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Easter Island: Scientific Exploration into the World's Environmental Problems in Microcosm. Edited by John Loret and John T. Tanacredi, 2003 (Norwell, MA: Kluwer Academic Publishers) [xii + 240p, with a subject index, eight colour plates and numerous bw photographs and line drawings]. Price £60 (hbk). ISBN 0-306-47494-8.

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Book review

Easter Island: Scientific Exploration into the World's Environmental Problems in Microcosm. Edited by John Loret and John T. Tanacredi, 2003 (Norwell, MA: Kluwer Academic Publishers) [xii + 240 p, with a subject index, eight colour plates and numerous bw photographs and line drawings]. Price £60 (hbk). ISBN 0-306-47494-8.

John Loret (Introduction) describes his initial meeting with Thor Heyerdahl in 1954 whilst collecting algae in Grand Canary. This led, in 1955, to his getting a job with Heyerdahl on an archaeological expedition to Easter Island. At this time, the island population was around 900. It had been a sheep farm for over 100 years (until about 1963, when the population had grown to 2500). In 1968, NASA, as part of the space shuttle programme, constructed a landing field capable of taking the largest jets. The resulting tourism forced the island community to shift “from a primitive way of life into a modern society” in 40 short years. Becoming acutely aware of these changes in 1991, Loret (by now Executive Director for the Science Museum of Long Island and President of the Explorers Club) put together an interdisciplinary research team to work on Easter Island.

Part 1 (Documenting the World Heritage Significance of Easter Island) has a chapter by Loret raising the issue of whether Easter Island represents an ecological tragedy for the colonizing Polynesians. They seemed to have largely destroyed the flora and fauna of the island. Concomitantly, they appear to have lost their traditional maritime skills and seemed to turn to eating each other and destroying their rivals' statues (moai). “Rapa Nui National Park, Easter Island, Chile: An Eco-Tourism Outline with Issues and Suggestions” by Tanacredi et al. looks at putting into place the efficient infrastructure (human and otherwise) needed “to preserve the world heritage of Easter Island”. It looks at issues relating to cultural artefacts and natural resources as well as utilities and transport. “Documenting Petroglyphs on Easter Island” by Cliver describes using photogrammetry with computers to reveal hidden detail in rock carvings found throughout the island. “The Corals and Coral Reefs of Easter Island—A Preliminary Look” by Hubbard and Garcia concludes that a limited number of coral species are found here but their abundance is surprisingly high. They also suggest that the corals may be particularly prone to anthropogenic stress and to elevated temperatures lower than those associated with coral bleaching events elsewhere.

Part 2 (Ecological Considerations and Restoration/Protection Efforts of Natural and Cultural Resources [sic]) has a chapter entitled “Rapid Vegetational and Sediment Change from Rano Aroi Crater, Easter Island” by Peteet et al. It describes taking an 8 m sediment core and using it to examine changing patterns of pollen and spores over the late glacial to Holocene transition. The results suggest the vegetation changes on this small island over this period were dramatic. “Mata Ki Te Rangi: Eyes Towards Heaven” by Beck et al. uses radiocarbon dating of artefacts (including coral moai eye inserts) to show that most of these items were created between 1100 and 1620 AD. “Stable Isotope Record of El Niño-Southern Oscillation Events from Easter Island” by Mucciarone and Dunbar describes an initial study of isotope ratios of $^{18}\text{O}/^{16}\text{O}$ and $^{13}\text{C}/^{12}\text{C}$ in five *Porites* coral cores from four locations. El Niño events are reflected in the coral oxygen isotope values and the cores have the potential to span at least 250 (perhaps as much as 400) years. “Prehistoric Destruction of the Primeval Soils and Vegetation of Rapa Nui (Isla de Pascua, Easter Island)” by Mann et al. shows that widespread burning of the forest and soil erosion began in this region only after 1200 AD with a switch to dry land farming. “The Endemic Marine Invertebrates of Easter Island: How Many Species and for How Long?” by Boyko concludes that “Although it [the invertebrate fauna] is markedly less diverse than those faunas of other tropical Pacific Islands, it contains a remarkably high percentage of endemic species for such a small and geologically young landmass”. He suggests they will need protection, particularly from the tourist trade. “Finfish in the Rano Kau Caldera of Easter Island” by Magliulo-Cepriano et al. describe the fish caught with a seine net in the freshwater lake occupying the crater of the largest inactive volcano on the island. All proved to be *Gambusia affinis* (Western mosquitofish), presumably introduced to control mosquitoes.

Part 3 (Technological Applications to Protect Biological and Cultural Artifacts) has a chapter entitled “Aerial Surveys of Isle De Pasqua: Easter Island and the New Birdmen” by Hemm and Mendez describing using a two-man powered parachute to photograph sections of the island. “Easter Island Under Glass: Observations and Conversations” by Kirksey considers the inhabitants of the island (numbering some 3000 at the time of writing), the over 10,000 tourists arriving annually and the need to protect the artefacts (e.g. protective coatings on the moai?). “Mapping the Poike Ditch” by Reanier and Ryan describes this feature as “a discontinuous linear string of 20 or so elongated depressions that stretch for nearly 2 km across the base of the Poike peninsula”. The “ditch” actually appears to be the ancient western coastline of an island linked to the rest of Easter Island by volcanic activity.

As Loret says “This book now brings together the results of the three expeditions, identifies new areas of research, and hopefully will inspire aspiring scientists to revisit this amazing island to explore and demystify this timeless enigma of human history.” It is particularly interesting as it details a wave of historical and current anthropogenic effects on a small, remote island.

Paul F. Brain