddon uses *Banksia* to provide glimpses of this process. The genus *Banksia* was named in 1781 for the wealthy botanist and patron of science, Sir Joseph Banks, who had brought naturalists and artists on Captain James Cook's *Endeavour* voyage into the Pacific and made the first known scientific collections of specimens of plants that would later carry "his" generic name. Five species of *Banksia* were named from collections he made in 1770, when the *Endeavour* visited the eastern coast of the unmapped continent which would later be called Australia. Three species were named in 1800 by the Spanish botanist, Antonio Cavanilles, using specimens collected during the Malaspina expedition which was sent into the Pacific in the 1790s in response to English encroachments into the "Spanish Lake." (Please see the review of *Captain Cook: Explorations and Reassessments* in the *Bulletin of the Pacific Circle*, 15, October 2005). Many species were named by Robert Brown from coastal specimens collected during Matthew Flinders' expedition in 1800-02. Seddon includes beautiful *Banksia* illustrations by Sydney Parkinson, who accompanied James Cook and Joseph Banks, Ferdinand Bauer, who accompanied Matthew Flinders and Robert Brown and Celia Rosser who, as part of her enormous project to illustrate every one of the over seventy species of *Banksia*, has trekked into sometimes little-known parts of the Australian landscape to see each one growing in the wild.

Seddon discusses the Gondwanan origins and the taxonomic and geographic relationships of Australian conifers. A dictionary of plant names will tell you that the genus

Araucaria was named in the late 18th century for the Arucani Indians of Chile, whose territory includes the first-documented species, *Araucaria araucana*, the monkey-puzzle tree. South America shares this genus with Pacific Islands and Australia—the Norfolk pine, *A. heterophylla*, and eastern Australia's bunya pine, *A. bidwillii*, and hoop pine, *A. cunninghamii*. Kauri is a Maori word, which is used for trees in the related genus, *Agathis*. Australia's three kauris have Pacific cousins, including the gian kauri Seddon photographed on the North Island of New Zealand—'Te Matua Ngahere,' the Father of the Forest, which is revered by the Maori. Seddon describes the 1994 discovery in an almost inaccessible canyon in the Wollemi National Park, not far from Sydney, of a group of huge trees without a scientific name. A new genus was established in the same family as *Agathis* and *Araucaria* for the Wollemi pine, *Wollemia nobilis*. From seed collected by a National Park ranger dangling from a helicopter hovering between the canyon walls, this "new" pine has been commercially propagated, with thousands of young trees recently offered for sale.

Another coniferous family includes genera separated by the Pacific Ocean—Tasmania's pencil and King Billy pines, species of *Athrotaxis*, and California's mighty redwood, *Sequoia sempervirens*, and the giant sequoia or Wellingtonia, *Sequoiadendron giganteum*.

Tasmania's long-valued huon pine, *Lagarostrobos franklinii*, has several Tasmania cousins, *Dacrydium* cousins in New Zealand, New Caledonia, Fiji and Chile, and *Podocarpus* cousins dotted around the Pacific—in New Zealand, eastern Australia, China, Japan, Mexico, and South America. The Old Country includes photographs of New Zealand's rimu, *Dacrydium cupressinum*, and much-felled totara, *Podocarpus totara*, south-eastern Australia's mountain plum pine, *Podocarpus lawrencei*, and Tasmania's huon pine.

As Seddon points out, the indigenous flora is a precious part of Australia's natural heritage, and Australians are responsible for protecting it. Gardens are a rich source of escapee plants which may become invasive weeds and out-compete indigenous species in the wild. Consequently, Australians must seriously address the tricky horticultural dilemma that the best-adapted garden plants—those requiring no extra water or nutrients—are the very ones that are most likely to flourish in the wild.

I hope that Seddon's eclectic discussion of Australia's amazing floral heritage stimulates interest in the indigenous flora of this old landmass on the southwestern edge of the Pacific Ocean and the floral relationships around and across the Pacific. Colin Totterdell's stunning photographs will certainly help.

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(Editor's note: The following review, entitled "Misguided Missions? Science and Technology Programs in the Developing World," was commissioned by Michael Osborne to commemorate the influential scholarship of the late historian of agronomy, Dr. Joseph N. Cotter. Thanks to Prof. Osborne for his assistance).

David McBride, *Missions for Science: U. S. Technology and Medicine in America's African World*. New Brunswick, N.J. and London: Rutgers University Press, 2002. Pp. 308. Plates. Illus. Bibliography. Index. Cloth: US\$40.00 and ISBN 0813530679.

Stuart McCook, *States of Nature: Science, Agriculture, and Environment in the*

Spanish Caribbean, 1760-1940. Austin: University of Texas Press, 2002. Pp. 201. Illus. Maps. Bibliography. Index. Cloth: US\$50.00 and ISBN 0292752563 and Paper: US\$22.95 and ISBN 0292752571.

The once widely shared faith in Western science and technology has eroded considerably in the last few decades. Academics have contributed to this disquietude by criticizing everything from the industrial revolution of the green revolution to the over-reliance on medical technology to diagnose illnesses. The major theme in both David McBride's *Missions for Science: U. S. Technology and Medicine in America's African World* and Stuart McCook's *Sates of Nature: Science, Agriculture, and Environment in the Spanish Caribbean, 1760-1940*, is that technology by itself rarely delivered on the promises made by its backers. Technology and science, in the absence of social and economic reforms and environmental considerations, did not improve the lives of the vast majority of people.

McBride and McCook also address a related issue: did Westerners impose their science and technology upon people in the "developing world," or was there a blending of Western science and technology with "indigenous" traditions and practices? Here, the authors reach divergent conclusions, as will be discussed later in this review.

McBride asserts that for many 'African' peoples the "rewards from quests for modern science are still either a hope or a prayer" (p. 230). Why should this be? McBride's answer in regards to technical projects in America's African World (which he defines as the heavily African-American populated areas of the Southern United States, the Panama Canal Zone, Haiti, and Liberia) is unequivocal: Whether it was the building of the Panama Canal, public works projects in Haiti, the Tennessee Valley Authority and the Oakridge nuclear facility in the American South, or the Firestone Rubber Plantations in Liberia, Africans and African-Americans were relegated to manual labor.

Educational systems were structured so that Africans and African-Americans were rarely able to break the white monopoly on professional positions. The paucity of schools, poorly paid teachers, dilapidated facilities, and a focus on vocational education rather than on a broad-based higher education meant that almost all Africans and African-Americans would remain as laborers or tenant farmers. As McBride laments about the place of such men and women in the Panama Canal Zone: "In the end, Canal authorities could boast about industrial progress and invincibility of scientific medicine, pointing to the fantastic Canal as well as the effective campaigns against yellow fever and malaria. However, overshadowed by these successes was the fact that the Canal population was highly divided by economic status and segregated schools and housing accommodations" (pp. 76-77).

McBride offers a variety of explanations for why many medical missions failed in America's African World. In many cases, African-Americans and Africans were seen as either immune or especially susceptible to certain diseases and thus either did not need to be saved or were incapable of being saved. A second explanation is that African and African-American laborers were often in abundance and thus a certain mortality rate was acceptable. U. S. policy-makers and their allies were mainly concerned about keeping infected Africans and African-Americans from spreading disease to whites, especially wealthy whites. In the case of the Panama Canal Zone, officials were particularly interested in reducing the incidence of debilitating diseases, such as yellow fever and malaria, that would interfere with labor productivity. McBride's analysis does not explain, though, why a greater effort was not made to

attack other debilitating and life-threatening diseases, including pneumonia and tuberculosis (even if one accepts McBride's classification of tuberculosis as a non-debilitating illness in the short-term). While there may be some minor flaws in the argument, McBride is probably correct that callous calculations often lay behind the neglect of the health of African and African-American populations.

The focus on techno-medicine also played a role in retarding the progress of medical missions. The successful campaigns against malaria and yellow fever in the Panama Canal Zone can be largely attributed to the focus on environmentally-based solutions, such as the large-scale draining of standing water and the screening of doors and windows. However, as the twentieth century progressed, environmental control efforts were replaced by the search for silver bullets, especially microbiological-based cures and pesticide use. No microbiological breakthroughs were made, however, and insects developed resistance to pesticides (not to mention the harmful effects which pesticides had upon human beings and other animals). In retrospect, the decision to abandon environmental amelioration efforts was a foolish one.

Moreover, the campaign against diseases could not make major headway without a full-scale assault on poverty. In Haiti, for instance, the spread of yaws was so rampant in large part because people had inadequate shoes, or no shoes at all. The many cuts people had on their feet greatly facilitated the spread of the disease. No large-scale treatment program could overcome this fact. Yet with rare exceptions, the U.S. and its allies were more interested in a technocratic solution than in addressing the more thorny and seemingly intractable issue of attacking poverty head on. Although McBride does not make this point explicitly, the search for a scientific breakthrough held more appeal than the difficult task of modifying the environment or changing socioeconomic systems.

Was there something wrong with Western medicine itself or was it inadequately transmitted to developing regions and countries? McBride's answer is both. He does not dismiss the benefits of Western medicine. Certainly, more people would have lived longer lives if they had access to quality hospitals, medical treatment, and trained physicians (many who left poorer countries to study abroad then never returned home). On the other hand, the almost exclusive focus on technocratic solutions and the failure to draw upon "indigenous" medical knowledge and talent was counterproductive. It is not surprising that the former Haitian public health officer turned repressive dictator Francois Duvalier made so little progress in improving health conditions in his country. His play after all was to attract foreign aid from the U.S. during the Cold War to be used as he saw fit. On the other, William V. S. Tubman, the President of Liberia, did little better despite his apparently genuine commitment to improving health care in his country. Certainly financial constraints played their part, but a broader focus on preventive medicine (including improving rural living conditions) may have been a more effective strategy.

McBride's book contains both unique and familiar elements. Much of the broader background history he presents is already well known to scholars of the regions he covers and in some cases to generalists as well. His most original contribution lies in his critique of medical missions in the region he himself has constructed: "America's African World" (although here the author could have treated Cuba as more than a peripheral part of this world). Future scholars can expand upon McBride's work by exploring in depth the accomplishments and shortcomings of the many medical missions he mentions. Also further attention could be given to the minority of dissenters of techno-medicine. McBride's framework can be a springboard to further examinations and interpretations of the impact of Western medicine in various parts of the "developing world."

Finding a niche for McBride's book at universities and colleges may be difficult. Although still relatively few in number, professors who teach courses on the social aspects of science, medicine, and technology, can usefully employ this book. Otherwise, professors teaching courses in the Caribbean, the American South (or U.S. history in general), and West Africa may consider extracting parts of this book for their courses.

Missions for Science is probably best suited for graduate students. The sometimes discontinuous narrative and complicated prose require a patient reader. But once a person becomes used to the author's style, he or she will find this to be a compelling and important text.

Stuart McCook examines the evolution of botany and agronomy in five Caribbean nations: Venezuela, Cost Rica, Cuba, Puerto Rico, and Colombia, primarily between 1880 and 1940. McCook, like McBride, is interested in techno-science missions and their self-serving goals. As he states, "the U.S. government used science and technology as tools to consolidate effective control of the islands [Cuba and Puerto Rico] and as an ideological justification for this control" (p. 48). Unlike McBride, though, McCook sees more national influence on the development of the biological sciences.

McCook illustrates his point regarding the nationalization of Latin American science through two key figures: the Swiss-born botanist, Henri Pittier, and the Puerto Rican plant pathologist, Carols Chardon. Although Pittier relied upon U.S. and German scientists to help with his collections, unlike his predecessors, he did not send his collection away to be stored in foreign countries. Instead, he developed herbariums within Costa Rica and Venezuela. Despite huge obstacles, Pittier made significant progress in developing national flora studies for both Costa Rica and Venezuela. Unfortunately, both the Coast Rican and Venezuelan governments had only a passing interest in his work and then only for its practical applications. A chronic shortage of funding and the delicate task of trying to maintain favor with his political bosses meant that Pittier's efforts could never reach their full potential. His research was of a national character and took place within a national context with all the novelty and pitfalls which that entailed.

Carlos Chardon searched for scientific solutions that fit Puerto Rico's needs. North American scientists had often tried to apply North American research to tropical areas. Chardon realized the folly of such an approach. In that sense, he "nativized" Western science. Chardon, perhaps more than any other Latin American scientist of his times, sought to bridge the gap between imported science and national needs (although the definition of what constituted national needs varied widely among different groups).

McCook does acknowledge that many agronomic and botanical missions in the Caribbean were either wholly directed or dominated by U. S. interests. Still, McCook emphasizes, with numerous illustrations, that the U. S. influence over the development of science was not monolithic even in its colonies and protectorates. Different sciences, different countries, and most especially different perspectives explain why McBride views all "his" science missions as hegemonic whereas McCook portrays many of "his" missions as heterogeneous.

McCook and McBride do agree on the central role of techno-science in the Caribbean and on the shortsighted nature of this approach. In Puerto Rico, Carlos Chardon's principal solution to a potentially disastrous plant disease—the sugar mosaic—was to import hybrid varieties more resistant to the disease. His large measure of success in this campaign, elevated the prestige of agricultural researchers not only in Puerto Rico, but in other part of Latin America, as well.

Nevertheless, Chardon's scientific solution took root more slowly in Cuba. Some of the varieties that Cuban planters began to experiment with contained spines that cut the hands of the workers. In addition, planters and mill operators knew how much sugar to expect out of the old, but now vulnerable *crystalina* varieties. To develop a new system, based on a new variety, took some time. McCook's main point is that social, economic, and environmental factors slowed the adoption of a techno-science approach to the sugar mosaic problem in Cuba.

Chardon attempted to export his model of agricultural research to other parts of the Caribbean with mixed success. In Colombia, some government officials and planters wanted a greater emphasis on agricultural extension services rather than on agricultural research *per se*. Chardon gained substantial support in some quarters for his proposals, but like U. S. agronomists, he could not simply impose his research priorities on other countries.

McCook describes how disagreements between U. S. officials, national (or insular) officials, U. S. agronomists, Latin American agronomists, planters, and, in some cases, workers, helped shape agricultural problems and policies in a way different from what each group had envisioned. Political turmoil and economic crisis (such as the Great Depression) could undermine the efforts of agricultural researchers or at the very least alter their focus. For the period McCook discusses, national politics and policies often played a determinant role in the direction of agronomic and botanical pursuits.

McCook finds techno-science lacking on two grounds: one is that with the partial exception of the export collapse during the Great Depression, agricultural scientists focused on improving the production of export crops rather than food crops. Second, agricultural scientists failed to recognize that not every problem had a scientific solution. Many of the challenges facing Latin American farmers were of a social and economic nature. Here McCook and McBride, though dealing with different sciences, are in complete agreement.

McCook's work like that of McBride's opens the door to further research. For instance, scholars could adopt or alter McCook's framework by researching the development of botany and agronomy in other parts of the Caribbean and in other Latin American countries outside of the Caribbean during the liberal period (nineteenth and twentieth centuries). McCook's brief remarks about silviculture in the Caribbean highlight the need for a full-scale study of forestry and forest conservation throughout the region (focusing on such topics as the use of forest products and early ecological concerns regarding deforestation). One might find that for the Caribbean as was the case for many other areas in Latin America, individuals and groups were concerned about deforestation prior to the development of an active botanical research community. This does not distract from McCook's observation that the work of botanists was an important antecedent to the conservation movement in Latin America; it only underscores the need for a more thorough understanding of the many roots of conservation concerns in the region.

While McCook makes a number of observations that relate to environmental history, his primary focus is on the history of science. Indeed, McCook is to be commended for writing one of the few books relating to the history of science in Latin America during the nineteenth and early twentieth centuries.

McCook writes in a clear and effective style. His approach to the subject is neither overly theoretical nor oversimplified. Undergraduates as well as graduate students should find it to be an engaging book. The problem may be in finding a place for the book in college courses. Few historians of science and technology are Latin American historians and vice versa. Hopefully, some professors of Latin American history and of the history of science and technology will consider using this book in their classes.

These books address two critical questions: to what degree has science and technology been imposed on “developing countries” and what was missed by looking at certain problems only from a scientific and technological perspective? McBride and McCook provide valuable insights on both topics.

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Brian W. Richardson, *Longitude and Empire: How Captain Cook's Voyages Changed the World*. Vancouver, B.C.: University of British Columbia Press, 2005. Pp. xvi + 240. B/W Illus. Index. Cloth: Cdn\$85.00 and ISBN 0774811897. Paper: Cdn\$29.95 and ISBN 0774811900.

James Cook's three epic voyages represent not only the genesis of the modern scientific exploring expedition, according to author Brian Richardson, but also heralded a revolution in the ways in which Europeans conceived of the wider world and the diverse peoples, creatures, and plants to be found there. In six thematic chapters, the author describes how the “Lines” in sailing instructions were converted into “Spaces” precisely delineated on maps and nautical charts; how the native peoples in these spaces were re-conceived as “Nations,” whose customs and artifacts were carefully observed, recorded and gathered into “Collections;” how this process served to differentiate them and allow their relative comparison and evaluation; and finally, how these nations and their human and material resources were gathered up into “Empires” by the more advanced European civilization.

Harrison's chronometer enabled Cook and later mariners to measure longitude with considerable accuracy, and thus allowed oceanic voyaging and exploration to proceed without reference to coastlines and known landmarks. Islands could be precisely located and mapped within the global network of meridians. Cook could thus sail boldly through parts of the Pacific his predecessors had shunned, making new discoveries (eg. Hawai'i), as well as more precisely locating and mapping islands first sighted by others, and thus confirming (or denying) their existence.

Moreover, Cook's success in maintaining the health of his crews, and preserving their lives as well as the ships in his charge, did much to dispel the uncertainty and fear that had always surrounded long-distance, oceanic voyaging. Indeed, Richardson notes that the published accounts of Cook's three voyages bear considerable resemblance to travel guidebooks in their substance and tone. Accompanied by naturalists and artists, Cook's expeditions undertook ethnographic, botanical, and zoological research and the collecting of specimens and artifacts, and through this process Cook and his colleagues made the Pacific, “a test case for a new way of knowing the world.”

Anthropologists may disparage Cook's characterization of people by their isolated, physical localities, his failure to appreciate their navigational skill and achievements, or to overcome his own innate attitude of cultural superiority. Nonetheless, Cook and his scientists

brought a positively modern degree of inquisitiveness about other cultures, that stood in contrast to the relative lack of interest that the Native peoples showed in them, and in still sharper contrast with the view of the curmudgeonly Dr. Samuel Johnson, who dismissed the stout volumes of the published account of Cook's third voyage by acerbically declaring, "These *Voyages*...who will read them through?...they will be eaten by rats and mice, before they are read through. There can be little entertainment in such books; one set of savages is like another."

But they were read through, and with far-reaching effects. Employing only minimal jargon and offering clear, if sometimes reductive, explanations, Richardson analyses the texts of Cook's *Voyages* and interprets their impact upon the European mind and political order in a manner that might profitably be emulated by cultural theorists and literary deconstructionists. In Richardson's eyes, Cook achieves apotheosis as "the Copernicus of exploration" and, "becomes an important point of origin, someone who has articulated the world, and given the collected world, as a gift, to his nation." Anthropologists such as Anne Salmond and Greg Denning have provided studies of early contacts between Pacific Natives and European largely from the former's point of view. Richardson's thought-provoking study reverses the lens to show the impact upon European sensibilities and growing conception of the world as a unified and precisely definable whole.

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