being an opportunity either to change craft or to negotiate a higher rate of pay owing to the skills already gained. This would appear very different from the southern Netherlands, where guilds were fined heavily for hiring runaway apprentices (p. 233). Differences in enforcement affected the nature of the contracts. In the southern Netherlands, longer contracts could be negotiated at a lower price on the condition that apprentices worked for masters below the market rate in their final years (p. 224). Such contracts would not have been desirable for masters had it been too easy to leave early.

Future research might turn its attention to questions beyond the remit of this collection. First, is the origin of apprenticeship. The private negotiation of contracts, independent of guilds, is a common theme across the chapters. This raises the intriguing question of whether the practices predate the development of craft guilds. Secondly, is the black market in labour. Surviving documents are biased towards above-the-board arrangements, often backed up by contracts. The black market is alluded to by a number of contributors, in particular Clare Haru Crowston and Claire Lemercier, but is a central theme for none.

The chapters of this volume are essential reading for urban historians studying the social and economic structure of the region or city in question. Collectively, they have a wealth of information for those interested in broader themes relating to apprenticeship, but readers may find themselves needing to join the dots between the case-studies.

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Chris Otter, *Diet for a Large Planet: Industrial Britain, Food Systems, and World Ecology*. Chicago and London: University of Chicago Press, 2020. 400pp. 65 halftones. $49.00 cloth. $48.99 eBook.
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The modern 'Western Diet' – one dependent on animal proteins, processed grains and sugar – dominates the world. This food system produces abundance and waste; it meets nutritional needs for hundreds of millions while creating new types of health concerns and epidemics; and it fosters local cultures and consumer tastes while giving rise to ecological devastation. In his wide-ranging book, *Diet for a Large Planet: Industrial Britain, Food Systems, and World Ecology*, Chris Otter dives deep into the historical foundations of this paradoxical diet. He explores how Britain, between 1820 and 1914, became the architect of a global agro-industrial food system that took over the world. This planetary system was partly the project of political economy and Britain's position as a global and colonial power. However, power also resided in distributed infrastructures, technologies, dispositions and subjectivities around food. The notion of 'cheap food' became part of British consumer rituals, in recurring purchases of roast beef and loaves of white bread.

The core problem that Otter dissects is how something so personal – feeding families, satiating bodies and assembling tastes – can be networked into world ecology and geopolitical struggles. This 'large planet philosophy' imprinted human consumerism onto the earth. To demonstrate this connectivity, Otter himself becomes a connector. He links history, philosophy, geography, urban studies, STS, ecology and evolutionary biology, while drawing on thousands of primary sources, including medical journals, industry textbooks, parliamentary reports, memoirs, cattle breeding manuals and newspapers. The result is a tour de force of historical inquiry, unpacking layers and levels of events, actors, innovations and materials.

Although meat, wheat and sugar have their own logics of development and expansion, common elements unfolded across them. Biology, technology and infrastructure were marshalled to solve consumer and industry problems. Meat, for instance, was built into cultural understandings of manliness and progress, even before it became part of Britain's political ecological machinery. 'Backwardness' was linked to 'meatlessness', and a 'meat famine' pushed Britain to find new ways to address demand. Over time, producers were distanced from consumers, erasing ethical considerations about livestock as living beings. Otter details the gruesome backstage technology of slaughter, of experimentation with modalities of killing, from bolts through animals' skulls to guillotines, gassing and electrocution. The industrial work of raising and slaughtering cattle was ultimately moved away from dense neighbourhoods, out of perceptual view of consumers.

Similar institutional logics arose in wheat and sugar markets. For meat, the issues were breeding, landscape, slaughter, refrigeration and spoilage in search of settling on the right qualities and locations to raise Hereford cattle. For wheat, the issues were selection criteria, hybridization and plant breeding to locate the best combination of colour, gluten, yield and traits for pest resistance and industrial baking. Sugar came with similar scenarios, especially as beet sugar replaced cane sugar. Why sugar from white Silesian beets, but not varieties of carrots, apples or grapes? Beets were shown to have similar qualities of crystallization, comparable extraction processes and chemical likeness.

Industries deconstructed animals and plants into 'fat, protein, bran, germ, skin, [and] bones' to enable industrial products to traverse geographic boundaries and feed a nation (p. 100). The industrial infrastructural connectivity also relied on a triple politics of food risk, violence and bodily metabolism. Distance erased the perception of ethical considerations about animals' lives, but it also created new debates about food safety and inequality. Global shipping, adulteration and processing altered the materiality of products leading to major contamination events, everything from arsenic poisoning to rust in canned food. Global trade exposed people to epizootics and parasites, raising new questions about freedom of markets versus freedom from disease.

While this large planet philosophy secured foodstuff for most British consumers, global development created new kinds of food inequalities: geopolitical famine response, uneven metabolic pathways and the rise of the Western Diet as a 'master pathology'. Britain, through the soft force of food, pushed economic liberalism into peasant societies. As famine conditions worsened and people suffered, the British mainland saw opportunities to convert Ireland into an agrarian hinterland for

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their own meat consumption rather than solve food security crises. In India, granaries and irrigation systems were destroyed, leading famine and drought to plague populations even as railroad infrastructures generated new markets for Indian-grown grains. Inequities in health and consumption did not completely escape the British mainland either, where men and women were introduced to different diets, nutrients and metabolic outcomes.

Otter's dual focus on world ecology and British consumer culture illustrates the push and pull of global development through food, operating as spatial expansion and cultural localization. He shows how incremental strategies accumulated into worldwide interdependencies and social inequalities. In this regard, Otter expertly demonstrates how to study a world system, not as a top-down geopolitical project, but rather as evolving socio-material relationships and political-economic struggles. The result is a treasure trove of historical discovery about the unfolding complexity of power and culture in the context of industrial capitalism.

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Timothy Moss, *Remaking Berlin: A History of the City through Infrastructure, 1920–2020*. Cambridge, MA: The MIT Press, 2020. xix + 452pp. 80 figures. 9 tables. Bibliography. £43.00 pbk.
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For many, the infrastructure of the city is taken for granted. In order for modern societies to function, we need miles of pipes and cables, interconnected networks, raw materials for fuel, over capacity and safeguards, all of which require expertise, political will and financial capital. How those facets of urban life were put in place and maintained can provide a lot of information about the city. In exploring the socio-technical history of Berlin, Timothy Moss chooses a city that underwent profound political and social upheaval. Though Berlin was undoubtedly an exceptional case, Moss's excellent monograph also points the way for further studies of urban infrastructure in more mundane settings. As he points out in his concluding chapter, much of the upheaval to Berlin's infrastructure occurred during times of political calm – the municipal socialism of the 1920s and the liberalized reunification of the 1990s – rather than the eras of totalitarianism and urban divide.

Moss takes a long-term view of infrastructural processes in Berlin, beginning in the 1920s with the creation of Greater Berlin. This was a period of municipal socialism, with utility companies for water, gas, electricity and waste created and maintained by municipal government. He then surveys the changes and, importantly, continuities with the coming of Nazi rule in the 1930s, and how the city's infrastructure was modified for World War II. Thereafter, he moves to look at how infrastructure was used in the divided city, as an arm of state socialism in East Berlin and an important facet of self-sufficiency in isolated West Berlin. Moss finishes by examining the role of infrastructure in the globalized city