

Sediments of Time

Part 1

Environment and Society
in Chinese History

中國環境史論文集
積漸所至

Edited by

Mark Elvin and Liu Ts'ui-jung

Sediments of Time

ENVIRONMENT AND SOCIETY IN
CHINESE HISTORY

Part I

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China's environmental problems long predate the modern era. Official policies, sometimes local, sometimes on a massive scale, have often caused as many difficulties as they have solved. Yet the Chinese have always been aware of their environment. The Chinese written record on environmental matters is probably unique in its continuity and depth in time. Historically, Chinese conceptual representations of nature in official documents, literature, and popular thinking have both reflected patterns of human action in a changing environment and conditioned them.

This collection of essays is the first relatively comprehensive survey of the environmental history of China. Written by some of the world's leading Western and Chinese experts, *Sediments of Time* crystallizes a new and distinct field of scholarship that studies what happens when human social systems interact with the rest of the natural world. This book shows how deforestation, land reclamation, settlement, and water control, when combined with an ever-changing climate, shape a distinctive and often precarious environment. Pioneering essays explore new methodologies of historical environmental research; others offer comparative perspectives setting China in the context of the West and Japan, and describe the impact of the early modern ecological transformation on the spread of diseases such as cholera and tuberculosis. *Sediments of Time* is indispensable for anyone who wants to understand either the foundations of modern China or the deeper origins of many of China's most daunting contemporary challenges.

SEDIMENTS OF TIME

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Peace does not become peace in a single day; a crisis does not become a crisis in a single day. Both become what they are through a gradual accumulation.

Jia Yi

Biography of Jia Yi, j. 48 of the *Han Shu* [History of the Han]

安者非一日而安也。危者非一日而危也。皆以積漸然。

漢書 卷四十八 賈誼傳

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Preface

The chapters of this book are, with one commissioned addition, revised versions of the majority of the papers presented to the Conference on the History of the Environment in China held December 13–18, 1993, at the Silvermine Beach Hotel on Lantau, Hong Kong. This conference was jointly sponsored by the Research School of Pacific and Asian Studies of the Australian National University and by the Institute of Economics of the Academia Sinica. The greater part of the funding was provided by the Chiang Ching-kuo Foundation for International Scholarly Exchange, which has also made a generous grant toward the costs of publication. We would like to express our deep gratitude to the foundation and to our two institutional sponsors. Together they made possible an unprecedented event that may be reasonably described as the crystallization of a new field in Chinese and historical studies.

A somewhat fuller Chinese-language version is already in print, under the title 積漸所至。中國環境史論文集, edited by the same editors and published by the Institute of Economics of the Academia Sinica (1995). Reference should be made to this version for the four papers that, to our great regret, were precluded for reasons of space from inclusion in the present already massive volume. To the authors of these papers, our colleagues Professor Rhoads Murphey, Dr. Janice Stargardt, Professor Carney Fisher, and Dr. Alan Lu Yun, we should like to express our apologies and our continuing appreciation of their valuable and important work. For further information about initiatives stimulated by the conference and other current work in Chinese environmental history, readers should contact Professor Helen Dunstan 鄧海倫 at the School of Asian Studies, University of Sydney, Sydney, Australia 2006 (e-mail: helen.dunstan@asia.su.edu.au), with a request to subscribe to the *Chinese Environmental*

History Newsletter, specifying the English-language or Chinese-language version.

We should also like to thank all those who helped us at the conference. Special gratitude is due to Professor Wang Gungwu 王賡武, then Vice-Chancellor of Hong Kong University and an authority on the environmental problems faced by Hong Kong, who inaugurated our proceedings with a memorable opening address. Likewise, our two very knowledgeable doctoral students, Liu Shih-yun and Lewis Mayo, worked very hard at countless matters of detail on our behalf. Both the academic editors would like to pay tribute to Walter Havighurst, our press copy editor, for his painstaking but tactful reshaping of virtually every page of this book in the interests of increased clarity and internal consistency. We appreciate also the contributions of our production editor, Janis Bolster, in dealing with a book composed of exceptionally heterodox components. It is a pleasure to thank Mr. Andrew Johnson of the White Horse Press (UK) for kind permission to reproduce the photograph by Mark Elvin (Figure 10.12 herein) that originally appeared as the cover of the first issue of *Environment and History* (1995). Finally, our warmest thanks go to Keith Mitchell and his colleagues Ian Heyward and Neville Minch at the Cartography Unit of the Research School of Pacific and Asian Studies, who so expertly prepared our maps, and – of course – to Frank Smith, Executive Editor for the Social Sciences at Cambridge University Press, New York, who attended the Conference and provided us there and afterward with many useful comments and much encouragement.

Liu Ts'ui-jung
Mark Elvin
January 1997

Notes on Chinese Characters, Their Roman Transcription, and Terminology

The normal form of the Chinese characters used in the text and notes is the traditional or “full” form (*zhengti zi* 正體字, *fanti zi* 繁體字). The “simplified” forms (*jianti zi* 簡體字) are used in the following cases: (1) for personal names of present-day authors who have customarily worked in the People’s Republic of China, or who have to our knowledge expressed a preference for their names to be so written, and (2) for the titles of books and periodicals produced in the People’s Republic of China since the changeover to the more or less general use of the simplified forms.

The transcription of Chinese characters into the Roman alphabet follows the *pinyin* system, with a handful of exceptions. Present-day place names in the Republic of China on Taiwan and in Hong Kong are kept in their customary contemporary forms throughout, as, for example, “Taipei.” Personal names of living or recently deceased Chinese are initially given in their personally preferred form if this is known to us or can reasonably be inferred, with the pinyin form added in parentheses.

These rules work fairly consistently, but there are a few ambiguous areas where the editors have been obliged to make what may seem to be arbitrary choices. We hope that our readers will forgive us if they disagree with some of our decisions.

The rules for the joining, separating, and hyphenating of groups of pinyin syllables have never, to our knowledge, been satisfactorily systematized. Rather than try to invent such rules ourselves, we have therefore on the whole followed the preferences of our contributors in these matters. This has resulted in some minor inconsistencies between chapters from different hands; we trust these will not give offense to purists.

As regards the pronunciation of Chinese words, nonsinological readers may wish to note that, while the vowel sounds in standard modern Chinese

are mostly close to those in Italian (with an *ü* that approximates the vowel in the French *rue* and an *ia* that is not far from “ye” as in English “yet”), the approximate values of some of the consonants are not immediately obvious:

c is roughly “ts” and *z* roughly “dz”

q is roughly “ch” before a yodized vowel (a vowel preceded by a brief *i*), the voiced form being *j*

zh is roughly “dj” before a nonyodized vowel, the unvoiced form being *ch*,

and *x* is roughly “sh” before a yodized vowel, with *sh* being used before the nonyodized vowels.

There are cases of ambiguity as to where a division should be made between syllables – an example being the bisyllabic name for the city “Xian” (“Shee-ahn”), which is transcribed (apart from the capital letter) like the monosyllabic word for “county,” which is *xian* (roughly “shyen”). There is a (not wholly watertight) rule for the correct division of multisyllabic strings in pinyin: as a default option make the break at the first point in the string at which a valid Chinese syllable is complete; if this does not give the desired result, insert an inverted comma to indicate where the break should come. Thus the province “Henan” is composed of “He + nan.” If it were “Hen + an” (both of which are also legitimate syllables) it would have to be transcribed “Hen’an.” Using this rule requires a prior knowledge of which syllables are legitimate in Chinese; for the convenience of our nonsinological readers we have therefore inserted the inverted comma at points of apparent ambiguity where, for the sinologist, this is not strictly necessary. Hence the reader will find “Xi’an” for the city and “He’nan” for the province. The logically minded will note that the word for “county” would have to be transcribed as *xian’* to avoid ambiguity, something that, so far as we know, has never been done in practice.

This book follows the demographic convention that “immigration” and “emigration,” and cognate terms, are reserved for movements of population across international political borders, while “inmigration” and “outmigration” designate movements within the same national political jurisdiction.

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