

they were granted with emancipation. They worked to gain equality with their former masters, educated themselves, and resorted to violent and illicit means when they faced fervent opposition from whites. Their victories were small, and Lightfoot's book reveals the stark difficulties that newly freed blacks faced in Antigua, and also shows the many drawbacks of the emancipation project within the British Empire.

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*Fusion Foodways of Africa's Gold Coast in the Atlantic Era.* By J. D. LA FLEUR. Leiden: Brill, 2012. 214 pp. \$144.00 (hardcover).

*Rice: Global Networks and New Histories.* Edited by FRANCESCA BRAY, PETER A. COCLANIS, EDDA L. FIELDS-BLACK and DAGMAR SCHÄFER. New York, NY: Cambridge University Press, 2015. 421 pp. \$99.00 (hardcover).

For at least the last ten thousand years and probably much longer, most people have depended for most of their calories on a primary starchy staple, usually prepared from a grain or a root. Secondary starches have provided a backup in case of crop failure and in the lean time before the harvest of the primary starch. Besides being fundamental to health, food security, and culture, these staples, so laborious to farm and process, were integral to the distribution of labor, to divisions between subsistence and market agriculture, and to economic growth or lack of it. Changing how familiar staples were produced or processed, or shifting to a new staple, even if this promised a more secure or more appealing diet, was never undertaken lightly.

Such changes are central to, if not always carefully analyzed in two widely-discussed issues in the history of the modern world. The first is the Columbian Exchange, the transfer of living things, plants included, between the Old World and the New, described by Alfred Crosby in *The Columbian Exchange: Biological and Cultural Consequences of 1492* (1973), and frequently assumed to have precipitated rapid dietary change and population growth. The second is the question of why the West industrialized in the nineteenth century, when China and other non-western civilizations apparently failed to do so. For much of the second half of the twentieth century, the answer was framed in terms of Clifford Geertz's *Agricultural Involution: The Processes of Ecological*

*Change in Indonesia* (1963), in which he argued that rice farming could be intensified almost indefinitely, increasing production per area at the cost of keeping production per worker the same, and thus leading to economic stagnation. The environmental historian Mark Elvin extended this analysis to China in *The Pattern of the Chinese Past* (1973) suggesting that China had fallen in to a "high-level equilibrium trap." Both *Fusion Foodways* and *Rice* address the Columbian Exchange, while *Rice* also takes on the Involution hypothesis.

To begin with exchange, in *Fusion Foodways*, La Fleur focusses on the introduction of maize, Asian rice, plantains, and cassava to southern Ghana between 1482 when the Portuguese established a fort at Elmina and 1850 when the Atlantic era tilted over to the colonial period. Faced with a sparsity of written sources, a lack of physical remains thanks to the climate, oral traditions directed as much at present concerns as at representing the past, and a still-scanty literature on plant genetics, La Fleur turned to language. From early European books and manuscripts and current usage, he collected food names in five different vernaculars, concentrating on loan words for unfamiliar crops and adapted words for new crops similar to ones already in cultivation.

As a preliminary, La Fleur reviews the thousands of years of African experiments with different foraged, gardened, and eventually farmed crops. Only in the last hundred years before the arrival of the Portuguese did the local people finally settle on African rice, millet, sorghum, or yam as their main staples, selecting one or more depending on local conditions and their need to minimize or reduce both labor and risk of crop failure. Each staple was processed into one or more basic staple foods, the most prestigious being fufu, a dish of cooked, pounded yam. Thus the locals, particularly women, were already experienced in the arduous work that went into the adoption of a new crop. This involved trial plantings in gardens, breeding to adapt the crop to local environmental conditions and cultural expectations, and developing ways to process and cook the plants into appetizing dishes.

Plantains which are propagated by cuttings not seeds, were one of the most difficult of the post-Portuguese introductions to establish. The necessary knowledge was supplied by slaves imported from Central Africa where plantains were already familiar (La Fleur rejects the widely-held view they were already in West Africa). Plantains, however, were easy to process into a fufu-like paste for the lean months. Asian rice, with its subtly different agricultural and processing properties, supplemented African rice.

Maize, the most important of the new crops, ripened rapidly, produced abundantly, and was easy to breed, so farming was relatively

straightforward. Slaves imported from the Niger Delta further east along the coast, were put to work by African “big men” to grow maize commercially to supply gold mines and slave ships. For processing, cooks adapted techniques already in use for millet and sorghum to make cracked grain porridges, beverages, and “breads” of fermented dough, as well as inventing a new maize food, the solid fermented dough, kenkey, that is still in use.

Cassava, which had to be grated and pressed to express the toxic juices, become adopted as a hunger food only in the mid-nineteenth century. By then farmers had bred less poisonous cultivars. Even so, new immigrants—Afro-Brazilians resettled to West Africa following slave revolts in Bahia in the early 1830s who knew how to make the grated condiment-like garri and Jamaicans in the 1840s who introduced the Amerindian technique of making hard, flat cakes, known as casaba—were essential to the ultimate, reluctant acceptance of the starch.

Contact also meant new uses for local millet and sorghum. Learning from the Portuguese criminal outcasts both male and female who served as the support staff and soldiers for high ranking Portuguese, African cooks turned them into versions of bread and ships’ biscuits to provision European mess halls and ships, and into millet beer for sale and for home consumption.

The benefits of the increased variety of staples were unevenly distributed. Poor Africans went hungry when crops failed, as they often did due to pestilence, drought, or frequent warfare, forcing families to sell children into slavery, an event anticipated by both African and European traders. If the hungry resorted to a largely-maize diet, their miseries were compounded by deficiency diseases such as kwashiorkor or pellagra. The wealthier Portuguese, the English, the Danes, and other Europeans shunned the starchy staples, preferring imported food, a custom emulated by African “big men” who dined on preserved fruits and meats and even the most valued of foodstuffs, fresh beef, from finely-chased silver platters.

Transatlantic exchange is also the subject of about half the papers in *Rice*, in this case in the context of the Black Rice hypothesis, advanced by a number of scholars, most forcefully Judith Carney who coined the term in *Black Rice: The African Origins of Rice Cultivation in the Americas* (2002). She argued that both production and processing of rice on the plantations of South Carolina and Brazil depended on the skills of enslaved African women from the rice-growing Upper Guinea Coast. Although the Black Rice hypothesis has been challenged, most notably in a series of essays in the *American Historical Review* in 2010, the contributors to *Rice* instead concentrate on the complexity of transfers

between rice farming in Senegambia and the Americas. Culturally, coerced slaves experienced their labor very differently from free workers, points out to Walter Hawthorne. Technically, reservoir-irrigated rice meant adapting, not just adopting tidal irrigation methods, explains Hayden Smith, while Peter Coclanis shows that lack of experience with rice did not prevent Midwestern entrepreneurs from establishing the modern rice industry of Louisiana and Texas. On the other side of the Atlantic, farmers were too smart to rely on just one staple, argues Edda Fields-Black like La Fleur, though even diversified farming did not protect them from crop shortfalls. Rice from Asia was introduced at least three, perhaps four times, along different trade routes according to Erik Gilbert and rice from South Carolina, introduced to the abolitionist settlement of Sierra Leone at the end of the eighteenth century as a commercial crop, say Bruce Mauser, Edwin Nuijten, Florent Okry, and Paul Richards in their co-authored paper, was transformed by breeding into a product more like African rice before becoming a staple for locals in the late twentieth century. Olga Linares shows how the people of southern Senegal, formerly self sufficient in rice, have recently become net importers thanks to tensions between trade and subsistence, changing weather patterns, urbanization, and economic policies. Between them La Fleur and the contributors to *Rice*, show convincingly that staple transfers were never easy, that dietary change required a steep learning curve, and that much more research is needed on the effects on world history.

Turning to the Geertz-Elvin hypothesis of involution and high-level equilibrium traps, Francesca Bray, Chinese agricultural historian and the lead editor of *Rice*, challenged this as early as 1986 in *The Rice Economies: Technology and Development in Asian Societies*. She, followed by other members of the California school of Asian history such as Kenneth Pomeranz and Roy Bin Wong, argued that rice-based farming by enabling rural diversification provided a path to higher productivity distinct from the mechanized agriculture of Britain and its colonies. Soon thereafter, drawing on ideas that Japanese historian Akira Hayami had developed in the 1960s, Jan de Vries suggested that in the Netherlands too, more intense labor led to economic growth, a line of research culminating in his *The Industrious Revolution: Consumer Behavior and the Household Economy, 1650 to the Present* (2008).

Thus is it perhaps not surprising that the contributors to *Rice* offer a series of studies to show how small-scale rice farming can still be market-oriented. Whether in eighteenth-century or modern China, Sumatra in World War I or contemporary Vietnam or Japan, rice

farming has never been inward-looking, farmers selecting and breeding to meet market demand, adopting appropriate technology, and diversifying into other economic activities. Perhaps most telling is the re-working of Geertz's data by Peter Boomgaard and Pieter M. Kroonenberg who conclude that he got many of his facts wrong and suggest that the term 'involution' be forthwith abandoned. My chief reservation with this set of essays is that in spite of promising to cover rice from production to consumption, the authors say little about either post-harvest processing or the multiple culinary and non-culinary uses of rice and its by-products (straw, for example). In particular, they ignore the mechanical rice mills that from the late-nineteenth century onwards dramatically reduced the labor of making white rice, surely a key contribution to an industrious revolution.

Both books are slow and difficult reads, the authors frequently assuming familiarity with the history and geography of the regions under discussion, as well as with genetic, linguistic, and economic methods. The effort, though, is well worth it as they move the history of staple foodstuffs to a new level, greatly extending understanding of the history of agriculture and food, particularly in West Africa and East Asia. Even more important, they pose a new series of questions: How does food production for global trade intersect with production for local markets, or even for subsistence? Why do some agricultural products become commodified and others not? Who are the individuals and groups who effect different aspects of transfer? And what are the cultural and economic conditions that encourage or impede agricultural and culinary transfer that has been and continues to be so crucial to the world food supply?

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*The Sea and Civilization: A Maritime History of the World.*

By LINCOLN PAINE. New York: Alfred A. Knopf, 2013.

pp. xxxv + 744. \$25.80 (hardcover).

A more fitting subtitle for this book could be "The Silent Service," a name that is normally applied to the U.S. Navy's submarine fleet, since Lincoln Paine's 600-page (not including notes and bibliography) opus "The Sea and Civilization: A Maritime History of the World," proves that this epithet can now equally refer to almost