Review: Acid Rain Science and Politics in Japan: A History of Knowledge and Action Toward Sustainability

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Kenneth E. Wilkening. *Acid Rain Science and Politics in Japan: A History of Knowledge and Action Toward Sustainability* . Cambridge, MA: MIT Press, 2004. 322 pp. ISBN 0-262-23235-9 (paper). US$19.00

Acid deposition is a problem that results in the release of hydrogen ions. The primary source of hydrogen ions are sulfuric and nitric acids that are secondary pollutants formed from the primary pollutants such as sulfur oxides (SO x) and nitrogen oxides (NO x). The major contributors of these pollutants are power plants, typically coal-fired power plants, and motor vehicles. Acid deposition has a long history as an international environmental issue—over thirty-five years in Europe, over thirty years in North America and now over fifteen years in East Asia.

Japan has experienced three pollution-related sustainability crises since the end of the Edo period. The first occurred around the turn of the century and was related to copper mining. The second occurred after World War II and was related to massive industrial pollution. And the third is the present day global crisis, being experience by Japan and the rest of world, in which pollutants are exchanged between all nations and transported to the furthest reaches of the earth.

Acid Rain Science and Politics in Japan is the first book to trace in detail both the science and politics of an environmental problem in Japan from its origin in the country's opening to the West in the late 1800s to the present. It is certainly the first related to the acid deposition problem.

The book is divided into four sections. The first section introduces the general set of concepts, such as environmental policy process and expert community activism, used to analyze the science-politics nexus. These concepts are employed in the remainder of the book to track and explain the relationship between science and policy related to the acid deposition problem in Japan.

The next section, chapter 3, discusses nature, culture, and the acid deposition problem in Japan. It begins with a brief introduction to the acid deposition problem in general. It continues with an overview of elements of Japan's natural environment and culture that are relevant to its acid

deposition problems. The swath of history between 1868 and the present (circa 2000) is divided into five environmental eras (prewar industrialization era, postwar reconstruction era, domestic environmental revolution, transition era and global environmental era) and six acid deposition periods (copper mines and early precipitation chemistry, flowering of precipitation chemistry, reign of air pollution, moist air pollution, ecological acid deposition research and East Asian transboundary air pollution). The second-to-last section, chapters 4-9, discusses in detail each of the six acid deposition periods.

Finally the last section, chapter 10, synthesizes and summarizes what was learned in the process of analyzing Japan's acid deposition history, and draws lessons that might be applied to the challenge of creating sustainable societies in Japan, Asia, and the rest of the world. An appendix describes the present state of acid deposition science in Japan.

The book is primary directed to scholars in the fields of environmental science (especially scientists studying acid deposition) and political science (especially researchers analyzing the role of science in environmental policymaking). It also targets specialists in history (especially historians of Asian science) and Japanese culture (especially students of Japan's relationship to nature).

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