

THE PACIFIC CIRCLE



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PACIFIC CIRCLE NEWS

Recent and Forthcoming Publications and Scholarly Activities by Circle Members

D. Graham Burnett, *The Sounding of the Whale: Science and Cetaceans in the Twentieth Century*, The University of Chicago Press, 2012.

Marc Jason Gilbert and Jon Davidann, *Encounters and Exchanges in Modern World History*, Pearson, 2012.

Emily O’Gorman, “Local Knowledge and the State: The 1990 Floods in Cunnamulla, Queensland, Australia,” *Environmental History* 17:3 (2012), pp. 512-546.

Helen M. Rozwadowski, “Arthur C. Clarke and the Limitations of the Ocean as a Frontier,” *Environmental History* 17:3 (2012), pp. 578-602.

Warwick Anderson, “Hybridity, Race, and Science: The Voyage of the *Zaca*, 1934-1935,” *Isis* 103:2 (2012), pp. 229-253.

Roy Macleod has been invited to return as a Senior Fellow at the Lichtenberg-Kolleg of the University of Göttingen. He will be consulting with the University’s unique collection of Pacific ethnological artifacts assembled by Reinhold Forster and his son, Georg Forster, during Cook’s second voyage. This project continues Roy’s long-standing interest in the history of discovery and exploration, an interest that goes back to joint publications with our late colleague, Fritz Rehbock. Additionally, Roy will be helping the University develop a ‘Wissenschaftshaus,’ which will incorporate the historic museums of the University and host city into a new interdisciplinary, higher degree program devoted to the study of ‘Wissenschafskultur.’



Upcoming Circle Conference Papers and Panels

Circle members have participated over the past few years at the annual meetings of the North American Conference on British Studies and the Pacific Coast Conference on British Studies. At times, we have been able to organize and sponsor a Circle panel.

Please note that the call-for-papers for the PCCBS meeting in Berkeley, California, for March 8-10, 2013, has just been published. Please contact Prof. Peter Hoffenberg at peterh@hawaii.edu if you would like to be part of a Circle panel, or would like the Circle to officially sponsor your individual paper. The organizers request for each paper a 200-word abstract and a 1 page c.v. Panel chairs and commentators need only submit the 1 page c.v. Please send materials to Dr. Hoffenberg no later than November 1, 2012.

Circle Odds and Ends

Looking for copies in good condition of *Darwin's Laboratory* and/or *The Commonwealth of Science*? If so, contact Roy Macleod at roy.macleod@sydney.edu.au.

Hans van Tilburg reminds us that UNESCO Asia Pacific HQ has just released to the public its *Training Manual for the UNESCO Foundation Course on the Protection and Management of Underwater Cultural Heritage in Asia and the Pacific*. This volume is the result of regional capacity-building projects to protect and manage underwater archaeological sites. Those projects have included foundation courses and the interaction among UNESCO, trainers, and students, with the assistance of the regional Centre of Excellence. The latter is funded by the Royal Government of Norway. The volume provides a curriculum for Foundation Courses and a high standard of delivery of the training units. Please visit <http://www.unescobkk.org/culture/uch/uch-publication/>.

HSS NEWS

The 2012 Annual Meeting of the History of Science Society will be held on November 15-18, 2012, at the Sheraton San Diego (California) Hotel and Marina. The Philosophy of Science Association will also be meeting and the two conferences will open with a joint plenary on “Kuhn’s *Structure of Scientific Revolutions*, 50 Years Later.” For additional information, please visit <http://www.hssonline.org>.

FUTURE MEETINGS, CONFERENCES, and CALLS FOR PAPERS

18-20 October 2012. The 1st IHPST Asian Regional Conference, to be held at Seoul National University. Goals for the meeting include: 1) strengthening the links between HPS and science education in Asia; 2) showing different connections between the sciences and the humanities; 3) exchanging experience of research and implementation of HPS&ST in Asia and 4) establishing an academic platform for HPS&ST in Asia. For information, please visit www.ihpst2012.snu.ac.kr.

1-3 November 2012. Fifth International Conference of the European Society for the History of Science, to be held in Athens, Greece. The theme is: "Scientific Cosmopolitanism and Local Cultures: Religions, Ideologies and Societies." For more information, please visit <http://5eshs.hpdst.gr>.

5-8 December 2012. Conference of the European Society for Oceanists, to be held in Bergen, Norway. The theme is "The Power of the Pacific: Values, Materials, Images." Questions? Please visit: esfo2012.com/en.

8-10 December 2012. Annual Conference of Social Anthropology of Aotearoa/New Zealand (ASAANZ), to be held at Victorian University of Wellington. Featured papers and panels will consider the conference theme of "Anthropology and the Imagination." For information, please visit <http://asaanz.science.org.nz/conference%202012.html>.

4-6 April 2013. "Waves of Change: Climate Change in the Pacific Islands and the Implications for Hawai'i," to be held at the University of Hawai'i at Manoa, in Honolulu. The Center for Pacific Islands Studies at U.H. Manoa is organizing this meeting to explore the environmental, social, cultural, political, and economic impacts of Climate Change. Featured speakers and participants will include natural scientists, students, policy makers, and members of the general community.

16-19 June 2013. 94th Annual Meeting of the AAAS, Pacific Division, to be held in Las Vegas, Nevada. Please contact Dr. Roger Christianson at rchristi@sou.edu.

8-12 July 2013. The 12th Pacific Science Inter-Congress, to be held at the Laucala Campus, University of the South Pacific, Suva, Fiji. The theme is "Human Security in the Pacific." Sessions will include, but not be limited to, biodiversity, governance, food and health, ocean development, climate change, sustainable development, and trade and economic integration. For additional information, please contact the Pacific Science Association at www.pacificscience.org.

28-31 August 2013. 4th Conference of the European Philosophy of Science Association Conference, to be held at the University of Helsinki, Finland. The conference has eight sections: General Philosophy of Science; Philosophy of the Physical Sciences; Philosophy of the Life Sciences; Philosophy of the Cognitive Sciences; Philosophy of the Social Sciences; Philosophy of Technology and Applied Research; Formal Philosophy of Science and Historical, Social, and Cultural Studies in Philosophy of Science. Please submit an abstract of 1000 words to <http://www.helsinki.fi/epsa13/>.

BOOK, JOURNAL, EXHIBITION and RESEARCH NEWS

Signals 98 (March to May 2012), the official magazine of the Australian National Maritime Museum, includes the following articles of possible interest: Claire Baddeley, "Whaling in Jervis Bay: From Commodity to Conservation," pp. 42-45 and Bill Richards, "*Edwin Fox*: Respect for Age," pp. 46-49.

Interested in indigenous watercraft? Please see Daina Fletcher and Stephen Gapps, "Nawi: Exploring Australia's Indigenous Watercraft," pp. 4-11, Steaphon Paton, "Nawi: Boorun's Canoe," pp. 12-17 and Fred Cahir, "Nawi: Seeing the Land from an Aboriginal Canoe," pp. 18-21 in *Signals 100* (September to November 2012).

Tree Physiology 32:6 (2012) is a special issue devoted to "Carbon Allocation of Trees and Forests." That volume contains several 'Pacific' area articles, including one on tropical *Eucalyptus* plantations (pp. 667-679).



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BOOKS and BOOK CHAPTERS

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The Last Crusade: The Epic Voyages of Vasco de Gama, by **Nigel Cliff**, Atlantic Books, 2012.

Pacific Worlds, by **Matt K. Matsuda**, Cambridge University Press, 2012.

Re-inventing the Ship, edited by **Don Leggett** and **Richard Dunn**, Ashgate, 2012.

The Scope of Anthropology: Maurice Godelier's Work in Context, edited by **Laurent Dousset** and **Serge Tcherkezoff**, Berghahn Books, 2012.

Shipwrecks of the Southern Seas, by **Craig Cormick**, Pier 9, 2011.

West Australian Gold Towns and Settlements, by **Ian Murray** and **Phil Bianchi**, Hesperian Press, 2012.

ARTICLES and ESSAYS

“Anatomical Basis of Variation in Mesophyll Resistance in Eastern Australian Sclerophylls: News of a Long and Winding Path,” by **Tiina Tosens**, **Ulo Ninemets**, **Mark Westoby**, and **Ian J. Wright**, *Journal of Experimental Botany* (2012), 63:14 (2012), pp. 5105-5119.

“Anatomy and Lignin Distribution in Reaction Phloem Fibres of Several Japanese Hardwoods,” by **Kaori Nakagawa**, **Arata Yoshinaga**, and **Keiji Takabe**, *Annals of Botany* 110:4 (2012), pp. 897-904.

“Charles Darwin, Beagle, the Discovery and Naming of Port Darwin,” by **Alan Powell**, *Journal of Northern Territory History* 23 (2012), pp. 77-93.

“Cryopreservation of *in vitro*-Propagated Protocorms of *Caladenia* for Terrestrial Orchid Conservation in Western Australia,” by **Patcharawadee Watanawikkit**,

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“Genome Size and Chromosome Number in the New Zealand Species of *Schoenus* (Cyperaceae),” by **Navdeep Kaur, Paul M. Datson, and Brian G. Murray**, *Botanical Journal of the Linnean Society* 169:3 (2012), pp. 555-564.

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BOOK REVIEWS



Michael J. Balick, et al. *Ethnobotany of Pohnpei: Plants, People, and Island Culture*, Honolulu and New York: University of Hawai‘i Press and the New York Botanical Garden, 2009. Pp. xi + 585. Index. Tables. Maps. Color Photos. Paper US\$28.00 and ISBN 978-0-8248-3293-3 and 9-80824-832933.

I first visited Pohnpei in the early 1970s. For many years prior to my initial sojourn to that Eastern Caroline high volcanic island in Micronesia, it was known to the outside world, and even within the island, at least among the expatriates, as Ponape.

This nomenclature was a reflection of the cultural interpretation by Micronesia’s foreign rulers, the last of which was the United States (1947-1986), whose political, cultural and economic control of what was known as the Trust Territory of the Pacific followed after the long lasting colonial occupation by Spain, Germany and Japan. All of these foreign interlopers perceived themselves as “benefactors of the people whose islands they appropriated” (Hezel 1995).

Even though there were many inconveniences experienced by the islanders throughout much of Micronesia that was under colonial rule, the foreign powers believed that they brought the “blessings of civilization,” such as a rise in copra production, eradication of intestinal parasites, the introduction of democratic elections, or at least some years of formal Western-styled education. But often there were severe encroachments on the ways of traditional life of the islanders including those living on Pohnpei. Many of these intrusions were seen as unjustifiable by the native people. Although the islanders adjusted to these cultural and even physical changes in islands in numerous and sometimes creative ways, they also became increasingly dispossessed of their familiar cultural landscape with ramifications that persisted and became more aggravated during much of the colonial period. The islanders became as Francis X. Hezel described them: “strangers in their own land.”

As a result of this varying estrangement from their own environments it has been difficult for the native peoples to maintain many of their traditional customs including their use of their natural and cultural resources. This trend has continued during the period following independence from the United States when Pohnpei and

the other liberated islands of Micronesia, began to govern themselves again. Among the more important aspects of cultural change has been the decline and often loss of self-sufficient use of plants to feed, house, provide fuel and maintain physical and mental health of the people.

The book under review has addressed the decline of traditional Pohnpeian ethnobotanical knowledge that has been such a mainstay of their island culture and survival in a very meaningful manner while integrating a remarkable degree of ethical correctness and scientific rigor. Michael Balick and his extraordinarily large group of local and outside expert collaborators have produced a significant model for how ethnobotanical research in traditional societies should be carried out; more directly this large and dense volume provides an astonishing amount of critically evaluated information about the native and scientific knowledge of plants, people and island culture on Pohnpei.

The research project that led to this book started in 1997 when the compiler and editor, Balick made a short field trip to Pohnpei, by then one of four states within the Federated States of Micronesia. Over the years following that brief visit many other excursions to that island involved numerous ethnobotanical and floristic studies of the island that led to the publication of this large compendium volume. Balick tells us that “there is still a great deal to learn from lessons of the past” in spite of the societal changes that have come with the adoption of more modern lifestyles and beliefs, especially in terms of Pohnpeian traditions involving the use of plants and respect for their insular environments. Balick defines his research group’s main goal: the production of “a single reference intended to be used in support of Pohnpeian culture, biodiversity conservation, and resource management.” This goal and the resulting publication discussed here are of special interest to me and my own research group that spent much less time on Pohnpei, but also made attempts to document and celebrate the traditional knowledge of several Micronesian cultures, including that which developed over the centuries; our focus on the conservation of biodiversity and resource management was generally similar to that of Balick and his collaborators with an emphasis on the production of several educational publications.

During an eight year period from 1988 to 1996, a team of local and foreign researchers, including myself as the lead organizer and author, carried out a series relatively rapid assessment studies for six areas in Micronesia including Palau, Pohnpei, Kosrae, The Marshall Islands, Chuuk and Yap. These studies resulted in the publication and dissemination of six environmental textbooks focused on traditional use of plants and long term resource conservation; the books were aimed at assisting local teachers and resource managers with their efforts to educate the people of

their respective cultures and celebrate the wealth of local traditional botanical and ecological knowledge (see references). However, our efforts with these six textbooks reached a relatively limited audience and need much additional development with attention to the respective ethnobotanical traditions of the different Micronesian cultures. Therefore, it pleases me to say that the *Ethnobotany of Pohnpei* book has significantly increased the documentation and interpretation of the great wealth of traditional human-plant relations on Pohnpei. Even though the authors of the Pohnpei book acknowledge that there is much that remains to be learned and passed on to future generations, it is hoped that this collective, ethically commendable, extensive research within Pohnpei and beyond into other areas of Micronesia will continue and result in more studies such as the one under review here; in fact this is well underway for the Republic of Palau where Balick and his team of local and foreign contributors have been working for some years now as part of their Plants and People of Micronesia Project.

Before I describe and comment on the main features of this book as well as its limitations, it is important to address and acknowledge some of the key methodological aspects of this book that make it special, especially in terms of ethnobotany. As Balick states in his preface to the book, in order to best protect the contents of this book from inappropriate exploitation, the Pohnpei Council of Traditional Leaders (Mwoalen Wahu Ileilehn Pohnpei) have been given the copyright to this large, information-rich volume dealing with traditional knowledge:

The Pohnpeian people, both living and from previous generations, are the owners of the information presented in this book. Pohnpeian traditional knowledge has been carefully developed since the arrival of the first people to the island, who, through their hypothesis-driven experimentation (e.g., are all red fruits sweet and edible?), deliberately constructed the body of traditional botanical knowledge and practices that comprise Pohnpeian ethnobotany.

Balick's team specifically avoided presenting sensitive information, especially family-based secrets, and thus they acknowledge that this book is generalist in its overriding scope. However, Balick, speaking for his group of collaborators, makes a cogent case for the value of traditional plant use knowledge that his team has brought together, and overall this is a wonderful contribution to Pacific Island studies, including those focused on traditional knowledge, the flora of the region, resource conservation and Micronesian ethnobotany.

Although there are many benefits that will result from this rich Pacific Island ethnobotanical resource, there are limitations regarding the book that need to be

addressed, and frankly, Balick and his team have acknowledged many of these. For example, of the more than 1,000 plant species known from Pohnpei, their team only identified local names and uses for 44% of these. As noted by the authors, their book deals with only “a small fraction of the rich body of ethnobotanical knowledge that exists on the island and its outlying atoll; much more work of this type must still be undertaken.” Other positive and negative aspects of this book will be reviewed as we discuss the chapters in order of their appearance.

Ethnobotany of Pohnpei comprises nine chapters which have uneven length with one chapter (chapter 8) dealing with local uses of plants and fungi on Pohnpei encompassing more than half of the book. The first Chapter (authors: Michael J. Balick, David H. Lorence, Dana Lee Ling, and Wayne Law) presents an introduction to the high volcanic island and its regional setting in the Caroline Islands of eastern Micronesia; this chapter also outlines the vegetation diversity and importance of natural and cultural resource conservation on Pohnpei and finishes with a description of the methods and goals of the ethnobotanical project that led to the book’s production. Chapters 2 through 6 focus on what might be referred to as cultivated “keystone” plant groups, including yams, breadfruit, bananas, taro, and sakau (kava) that have long been essential to sustaining Pohnpeian culture. However, as Balick points out early on, each of these five plant group chapters has been written by different sets of authors providing a somewhat limited perspective on these culturally significant crops based on the specific writers’ particular knowledge and therefore are not meant to be strictly comparable in their design and subject description. Nonetheless, each of these chapters do deal with cultivar diversity in the past, present and future, and because of this and other scientific and scholarly aspects should attract specialists of several kinds to the specific expertise that the individual chapter authors bring to their respective discussions.

Chapter 2 (authors: Bill Raynor, Adelino Lorens, and Jackson Phillip) deals with yams (*Dioscorea* spp.), especially *D. alata*, that is referred to as the most important subsistence root crop on Pohnpei, “although its importance to the prestige economy as a major component of feasts and competitions far outweighs its value as a food crop.” Unfortunately, much of the great cultivar diversity of yams, including *D. alata*, has been lost in recent times. For example, of the 179 yam cultivars recorded on Pohnpei, a few decades ago, only a fraction of them occur today in local gardens and plant collections; the others have disappeared due to disease or basically have been dropped from cultivation. This chapter will be helpful for cross-cultural comparative descriptions of the uniquely high ranking of yams for food and/or prestige in a number of traditional Pacific Islands cultures; in my mind this theme harks back to the extremely long heritage of yam-human relationships, from

our origins in Africa to our migrations far and wide in the Old World tropics, from our hunter and gatherer roots (as in yams!) to our rise as farmers. Michael Balick's outstanding photo of a very large feast display yam (*D. alata*) topped by bird's nest (*Asplenium nidus*) fern fronds is a classic, symbolizing the high rank of this plant in traditional Pohnpeian culture, along with kava and pigs.

Chapter 3 (authors: Diane Ragone and Bill Raynor) deals with breadfruit (*Artocarpus altilis* and *A. mariannensis*), the "principal component of indigenous agroforestry systems on Pohnpei." This discussion, presented by Ragone, the major Pacific authority on the horticulture and ethnobotany of *Artocarpus* species, and Raynor, the locally-based agroforestry and conservation biology expert, is valuable for its local perspective and for comparison of this widely cultivated keystone multipurpose plant in the tropical Pacific and beyond. Breadfruit is known to Pohnpeians as a gift of the gods as it takes relatively little work to get it started from a cutting and then provides abundantly if seasonally for generations of people. This chapter presents a very nice discussion of the cultivation and use of this extremely useful tree.

Chapter 4 (authors: Lois Englberger, Adelino Lorens, Amy Levendusky, and Jeff Daniells) deals with the most widely cultivated and used local food crop which is not limited by seasonality like yams and breadfruit. This treatise on locally grown bananas draws heavily upon the dietary expertise and experience of the lead author and her colleagues, and due to the wealth of nutritional data available on Pohnpeian banana cultivars, based on the research of these authors, this key health-related information is "presented in great detail."

Chapter 5 (authors: Lois Englberger, Kipen Albert, Adelino Lorens, and Amy Levendusky) deals with the taro species utilized on Pohnpei, of which three, *Cyrtosperma merkusii*, *Colocasia esculenta*, and *Alocasia macrorrhizos*, have long been and still are among the important food and/or medicinal plants of Pohnpei with *Cyrtosperma* traditionally the most significant food crop with great cultural importance on the outer atolls of the region. The authors of this chapter point out that lifestyle changes have resulted in a change in the diet to imported foods overall on Pohnpei, especially to consumption of rice, and thus leading to a general neglect of all types of taro, especially *Alocasia*. The authors lament this general trend since the edible taros contain more than "just starch" with their rich micronutrient content.

Chapter 6 (authors: Michael J. Balick and Roberta A. Lee) deals with the kava plant (*Sakau*, *Piper methysticum*) certainly one of, if not the most important "cultural keystone" plants in Pohnpeian culture past and present. Having been a co-author of

a general survey book on the natural and cultural history of kava (Lebot et al. 1992, 1997), a cultigen most probably domesticated in Remote Oceania and spread far and wide to high islands in this region, I can speak with some experience on the relative importance and broad use of this plant in Pohnpei which has expanded in cultivation that has significant impact on the native rainforest in recent decades (also see Merlin and Raynor, 2004, 2005). The authors of this chapter have done a fine job to outline the great cultural significance of this true narcotic psychoactive drug plant and its varying use from ancient to modern times. Cautionary comments regarding the clandestine cropping of kava are presented in chapter one. This is crucial to the long term sustainability of Pohnpei since the cultivation of Kava in ecological situations where it leads to a decrease in forest cover, threatens endemic species, and generally harms the crucial upland watershed; in response to forest decline and the threats this presents, there has been a recent rise and implementation of a “grow low” campaign to eliminate the upland kava cultivation which is largely responsible for the decline of native forest cover from 43% of the island in 1975 to 12% in 2002 as shown in a series of three maps in this book.

Chapter 7 (author: Roberta A. Lee) reviews the traditional ethnomedical system of Pohnpei that ensured the health of local people for centuries, but now is an endangered art and science due to the decline in the number of knowledgeable practitioners. Nevertheless, many aspects of contemporary ethnomedicine in Pohnpei have become integrated with modern Western medicine and still provide significant value for the Pohnpeian people, not only for enhancing health care on this remote island but also as a force supporting traditional culture as well as preservation of ecological and biological diversity.

Chapter 8 (authors: 14 “Pohnpeian ethnobotanists” with Michael J. Balick) is a very lengthy compilation of the local names and uses of plant species that relied on over approximately ten years of fieldwork on Pohnpei and a very thorough review of the literature. As noted earlier, this chapter makes up over half of this large book. Although the authors refer to this chapter as “a limited introduction to general knowledge about plant use on Pohnpei,” it is certainly the most extensive ethnobotanical survey ever completed for Pohnpei or any other individual island in Micronesia, and thus will serve as a major resource for ethnobotanists, botanists, geographers, historians, anthropologists and other interested scholars. The authors point out that they “intentionally avoided collecting information considered secret or that would negatively impact a person’s practice as an ethnomedicine specialist by reporting in detail on their recipes or techniques.” From the beginning of their research project, the authors relied on the advice and consent of traditional leaders and knowledgeable Pohnpeians, and deliberately focused “on what was considered

generalist knowledge by the individual, family, or community, as well as compile information from the available literature.” Even though much more ethnobotanical knowledge has yet to be documented, the authors (local and foreign) were fortunate to have access to many family record books providing traditional plant use information and in turn have encouraged local people “to begin such recordkeeping, intended for future generations.” It needs to be noted that in its present form none of the plants included in Chapter 8 have reference to their life form (e.g., tree, shrub, vine, herb) and all lack a brief botanical description. This makes it somewhat difficult for the non-Pohnpeian or even the trained botanist or other natural scientists to know much about the basic botany and ecology of these species. A second edition should definitely address this issue; however, I assume that the authors decided to leave out these aspects of each plant because of the large size and heavy weight of the book even in its present edition as a paperback. I will return to the issue of length and mass of this volume after a brief description of the final chapter.

Chapter 9 (authors: David H. Lorence and Timothy Flynn) provides a “preliminary checklist of the native and introduced flora,” which the authors refer to as offering “the foundation for a proper understanding of the plant-based knowledge and practices of Pohnpei.” Each of the vascular species listed in this chapter is annotated with information indicating the origin of the plant; in other words whether the species is endemic, indigenous (native but not unique to Pohnpei), or introduced, and in the case of the alien species, “where relevant,” the level of invasive threat of those plants to the native island flora. This chapter provides the most comprehensive taxonomic account of the plants of Pohnpei, and thus supersedes the only other flora (Glassman 1952) with a major update and expansion of botanical classification for the island. The authors point out that the rugged terrain of much of Pohnpei has yet to be fully explored by botanists and that future discoveries of new species present of the island will be discovered and recorded; they also note the unfortunate loss of much nature habitat in recent times due to the expansion of kava cultivation into the remaining native rain forest and its consequences for the native vegetation and wildlife (also see Merlin and Raynor 2004, 2005). In any case, this chapter will serve as a key reference for botanists interested in Pohnpei and other tropical Pacific high islands.

I am of the opinion that chapters 8 and 9 might have been better kept separate as a second volume in a two book set. I suggest this because of the literally great weight of this book, even in its paperback form. With its almost 600 total pages it is cumbersome to read comfortably without a supporting platform. But with such a prop the volume becomes a very useful resource reference. Nevertheless, in any future editions which may follow the same one volume format or separate chapters 8 and 9 as a second companion volume, each of the plants described in chapter 8 should

have reference to their life form (e.g., tree, shrub, vine, herb) and include a brief botanical and ecological description which is lacking and makes it somewhat difficult for the non-Pohnpeian and perhaps many Pohnpeians living on Pohnpei or abroad to know much about the basic botany of these species. On the other hand, when this 300 plus page chapter is included with the rest of the book, increasing its length with additional biological information would only increase the literal load with which the reader has to deal; this underscores my suggestion that any subsequent edition consider a two volume set separating the last two chapters from the subsequent ones. It should also be noted that this book, in its present form, includes a large number and fine array of photographs that greatly enhance its presentation and content. Indeed, the lush set of illustrations is one of several highlights of this book.

In sum, *Ethnobotany of Pohnpei* is the first major literary product of the “Plants and People of Micronesia Project” under the thoughtful direction of Michael Balick, one of the scientific leaders of modern ethnobotany and a strong advocate of ethical research methodology and biological and cultural diversity conservation. This information-rich volume, as the authors argue, will be a valuable resource for “many constituencies including those working in science, culture, conservation, resource management, public health, and education.” I certainly hope so. I also anticipate that this book will serve as an outstanding model for other in depth, regional ethnobotanical studies in the future, and that will be equally scientifically and culturally sensitive. I do want to repeat my suggestion that the authors and publisher consider subsequent printings as a two volume masterpiece compendium of plant and people relationships of a remote Micronesian high volcanic island. This would most likely increase the use of this remarkable work and facilitate its applications for the people of Pohnpei and the various scholars and scientists who study ethnobotany. In any case, if this is not financially feasible, an ebook version would certainly facilitate the availability of this fine compendium. Readers should note that the \$28.00 paperback cost is very reasonable for a volume of this length containing so many color photographs.

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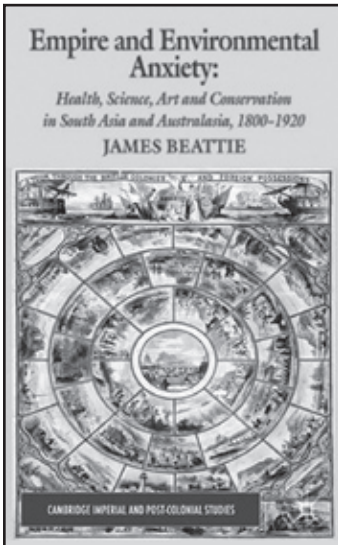
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James Beattie, *Empire and Environmental Anxiety: Health, Science, Art and Conservation in South Asia and Australasia 1800-1920* [Cambridge Imperial and Post-Colonial Studies], Basingstoke: Palgrave MacMillan, 2011, Pp. 312. 24 B&W Figures and 1 Table. US\$85.00 ISBN 0230553206 and 978-0230553200.

James Beattie's book is both a history and an offering to our present environmental crisis. In our "time of increasing environmental anxiety," he argues, we need to understand its origins in "the experience of empire" (p. 214).

The scope of this book is defined by empire, rather than environment. India, the Australian colonies and New Zealand were connected by multiple imperial exchanges, and it is these that have defined Beattie's imagined trans-national place. South Asia and Australasia were also connected biogeographically and in travel writings (for example those of Alfred Russel Wallace) via the Indian archipelago (including present day Malaysia and Indonesia), but these environments were not so much sources for 'imperial' stories, which often focus on forestry, medicine and planning for British settler societies. Perhaps the Dutch East Indies was a rather too different empire to be part of the comparison Beattie creates? Or perhaps, rather the comparable lessons of the British East India company have not become the "environmental history" of our own era, a discipline somewhat biased to "seeing like a state" (in James Scott's terms), and seldom like a corporation.

Beattie's important contribution is to offer a synthesis of the literature in "environmental" history with that of traditional imperial history. Richard Grove, one of the sources he draws on extensively in his chapter on *Scottish-trained doctors, environmental anxieties and Imperial development 1780s-1870s*, was a pioneer of imperial/environmental history, and Beattie acknowledges this legacy. A decade and a half on from Grove's *Green Imperialism*, it is good to revisit the connections, and Beattie adds much from the rapidly expanding historiography of the environment to this confluence of fields, particularly in his opening chapter, which is a very extended

literature review of recent developments in environmental history. Nonetheless, Beattie's definition of sources and issues is firmly imperial: it is the settler colonies – the places that have become the big cities of Australasia, and key imperial sites in India like Ootacamund (now Udhagamandalum), and other 'hill stations' – that frame his arguments about 'environmental anxiety.'

Beattie's New Zealand origins give him an original perspective on issues such as forestry, sand drift and health. Where sand drift discussions, for instance, usually concern interior hot places (India, desert Australia, and South Africa), the fact that sand drift was a problem for temperate New Zealand was new for me. New Zealand's major 'Sand Drift' legislation of 1903 was about the loss of agriculture and even forestry lands to sand drifts as denuded dunes moved inland from the sea. Western Australia and the Cape Colony also had this sort of erosion, but it was interesting to see the erosion of South Australia's interior and the Punjab coupled with that of Christchurch peninsula and Dunedin. In particular, the vivid image of the Christchurch pine plantation choked by sand (Fig 7.7) reminded me of similar issues in Mt Gambier in a slightly later period – yet in the Australian context, coastal erosion was not treated by the same 'experts' as interior sand drift. This 'transnational' approach has the potential to open up new parallels even *within* the nations compared.

The strongest new material in this book, in my view, concerns urban planning and city planting. The Australian eucalypt was exchanged as a cure for unhealthy miasmas, redeeming city parks and green spaces, and becoming part of the 'ozone-producing' green areas planted into New Zealand towns and cities in the 19th century (p. 65). They were also used in India as a defense against fevers. Often environmental histories ignore the urban – or are exclusively about one city – but in *Empire and Environmental Anxiety*, urban environments are just part of 'the imperial environments' under comparison. Cities are not just part of the chapter on Imperial Health, but also the one on Colonial Aesthetic Anxieties, and reappear throughout. Although Australian sources on agricultural development and forestry typically ignore cities, the smaller scale, and the intermingling of city and country in New Zealand demands a rapprochement and Beattie uses this to offer new insights for places beyond his homeland.

The two 'empires' that Beattie examines closely, the empire of Scottish medicine, and the empire of German forestry, are both important elements under the bigger British Empire umbrella, but deserve the separate treatment that these two chapters offer. There is much to reflect on in comparing the way imperial masters mapped themselves onto the very different ecological canvases of Australia, New

Zealand and India. ‘Anxiety’ is a nebulous concept – very different in different places and times, but its elasticity enables the revelation of some intriguing comparisons in *Empire and Environmental Anxiety*.

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