Rice today is food to half the world’s population. Its history is inextricably entangled with the emergence of colonialism, the global networks of industrial capitalism, and the modern world economy. The history of rice is currently a vital and innovative field of research attracting serious attention, but no attempt has yet been made to write a history of rice and its place in the rise of capitalism from a global and comparative perspective. *Rice* is a first step toward such a history. The 15 chapters, written by specialists on Africa, the Americas, and several regions of Asia, are premised on the utility of a truly international approach to history. Each one brings a new approach that unsettles prevailing narratives and suggests new connections. Together they cast new light on the significant roles of rice as crop, food, and commodity, tracing how it shaped historical trajectories and interregional linkages in Africa, the Americas, Europe, and Asia.

**Francesca Bray** is Professor of Social Anthropology at the University of Edinburgh. She is the author of *The Rice Economies: Technology and Development in Asian Societies* (1994); *Technology and Gender: Fabrics of Power in Late Imperial China* (1997); *Technology and Society in Ming China, 1368–1644* (2000); and *Technology, Gender and History in Imperial China: Great Transformations Reconsidered* (2013).

**Peter A. Coclanis** is Albert R. Newsome Distinguished Professor of History and Director of the Global Research Institute at the University of North Carolina at Chapel Hill. He is the author of *The Shadow of a Dream: Economic Life and Death in the South Carolina Low Country, 1670–1920* (1989) and *Time’s Arrow, Time’s Cycle: Globalization in Southeast Asia Over La Longue Durée* (2006) and the coeditor of *Environmental Change and Agricultural Sustainability in the Mekong Delta* (2011).

**Edda L. Fields-Black** is Associate Professor of History at Carnegie Mellon University. She is the author of *Deep Roots: Rice Farmers in West Africa and the African Diaspora* (2008).

**Dagmar Schäfer** is Director of Department 3, Artefacts, Knowledge, and Action at the Max Planck Institute for the History of Science, Berlin, and Professor of Chinese Studies at the University of Manchester. She is the author of *The Emperor’s Silk Clothes: State-Run Silk Manufacturing in the Ming Period, 1368–1644* (1998) and *The Crafting of the 10,000 Things: Knowledge and Technology in 17th-Century China* (2011) and coauthor of *Weaving an Economic Pattern in Ming Times, 1368–1644* (2002).
Rice: Global Networks and New Histories

Edited by
FRANCESCA BRAY
University of Edinburgh

PETER A. COCLANIS
University of North Carolina, Chapel Hill

EDDA L. FIELDS-BLACK
Carnegie Mellon University

DAGMAR SCHÄFER
Max Planck Institute for the History of Science
Contents

List of Figures  page vii
List of Tables  ix
List of Contributors  xi
Foreword by Giorgio Riello  xiii
Acknowledgments  xix

Introduction: Global Networks and New Histories of Rice
Francesca Bray  1

PART I: PURITY AND PROMISCUITY

Introduction
Francesca Bray  37

1. Global Visions vs. Local Complexity: Experts Wrestle with the Problem of Development
Jonathan Harwood  41

2. Rice, Sugar, and Livestock in Java, 1820–1940: Geertz’s Agricultural Involution 50 Years On
Peter Boomgaard and Pieter M. Kroonenberg  56

3. A Desire to Eat Well: Rice and the Market in Eighteenth-Century China
Sui-Wai Cheung  84

4. Rice and Maritime Modernity: The Modern Chinese State and the South China Sea Rice Trade
Seung-Joon Lee  99

David Biggs  118
Contents

6. Red and White Rice in the Vicinity of Sierra Leone: Linked Histories of Slavery, Emancipation, and Seed Selection
   Bruce L. Mouser, Edwin Nuijten, Florent Okry, and Paul Richards
   138

PART II: ENVIRONMENTAL MATTERS

7. Rice and Rice Farmers in the Upper Guinea Coast and Environmental History
   Edda L. Fields-Black
   167

8. Reserving Water: Environmental and Technological Relationships with Colonial South Carolina Inland Rice Plantations
   Hayden R. Smith
   189

9. Asian Rice in Africa: Plant Genetics and Crop History
   Erik Gilbert
   212

10. When Jola Granaries Were Full
    Olga F. Linares
    229

11. Of Health and Harvests: Seasonal Mortality and Commercial Rice Cultivation in the Punjab and Bengal Regions of South Asia
    Lauren Minsky
    245

PART III: POWER AND CONTROL

12. The Cultural Meaning of Work: The “Black Rice Debate” Reconsidered
    Walter Hawthorne
    279

    Peter A. Coclanis
    291

14. Rice and the Path of Economic Development in Japan
    Penelope Francks
    318

15. Commodities and Anti-Commodities: Rice on Sumatra 1915–1925
    Harro Maat
    335

Bibliography

Index

© in this web service Cambridge University Press

www.cambridge.org
Figures

P.1 Overview maps: (a) Asia, (b) Europe and Africa, and (c) Africa and Americas

2.1 Distributions of percentage sawahs under sugar cane for the years 1880 and 1920

2.2 Relations between percentage sawahs under cane and population density for 1880 and 1920

2.3 Relations between percentage sawahs under sugar cane and sawah area per capita for 1880 and 1920

2.4 Relations between percentage sawahs under cane and rice yield per unit sawah for 1880 and 1920

2.5 Relations between percentage sawahs under cane and wet rice production per capita, 1880 and 1920

2.6 Relations between percentage sawahs under cane and arable land per capita for 1880 and 1920

2.7 Distribution of percentages of sugar cane sawahs per district for each Residency in 1920

2.8 Livestock per unit of arable land in 1880 and 1920

2.9 Relation between numbers of livestock in 1880 and 1920 at Residency level

3.1 Rice regions in China, ca. 1920–1950

5.1 Hydro-ecological zones of the Mekong Delta

6.1 Phylogenetic relationships among 315 West African rice samples using UPGMA

6.2 Close-up of the phylogenetic relationships of the Japonica cluster and its subclusters

8.1 Scarps and terraces of the Lower Coastal Plain, central South Carolina

8.2 Charleywood Plantation with new rice fields

8.3 Windsor Plantation, with rice fields in division “A” and flanking canal wrapping around division “B”
List of figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>Population clusters identified by PCA in JMP Genomics software</td>
<td>221</td>
</tr>
<tr>
<td>10.1</td>
<td>Graph of 5-year running averages for four Lower Casamance stations</td>
<td>231</td>
</tr>
<tr>
<td>10.2</td>
<td>Location of our Jola study communities and the regions where they are found</td>
<td>233</td>
</tr>
<tr>
<td>11.1</td>
<td>Death rates during the 1908 Malaria epidemic in Punjab</td>
<td>253</td>
</tr>
<tr>
<td>11.2</td>
<td>Malaria distribution in Bengal</td>
<td>258</td>
</tr>
<tr>
<td>11.3</td>
<td>Seasonal mortality in the Punjab</td>
<td>272</td>
</tr>
<tr>
<td>13.1a</td>
<td>Geographic distribution of pounds of rice produced in Southwestern states 1880–1900</td>
<td>294</td>
</tr>
<tr>
<td>13.1b</td>
<td>Geographic distribution of pounds of rice produced in Southwestern states 1910–30</td>
<td>295</td>
</tr>
<tr>
<td>15.1</td>
<td>Map of a tobacco estate on Northeast Sumatra</td>
<td>341</td>
</tr>
</tbody>
</table>
### Tables

2.1 The land, population, and rice-production characteristics of the sugar regions of Java in 1920  
2.2 Production of kilocalories per capita per day for selected years, Java  
2.3 Rice production per hectare (in kgs unhusked rice) for selected years  
2.4 Correlations of percentage sawahs under cane with other variables  
2.5 Correlations of the agricultural variables for districts  
2.6 Correlations of livestock per unit of arable land with other variables at Residency level  
6.1 Japonica rices at Mogbuama (Sierra Leone) in 1983 and 2007  
13.1 Rice production in the United States, 1839–1919 (millions of pounds of clean rice)  
13.2 Southwest Louisiana’s share of total rice production in Louisiana, 1879–1929  
13.3 Mean yield of clean rice per acre, southwest Louisiana, 1879–1929  
15.1 Origins of rice imports of the Netherlands Indies, in the mid-1910s  
15.2 Rice imports of four major districts of Sumatra, in the mid-1990s
Contributors

David Biggs  Associate Professor, History, University of California-Riverside, USA

Peter Boomgaard  Professor, Environmental and Economic History, KITLV/Royal Netherlands Academy of Arts and Sciences, Leiden, Netherlands

Francesca Bray  Professor, Social Anthropology, University of Edinburgh, UK

Sui-Wai Cheung  Associate Professor, History/Research Centre for Ming-Qing Studies, Chinese University of Hong Kong

Peter A. Coclanis  Albert Ray Newsome Distinguished Professor, History, University of North Carolina–Chapel Hill, USA

Edda L. Fields-Black  Associate Professor, History, Carnegie Mellon University, Pittsburgh, USA

Penelope Francks  Research Associate, School of Oriental and African Studies, London, UK

Erik Gilbert  Professor, History, Arkansas State University, Jonesboro, USA

Jonathan Harwood  Professor Emeritus, History of Science, University of Manchester, UK

Walter Hawthorne  Professor, History, Michigan State University, East Lansing, USA

Pieter M. Kroonenberg  Professor, Social Science, Leiden University, Netherlands

Seung-Joon Lee  Assistant Professor, History, National University of Singapore

Olga F. Linares  Senior Staff Scientist, Smithsonian Tropical Research Institute, Panama City, Panama
List of Contributors

Harro Maat Universitair Docent, Knowledge, Technology and Innovation, Wageningen University, Netherlands

Lauren Minsky Assistant Professor, History, New York University–Abu Dhabi, UAE

Bruce L. Mouser Professor Emeritus, History, University of Wisconsin–La Crosse, USA

Edwin Nuijten Senior Researcher, Plant Breeding and Sustainable Production Chains, Louis Bolk Institute, Driebergen, Netherlands

Florent Okry Researcher, National University of Benin, Cotonou, Benin

Paul Richards Professor Emeritus, Technology and Agrarian Development, Wageningen University, Netherlands

Dagmar Schäfer Director, Department III, Max Planck Institute for the History of Science, Berlin, Germany

Hayden R. Smith Adjunct Professor, History, College of Charleston, USA
Foreword

Giorgio Riello

“We can’t stop buying rice just because it is expensive. Maybe, we will increase our roti consumption.” The words are those of Damini Gupta, an Indian housewife interviewed by The Times of India at one of the many malls in Bangalore while buying provisions in January 2013. Comments left on the “readers’ opinion” provided further opinions on the matter. While some prompted other readers to change their consuming habits – “switch to wheat” said one of them as it is good for diabetes – most of the 17 comments hinted at wider issues: “how many quintals of rice is rotting due poor infrastructure in another comic situation,” one of them said. Another was vociferous that “we should stop giving loans to Farmers.” Others thought it a government conspiracy and a “mismanagement by terrorist Kangress [sic]” or simply a failure on the part of the state. Praveen from Mangalore argued for a wider political economy perspective: “the govt lifted ban on export of nonbasmati rice 6 months back. It’s time to impose it back, we export and our people suffer. Now onion prices also increased.” Jaideep Shenoy, also from Mangalore, put jokingly: “If the people can not have rice, they can have cake instead. :).”

Anyone who thought that “rice is easy” might change one’s mind by reading the pages of The Times of India. Today, as five centuries ago, rice is a complex topic. It is not just a staple in the diet of billions of people but also one of the most important crops in the world. Yet, unlike cod, salt, or chocolate among the foods and beverages, and indeed silk, cotton, silver, or even copper among the globally traded commodities, rice has so far evaded both popular and scholarly analyses on a world scale. Until the recent increase of the price of rice – and indeed many other staple foodstuffs such as coffee and sugar – few popular accounts had ever given a thought to rice

beyond the idea that it is the food of Asia par excellence. This stereotypical view of rice contrasts with a rather complex history as conveyed in this book in at least two major ways. First, rice is not a crop or a commodity of just one area of the world. Throughout its history, the cultivation, trade, and consumption of rice has affected vast parts of Asia, Africa, and the Americas. In China rice started to be cultivated more than 10,000 years ago; it was also domesticated very early in South and Southeast Asia, where its cultivation spread widely through antiquity. It was grown in Europe by the tenth century CE and was introduced to the Americas in the early sixteenth century as part of the so-called Columbian exchange. By the precolonial period, rice cultivation was widespread in West Africa.

Italians like their risotto and the Japanese their rice *nuka*; Caribbean cuisine is famous for its coconut rice with beans; and any Indian meal is incomplete without rice. Therefore, one could think of a global history of rice as something that is cultivated and consumed in different parts of the world. Yet, this might be a simplistic or simplified view. A second feature of the complex story of rice is that—as for many other commodities—it does not come in only one standard variety. There are at least three distinct species of rice, and within each species there are hundreds of types depending on cultivation and suitability to different purposes. Indeed, as the introduction to this book reveals, variety is just one of the reasons that makes “rice resist any easy reification.” Rice is a “varied commodity” that relies on a diverse range of systems of cultivations, organizations of labor, gender relations, and so on. Indeed as *The Times of India*’s article shows, rice is at the core of people’s consumption habits, it is a concern of the state, a commodity whose production requires heavy infrastructural investment, and a product that competes with other foods worldwide.

The challenge faced by the editors and contributors to this volume is at once that of recovering the complex history of rice in its long and geographically diverse history; and to convey it in a clear and concise way. This is no easy task. As the field is vast, they collectively decided to follow William McNeill’s suggestion that scholarship of a global nature needs to know what “to leave out.” This book, therefore, focuses on the last five centuries. This is no random choice as the “discovery” of the Americas at the end of the fifteenth century reshaped the contours and redesigned the relational logic between different world areas. In the past two decades world and global historians have produced a vast array of studies addressing how the past half a millennium generated many of the structures, challenges, and achievements that dominate the debate over our present-day globalized world. Globalization has become an everyday expression signifying the increasing interconnectedness of the world. The awareness that globalization is not just a recent phenomenon but has slowly emerged over the centuries has been one of the key themes embraced by global history. Economic historians, in particular, have been interested in understanding not just how the
economic connectedness of the world affected people’s lives, but also the disparities of wealth across different world areas. A second concern has, therefore, been what is called “divergence”: the different paths of economic development that saw the West industrialize while most of Asia and Africa lagged behind.

The language and concerns of economic history that dominate debates over globalization and divergence have been influential in the shaping of narratives of a global type. However, the past decade has seen the emergence of a global history that is more multidisciplinary and addresses topics that are not limited to economic development. At least three of these new areas are relevant for this book. First, the history of science and technology now engages with the importance of embedded knowledge, of different “epistemic cultures” and of the transmission of useful and reliable knowledge across world areas. Second, commodities have become a way to reflect on commercial but also material and cultural contact across time and space. Moving beyond the traditional remit of the history of trade, commodities are today a way of considering complex global processes that link together resources, technologies, manufacturing, exchange, power, and the agency of states and consumers. Finally, there is an emerging body of scholarship on global consuming practices. From the work of Brewer and Porter and de Vries for Europe, several world areas are crafting sophisticated studies on consumer behavior, the importance of exotic and foreign goods, and on consumers’ tastes and preferences that will hopefully result in a global reconsideration of the very meaning of consumption.

The analysis of these new trends in global history could continue. My point here is that this book challenges easy pigeon-holing. Francesca Bray in the introduction to Part I asks “What happens when we reframe the well-worn production-focused debates that have structured standard readings of economic history to incorporate evidence about consumer tastes, peasant agency, the ideological dimensions of technical choice, or the resistance of pollen to human control?” Indeed, what happens when well-known approaches are scrutinized with fresh eyes? It turns out that a more eclectic approach might be needed. The choice made here is not to reduce the story of rice to simply one of economic development; or one of agrarian knowledge and associated technologies; or one of a commodity called “rice”; or indeed one of a foodstuff consumed across the world. Embracing only one of these perspectives would not “do justice” to rice, but would also limit the potential of this study and its contribution to global history. Global Rice rather than being “exclusive,” engages with different bodies of literature, and by doing so it connects debates and problems that have so far been seen as separate.

So far so good, but how are good intentions translated into action and even more importantly, good results? First, one of the ambitions of this book is to bring together distinct discourses without denying their specificity, their logic and their heuristic importance. The point here is not, as for many popular...
accounts, to narrate a unified history of rice across time and space, but to consider histories of rice through their connections, their entanglements and at points through comparative methodologies of analysis. The Green Revolution of the 1960s and 1970s, for instance, was a drive to purify farming landscapes across the world. Yet, knowledge and ideology stemming from Western labs came to create different vectors of change in places such as China, Southeast Asia, and India. While their histories are connected and in dialogue with each other they also show profound contrasts. The same could be said of the nature and power of institutions, of gender, race, and class relations in riziculture, of the relationship between endogenous and exogenous forces in each world area, of the role of the state, of labor relations, and the like.

A second important factor underpinning this project is more of a practical nature. The premise of the intellectual endeavor that supports this work has been rather different from traditional ways of organizing scholarship. Rather than gathering a group of scholars, each of whom attempts to construct a separate argument that is exclusive of any other alternative interpretations, in this book contributors admit the limitations of their interpretations and “compare notes” with each other. Some might object that scientific labs have long worked on the principle of collaboration – teamwork as it is called. Yet, historians are less acquainted with such ways of drafting scholarship. It is only in recent years that large collaborative research projects have made an entrance in the historical arena, frequently at great expense of public money. More well-known is the format of the edited book, often the result of a conference or series of workshops gathering together like-minded people to discuss a topic or problem. The result is in-depth analysis: a collective work of excavation that drills deep across the vast surface of history often limiting the field to narrow temporal and geographical coordinates. In this sense, Global Rice is very different from an edited volume. As observed earlier, it covers broad geographical and temporal coordinates, spanning at least four continents and several centuries. And more importantly, its aim is to connect different themes, methodologies, and even disciplines.

The ways in which this book has been conceived is not its only point of distinction. The field of global history has addressed vast temporal and spatial expanses mostly by privileging macro approaches. In the attempt to paint grand canvases of history, the brushstrokes of global historians have been rather large, sometimes using economic and sociological theories as generalization devices. In practical terms, this has meant an over-reliance on secondary sources rather than the engagement with primary research. It has also meant that the quirky detail, the colorful anecdote, and indeed the personal and subjective have not fared well in recent global historical narrative. It is always difficult to single out examples of bad practice, but let me say that such difficulties have plagued my own work on cotton. A field dominated by a vast secondary literature, my approach to writing a global
history of cotton textiles has been rather macro, therefore glossing over the specificity of individual areas and focusing instead on topics relevant to a preconceived set of questions. Such an approach would however not work for rice. This is not just because of the large number of topics that rice raises and the empirical ground that scholars need to cover. Another important reason is that the history of rice throws at us a series of different questions and is characterized by the co-existence of different scholarly traditions and debates.

As the general introduction and chapters in this book observe, at least two large-scale debates have been at the core of histories of rice: the “black rice thesis” of the Atlantic region and the “agricultural involution” or “growth without development” of early modern China. Both of them deal with issues surrounding the cultivation of rice. The black rice thesis emphasizes the transplantation from West Africa to the Americas of a set of agricultural skills and a system of gendered knowledge. By contrast, agricultural involution underlines instead how rice encouraged small-scale improvements, rather than a search for radical transformation, thus running into the trap of decreasing returns. One is positive, the other rather negative; one is connective, the other fosters comparisons; one is set in the Atlantic, the other in East Asia. There might seem to be little common ground and yet as contributors make it clear, power, gender, the agency of state and individuals, and decision-making processes are common themes that cut across these two broad debates. Similar linkages, contrasts, and mutual comparisons help also at the level of individual factors and micro histories: Is the social cohesion brought about by rice unique to Asian societies? Is the role of labor in the Atlantic so different from Asia in the conveying of knowledge? Is multi-activity associated with rice cultivation everywhere? Are water resources always key to rice cultivation? And so on.

This book thus engages with local experiences and with a micro-set of issues, often conveyed through the expertise of individual contributors. Yet, this is not a simple gathering of precious information that simply adds to our knowledge of rice. Each fact, interpretation, and explanation comes to form a dot in a large canvas. Rather than large strokes, here the big tableau vivant of rice is formed by the mercurial nature of different voices that are in dialogue and sometimes in contrast with each other. The editors made the conscious decision of emphasizing the different logics shown by historical evidence, the malleable lines of evolution and the many differences and dissonances of a history of rice on a global scale. This is a point of radical departure for the simple reason that the vast majority of global history has embraced instead the opposite view in the belief that models or meta-narratives should be the end-point of large-scale historical analysis. Here instead we see a different strategy of presentation and explanation at play. A series of recurrent themes such as economic development, modernization, the role of the state, knowledge and agrarian practices, standardization and homogenization of commodities, and so on are considered through a variety of lenses and are
often contextualized within specific historical and historiographical settings. Yet at the same time authors enter into a dialogue with each other and cluster into at least three major “constellations” on “Purity and Promiscuity,” “Environmental Matters,” and on “Power and Control.”

I would like to conclude my brief analysis by reflecting on the peculiarity of using rice to write global history. By now, it should be clear that rice defies established ways of writing the global as it does not present a linear or unified narrative. There is also a certain non-permeability of area studies (the geographic clustering of historical scholarship) that does not help. The story of rice is also one of moments of profound change accompanied by stasis and of acute opposition between different forces, most evidently local cultivators vs. state administrations or capitalist interests. One might say that especially when we focus on riziculture there is however a great deal of potential for comparative analysis to allow for a deeper understanding of commonalities, differences, and peculiarities. The transfer of agronomical knowledge, of tools, and technologies and the adaptation of rice varieties and systems of cultivations are further global themes of a connective nature. Yet, in a reverse of common expectations, rice turns out to be a “disappointing” global commodity. Today, possibly at the peak of its globalization, only 5–7 percent of the total world rice production is traded internationally. One might ask how much rice is actually a good example of a failed global commodity or even a so-called anti-commodity in which global forces lead to the creation of specific “indigenous” forms of production and in which the global is not about worldwide processes but concerns co-existence of a multitude of different experiences on a global scale. In many ways, this is a global story that brings us back to the local, to the preoccupations of the Indian housewife Damini Gupta or a similar head of household in Bangladesh, Brazil, Cambodia, Laos, Madagascar, Myanmar, Nigeria, or Vietnam, all countries in which rice provides a substantial part of the daily caloric intake. Here we see the potential to see local consuming patterns in the light of global processes and forces. The five centuries of history considered in this book thus provide an insight into the daily lives of cultivators, administrators, businessmen, and consumers who rarely thought of themselves as part of any global history and yet each of them came to be a tile in the mosaic of a large-scale history.
Acknowledgments

Support from the Max Planck Institute for the History of Science, Berlin, Research Group Concepts and Modalities: Practical Knowledge Transmission, Dagmar Schäfer and from the Centre for Chinese Studies, of the University of Manchester, enabled the production of this working group book. In March 24–26, 2011, the authors who eventually joined this book project were able to meet for a workshop on “New Histories of Rice,” in Berlin. Our thanks go to all the contributors for their serious engagement with the volume’s topic. In an unusual spirit of good fellowship, they never failed to react promptly and patiently to the smaller and greater demands of the editing team as the theme, focus, and arrangement of the book as a whole took shape. Our joint work was exciting and stimulating.
Figures P.1 a–c assemble data from various contributions in the book to illustrate the diversity of topics and issues of regional approaches to rice that inform the global view (and conversely also how the global view informs regional debates). Lee, for instance, tackles the regional diversity of rice production in early twentieth century China, while Maat, interlinking with such data, highlights contrasts between import and export regions in Dutch East India around the 1910s. (The size of the colored circles reflects import–export balance (adjusted from Smits 1919).) Debates around the African continent in this book underline circulation/flows/exchanges. Gilbert, for instance, discusses the flow of various genotypes into and out of Africa and thus also provides selective data on rice characteristic of various other macro-regions of the world. But Gilbert’s samples do not adequately reflect the importance of indigenous West African rices (*glaberrima*), discussed in the chapters by Mouser and Fields-Black and rendered on Figure P.1b by the ellipses. Regions tackled in the book are highlighted in grey.
Distribution of rice population clusters (Gilbert)

- \( \text{AHO} \): Glaberrima
- \( \text{AUS} \): Indica
- \( \text{TEJ} \): Japonicas
- \( \text{TRJ}_1 \): Glaberrima
- \( \text{TRJ}_2 \): Glaberrima

Export Asian rice market in the 1910s

Import Regions tackled in the book

**FIGURE P.1a.** Overview map Asia
Regions tackled in the book

Distribution of rice population clusters (Gilbert)

ARO
AUS
IND
TEJ
TRJ1
TRJ2

Imports

Asian rice market in the 1910s

Japonicas
Indica
Glaberrima

African (glaberrima) rices

Upper Guinea coast: region of original domestication of glaberrima rices [Fields-Black]

Upper Niger Delta (Mali): region of original domestication of glaberrima rices [Fields-Black]

Figure p.1b. Overview map Europe and Africa
Regions tackled in the book

Distribution of rice population clusters (Gilbert)

ARO
AUS
IND
TEJ
TRJ1
TRJ2

Indica
Glaberrima
Upper Guinea coast
African (glaberrima) rices
Upper Niger Delta (Mali): region of original domestication [Fields-Black]

Regions tackled in the book

Figure p.1c - Overview map Africa and Americas