

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

**THE SHORTER
SCIENCE AND CIVILISATION IN CHINA**

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

COLIN A. RONAN

**The Shorter
Science and Civilisation
in China**

AN ABRIDGEMENT OF

JOSEPH NEEDHAM'S ORIGINAL TEXT

Volume 1

VOLUMES I AND II OF THE
MAJOR SERIES

China: Its Language, Geography and History
Chinese Philosophy and Scientific Thought



**CAMBRIDGE
UNIVERSITY PRESS**

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge CB2 1RP, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, United Kingdom
40 West 20th Street, New York, NY 10011-4211, USA
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press 1978

This book is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without
the written permission of Cambridge University Press.

First published 1978
First paperback edition 1980
Reprinted 1988, 1993, 1997

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data

Needham, Joseph, 1900-
The shorter Science and civilisation in China.

Bibliography: p.

Includes index.

1. China - Civilisation. 2. China - Intellectual life.
3. Science - China - History. I. Ronan, Colin A. II. Title.
DS721.N392 509 .51 77-82513

ISBN 0 521 21821 7 hardback
ISBN 0 521 29286 7 paperback

Transferred to digital printing 2001

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)**CONTENTS***List of Illustrations vi List of Tables vii Preface viii*

1	Introduction	1
2	The Chinese language	5
3	The geography of China	15
4	Chinese history: (i) The pre-Imperial Ages	19
5	Chinese history: (ii) The Empire of All Under Heaven	33
6	The travelling of science between China and Europe	58
7	Confucianism	78
8	Taoism	85
9	The Mohists and Logicians	114
10	The fundamental ideas of Chinese science	127
11	The pseudo-sciences and the sceptical tradition	191
12	Chin and Tang Taoists and Sung Neo-Confucians	216
13	Sung and Ming idealists and the last great figures of Chinese naturalism	250
14	Buddhist thought	259
15	The Legalists	269
16	Human law and the laws of Nature	276
	Bibliography	307
	Index	312

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

ILLUSTRATIONS

- | | | | |
|----|--------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------|
| 1 | General map of China: x-xi | 17 | Wu Liang tomb-shrine relief
(second century A.D.): 62 |
| 2 | A sound-table: 11 | 18 | Drawing of <i>Artemisia argyi</i> : 63 |
| 3 | The eastward staircase of the
Chinese subcontinent: 17 | 19 | Trade routes between China
and the West: 67 |
| 4 | A <i>li</i> (Shang dynasty): 24 | 20 | Striking water-clock: 70 |
| 5 | A <i>hsien</i> (Shang dynasty): 25 | 21 | Three medical drawings: 73 |
| 6 | A bronze ritual wine vessel
(Shang dynasty): 27 | 22 | Taoist temple at
Chhien-shan: 111 |
| 7 | An Oracle-Bone (Shang
period): 28 | 23 | Segregation Table of the
symbols of the Book of
Changes: 162 |
| 8 | Approximate boundaries of
the Feudal States about the
beginning of the third
century B.C.: 31 | 24 | The legendary Emperor Shun
and his ministers consulting
the oracles of the tortoise-shell
and the milfoil: 193 |
| 9 | The Great Wall near the
Nankow Pass: 34 | 25 | A Chinese horoscope of the
fourteenth century A.D.: 197 |
| 10 | China in the Three
Kingdoms period (A.D. 220 to
265): 41 | 26 | Illustration from a work on
geomancy: 199 |
| 11 | China about A.D. 440: 42 | 27 | The geomancer consulting his
magnetic compass: 201 |
| 12 | Cave-temple of Thang date
(c. eighth century A.D.): 47 | 28 | Diagram of the Supreme
Pole: 233 |
| 13 | A military guardian deity: 48 | 29 | Metamorphosis in Buddhist
iconography: 270 |
| 14 | A Buddha or Bodhisattva: 51 | | |
| 15 | Two-edged bronze-age
swords: 60 | | |
| 16 | Bronze-age ceremonial axes:
61 | | |

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)**TABLES**

-
- | | | | |
|----|------------------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------|
| 1 | Romanisation of Chinese sounds: 6 | 11 | Significances of the hexagrams in the Book of Changes: 174 |
| 2 | The development of Chinese script: 9 | 12 | Inventions mentioned in the Book of Changes: 185 |
| 3 | Sound-combinations in Chinese: 13 | 13 | Association of the <i>kua</i> with the lunar and diurnal cycles in the <i>Tshan Thung Chhi</i> : 186 |
| 4 | Chinese dynasties: 20 | 14 | Association of the <i>kua</i> with the administrative system in the <i>Chou Li</i> : 188 |
| 5 | Some historical chronology: 22 | 15 | Divination methods: 194 |
| 6 | Transmission of mechanical and other techniques from China to the West: 76 | 16 | Rationalisation of Confucian terms by the Neo-Confucians: 245 |
| 7 | Transmission of mechanical techniques from the West to China: 77 | 17 | Chronology of the rise of Buddhism: 260 |
| 8 | Ideographic etymologies of some of the words important in scientific thinking: 128 | 18 | The cycle of the Twelve Nidānas: 262 |
| 9 | The symbolic correlations: 154 | | |
| 10 | Significances of the trigrams in the Book of Changes: 172 | | |

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

PREFACE

There is no doubt that Dr Joseph Needham's 'Science and Civilisation in China' is a monumental piece of scholarship, and one which breaks new ground in presenting to the Western reader a plentifully detailed and coherent account of the development of science and technology in China from the earliest times until the advent of the Jesuits and modern science in the late seventeenth century. It is a vast work that is of necessity more suited to the scholar and research worker than the general reader. Yet so significant are its contents in presenting something hitherto unavailable in the Western world that there is clearly a need for an abridged version written in a way that will make it available to the general reader whether or not he or she has any scientific training. This both Joseph Needham and the Cambridge University Press have realised, and it is my privilege and pleasure to have been invited to do this: privilege because I am thereby a link in the chain of bringing this almost superhuman study to a wider audience, and pleasure since the task, though not a light one, has meant a voyage of discovery for me across previously uncharted oceans.

Many people have helped and encouraged me with this abridgement, but none more than Joseph Needham himself. Consultations with him, often over tea, have always been an education as well as a happy experience, and have helped me to sort out the problems involved in abridging a text so full of information. I am also indebted to Joseph Needham not only for preparing the bibliography but also for going through my entire text with me. We have read it and he has approved it, and although pressure of work on the main text of 'Science and Civilisation in China' has prevented him from systematically introducing new material, between us we have taken the opportunity to add certain fresh facts and make some modifications of emphasis in the light of knowledge gained since the full text of the earlier volumes appeared. We have also made a few corrections here and there. Moreover, we have

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement
of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

Preface

ix

changed the chapter headings and altered the order of subjects so that these are not quite the same as in Volumes I and II of the original. However, this is not in any way a second edition of 'Science and Civilisation in China'; it cannot incorporate the new findings of the past twenty years in, for instance, the pre-history of the Chinese culture-area, or in archaeology. It is essentially an abridgement of the work as it stands now.

The romanisation here adopted remains that of Wade-Giles with the substitution of an *h* for the aspirate apostrophe.

My thanks are also due to Mr Anthony Parker of the Cambridge University Press for introducing me to the idea of acting as abridger, and my warmest thanks are also due to the Press' editor Dr Alan Winter, without whose patience my text would have had more blemishes than it carries at the moment. My deep thanks are also due to Mrs Sandra Welch and Mrs Diana Brodie who have typed the manuscript impeccably in spite of it being peppered with alterations, and not least to my wife Penny who has read through every line and made helpful comments.

Bar Hill, Cambridge
23 December 1976

Colin A. Ronan



Fig. 1. General map of China.

Cambridge University Press

978-0-521-29286-3 - The Shorter Science and Civilisation in China: An Abridgement of Joseph Needham's Original Text, Volume 1

Colin A. Ronan

Frontmatter

[More information](#)

