

## Moving Crops and the Scales of History. By Francesca Bray, Barbara Hahn, John Bosco Lourdasamy, and Tiago Saraiva. 2023. Yale University Press, New Haven. 352 pp.

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*Moving Crops and the Scales of History* is a remarkable book with an astonishing organization strategy that turns the historical ecology of agriculture away from the obvious botanical categories as simply crops to the larger dimensions of crops in context. Readers will find this a lively contribution to the understanding of the ever-developing relationship of our species and the world around us to the plants we depend on.

The authors are all, broadly speaking, historians of technology and agriculture. Francesca Bray focuses on everyday technologies in East Asia; Barbara Hahn studies commodity and plantation crops during industrialization and capitalism; John Lourdasamy examines medicine and engineering in colonial and post-independence India; and Tiago Saraiva concentrates on colonial and fascist science and technology. Together, these authors have synthesized a vast body of materials teasing out details that bring to bear a global fusion of a new inspired agricultural history.

This book is a creative elucidation of varied subjects based on collaborative appreciations of a wide set of examples drawn from their collective experience. Their account is exciting and startling. Ethnobiology is put to test, examining the historical ecological records from various vantage points, including archival texts, primary resources, ledgers, paintings, photos, and film, all cleverly woven into a narrative that keeps the reader anticipating the next revelation.

The organization of the book is provocative, oriented in chapters titled: Times, Places, Sizes,

Actants, Compositions, and Reproductions. Each chapter theme captures novel aspects of the cropscape. While most of the titles are intuitively obvious, Actants is not. An actant is a dynamic entity or agent that participates in shaping and driving events and runs from policy to pests. This organization allows the authors to develop the important concept of cropscape, not simply crops and their outputs. This approach addresses the global categories that historically make a difference.

Many of the examples highlight the impact of the short-term profit-oriented commodity cropscape and its grim consequences. These are set against cropscaapes that were transformed from complex traditional Indigenous ones that had emerged over the long term to avert risk. This is clear, for example, in the case of the garden magic of the Trobriands where missionaries noted that "... to the native, magic is as indispensable to the success of gardening as competent and effective husbandry" (p. 134). And evident, as well, in the authors' appreciation of local values with the Maya milpa forest gardens, where shifting cultivation was viewed "by modern agronomists as an extensive form of land use with low productivity." Milpa fields, in fact, "like most other swidden systems, can be highly productive" (p. 191), with Maya farmers managing not only the fields but the perennial landscape, recognized as a cropscape for food, shelter, and other household goods. These accounts show how homogenization changes how the cropscape is valued: gauging soil by the standards of the West, estimating land principles based on the



World Bank, building seed banks divorced from the living assemblage, and seeking to feed millions with Green Revolution agriculture.

Chapters by themes, such as sizes and compositions, explore crops and their changing values over time and across space. The small size of Indigenous polyculture fields is part of the large regenerative cropscape that includes the perennials. These perennials are completely missed by the Western view of the maize crop alone. This may also be addressed in compositions where the modern agronomist sees only maize in a sea of forest, yet the compositions of the maize field as well as the regenerating forest are part of a sophisticated cropscape that resolves both subsistence and housing. The authors' unique framework for crops challenges the mind to reconsider how values are achieved: how they shift over time, move to different places, shrink or grow based on histories, interact with diverse actants, find stable or vulnerable compositions, or conserve and innovate around reproduction.

Each chapter builds from theme to theme, gathering in the deep meaning of cropscape. The chapter on time considers how cropscales morph over history. This is illustrated with the example of the valuable date palm. The date palm was domesticated in the Sahara, brought to Spain as a memory, only to later explode in plantations in California. For the chapter on place, we learn about the lavish court frivolities of tulips as they were developed in the Ottoman Empire, pictured on the cover of the book. Tulips were essential articles of commerce in the East yet influenced capitalism in the West as an investment of opulence in the Netherlands and fostering the erroneous assumption that tulips are Dutch.

The surprising chapter on actants—defined as significant historical human and non-human agents—brings in the complexities of all the relationships among species and the very land of the cropscape where nature, plans, pests, and policy play roles. Here, strange agencies are uncovered: the important role of elephants with tea in Assam that leads to their demise; the hope for rubber plantations in the Amazon foiled by the leaf blight that is absent when introduced in SE Asia; the expansion of cotton and its nemesis, the weevils, which impact individual farmers and future markets. Compositions, the next chapter theme, is the consequence of place, size, and actants on a continuum of the Indigenous polyculture of

traditional Maya Forest gardens to tobacco monocultures, each where one farmer's harvest is another's weed.

The final thematic chapter on reproduction is where we come to understand the significance of the cropscape assemblage: one part does not make up the whole. The example of seed science and how it disconnects the seed from its assemblage is noteworthy. In saving a seed, you obliterate the lively agents—the human and non-human actants that contribute to whole cropscape and of its reproduction.

Largely, though not directly, the text focuses on how the great Columbian exchange globalized plants with the avaricious colonial approach to landscapes, or more correctly cropscales. These collide to reapportion wealth in the short-term while simultaneously wracking destruction in the wake of the redistribution of plants. Ultimately, the work considers consequences of ecological imperialism (Crosby 1986) and brings us to the point where, today, big is viewed as better. This plantation mentality translates into what is now called conventional agriculture, supported, as the authors note, as orthodoxy "... in such bastions of power as the Rockefeller Foundation and the FAO" (p. 104).

Through time, place, size, actant, composition, and reproduction, we learn that the cropscape assemblage developed over the long *durée* whether with the use of skill of dedication or greed of colonialism—plants, animals, soil, and things that shape the cropscape assemblage can bite back with their own preferences and controls when not appreciated or understood. Classifying potential cropscales based on one standard, for example soil for the United States Department of Agriculture, can miss entirely what may indeed be cultivable by simply assuming cultivable is equivalent to arable (see Wilson 2002). Planning the expansion of plantations may well work in the short term, yet monocrops are inherently defenseless against nature in the long term, be it perceived pests, when their natural food sources are removed, or weather extremes such as deluge or drought.

Cropscales that have developed *in situ*, with magic and wisdom, show resilience. With our conventional mono-cropscales and chemical amendments, what is the future of the cropscape assemblage? Considering crops and cropscales as the dynamic interaction of human and non-human agents



across time and space, the collaborating authors, hailing from all points of the globe, take us on a journey that plays out like a whodunit. For the authors, they command a look to our own history and technologies to cultivate a promising agenda.

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