velop and act on sound data rather than beliefs, even well-intended ones.

Food Politics is essential reading for anyone seriously interested in addressing the nutritional dilemma facing the United States. Its greatest value lies in the detailed documentation of the ways in which the food industry operates, and nearly everyone will find information that is new and useful. Nestle's account does not make for light reading, but it will certainly contribute to informed discussion and, hopefully, effective actions to reduce the burdens of obesity and related conditions.

BOOKS: HISTORY OF SCIENCE

Consequences of Raising Cane

Jorge Cañizares-Esguerra

Steam-powered three-roller mills, railways, and new chemical processes allowed for the transformation of sugar refining in the late 19th-century Caribbean: wasteful, old colonial *ingenios* were replaced by efficient, modern *centrales*. These changes are all well known, but historians have overlooked the equally important role science played in the transformation of sugar agriculture. The introduction of new varieties of cane, for example, caused a 20% increase in sugar production in Puerto Rico in 1923–1924 alone. Images of islands of modernity amidst oceans of agricultural backwardness have come to dominate our perception of fin-de-siècle Latin America. In *States of Nature*, Stuart McCook offers a timely corrective to this age-old view.

McCook, a historian at the College of New Jersey, persuasively shows that natural history, and botany in particular, had contributed a great deal to the 19th-century export economies of the Spanish Caribbean. Networks of local and foreign botanists and naturalists, for example, surveyed and classified the various national floras, giving plants a "civic status." The tottering fledgling republics quickly understood that exercising sovereignty included laying claim to the naming of botanical resources. Moreover, naturalists in some places went beyond cataloging and speculating about the economic potential of newly identified organic assets. In Costa Rica, they managed to create a discourse of national-botanical exceptionalism, which nowadays has become hegemonic as the significance and scope of ecotourism in this small Central American republic grows.

States of Nature
Science, Agriculture, and Environment in the Spanish Caribbean, 1760–1940
by Stuart McCook

University of Texas Press, Austin, 2002. 215 pp. $50. ISBN 0-292-75256-3. Paper, $22.95. ISBN 0-292-75257-1.

For all the contributions he makes to our understanding of the role of botany in the symbolic consolidation of the Spanish Caribbean, McCook is at his best exploring the impact of agricultural research centers in early 20th-century Puerto Rico and Cuba. These centers—most of which were founded by U.S. institutions (primarily multinational corporations but also Harvard University) and the U.S. government, though often led by Caribbean nationals—were instrumental in creating and developing the science of "tropical agriculture." This science, in turn, was largely responsible for the wholesale ecological transformation of the region. As tropical agricultural scientists (botanists, mycologists, entomologists, and ecologists) sought to contain the spread of deleterious diseases affecting the sugar cane, they identified the life cycles of vectors, parasites, and viruses. They also developed hybrid canes, which were resistant to these diseases. As an added benefit, the new varieties of cane sometimes made the process of refining easier by providing softer canes for roller grinders, burning fuel for boilers (thus reducing the problem of deforestation), and richer syrups. But the introduction of novel varieties into the field also created genetic homogeneity, which made the crops susceptible to new diseases. To catch up, scientists then had to develop fresh hybrids, which set off another cycle of the changes.

Scientists in Puerto Rico became incredibly efficient at this process and improved the productivity of the sugar industry manifold. Understandably, they therefore sought to spread the gospel of the new science of tropical agriculture throughout Latin America. In this they were less successful, because other crops such as rubber in Brazil and cacao in Ecuador proved unamenable to manipulation and control. Brazil and Ecuador lost entire industries to crop diseases in the 1920s.

Fieldwork for floras. In the years around 1900, Costa Rican naturalists built extensive botanical collections for the country's Instituto Fisico-Geográfico Nacional and National Museum.

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McCook describes not only the rise of the technocratic utopia engendered by the new tropical agriculture, but also its fall. Along with the failure to stem the tide of diseases in crops other than sugar cane came the Great Depression. In the 1930s, Latin Americans found global markets glutted and they faced diminishing prices for their cash crops. The crisis led to new strategies of agricultural development that put less emphasis on scientific silver bullets and more on implementing social reform, raising food crops, and introducing import substitution.

This thoughtful study raises as many questions as it answers. McCook, for example, suggests that the science of tropical agriculture in Puerto Rico and Cuba was "creole." Playing with the polysemic meaning of this term ("hybrid" in the United States, "home-born" in Latin America), McCook pays attention to the local dynamics of the new science. It is clear that as they struggled to create new institutions, foreign and local scientists often had to contend with political instability, unreliable sources of funding, chronic shortage of resources, and even official corruption. But for McCook, "creole" simply signifies institutional development under conditions of adversity. His model of "creolization" is overly negative. He might have considered how the encounter with the local intellectual traditions of the Spanish Caribbean affected the foundational questions and paradigms of the new science, one primarily developed by U.S. scientists. Another topic that might have yielded interesting results is that of the relation between tropical agriculture and "tropical medicine." How did these two coeval sciences interact in the creation of the imperial construct of the "tropics"? Were there institutional differences between the developments of tropical medicine and tropical agriculture? Such caveats aside, *States of Nature* is a fine and much needed study.

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