

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)

Cambridge Studies in Historical Geography 12

THE SUGAR CANE INDUSTRY

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)

Cambridge Studies in Historical Geography

Series editors

ALAN R. H. BAKER J. B. HARLEY DAVID WARD

Cambridge Studies in Historical Geography encourages exploration of the philosophies, methodologies and techniques of historical geography and publishes the results of new research within all branches of the subject. It endeavours to secure the marriage of traditional scholarship with innovative approaches to problems and to sources, aiming in this way to provide a focus for the discipline and to contribute towards its development. The series is an international forum for publication in historical geography which also promotes contact with workers in cognate disciplines.

- 1 Period and place: research methods in historical geography. *Edited by* A. R. H. BAKER *and* M. BILLINGE
- 2 The historical geography of Scotland since 1707: geographical aspects of modernisation. DAVID TURNOCK
- 3 Historical understanding in geography: an idealist approach. LEONARD GUELKE
- 4 English industrial cities of the nineteenth century: a social geography. R. J. DENNIS
- 5 Explorations in historical geography: interpretative essays. *Edited by* A. R. H. BAKER *and* DEREK GREGORY
- 6 The tithe surveys of England and Wales. R. J. P. KAIN *and* H. C. PRINCE
- 7 Human territoriality: its theory and history. ROBERT DAVID SACK
- 8 The West Indies: patterns of development, culture and environmental change since 1492. DAVID WATTS
- 9 The iconography of landscape: essays in the symbolic representation, design and use of past environments. *Edited by* DENIS COSGROVE *and* STEPHEN DANIELS
- 10 Urban historical geography: recent progress in Britain and Germany. *Edited by* DIETRICH DENECKE *and* GARETH SHAW
- 11 An historical geography of modern Australia: the restive fringe. J. M. POWELL
- 12 The sugar cane industry: an historical geography from its origins to 1914. J. H. GALLOWAY
- 13 Poverty, ethnicity and the American city, 1840–1925: changing conceptions of the slum and the ghetto. DAVID WARD
- 14 Peasants, politicians and producers: the organisation of agriculture in France since 1918. M. C. CLEARY
- 15 The underdraining of farmland in England during the nineteenth century. A. D. M. PHILLIPS

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

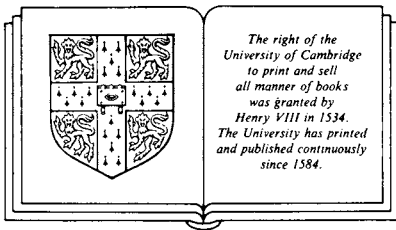
[More information](#)

THE SUGAR CANE INDUSTRY

An historical geography from
its origins to 1914

J. H. GALLOWAY

*Professor in the Department of Geography and Fellow of Victoria College, University
of Toronto*



CAMBRIDGE UNIVERSITY PRESS

CAMBRIDGE

NEW YORK NEW ROCHELLE MELBOURNE SYDNEY

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press

The Edinburgh Building, Cambridge CB2 2RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9780521248532

© Cambridge University Press 1989

This publication 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 1989

This digitally printed first paperback version 2005

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

Library of Congress Cataloguing in Publication data

Galloway, J. H.

The sugar cane industry: an historical geography from its origins to 1914/J. H. Galloway.

p. cm. – (Cambridge studies in historical geography: 12)

Bibliography.

Includes index.

ISBN 0 521 24853 1

1. Sugarcane industry – History. I. Title. II. Series.

HD9100.5.G29 1989

338.4'763361'09 – dc 19 88-22823 CIP

ISBN-13 978-0-521-24853-2 hardback

ISBN-10 0-521-24853-1 hardback

ISBN-13 978-0-521-02219-4 paperback

ISBN-10 0-521-02219-3 paperback

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)

*For my mother
and in memory of my father*

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)

Contents

<i>List of illustrations</i>	<i>page</i> ix
<i>Acknowledgments</i>	xi
<i>A note on statistics</i>	xiii
Introduction: the taste for sweetness	1
1 Sugar cane and the manufacture of sugar	11
2 The Eastern origins	19
Part 1 The sugar industry in the West	
3 The Mediterranean sugar industry: c. 700–1600	31
4 The Atlantic sugar industry: c. 1450–1680	48
5 The American sugar industry in the eighteenth century	84
6 The innovations of a long nineteenth century: 1790–1914	120
7 The geographical responses to the forces of change: 1790–1914	143
Part 2 The sugar industry in the East	
8 Asia: c. 1750–1914	197
9 The Indian Ocean and Pacific colonies: 1800–1914	218
Conclusion	234
<i>Appendix: the price of sugar</i>	238
<i>List of references</i>	240
<i>Index</i>	259

Illustrations

Plates

1 Collecting manna: eighteenth-century Sicily	<i>page</i> 3
2 Sugar cane: perhaps the earliest representation in a western text	12
3 A Sicilian sugar mill of the second half of the sixteenth century	38
4 An Hispaniolan sugar factory in the sixteenth century	67
5 The three-roller mill, 1613	74
6 The Dutch with slaves work a three-roller mill in seventeenth-century Brazil	75
7 A sugar factory in the French West Indies, later seventeenth century	76
8 The ideal layout of a sugar plantation in the French West Indies	92
9 Two-roller mill, South India, early nineteenth century	199
10 Mortar and pestle, South India, early nineteenth century	200
11 Mortar and pestle, United Provinces, India, early twentieth century	203
12 Two-roller mill, China	205

Figures

2.1 The ancient Oriental sugar industry, c. 500 B.C. to A.D. 1100	26
3.1 Major sugar-producing regions of the Mediterranean, 700–1700	32
3.2 Sugar in the Mediterranean lands, 700–1600	35
4.1 The Atlantic sugar colonies, c. 1450–1680	49
4.2 Sugar production in the major colonies of the Atlantic period, 1450–1680	51
5.1 The colonial sugar industry, 1500–1800	85
5.2 Caribbean sugar exports, 1680–1800	86

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)**x** *Illustrations*

5.3	Diffusion of innovations in America	97
5.4	The Jamaica train	98
5.5	Barbados as a center of innovation	101
6.1	Cane and beet sugar production, 1850–1915	132
7.1	Sugar production in the major English and French Caribbean colonies, 1800–1914	151
7.2	Sugar production in the Americas, 1800–1914	159
9.1	Sugar production in the Indian Ocean and the Pacific colonies, 1800–1914	220
A.1	Retail price of sugar, England, 1259–1950	239
A.2	Raw sugar (cost, insurance, freight) in London, 1730–1914	239

Tables

I.1	Consumption of centrifugal sugar	10
4.1	Sugar exports of Madeira as anticipated in the <i>alvará</i> of 1498	52
5.1	Population of the West Indian sugar colonies during the eighteenth century	114
6.1	Indian indentured laborers in the Caribbean, 1838–1917	127
6.2	The efficiency of sugar factories	140
8.1	Sugar exports of Java	212
8.2	Sugar exports of Malaya	215
9.1	Indian indentured laborers	222
9.2	Immigrants arriving in Hawaii, 1852–99	223

Acknowledgments

Barbados was my introduction to the tropics. One snowy March morning many years ago, Professor Theo Hills of the Department of Geography, McGill University, stopped me in the upper corridor of the Old Arts Building to ask me if I would like to spend the coming summer at McGill's Bellairs Research Institute in Barbados. How could I have refused? Some weeks later, I traveled through fields of sugar cane for the first time, from the airport to Bellairs on the St. James coast. My formal responsibilities as monitor of some climatological instruments took me literally a few minutes each day. Not having either the constitution or inclination to spend many hours on coral beaches, I found my way to the libraries and archives of the island, and so into the world of the sugar cane industry. I owe Theo Hills a great deal for setting me on such an interesting course and I am happy now to be able to acknowledge this debt. I would like to acknowledge also the kindness of two later academic advisors who encouraged me to keep to the course: Professor James J. Parsons of the University of California at Berkeley and Professor Sir Clifford Darby, formerly of University College London and now of King's College, Cambridge. The origins of this book indeed lie in my research on the historical geography of the Caribbean and Brazil. Alan Baker of Emmanuel College, Cambridge, convinced me that I should expand my interests in sugar cane from the Americas to the rest of the world, and he has been a patient, understanding editor. I would like to thank also the Master and Fellows of Emmanuel College, Cambridge, who did me the honor of electing me to a Visiting Fellowship for a sabbatical year which meant that I was able to explore from a very comfortable base the holdings of the Cambridge University Library. David Sheinin was a very helpful research assistant during the summer of 1983. The maps and diagrams were drawn by Jane Davie in the Cartography Office of the Department of Geography, University of Toronto, under the supervision of Geoff Matthews, a good friend who has been my cartographic counsellor for many years. I have received

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)xii *Acknowledgments*

pointers, advice, hospitality from many people not immediately connected with my work. Pedro Geiger in Rio, and Manfredo and Stella Winge, formerly of Recife, now of Brasilia, have helped make visits to Brazil such a pleasure. Professor Sidney Mintz introduced me to the literature on sorghum syrup; Frank Plasil of Oak Ridge, Tennessee, a friend from high school days, seized the opportunity of a visit of mine, to take me to see Appalachian farmers actually making the syrup. At the University of Toronto, my friends W. J. Callahan, David C. Higgs, Aidan McQuillan and Ricardo Sternberg form a support club that I warmly appreciate. A word of thanks must also go to the Robarts Library of the University of Toronto and its librarians and to the Department of Geography, the University of Toronto, which has provided a stimulating academic home.

The Social Sciences and Humanities Research Council of Canada has helped me through research grants. Chapter 3 is a revised version of my 1977 paper on “The Mediterranean sugar industry” that originally appeared in the *Geographical Review*. I am grateful both to the editor of the *Geographical Review* and to the American Geographical Society, the holder of the copyright, for permission to republish. Chapter 5 incorporates in revised form my 1985 paper on “Tradition and innovation in the American sugar industry c. 1500–1800: an explanation”, published in the *Annals of the Association of American Geographers*. I would like to thank the Association of American Geographers for permission to republish. The Royal Statistical Society has kindly given me permission to republish Figure A.1.

I gratefully acknowledge the permission of the following to reproduce their illustrations in this book: Plates 1, 2, 3, 7, 8, 9 and 10: the British Library; Plate 4: the Rare Books and Manuscripts Division, The New York Public Library, Astor, Lenox and Tilden Foundations; Plate 5: the Ajuda Palace Library; Plate 6: the Syndics of Cambridge University Library.

*Victoria College,
University of Toronto*

Cambridge University Press

0521022193 - The Sugar Cane Industry: An Historical Geography from its Origins to 1914

J. H. Galloway

Frontmatter

[More information](#)

A note on statistics

The book contains a number of tables and graphs of sugar production. For ease of comparison, I have converted to metric tons all units of weight – Spanish *arrobas* and Portuguese *arrôbas* (very different measures), French *livres*, English tons, Dutch East Indian *pikols* and Singapore *piculs* (slightly different measures) – using the equivalents given by McCusker (1973: 621) and Furnivall (1939: xxiii). One metric ton equals 86.9 Spanish *arrobas*, 68.1 Portuguese *arrôbas*, 2,043 French *livres*, 0.984 English tons, 16.19 Dutch East Indian *pikols* and 16.53 Singapore *piculs*.

Many authors still turn to Noel Deerr (1949–50) for figures on the annual exports of the various sugar colonies. Unfortunately, Deerr frequently fails to mention his sources of information, although, given that he was writing in England, he no doubt found his data on the sugar trade of the English colonies in the Public Record Office. I have used statistics compiled by more recent scholars and have relied on Deerr when he is the only source.