Index

Academia Sinica 104
Acadia Parish, Louisiana 309
Adão, (Bijago, a slave, Amazonia) 288
Africa, African analyses 17
African slaves in America and rice 10–11, 226
and Asian rice 224, 273
and Black Rice debate 10
comparative linguistics and historical reconstructionism 172
creativity of societies 14, critiques 178
differential modes of operation 280–281
environmental history 185
genetic distribution of rice 221, 222
japonica rice 225
study of rice farmers 185
trade before the Green Revolution 223
see also African rice, Black Rice debate, Green Revolution, individual countries
African Institution 143
African rice (Oryza glaberrima) 28, 139, 172, 185, 212
archaeobotanical evidence of use in Africa, 215
centers of genetic diversity and origins of 213
cultivation 225
domestication 213
domestication 213
domestication of 213
domestication of 213
domestication of 213
domestication of 213
geographical reach of 216, 227
N’contu 282
salt tolerance 213
and US 292
see also Asian rice
African role in the making of American agricultural systems 279–280
and transfer of knowledge systems 284
African studies 17
see also individual cultures; slavery; West Africa
Africanists 185, 186
Agent Orange 134
agrarian development, mainstream approaches to 246
Agricultural Advisory Corps of Republic of China at Vietnam (Zhonghua minguo zhu Yuenan nongye jishu tuan) 110
agricultural involution theory 3, 5, 10–11, 40, 66
creativity 14
criticism of thesis 58
inappropriateness of term 72
modernization and progress 13
and rice based dynamic 40
rice industry and 12 see also Geetz
agricultural purification regimes 37–38
agricultural research, new directions in 51–52
agricultural revolutions 54
agriculture: as purification 37
dynamics of agricultural sector 337, 338
history and historiography of rice and other crops compared 13
and illness 264–265
relationship with the economy 95, 96
and revolution through uniformity 41
themes of power and control 275
agroecology 52
agronomists, economists, governments and efficient commodity production 20
Akifumi Norimatsu 92
Alberto (slave, Amazonia) 289
Alimamy Namina Sheka Dumbuya, 148
Álmada, André Alvares de 182
Almamy Amara 146, 147
## Index

- **Aman rice** 97
- **Amazonia** (Maranhão and Pará, Brazil) 279, 280
- Absence of cultural significance of work 286
- Methods of rice production 286
- Planters and rice production 286
- Planters and wetland rice agriculture 285
- Planting and harvesting 286–287
- Amazonia 284, 285–289
- Weeding 287
- Anderson, A. (Deputy Commissioner of Hisar) 253
- Angkor Borei 122, 124
- Angkor Empire 97
- Angola 224, 225
- Anhui 90, 108
- Annam geng rice 115
- Anopheles mosquitoes 164, 165, 251
- Anti-commodity, concept of 20, 21, 138
- Acquisition of status 337
- Complementarity and mutual dependence with commodities 337
- Definition 337
- Focus on production processes 337
- Hybridization argument 337
- Producing anti-commodities 336–338
- See also Under Sumatra
- Arkansas, US, rice industry in 314
- Aromatic rices 214
- Ashepoo-Combahee-Edisto (ACE) Basin 196
- Asia and rice 1, 31
- Asian oceanic trade 6
- Importance of skills over economies of scale 19, -trade 7–8
- Studies of rice systems 18
- See also Under individual states
- Archéologie du Delta du Mékong 122
- Asian rice (**Oryza sativa**) 28, 126, 139, 186–187, 212, 214–215
- And African rice 225
- Archaeobotanical evidence of use in Africa, absence of 215
- Balanta region 282
- Domestication 214
- Genetic evidence of migration 217–219
- In Mediterranean 217
- Pathways for introduction into Africa 215
- Spread of in Africa 227–228
- Use in Africa 212–214
- And US 292

---

Asianists 19
Atlantic approaches to understanding
American history 292
Atlantic economy, demands of the 279
Atlantic history and Atlantic world 1, 5, 31
Atlantic language group, Upper Guinea 169, 171, 176, 181
Classification and evolution 170–171
Atlantic region 3, 31, 163
Atlantic rice systems 14, 33
Atlanticist history 15
Atlanticist debate 14, 15, 153
August Revolution, Vietnam 125
Aus rice 97, 214, 222, 227
Austin, Lieutenant 147
Avicenna Africana *–yop 179
Ayutthaya (Siam) 123

b’alante b’ndang, grade Balanta 281
Back River plantation 206
Baga Sitem 183
Balanta, Guinea-Bissau 281, 282
Age grade system 281, 282
Control of blufos grade 282–283
Councils (ko or beho) 281
Gender division 281
Mangrove rice agriculture 281
Preparation of rice 282
Resistance to technological innovation 284
Spirit world 283
Structure of Balanta society 283
Varieties of rice used 282
Witchcraft 283
Ball 18, 56
Ball, John Coming 206
Banana 215–216, 224, 337
Phytolith evidence 215
Bangkok, Thailand, rice milling in 111
Bangladesh 132
Rice breeders in 47
Bangladesh Rice Research Institute 46
Banten 75, 79
Bantu language group 172–173
Banyuwangi 81, 83
Barros Vasconcellos, Felipe de 288
Bartram, William 203
Basmati rices 214
Batavia 75, 79
Bates, Robert 239–240
Bay Hill settlement, South Carolina 208
Beans, China 90
### Index

<table>
<thead>
<tr>
<th>Page</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>206-207, 208</td>
<td>Beresford, J.R., Richard</td>
</tr>
<tr>
<td>210-211</td>
<td>impact of slavery and canals</td>
</tr>
<tr>
<td>210</td>
<td>planters and management of water control</td>
</tr>
<tr>
<td>201-202</td>
<td>Beresford, Richard</td>
</tr>
<tr>
<td>101</td>
<td>Bergère, Marrie-Claire</td>
</tr>
<tr>
<td>280</td>
<td>Berlin, Ira</td>
</tr>
<tr>
<td>209</td>
<td>Biggin Swamp Canal</td>
</tr>
<tr>
<td>200, 201</td>
<td>Biggin Swamp Huguenot enclave</td>
</tr>
<tr>
<td>39</td>
<td>Biggs*</td>
</tr>
<tr>
<td>30</td>
<td>Bigins, Senator</td>
</tr>
<tr>
<td>148</td>
<td>Bilali rebellion</td>
</tr>
<tr>
<td>32</td>
<td>“biofortified” rice varieties</td>
</tr>
<tr>
<td>52</td>
<td>Black, Edda Fields</td>
</tr>
<tr>
<td>14</td>
<td>Black Rice thesis</td>
</tr>
<tr>
<td>279</td>
<td>Black, Edda Fields</td>
</tr>
<tr>
<td>54</td>
<td>Blyden, Edward Wilmot</td>
</tr>
<tr>
<td>148</td>
<td>Bonanza wheat farms, United States</td>
</tr>
<tr>
<td>46, 49</td>
<td>Borlaug, Norman</td>
</tr>
<tr>
<td>292</td>
<td>Borneo transition between rice and rubber</td>
</tr>
<tr>
<td>342</td>
<td>boro rice</td>
</tr>
<tr>
<td>97</td>
<td>Boserup, Ester</td>
</tr>
<tr>
<td>132</td>
<td>Boserupian growth</td>
</tr>
<tr>
<td>71</td>
<td>Brandão Júnior, F. A.</td>
</tr>
<tr>
<td>247</td>
<td>Brahmaputra river</td>
</tr>
<tr>
<td>287</td>
<td>Bray, Francesca</td>
</tr>
<tr>
<td>285, 287</td>
<td>Brazil, rice in</td>
</tr>
<tr>
<td>320, 323</td>
<td>Borneo transition between rice and rubber</td>
</tr>
<tr>
<td>308</td>
<td>Bonanza wheat farms, United States</td>
</tr>
<tr>
<td>49</td>
<td>Borlaug, Norman</td>
</tr>
<tr>
<td>351, 352</td>
<td>boro rice</td>
</tr>
<tr>
<td>97</td>
<td>Boserup, Ester</td>
</tr>
<tr>
<td>54</td>
<td>Boserupian growth</td>
</tr>
<tr>
<td>247</td>
<td>Brahmaputra river</td>
</tr>
<tr>
<td>287</td>
<td>Brandão Júnior, F. A.</td>
</tr>
<tr>
<td>310, 320, 323</td>
<td>Bray, Francesca</td>
</tr>
<tr>
<td>24</td>
<td>Black Rice thesis</td>
</tr>
<tr>
<td>24</td>
<td>rice growing as deculturing experience</td>
</tr>
<tr>
<td>53</td>
<td>Black Rice thesis</td>
</tr>
<tr>
<td>342</td>
<td>Breman, Jan</td>
</tr>
<tr>
<td>308</td>
<td>Brien, Maurice</td>
</tr>
<tr>
<td>96, 248</td>
<td>British East India Company</td>
</tr>
<tr>
<td>206</td>
<td>Broughton, Lieutenant Governor Thomas</td>
</tr>
<tr>
<td>134, 136</td>
<td>brown plant hopper</td>
</tr>
<tr>
<td>134, 135</td>
<td>brown plant hopper</td>
</tr>
<tr>
<td>264, 266</td>
<td>bubonic plague</td>
</tr>
<tr>
<td>219</td>
<td>breeding, agricultural</td>
</tr>
<tr>
<td>134</td>
<td>Breman, Jan</td>
</tr>
<tr>
<td>308</td>
<td>Brien, Maurice</td>
</tr>
<tr>
<td>96, 248</td>
<td>British East India Company</td>
</tr>
<tr>
<td>206</td>
<td>Broughton, Lieutenant Governor Thomas</td>
</tr>
<tr>
<td>134, 136</td>
<td>brown plant hopper</td>
</tr>
<tr>
<td>134, 135</td>
<td>brown plant hopper</td>
</tr>
<tr>
<td>264, 266</td>
<td>bubonic plague</td>
</tr>
<tr>
<td>206</td>
<td>Broughton, Lieutenant Governor Thomas</td>
</tr>
<tr>
<td>134, 136</td>
<td>brown plant hopper</td>
</tr>
<tr>
<td>134, 135</td>
<td>brown plant hopper</td>
</tr>
<tr>
<td>264, 266</td>
<td>bubonic plague</td>
</tr>
</tbody>
</table>
Index

and Sierra Leone 138
and seasonal hunger 273
Buck, John Lossing 85, 86, 95, 96, 104
Buck, Pearl 104
buckwheat 85, 88, 89
Buirkle, Adam 313–314
buffaloes 65
Burma (Myanmar) and rice production 7, 8, 15, 31, 34
export trade 32
Butcher, Rev. Leopold 143, 144, 149
Ca Mau Peninsula 123
Caçato, port of 184
Caetano (Mandinka slave, Amazonia) 289
California Rice complex, Sacramento Valley 317, 348
California School 12, 13
Cambodia 121, 122, 137
Vietnamese occupation of 124
Can Tho, Mekong Delta 124
Can Tho University 135, 136
Canton region, China 117
Canton rice market 115, 117
complexity of trade 32
rice imports 103
Cape Fear region, North Carolina 294
Cape St. Mary 182
Cape Verde islands:
and African food crops 225
Portuguese and 224
wet rice production 225
capitalism:
American 14
capitalist interpretations of efficiency and progress 9
capitalist mode of production 9
colonial-industrial 7, rise of 13–14,
networks 4
history of 5
capitalist enterprise, Jawa 62–63
Carney Judith 19, 23–24, 192, 225, 279, 280, 291
Black Rice thesis 10
critiques of 225
genetic evidence in support of thesis 226
Carolina Gold Rice 225
Carolina rice (O. sativa) 126, 127, 130, 143, 149, 154, 296–297
18th century-1830s exports 296
and japonicas 143
and Sierra Leone 138
taste and durability 130
Cary, Sylvester L. 302, 304, 307, 308, 314
promotional vision 314–315
Casamance River, Senegal 16, 171
interrelationship between rice production and groundnut production 240
cassava 66, 71, 83
Catesby, Mark 194, 198
cattle 65
Center for Rice and Wheat Improvement 105
Central Agricultural Experimental Institute, (Zhongyang nongye shiyansuo) China 100, 104–105, 107, 108, 109, 110, 116, 117
during Sino-Japanese War 108–109
Ceylon (Sri Lanka) 32
Champa rice, China 39, 85, 96
Charles Town (Charleston) 167, 190, 191, 277
canal construction 209
rice exports 191
Charleston Harbor 200
Charleywood Plantation, South Carolina 198
Charleywood rice fields 202, 204,
206–207, 210
expansion of settlement 208
Chen Dashou, Jiangsu Governor 93
Chen Gongbo
Chen Hongmou, Fujian Governor 89
Chen Luquan
Chen Zupei
Chengdu 108
Chiang Kai-shek 102, 105
China, 2, 14, 17, 21
18th century 40
agricultural experts 100, 101
agricultural revolution 10
Asian rice trade 7, 110
attitudes towards industriousness 23
attitudes towards rice 116
breeders 49
Chinese elite 995 116
commercialization and economic growth 25–26
commoditization of rice and other grain trade 99
demand for rice 97
desire to eat well 88–90
development of rice production 96
economic policies 100
economic policies of 100
economy 7
Index

farming in 7
food and foreign trade 103
food crops 33
food problem 99, 116
food security 100
gender divisions and work 23
Green Revolution 11, 13, 34
historic production 19–20
historical growth in 3, 9
ideological status of rice farming 23
impact of consumers 26
impact of World War I 102, 103, 116
internal flow of rice 33
internal trade in rice 33
irrigation 11, 88
irrigation projects 11
knowledge market 34
land reforms 18
management of river systems 18–19
markets 86, 18th century 86
modernising tendencies 12
and Nanyang Zone 32
official knowledge system 34
officials and markets 34
organization of peasant labor 18
population and rice cultivation 85
proposed backwardness of 11, 12
quality of rice 110
reasons for decline 12
regional grain staples 84, 85
Republic 9, 26–27, 34–35, 95, 101–102, 103
rice and agriculture 99
rice as foundation of Chinese agriculture 98, 99
rice and national security 102–103
rice and taxation 21, 37, 38
rice imports 32, 99–100, 129
rice production 15, 33
rice shortages 111
rice trade imperial China 18, 86
river systems 18–19
role of the market 85
significance of rice in history 99
significance of rice 99
stagnation in 13, 68–69
staple foods 88, 277, 278
RH Tawney on 96
technological improvements in rice

cultivation 99
trade with Europe 32
varieties of rice 86
see also Guomindang, Taiwan
China International Famine Relief
Commission 106, 107
Chinese Civil War 109
Chinese Communist Party 18, 101, 109
Nationalist government 105
Chinese dragon wheel 88
Chinese rice merchants 33, 49, 101, 112–113, 133
Cantonese rice merchants 100, 113
practical knowledge of 100
Cho Lon (Ho Chi Minh) 127, 128
cholera and Indo-Gangetic plain 262
and malnutrition 267, 271
morbidity 262–263
Cholon, Vietnam 111–112
Chongqing, Guomindang at 108
Christophers, S. R. 271
circumcision and African grade system 281
Civil War, US
ending of chattel slavery 298
impact on rice industry 298
as US historical watershed 297
civilizations, non-Western 14
Clarkson, Thomas 141
“coarse food” (zaliang), 26, 49, 89, 90, 93
Coastal language speakers 179
proto-Coastal speakers, geographical
location 179
language and location 139
Cochinchina 8, 31, 127
Chinese monopoly in 112
rice and European markets 127
Coclanis, Peter 8, 31, 126–127
Coelho, Francisco de Lemos 182–183, 184
Cold War 131
Cole, Arthur H. 296
College of Agriculture and Forestry, University of Nanking (Jinling daxue) 102, 106
College of Agriculture, National Central University in Nanjing (Guoli Zhongyang daxue), 106
College of Agriculture, University of the Philippines 109
colonialism
colonial era and universals 9
colonial policies towards agricultural modernization 336, 337
colonial policy and attitudes 20
colonial state and insurability of actor network 129
colonialist attitudes 126
and durability of tradition 129

© in this web service Cambridge University Press
www.cambridge.org
colonialism (cont.)
growth 1
research 126
rice and colonial development 15
Columbus, Christopher 6
commercial determinism 274
change in inequality 274
commercial seed crops and non-standard
-growing environments 43
cost of commercial varieties 44
Committee of Agriculture and Industry, Cochinchina 127
commodity production 20
and global inequality 245–246
Comoro Islands 216
comparative modeling of paths of economic
development and industrialization 323
Conakry 149, 160
Conneau, Theophilus 143, 146
consumer markets 2
consumers and economic growth 25
Cooper River 200, 201, 204
Cooper-Ashley-Wando (CAW) Basin 196
Cornell-Nanking Plant Improvement Project”/
agricultural improvement program 104, 106
Cornell-Nanking program 102
correlations, interpretation of 60–61
-cosmopolitan breeding strategy 51, 52
and local breeders 53
cotton 5, 6, 19
cotton farmers, Punjab 95
cotton, trade in 87
CPSP (Caisses de Péréquation et de
Stabilisation des Prix) Senegal 242
cerealization 192, 336–337
-and rice plantation 192
see also anti-commodity
crop ideotype and "miracle varieties" 46
Cropping Systems Division, IRRI 47
CSA (Commissariat a l’Aide Alimentaire),
Senegal 242
Cuba 337
Cullather, Nick 354
cultivars and biodiversity loss 126
-rise of 126–136
-cultivation of commercial landscapes 246–250
Cultivation System, Java 10, 57, 68, 69
cultural diversity 48
cultural importance of food quality 49
Curry-Machado, Jonathan 337
Cwiertka, Katarzyna 22

Index

Daillian 112, 114
Dala Modu 147
Davidson, Joanna 283
de Vries, Jan 13
dee-geo-woo-gen 132
see also Taichung Native 1
Deering Company and Deering binder 308
Deheyong, rice firm 114
Deli Company (Deli Maatschappij) 346, 351
Deli research station for tobacco 344, 345
development, history of 54
Diola group, Upper Guinea 283
disease, nature of global distribution of 274
disi rice type 157, 159
do-fasla (double-cropping), Punjab 247
doi moi reforms Vietnam 121–122
dongchongmi 92
Douglas, Mary 37
Dove, Michael 351, 352
drought responses to 16
West Africa 229–231
Dubose, Samuel 209
Dumont, Rene 120
dung, use of as fertilizer, India 259–262
Duras, Marguerite 128
Dutch East Indies 31, 32, 129
dwarfholdings, Java 65, 72
defined 64
-and sugar 63
E’erda, Governor Guangdong 94
East Africa 213, 214, 215, 216, 219
-and Madagascar 217
rice 217–219, 226–227
-trade with India 28, 217
East Asia 15
-and ideologies of Western supremacy 14
-involution debates 13–14
see also individual states
East Asia-Atlantic comparison 15
East Asian debate 15
East Pakistan/Bangladesh 250
Edelson, S. Max 15, 16, 201
Ehret, Christopher 178, 224
Elis, David 15, 24, 279, 292
Elvin, Mark 11, 12
-environmental history 183, 186, 187
-eruptive fevers, Bengal and Punjab 266
-impact on infants and children 266
-escape agriculture 338
-and anti-commodities 338
Esudadu Jola 235–236
Index

Esudadu, Senegal 232, 237
rice deficit 237–238
Eurocentrism 14
Europe, and rice China trade creation of world market in rice 31–32
research institutes 45
European imperialism 165, 185, 336
European colonial expansion 7
Evelyn Rawski 96
Expansionism, southern 301–302
rail network development 301
expert community 41–42
Fairlawn Plantation and Canal 210
famine 49
famine relief programs and rice 30
FAO (Food and Agriculture Organization of the United Nations) 109
Farm Bureau, Illinois 315
Farmers’ Cooperative Rice Milling Company 317
farming
as combination of commodities and anti-commodities 354
ecological and economic diversity 52
reasons for selection of varieties 8–9
and rise of industrialization 38
farming systems research 50
Fatiya, Senegal 232, 235, 238, 244
adjustment to drought 238
gender cropping 235
youth migration 243
Fengqiao, 93
Fengtairen, rice firm 114
fertilizers 68
and agricultural development 42, 44, 71
impact of 42
Fields-Black, Edda 1
Fishbrook Field 206
fonio 184
food and context 48
food grain production and hunger of food producers 245
health experiences of 245
links between environment and diseases 245
food security 277
food self-sufficiency 2
food studies 291, 321, food porn 291
Ford Foundation 46, 131
Ford, Timothy 204
Foshan 94
Forecariahy 146
Foucault, Michel 278
Foyoz, Father Fernando de 289
Francisco de N. S. Dos Prazeres, Friar 289
Freetown, Sierra Leone 138, 142, 146, 147, 149
civil war 149
and farming 142, 144
Royal Navy patrol 146
slave-based food supply 149
white rice exports 142–143, 148
Friedman, David 332
Fujian 85, 87, 89, 91
rice imports 97–98
Fujian Guangdong provinces 111
Fukien 123
fulcrum shovels, use of in Rio Nunez region 181
use in Senegal 233
Fuller and Boivin, landbridge proposal of 216
Fuller and Qin 228
Fuller, W. H. 314
Futa Jalon 144, 145, 148, 160
Mountains 169
Gambia River 167
famine 1784
and slavery 167
slaves from 168
Ganga river 247, 256
Geertz, Clifford 10, 12, 13, 20, 40
and agricultural income 67
analysis of statistics 58–59
analytical failures 72
assumptions 20
attitudes towards 20, 56
influence of 11
missing link between sugar and livestock 65
non-correlation of statistics 48–59
non-coverage of non-agricultural labour 62
and population growth 69
quantitative data 57–60
and sugar agriculture 57
statistics 58–59, 60
sugar-rice link 69
thesis 57, 60, 61, 66
writing style 56
see also agricultural involution
Gennilliat, Jean-Francois 198
genotype x environment (GxE) interaction 139
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>406</td>
<td>Index</td>
</tr>
</tbody>
</table>

- Georgia (USA) 3, 277
- antebellum economic decline of rice industry 298
- rice plantations in 279, 294
- Germany, agricultural development in 42-43 crops and regional ill-adaptation 43
- Ghana, rice in 155, 157
- Gibbs, Mathurin 204
- Gilbert, Erik 186
- Glanz 230
- Glenn, Governor James 196
- global distribution of hunger, models of 246
- global history 3, 4
- global South 41, 51, 53, 54
- Green Revolution in 45
- global trade 5, 6
- globalization, 19th century 297
- glottochronology, “177-178
- GMO rice see rice
- Gold Blizzard
- Golden Rice
- Goldseed rice, Carolina 129
- gotongroyong 18
- Gourou, Pierre 130
- governmentality, concept of 278
- grain, trade in 86, 87
- Grand Canal 88, 93
- Grand Prairie region 314, 317
- Granovetter, Mark 304
- Grant, Governor 147
- Granville Town 141
- Great Depression 1930s 249
- Great Divergence, Japan 319, 333
- Great Leap Forward 90
- Green Revolution 9, 26
- areas lying outside 8
- and Bengal and Punjab 250
- changing role 50
- China 11-12, 26-27
- controversy surrounding 47-48
- controversy over environmental impact 47-48
- criticism of 51
- critique 49-50, 51, 130, 131
- and development of rice variants 35, 46
- emphasizing quantity over quality 34, 46, 49
- establishment 132
- expense 48
- as an experiment 49
- flaws in policies 27
- frailties of Green Revolution 45-49
- and generic analysis 218
- and global South 45, 54
- holistic approach 50, IR8-288-3 132
- irrigation schemes 39
- Java 56, 71
- limitations on knowledge 53
- Mekong Delta 16, 121, 125, 134
- nature of 38
- negative impact upon poverty 48
- 1950s viewpoint 154
- reliance upon irrigation 48
- and rural poverty 48
- Sierra Leone 11, 151
- and smallholders 49-50, 51
- unsuitability of varieties 48
- Vietnam 134, 135
- West Africa 160
- Grey, Colonial L. J. H., Commissioner and Superintendent of Delhi Division 254
- Grichiles, Zvi 315
- Grist, D. H. 276
- groundnut farming 17
- and government rice price change 241-242
- and Islam 234
- Senegal 234, 233-234, 237, 241
- growth without development 3, 12
- Guangdong 85, 88, 89, 91
- government 90
- rice trade 112
- Guangdong Province 93
- poor quality of wheat 93-94
- types of rice 94, 97
- rice shortages 103
- Guangdong Provincial Agriculture and Forestry Experiment Field 104
- Guangxi 88, 94, 97, 105
- wild rice 106
- Guangxi Provincial Agricultural Bureau 105
- Guangzhou 88, 89, 97, 98, 114, 115, 123
- Guerin Creek 202
- Guinea Bissau 281, 282
- Balanta 140
- Black Rice thesis and 23-24
- rice in 155, 157
- rice production in 23, 24
- transferable rizicultural skills 23
- Guinea Coast 10, 27, 30
- Guomindang regime, China 100, 101-102, 108, 109
- and Central Agricultural Experiment Institute 104
<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>and China’s food problem 116</td>
</tr>
<tr>
<td>103</td>
<td>and Guangdong’s rice shortages 103</td>
</tr>
<tr>
<td>108</td>
<td>move from Nanjing 108</td>
</tr>
<tr>
<td>43</td>
<td>Hana barley 43</td>
</tr>
<tr>
<td>86</td>
<td>Hangzhou 86</td>
</tr>
<tr>
<td>172</td>
<td>Harlan, Jack 172</td>
</tr>
<tr>
<td>16</td>
<td>Hartlib, Samuel 16</td>
</tr>
<tr>
<td>38</td>
<td>Harwood, Jonathan, 16</td>
</tr>
<tr>
<td>1887</td>
<td>Hatch Act, 1887 303</td>
</tr>
<tr>
<td>184</td>
<td>Havana Island 184</td>
</tr>
<tr>
<td>323</td>
<td>Hayami, Akira 13, 323</td>
</tr>
<tr>
<td>103</td>
<td>see also industrious revolution 103</td>
</tr>
<tr>
<td>300</td>
<td>Hayami-Ruttan 300</td>
</tr>
<tr>
<td>108</td>
<td>Heitmann, John 313–314</td>
</tr>
<tr>
<td>148</td>
<td>Hennessey, Governor John Pope 148</td>
</tr>
<tr>
<td>130</td>
<td>Henry, Yves 130</td>
</tr>
<tr>
<td>197</td>
<td>Hewatt, Alexander 197</td>
</tr>
<tr>
<td>315–316</td>
<td>Hi-Bred Seed Company (later Pioneer), Iowa 315–316</td>
</tr>
<tr>
<td>278</td>
<td>high modernism, concept of 278</td>
</tr>
<tr>
<td>719</td>
<td>Highland language speakers 179, proto-Highlands 179</td>
</tr>
<tr>
<td>338</td>
<td>high-level equilibrium trap, concept of 338</td>
</tr>
<tr>
<td>165–166</td>
<td>hill societies, significance of 165–166</td>
</tr>
<tr>
<td>107</td>
<td>Huizhou 88</td>
</tr>
<tr>
<td>85</td>
<td>Hunan 85, 87, 88, 93, 107, 108</td>
</tr>
<tr>
<td>93</td>
<td>Hushu Customs House 93</td>
</tr>
<tr>
<td>316</td>
<td>hybrid corn 315, 316</td>
</tr>
<tr>
<td>275, 276</td>
<td>hydraulic empires and schemes 275, 276</td>
</tr>
<tr>
<td>9</td>
<td>immutable mobiles 9</td>
</tr>
<tr>
<td>103</td>
<td>Improvement of Chinese Agriculture (Zhongguo nongye zhi gaijin) 103</td>
</tr>
<tr>
<td>17</td>
<td>India 17</td>
</tr>
<tr>
<td>7</td>
<td>Mughul 7</td>
</tr>
<tr>
<td>164</td>
<td>British 3, 7, 32, 129, 164, 248</td>
</tr>
<tr>
<td>270</td>
<td>1920s economy 270</td>
</tr>
<tr>
<td>214</td>
<td>development of indica rice 214</td>
</tr>
<tr>
<td>30</td>
<td>famine relief programs 30</td>
</tr>
<tr>
<td>26</td>
<td>farmers and food 26</td>
</tr>
<tr>
<td>47</td>
<td>and technological package-local variety debate 47</td>
</tr>
<tr>
<td>46</td>
<td>varieties grown 46</td>
</tr>
<tr>
<td>33–163</td>
<td>Indian Ocean region 33, 163</td>
</tr>
<tr>
<td>219, 224</td>
<td>and rice 219, 224</td>
</tr>
<tr>
<td>219–220</td>
<td>analysis of rice varieties 219–220</td>
</tr>
<tr>
<td>214, 222, 227</td>
<td>indica rice 214, 222, 227</td>
</tr>
<tr>
<td>7</td>
<td>Indochina 7</td>
</tr>
<tr>
<td>114, 125</td>
<td>French 9, 32, 34, 49, 111, 114, 125</td>
</tr>
<tr>
<td>129</td>
<td>French absence of research stations 129</td>
</tr>
<tr>
<td>121</td>
<td>Indochina Wars 121</td>
</tr>
<tr>
<td>245, 246</td>
<td>Indo-Gangetic plain 245, 246</td>
</tr>
<tr>
<td>249</td>
<td>agricultural exports 249</td>
</tr>
<tr>
<td>263</td>
<td>cholera 263</td>
</tr>
<tr>
<td>249–250</td>
<td>development of 249–250</td>
</tr>
<tr>
<td>250</td>
<td>ecology and agriculture 250</td>
</tr>
<tr>
<td>262</td>
<td>gastrointestinal infections 262</td>
</tr>
<tr>
<td>250–251</td>
<td>harvest and health 250–251</td>
</tr>
<tr>
<td>267</td>
<td>socially acquired immunity 267</td>
</tr>
<tr>
<td>70</td>
<td>see also Bengal, Punjab</td>
</tr>
<tr>
<td>15–275</td>
<td>Indonesia 15, 32, 275</td>
</tr>
<tr>
<td>1920s</td>
<td>economic history 70</td>
</tr>
<tr>
<td>349</td>
<td>indigenous movements 1920s 349</td>
</tr>
<tr>
<td>70</td>
<td>living standards 70</td>
</tr>
<tr>
<td>246</td>
<td>Indus river 246</td>
</tr>
<tr>
<td>1</td>
<td>industrial capitalism, global networks of 1 rise of 6</td>
</tr>
<tr>
<td>9</td>
<td>industrial rationality 9</td>
</tr>
<tr>
<td>334</td>
<td>industrial revolution, Western 334</td>
</tr>
<tr>
<td>38</td>
<td>industrialization and standardization 38</td>
</tr>
<tr>
<td>3</td>
<td>industrious revolution 3, 13, 64–65, 70</td>
</tr>
<tr>
<td>242</td>
<td>and Japan 323–324</td>
</tr>
<tr>
<td>172</td>
<td>Inland Niger Delta 172</td>
</tr>
<tr>
<td>193</td>
<td>Inner and Outer South Carolina Coastal Plain 193</td>
</tr>
</tbody>
</table>
Index

408

international development, visions or ideologies of 9
International Rice Research Institute (IRRI) 9, 35, 46, 48, 51, 52, 126
actor-networks 137
changing role 31
development of IR 132
diversification 51, 136
durability of rice 134
founding 110
rice breeders’ doubts 47
structural implementation issues of 134
success of 133
seed bank 219
and Vietnam 131, 132, 134
see also IR8
involution debate 10–11
Iowa 300, 302
IR-8 (“miracle rice” variety) 8, 37, 38, 39, 46, 47, 48, 49
considered inferior 49
development of 132
Thailand 132
Vietnam 126, 132, 133, 134
vulnerability to pests 47
IR8–288–3 rice variety 132, 133
IR26 rice 134
IR30 rice 134
IR36 135, 136
Iraq 109
iron rice bowls 277
irrigation 276
and inland rice cultivation 197
and rice China 88
irrigation rights, Asia 18
irrigation strategies 2
Ishikawa curve 323
Ishikawa Shigeru 123
Ishmael Rashid 148
Islam and groundnuts 234
Islamic expansion and rice 217

Jagra, port of 184
Japan 2, 3, 7, 14, 17, 70, 96, 128, 132, 275, 278, Chapter 14
association of rice and urban identity 322
challenges to theses of Japan’s development 319
comparison with Europe 329
cult of rice 18, 22
development of part time farming 332–333
diversification 325
dynamic of extended-family organizations 327–328
Emperor 22
export of labor-intensive path of industrialization 333
female employment 331, 332
government food and agricultural policy 332
growth of manufacturing sector 325–326
growth of rural economy 328
historical development of rice industry 321
ideological status of farming 23
importing Mekong Delta rice 129
industrial development 319–320
industrious revolution 3
and industriousness 23
industry and rural income 331
institutional mechanisms in operation 327
intensification of rice based farming 13
Japanese models of rural societies 17–18
Japanese models of society 17–18
Japanese-style rice-based agriculture 327
long term development 320
Meiji government 8, 11, 13, 22, 54, 318, 329
pattern of technical change 325
political role of rice 22–23
political role of rice 22
post-WWII economic miracle 332, 334
pre-industrial Japanese countryside and vectors for technical and economic change 327
real and symbolic role 318
research into Japanese economic history 323, 324–325
as rice-centred civilization 22
rice and development 310, 320
rice and industrial development 334
rice production 12–13, 15, 19, 21
rice and taxation 22
rice imports 33, 333
rice labor intensity and rural households 323–326
rice, development, and mechanisms of change 333–334
role of rice 22–23
rural economy 325–326
rural households and industrial development 330–333
rural households and markets 329
rural-urban population movement 332
significance of consuming rice 291, 321
Index

significance of rice 318
as successful rice economy 19
symbolic status of rice 22, 23
taxation of rice 22
theory of Japaneseness 21–22
wage work 328
Japanese rice merchants 129
Japanese rice (Japonica rice) 91, 139, 143
in Africa 220, 222, 227
development of 214
Sierra Leone 139, 154, 155
Java 3, 12, 127, 349–350, 352
agricultural involution 20, 68
capital investment 67
Cultivation System 10, 58, 68
economic growth 71
farmers 344, 345
fertilizer use 68
Geertz and 10, 20, 56
Java Residencies 61
mechanization 67
population growth 69–71
regencies 17
rice and sugar production 20, 57, 59
rice imports 33
rice production, 59, 126
sugar production 59
javanica 214
Jenne-jeno 172
Jennings, Peter 132
Jiangnan 91, 92
Jiangsu 85, 87, 88
Province 90
Jiangxi 85, 87, 88, 90, 93, 108
jing (geng) rice 91–92, 93, 96, 97
supply of 92
Jipalom, Kajamutay, Senegal 232
agriculture 234–235
drought 237
youth migration 243
Jola villages, Casamance region, Chapter 10, 16–17, 140
change in socioeconomic activities 229
drought 17
factors affecting production 239–244
farming in 21
flight of youth to the cities 238, 243–244
gender and tasks 23, 235
gender division and productivity 244
gender separation of labour 232–233
general rice economy characteristics 242–243
pre-drought surplus 236
and rice 231–232
rice growing 183, 232–234
sugar estates 57
trade off between rice production and commercial crop production 240–241
transition from net production to net purchasers of rice 229
variable rainfall 243
women and ritual power 233
workforce distribution 62
Jolof Confederation 171
Jolof kingdoms 182
Julião (slave, Amazonia) 288
June Twenty-third Street of Guangzhou 115
Kajamutay, Senegal 232, 233, 234, 237, 241
candu (fulcrum-shovel) 235, 239
Kalunay, Senegal 232, 237
changing gender roles 239
drought in 237, 238–239
Kanter, Dr. Dwight W. 314
Kaplan (town) Vermilion Parish, Louisiana 313
Kaplan, Abrom 313, 314
Keday 7
Khan, Muhammad Hayat (Judicial Assistant Commissioner of Gurdaspur) 257
King George’s War 191
Kloppenburg, Jr., Jack Ralph 316
Knapp, Seaman A.
Kloppenburg, Jr., Jack Ralph 316
Knapp, Seaman A.
Kloppenburg, Jr., Jack Ralph 316
Knapp, Seaman A.
Kloth and 319
Knepper, Adam 302, 303, 304, 305, 306
introduction of rice varieties 316
and rice growing 306, 307
statistics on wages 312
Knight, Frederick C. 279
knowledge transfers 118
Korea 8
Kukuna (town) 147, 148, 159
Kuomintang (KMT) 257
Lake Charles in Calcasieu Parish [County], 305
agricultural modernization 313
becomes predominant US rice producer 308–310
methods of production 310
rice yield 311
water control and agricultural innovation 306–307
Lake Tai 91
Lambert and ‘culture of migration’ 243
Index

Laminayah 148, 149, 153
lançados (Portuguese settlers) 224
Land to the Tiller reform, Vietnam 125
Landbouwatlas van Java en Madoera
(Agricultural Atlas of Java and Madura) 60, 81
landlordism 19
language, nature of 174
core vocabulary 175
“cultural” vocabulary, 176–177
developments in 174
dialects 174–175
genetically related language 175
linguistic subgroups 176
loanwords 177
transformation 175–176
word creation 177
Lansing, Steven 18
Latham, A. J. H. 29
Latour, Bruno 343
Law, John 118
League of Nations 102, 150, 151
Leal, Antonio Henriques 288
Leizhou Peninsula 90
Le Noble, Henry 201
Leonora (slave, Amazonia) 289
Levert, J. H. 348
Lewis, Michael 322
Limba 149, 153
linguist historians 173, 174, 175, 176, 177
Littlefield, Daniel C. 279
livestock 65–66, 81–83
correlation between livestock and rice
production 65–66, 77
LL62 rice 291
local versus cosmopolitan crops 42–45
ecological aspects 44
local strategies 44–45
value of local crops 44
local-global articulations 4
Long Xuyen, rice station near 224
long-handled hoe (ebarai) 235
Longo, Catherine 153–154
Los Banos 135
Louisiana 9
Cajun country 301, 304
Cajun farmers 305
development of rice industry 298–300
immigration 304
irrigation technology 299
official promotion of enterprise 301
prairie agriculture 305
and railroads 301, 303–304, 305
rice in 295
suitability of soil for rice growing 306
Love, Harris H. (Harry Houser) 104, 106
Lovink, Herman 342
Lower Casamance, Senegal 229
decline in productivity in 240
drought in 230
Lower Yangzi River 19, 20, 32, 85
Ludlum, Thomas 142, 161
Lulofs, C. (Sumatra civil servant) 343
Lyttleton, Captain William 167, 168
Maat * 20
see also anti-commodity
Macau 96
Macaulay, Zachary 142, 143, 147, 160
Madagascar 216–217, 219, 227
crop diffusion scenario 217
and term for rice 227
Madura 79
Magalhaens, D. J. G. de 289
Magbeti, (town) 147
main food (zhuliang) 26, 89
maize 66, 71, 83, 276, Senegal 238
Malacca 96
malaria (Plasmodium falciparum and P. vivax)
164, 165, 251, 271
human genetic resistance 265
impact of flooding 255
India 207
Indonesia 70
inland planters and control of water
208–209
and malnutrition 267
and monsoon 252
private canals, impact of 209–210
see also Bengal and Punjab
Malaya/Malaysia 18, 32, 339
Mali Empire 171
Malinke or Manding people, Senegal 234
Malleret, Louis 122
malnutrition impact of on illness 267
and epidemics 271
Manchuko 102
Manchuria, Japanese invasion of 102
Mande language group, Upper Guinea
169, 171
classification and evolution 169–170
Index

Mandingo slave rebellion, Sierra Leone 150–151
Mandingo traders 183–184
mangrove
compared to wet rice farming 183
farming by Balanta 281, 283
mangrove rice farming 23, 124, 140–141, 149–150, 151, 171
red mangrove 179
resistance to growing alternative crops 283
Senegal 236
tidal systems rice farming 213
white mangrove 179
Manila 96
manioc 231
Manjagar, Kingdom of 183
Maranhão, Amazonia 285–289
work as deskilled and decultured 285
Marçal, (Mandinga slave, Amazonia) 288
marigot 234, 235, 236, 238
maraoons 140, 145, 153, 338
Marxist materialism 17
Marxist literature 62
master-hand (gaoshou or nengshou), Hong Kong 113
materiality, significance of 338
Matthews, John 144, 145, 146
Mauritius 336
Maxwell, Governor 146
slave trade interests 146–147
McCung, Anna 218
Meggett loam 196, 197
Meiji Land Tax Reform of 1872 328, 330, 332
Meiji government see under Japan
Mekong Delta 5, 16, 39, 97, 118, 119, 136
blurred boundaries between areas 112
choice of rice varieties 123
concern about loss of biodiversity 137
flooding 121
French attempts to improve rice 126
hydro-ecological zones 119, 120
impact of mechanization 137
impact of elevation 122
impact of geological depression 123, 125
impact of industrialization 122
loss of biodiversity 137
loss of knowledge 137
material semiotics perspective 1212
as net importer of rice 134
plant breeding operation 134
rising sea levels 136
settlement patterns 122
Viet-Khmer relations 124
Vietnamese influx 123
seed repopulation of 111
terrain topography and hydrology 16
Mekong River and hydroelectric dams 136
fish stocks 116–117
Melo e Póvoas, Governor Joaquim de 285
merchant cultures 2
Merrins, H. Roy 207, 208
Mexican Agricultural Program 46
Mid-Western model of rice farming 9
Midwest, US, faith communities and migration south 303
indigenous knowledge system and agriculture 308
migration to Southwest 304, 305–306
and rice 306
and rice revolution network 300–301
transfer of wheat producing technology 306
miet vuon (garden strips), Vietnam 122, 123, 125, 126, 133
millet 51, 85, 167, 184, 213, 224
China 84, 88, 89, 90
Country Corn 167–168
pearl millet 213, 216
Jola village 231
Senegal 234, 237, 238, 239
Upper Guinea 182
Ming government 84, 96
Ministry of Agricultural and Mining, China 104
miracles of modernization 354
Mississippi River 298, 299
rice growers’ competitive advantage over South Atlantic plantations 299
see also Louisiana
modernity, emergence of 14
Mogbuama, Sierra Leone, analysis of rice varieties 157
Mohr, E. C. J. 348
molecular analysis of rice 21
money-merchants and moneylenders, Bengal and Punjab 268, 273
Mongol invasion of China 86
monsoon 247
and malaria 252

www.cambridge.org
morbidity and mortality rates, means of tackling 246
patterns of morbidity 274
Morgan 228
Morgan, Philip 279, 280, 292
Morla, Sierra Leone 146, 148, 152, 153, 160
British involvement 147
formation 144
slaves 144, 145
Moriba of Port Loko 147
Morris John 314
Mortgage Lifter 32
Moriba of Port Loko 44

N
Nagy 54
Nayar, NM 55
Navigation Acts (UK) and rice 56
Native Americans 61
Nationalist Government, China 62
National Liberation Front, Vietnam 124, 128, 132
Nationalist Government, China 101
Native Americans 16, 95
Navigation Acts (UK) and rice 191
Nayar, NM 213–214
near-universal varieties 46–47, 52
Needham, Joseph 11
Nerica rice 159
Netherlands Indies 335
Netherlands, The 335
and Sumatra 339
see also Sumatra
New Green Revolution 18
new plant types, limitations on 52
New Treatise on Guangdong (Guangdong xinyu) 93
Newington Plantation, South Carolina 198
Nguyen Huu Canh 122–123
Nguyen Van Huyen 130
nhaye grades Blanta 282
Nicholson Creek 204–206, 207
Niger delta, and origins of African rice 213, 215
Norris, John 198
North American Land and Timber Company, Ltd., 301, 302, 305
Nouvelle Politique Agricole (NPA) 242

Index

oats 88, 89
Oc En-canal nexus 122
archaeological excavations 124
Ohnuki-Tierney, Emiko 22, 318
Old Southwest (Texas and Arkansas): labor inputs early 20th century 312
Midwest farmers and rice industry 315
post World War I entrepreneurship 312–313
rice industry in 278, 295, 296, 301
Olmstead, Alan L. and Paul W. Rhode. 315, 316
ONCAD, Senegal 241, 242
Oracao, Island of 184
Oriental despotism, concept of 11
Oryza species: O. barthii 172, 213
O. glaberrimas see African rice
O. officinalis, 137
O. rufipogons 121, 124, 125, 137
O. sativa see Asian rice
distinction between O. glaberrimas and O. sativa 213–214
Otrolander, T. 348
Oussouye, Senegal 230, 231
Pan Siju, Fujian Governor 89
Panajachel, Guatemala 95
Pandit Devi Chand, Municipal Committee Vice-Chairman, Jullundur district, central Punjab in 260
Paris, Pierre 122
“participatory plant breeding” (PPB) 51, 52
Pasuruan 61, 73, 75
Pavie, Auguste 127
Pax Nederlandica 69
Pearl River Delta 19, 93, 94, 98
peasant agency and choices 20
and commercially competitive production
2017
peasant agriculture 20, 53
peasant labor, organization of 18
Pekalongan 78
Pemba 216
Penholoway, Talbot, Pamlico, and Princess Anne Terraces 200, 201
Peoples Council (Volksraad), Sumatra 349, 350
peta (rice type, Philippines) 132
Pekuser rye 43
phantom rice 125
Philippines 32, 131
Index

and IR-8 rice 47, 126, 132
rice imports 32
Phnom Penh (Cambodia) 123
PIDAC (Projet Intégré pour le Développement Agricole de la Casamance) Senegal 237, 238–239, 242
encouraging market gardening 239
“Plan for National Rice Self-Sufficiency (quanguo daomi jigei jihua)” 105, 108
“Plan for National Wheat Self-Sufficiency (quanguo xiaomai jigei jihua)” 105
plant breeders
being out of touch with needs and diversity 48
broadening scope of 51
cosmopolitan strategy 42, 44, 48
and the global South 53
role of 41
preference for local verities 44
quasi-deductive approach 52–53
see also universal varieties
plant breeding stations, development of 45, 53
plantain 215
plantation systems 7, 280
planters and slaves’ resistance 280
plasticity 155
Pomeranz, Kenneth 318, 326
poor, fate of 25
poor, fate of
Poonchee Plantation 200, 201, 202
slaves at 201
Porcelain 5, 6, 96
Portuguese trade 96, 224
and introduction of Asian rice 225
rice and Cape Verde islands 224, 225
Posner, JL 231, 237
post-independence development programs 1
Post-War World Food and Agriculture Conference 109
power and control, basis of 277
Priangan 79
Principle of People’s Livelihood, China 102
probolinggo 61, 73, 75
proto-industrialization, Japan 326
Providence rice 306, 307
Provincial Rice Improvement Committee, Hunan province China 107
public health studies and interventions, framing of 246
Punjab 7, 25, 94, 163, 164, 165, 246, 247
1908 Malaria Epidemic 253
agricultural practice 257–258
anti-malaria mutation 265–266

British rule 248, 269
canal system 250
cash crops and health 257
changing agricultural crops 247–248
cholera 263
crops grown 250–251, 252
development and impact on health 250
development of jhils, 251
flooding 251–252
growing inequality 265–273
health environment 250
health of cultivars 245
impact of high grain prices 269–270
incidence of bubonic plague 264
interwar decline in mortality rates 273
livestock, human refuse and health 259
malaria 252–253, 271
malnutrition and epidemics 271–273
other infections 264–265
patterns of morbidity 274
peasants, land settlements and alienation 269–270
prevention of malaria 251
relationship between malaria and intensity of cultivation 252
rulers of 247
seasonal hunger 270–271
situation in 1920s 270
socially-acquired immunity 267
technology 247
use of dung 259, 261
waterlogging as an issue 252–254
wheat cultivation 264–265
Pyne, Stephen 198
Qian Tianhao 104, 107
Qing dynasty 104, 123, 127
Qingdao 112, 114
Qu Daijun 93
Quanzhou 86
quídí díke, Balanta 281

racism, intellectual 14
Rajchman, Dr. Ludwig 102
Ravenel, Daniel 209
Ravenel, René Lewis 201
Ravenel, Susanne 201
rebel grasses, Vietnam 125
Rechenge, rice firm 114
Red River Delta, 130
refuse, use of, and disease 261
and drinking water 261–262
Index

regimes of subordination 14
Rembang 75, 79
reservoir-irrigated rice cultivation 189
Residencies, Java and sugar cane 61
analysing data of 72
Revolutionary War 210–211
Rhizophora racemosa 179
Ricci, Matteo 85
rice 37, 275
absence of archaeological evidence 187
and actor-network theory 16
adaptations to local environment, in Africa chapter 6
and agricultural morbidity 25
and Atlantic system 31
as an African slave plantation crop 144–147
as anti-commodity 353, 354
as both commodity and anti-commodity 337, 338
assemblages 5, 118, 119, 121, 131
association with power and control 276
botanical-social history of rice 40
capacity to hybridize 119
and capitalism 2, 3
classification of rice 38
commitment to rice 19, 21–28
as a commodity 21, 29–30
cumulative historical aspects of diet 276
cumulative yields compared to other grains 323
cumulative world rice production 37
of creation of global market 97, 98, 99, 277, 312
cultivars 118, 119
deepestwater 123, 124
demand for rice 31
development of modern rice 9
differences between West African and East African rice 219
double-cropping 39, 85, 97
ecological niches 8
economic development 2, 7
and environment 2, 163
European market 31
and exercise of power 276
factors behind spread 228
floating 39, 123, 124, 125, 172
and food self sufficiency 34
French colonial era research 130
gender and rice production 23
and genetic mapping of 21
global rice 5–9
global analysis of rice growing 163
global and local attributes 5
global rice trade 128
GMO rice 291
green revolution 137
hybrid rice systems 16
high yield rice development 133, 315
histories of rice 1, 3, 4, 5, 9, 118, 229,
chapter 13
holistic approach to grain cultivation 101
ideology of rice breeding 2
impact of labor input 323, impact of environment 164
impact of rice and the industrial revolution on economic development 323
and industrial revolution 13
and innovation in science 119
as influencing humans 136
interbreeding of types 27–28
interrelationship between literature on 166
interrelationship between rice populations 118
local production and international trade 353
and involution 14
landraces 37, 118, 119, 121, 123, 125, 126, 129, 131, 137, 218, 219
longest 123
managing sustained production 120
mapping of rice genome 121, 135, 136
mass and niche markets 30
means and mode of production 24
means of production and mode of production 24
mid-Western model of rice farming 9
“miracle rice” see IR-8
myth of rice 22
new varieties 136
New World rice systems 10
19th century market transition from Western rice to Asian rice 297
potential problems with genetic data 222–223
presence in North Africa and Mediterranean 215
purity of 39
integrated world rice market 2, 33–34
policy of the local versus policy of the universal 39
reasons for eating rice 86
reconceptualizing significance of 5
Index

red rice 138, 141, 142, 143, 144, 146, 147, 148, 161
relationship between regional rices 219
rice-based societies and attitudes to emergence of modernity 13
rice breeders 29, 47, 52
rice cultivation and generating growth 324
rice cultivation as skill-orientated agricultural system 12–13, 19, 100
rice economies 19, rice ecosystems 119
rice farming East Asia 14
rice growing and personhood 23, 24
rice, markets and power 276
“rice is nice” perception 21
rice quality and consumers 116
rice, researchers and bio-prospecting 137
rice-sugar relationship 58–59
and robbery 339–340
and role of supply and demand 85–86
scientific seed breeding 9
Senegal rice production 234–239
significance in Chinese history 99
significance of as rice 28–30
and slavery 17
small scale farming, key aspects of 19
and society 15–21
status of 21
and sugar cane 62, 63
 tensions between various interests 18
 transfer over sea rather than land routes 227
 transgenic rice 121
 in 20th century 121
 types of 27–28
 universal varieties 40
 using variability of 37
 varieties as assemblages 136
 varieties of 8, 16
 varieties of rice 46, 58–59
 West Africa 140–141
 wet rice fields 22, 56, 183
 wider context of rice 118
 wild rice 105–106, 121
 wonder seeds 129
 as world cereal 119
 and world economy 2
 yields early 20th century China 84–85,
 see also agricultural involution, Black Rice, Green Revolution, individual countries
 Rice Association of America 317
rice economies and the West 320
 historical trajectory of rice based economies 10
 rice farming systems, varieties of 163
 Rice Journal and Gulf Farmer 316
 rice plantations and response and interaction 192
 and creolization 16, 192
 rice revolution, US Midwest 300, 307, 314
 innovation and research 316–317
 irrigation systems 307–308
 yields 311
 Rice Riots 322
 rice-based agriculture and technical and economic change 327–330
 Richardson, David 279, 293
 Ricketts, Major Henry 147
 Rio Nunez region, 175, 178–179, 180
 cultural vocabulary of inhabitants 180–181
 Portuguese in 181
 rice growing technology 181
 Riopongeos area 145
 Roche family, South Carolina 204
 Roche, Patrick 206
 Rockefeller Foundation 46, 131
 Rodney, Walter 169
 Rokup Rice Research Station 151
 roofbouw, (robbery cultivation) 340, 344, 352
 Rosengarten, Theodore 198
 Rosomoff, Richard 225
 rubber 20
 rural poverty 48
 Ryuku Islands 33
 Sacramento Valley of California, stubble burning in 291
 Saigon 122, 123, 127, 128, 132, 134
 salt production and trade 171
 Sambujat, Senegal 230, 238
 aquatic rice production 236
 and drought 237
 Esudadu Jola in 235–236
 non-gendered agriculture 236
 ritual power of women 233
 social division of labor 238
 system of tidal control 236
 youth migration 244
 sanganyaa rice 159
 Sansom, Robert 133
 Sao Tome 224
 Savannah River 196
Index

sawah, Java, 56, 58
and dwarfholdings 63
rice production 60
and sugar cane production 61, 62
Schneider, Jürg 345
Schoenbrun, David 178
Schultz, Theodore 95
scientific analysis and global history 186
scientific and industrial revolutions 11
Scott, James C. 41, 278, 338, 339
secret abacus” (midi suanpan). China 113, 114
Selatdjaran, Sumatra 348
Selatdjaran, near Palembang 347
Selatdjaran, Samatra 348
Senegal 3, 9, 163, Chapter 10
establishment of official organizations 242
impact of drought in 236–239
official ideology 240
perceived administrative inefficiencies 240
period of regulatory uncertainty and impact upon agricultural economy 242
post independent state and interventionist agricultural policies 241
rice growing in 139
rice growing region 16
state and drought 240
Senegambia subregion 168, 171, 188, 227
Shandong 114, 115
Shanghai market 98
Sharp, Granville 141
Shen Chiran 92
Shen Zonghan, Dr 105, 106–107, 109
post war career 109–110
Shinriki rice, Japan 50
Siam (Thailand) 7, 8, 15, 31, 32, 111
export trade 32, 33, 34, 98, 99
Sierra Leone 9, 21, 40
abolitionist settlers in 138
African red rice 138, 143, 144
agri-business 152
Anglo-French colonial boundary division 149
farmer created rice varieties, analysis of 154–157
formation of Colony and Protectorate of Sierra Leone 150
Green Revolution 150–151
introduction of Carolina rice 138, 140, 155
japonica rices in 139, 140, 155–157
League of Nations interest in 150
modernizing agriculture 151–152
post-slavery system 142
seed merchants 160–161
settlement for freed slaves 141
slave based food systems 19th century 149–151
slavery, emancipation and rice genetics 152
trade patterns 146
underclass farmers and innovation 159
urban food requirements 151, 152
use of rice varieties 153
see also mangrove
Silk Sprout (Simiao) rice 115
silk, trade in 87, 88, 96
Silva, Antonio da (planter) 288
silver China 96, Japan 96, New World 96, 97
Silvestre (Bambara, slave) 289
slavery
slave trade 7
Amazonia 284, 285–289
Atlantic slave trade 30, 97, 138, 167, 169
farm slavery 147
French and abolition 150, 151
impact on Africa 27
indigenous African 144–146
injuries to Amazonia slaves 287–289
and rice 7, 10, 17
and technology transfer 10
United States 14, 24, 50, 280
US Civil War and emancipation 298
smallholders 64–65, 72
agricultural intensification 72
and control of rice breeding 51
and technology 49, 50
changing analysis of 354
Europe 45
farming strategies 20
innovative capacity of 50
intensification and industrial revolution 61–64
subsistence-orientated 62
Sumatra 20, 351–353
trajectories of crop production 229
Vietnam 126
smallpox 70, 191, 264, 266
Smith, Adam 71
Smith, Thomas C. 327
Smilsonian growth 71, 72
Smits, M. B. (Sumatra civil servant) 343, 344, 348, 350, 352, 353
Société des Études Indochinoises 122
South Carolina Coastal Plain 190
South China Sea rice trade 100, 110–112
trade 123
South Vietnam 110, US and 132
Southeast Asia rice histories 17
colonial authorities in 110–111
rice trade 110, 112, 126–127
southern and northern trade (Nanbei hang),
China 112, 113, 114
Southern Pacific Railroad 301
Southwest Immigration Company 301
Spain, trade from 96
Spicer, J. M. 314
Squarehead wheat 43
Sri Lanka civil war 149
St. Johns River region Florida 294
St. Julian, Peter 96
Stoler, Ann 67
Stony Rebellion 191
Storey, Bill 336
Street of Nanbei hang. 301
Subak (Bali) 18
Sugar 19, 57, 59, 61
adapation of rice cultivation 190
antebellum economic decline of rice
duck 200
exports of rice 191–192
flexibility in controlling water 203–204
forest clearance 198
impact of microenvironments 204
inland cultivation 189, 190, 191
inland cultivation and slave labor systems 190, 197
inland rice cultivation 193, 195, 197
introduction of rice 190
and knowledge systems 10, 291
Lowcountry cultivators 16, 190, 191
Lowcountry plantation enterprise and
Atlantic markets 206
Lowcountry rice planters and wastewater
removal 203
Lowcountry slaves 199–200
Lowcountry topography 192, 193
Index

Taihixing, rice firm 114
Taiwan 8, 86, 108, 109, 128, 132
Nationalist government 35
Tamnnd 228
Tân Nông [TN, New Agriculture] number 73
rice 134
Tan Qian 84–85
Tan Tsz Huawg 111
Tang Youheng 104
Tangerang rice of Java 129, 130
Tanimoto, Masayuki 331
Tanzania 228
taro 215, 216
taste and rice 26, 27, 29, 47, 48, 49, 51, 115, 120–121, 130, 322
consumer 40, 97, 118
Tawney, Richard Henry 96
tea, trade in 19, 87, 96
technological determinism 116
“technological package” 47
limitations of technology 55
technology networks, role of, in the innovation process 300
Temudo, Marina 283
terry, George D. 207, 208
Tet Offensive 132
Texas Star 225
Thailand 132
Thompson, Alexander 302, 305
Thomson, Rev. William Cooper 148, 152–159
Three Principles of People, The 101
Tianjin 112, 114, 115
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Toko 139
togusawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
togusawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325
tobacco cultivation Sumatra 340, 341, 344, 345, 346
Tân Nông [TN, New Agriculture] number 73
Togo 139
Tokugawa period, Japan 121, 322, 324, 325

418

sugar cane sector Mauritius 336–337
Sui Wai Cheung 48
Sumatra, rice growing in 20, 278, Chapter 15
1937 riots 337
colonial government 20, 333–334
colonial histories 352
colonizers’ view of commodity production 336
Dutch statistical analysis of trade early 20th century 342
East Asian markets 335
establishment of colonial rule 339
impact of WWI on international rice trade 335, 342
import of Javanese farmers 345
local agricultural practices and accommodating change 351
local crop emphasis 343
negative portrayal of culture and agriculture 339, 340
plantation agriculture 314, 340, 342
post WWI rice market 350
recruitment of overseas workers 341–342
rice as an anti-commodity 336, 354, 355
rice as commodity 351–353
rice cultivation 340
rice production and marketing issues 336
rice trade with 340
Sumatran farmers’ views of rice production 336, 353
upland or dry rice 276, 343, 345
wetland rice 345
WWII and rice imports 345–346
Sumbuya 145, 147
Sun Yat-sen 101, 102, 103, 105
sustainability and participation 51
sustainable cultivation practices 52
Susu language 181
Suzhou 86, 87
Swahili, linguistic influences on 217
and rice 227
Swawah 58
sweet potatoes 88, 89–90, 91
attitudes towards 89
swidden agriculture, Sumatra 338, 340, 344, 352
and shift to static cultivation 339
Tabancas, villages, Balanta 281
Taichung Native 1 (deego-woo-gen) 35, 132
Taichung Research Station 35

© in this web service Cambridge University Press

www.cambridge.org
split between TRJ groups 224–225
spread across Atlantic world 224–225
spread of 226
and Upper Guinea 226

U.S. Agency for International Development 133, 134
UK Parliament and the Slave Trade 167
United Kingdom
Bengal and rice 31
and Carolina rice 31
colonies and rice 31
industrial revolution in 13
and Sumatra 339
United States 3
abolitionist movement 138, 141–143
American South and rice 15, 163
Bonanza farmers and agronomists 8
California and rice 8
Carolina rice 28, 30, 31, 97, 161
Carolinas 15, 16, 24, 25, 30, 31–32
Cultural meaning of work in the Americas 284–290

cultivation system 292
expansionism and southern history 301–302
export programs 128
gender inequality in rice plantations 284
geographical distribution of rice 293, 295
history of rice industry in US Chapter 13
influence of Africa on 30
Louisiana and rice 8, 293
nature of plantation system 10, 293
origins of rice growing in US 292
relationship with Africa 14
rice in 7, 8, 275
and rice in Asia 32
rice industry late 19th century 300
rice system 24
shift from net export to net import of rice 299–300
slaves and rice plantations 14, 284
slaves, sale of transported 168
spatial geography of rice production 293
use of slave labour 293
white planter input 292
see also Georgia, Old Southwest, slavery, South Atlantic, South Carolina
“universal varieties” (Universalsorten) 37, 39, 40, 43, 45–49, 53
criticism of 44
local strategy 53
and Black Rice thesis 291, 292
see also Black Rice
University of Nanking (jingling daxue), 106
Upper Branch (Tien Giang) Mekong 123
Upper Great Plains, wheat production in 308
Upper Guinea 279
Upper Guineans and American rice 280
and hard work 280
cultural meaning of work in Upper Guinea 280
Upper Guinea Coast 161, 168–187
changing rice exports 183
extent of rice production 168
geography 169–171
issue of uniform commitment to rice 183
language groups 169, 173
level of commitment to rice production 184
linguistic sources and regional history of rice 172
location of rice fields 165
need for diversification 187–188
and origins of African rice 213
rates of illness in 165
rice as export commodity 97
rice cultivation 172, 225
rice varieties 226
sustenance system 283–284
trade in grains 182
trade in iron and slaves 281
travellers’ accounts of 182–185
and TRJ rice 226
Upper Guinean knowledge system 284, 290
USDA 219, 220
USDA database 218, 223
USDA’s Soil Tilth Laboratory 317
USDA-ARS Dale Bumpers National Rice Research Center, Stuttgart, Arkansas 218
van der Stok, J. E. 148
van Linschoten, John Huyghen 6, 248
Vansina, Jan 178
Vasconcellos, Felipe de Barros 288, 289
Vieira, Leonel Fernandes 288
Vietnam 15, 32, 98, 122
Chinese immigration 127
Chinese merchants 127, 128
colonial period 128
colonial rule 128, 129
disappearance of varieties of rice 126
durability of tradition 129
entrepreneurs 133
### Index

**Vietnam (cont.)**
- ethnic division in rice preparation industry 127, 128, 129–130
- failure of colonial state to improve rice 129, 130
- French importation of Javanese labor 129
- Green Revolution 134
- historical expansion 97
- hybridizing of rice varieties 129
- IRRI 131, 133
- markets 129
- Republic of 126, 128
- reunification 121
- rice cultivation in 97, 121
- as a rice exporter 135
- Socialist Republic of 126
- studies of rice 130, 131
- US and rice distribution 132
- US presence in 131
- French attitudes towards rice production 127
- Vietnam War 110, 121, 125
- and agriculture 133

**Vink, G.J.**
- 67

**Vlach, John-Michael**
- 208

**von Verschuer Charlotte**
- 22

**Wallace, Henry**
- 315

**Walshaw, Sarah**
- 216

**Wando River**
- 200, 201, 207
- “Wanglee” rice 111

**Watkins, Jabez B.**
- 302, 304, 305, 307, 314

**Weihai 112, 114**

**West Africa**
- 31, 163, 164, 277–278
- 1960s drought and food shortages 229–232
- and anti-commodities 21
- anti-malaria mutations 263
- Asian rice in 217

**Carolina rice**
- 161

**comparative method of historical linguistics**
- 172–173

**dryland system**
- 141

**Europeans, malaria and quinine**
- 185–186

**French abolition of slavery**
- 150, 151

**and Green Revolution**
- 160

**impact of knowledge systems on American rice history**
- 292

**japonica rice**
- 161

**maritime trade and rice**
- 97

**peasants and rice development**
- 160, 161–162

**power and government**
- 277–278

**red and white rice**
- 138–139, 141

**rice**
- 138–139

**rice cultivation**
- 140

**rice culture**
- 100

**rice farmers and environmental history**
- 185–187

**rice varieties**
- 139, 140

**slave trade**
- 7, 10, 27, 50, 141

**West Africa, rice and the Atlantic**
- 223–226

**West African entrepreneurship**
- 186

**West African gold trade**
- 171

**West African knowledge system**
- 2, 10, 15, 30, 31, 186, 187, 245, 249

 **see also**
- Black Rice debate, mangrove

**West Bonham Street, Hong Kong**
- 112–113

**West River, China**
- 86, 88, 93, 94

**Western Jumna canal**
- 253, 254

**wheat**
- 84, 85, 88, 89, 276, 277

**Guangdong Province**
- 93–94

**Vietnam**
- 103

**wheat cultivating machinery, adaptation to**
- 308, 310–311

**Wilberforce, William**
- 141

**Wilson, James (“Tama Jim”)**
- 303

**Windsor Plantation, South Carolina**
- 204, 206

**Winterbottom, Thomas**
- 144, 145

**Wittfogel, Karl**
- 11

**Wolof ethnic group, Senegal**
- 234

**women and creativity**
- 14

**and the economy Indonesia**
- 70

**Indonesia**
- 70

**and West Africa rice cultivation**
- 10

**Wood, Peter H.**
- 192, 279, 291

**work brigades, China**
- 18

**World Bank**
- 150, 151

**Wright, Solomon Lusk (“Sol”)**
- 316

**Blue Rose variety**
- 316

**Wuzhou Prefecture**
- 94

**xian rice**
- 91, 92, 93, 94, 97, 98, 99

**on West River, China**
- 93–95

**Xie Jiasheng**
- 107

**Xuan, Dr. Vo Tong**
- 131, 134

**research**
- 135

**on rice development**
- 136–135

**Yaerhashan, acting Governor Jiangsu**
- 89

**yams**
- 51, 88, 89, 183, 216

**Yan, rice merchant**
- 115

**Yangekori, 145–146**
Yangzi Delta and rice production 19, 91, 93, 94
archaeological evidence 186, 187
rice imports 96, 98
varieties of rice grown 97
Yangzi River 86, 87, 88, 94
Yangzi Valley 18, 93, 97
Yenching University’s rural reform project 107
Yogyakarta 64, 74, 76, 83
Zhao Lianfang, Dr 105, 106, 107, 108
post war career 109
Zhaoqing 94
Zhejiang 85, 88
Zhong Shou 114
Zhong Xi 114
Zhongnong No. 4 rice 108
Zhongnong No. 34 rice 108
Zhu Zhixi 84
zhuliang 89
Ziguinchor area, Senegal 229, 230

zaliang (coarse food) 89
zamindars, Bengal and Punjab 268
Zhangzhou 89
Zhao Lianfang, Dr 105, 106, 107, 108
post war career 109
Zhaoqing 94
Zhejiang 85, 88
Zhong Shou 114
Zhong Xi 114
Zhongnong No. 4 rice 108
Zhongnong No. 34 rice 108
Zhu Zhixi 84
zhuliang 89
Ziguinchor area, Senegal 229, 230