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Published on H-Asia (April, 2022)

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Ian M. Miller’s excellent *Fir and Empire: The Transformation of Forests in Early Modern China* opens with an unexpected scene. George Macartney, traveling through southern China following his disastrous embassy to Beijing in 1793, noted thousands of acres of newly planted trees. Miller informs us that these were anthropogenic forests that had long been cultivated in the region, and that, moreover, these forests should prompt a rethinking of the widespread assumption that China was gradually deforested over time. The historical narrative that Miller fleshes out is more nuanced than the declensionist environmental narrative typified by Mark Elvin’s classic *Retreat of the Elephants: An Environmental History of China* (2004). Miller persuasively demonstrates that during the Song-Yuan-Ming period, private silviculture in the Jiangnan region provided sufficient timber for the Chinese state.

Chapter 1 situates the Song period as “The End of Abundance.” Up through the Tang dynasty, trees were logged from the wild, in what Miller calls “the age of abundance.” From a legal standpoint, the labor of harvesting trees transformed them into property; logging it made it yours. By the Song dynasty, supply no longer matched demand, a situation worsened by growing urbanization, overharvesting, and the foreign states that blocked access to northern forests. The Song dynasty responded to this crisis in the eleventh century with strategies to manage and conserve forests. What survived from these experiments was not government-managed forests or a professional forest bureaucracy as in France, Korea, Venice, and Prussia, but rather private silviculture and commerce. Private tree plantations sprouted up south of the Yangzi River, including not just fir but also “pine and camphor for timber; bamboo for poles and paper; palm for thatch and fiber; tung, lacquer, tallow tree, and camellia for oils and resins; mulberry to feed silkworms; tea to drink; and a wide variety of species for fuel, fruits, and nuts” (p. 4).

Chapter 2 explores the articulation of “Boundaries, Taxes, and Property Rights” in shifting forestry to private enterprise. Changes to land survey regulations in the twelfth century led to more forest land coming under government tax oversight, transforming open-access woodlands into private property. During what he calls “the wood age,” or early modern period, private timber plantations solved the problem of procuring timber in China, but silviculture created landscapes not conducive to biodiverse flora and fauna. Trees may not have “retreated,” but megafauna like tigers and elephants did, along with the old-growth forests that had once supported them. This trend happened in Europe too, but in China first.
Chapter 3, “Hunting Households and Sojourner Families,” deals with labor, convincingly arguing that the “single whip” tax reforms of the second half of the sixteenth century were not just a response to the influx of silver but also to the decline of woodland products. The single whip tax allowed localities to remit taxes in silver rather than in kind. The reforms were transformative, turning a “forced labor economy into a cash economy” (p. 70). Hunting and logging families now sold their goods on the market for silver instead of turning them in to the state. An itinerant labor force of hill people from Fujian, Jiangxi, and Guangdong developed, the ethnogenesis of the Hakka, or “sojourners.” Chapter 4, “Deeds, Shares, and Pettifoggers,” details the pains landowners took to be seen by the state. The industry’s investments took decades to mature, and landlords devised tools to protect their investments. Records show that landowners took it upon themselves to make sure their land was registered and that they retained claim to it, even across dynastic transitions. Miller describes how shareholding, partnerships, profit-sharing, lineage corporations, partible inheritance, and advance sales emerged as ways to reduce risk.

Chapters 5 and 6, “Wood and Water” parts 1 and 2, argue that “market-based oversight, not territorial control, was the principal state intervention into the changing forest landscape” (p. 99). Unlike in Europe, the development of a state forest service was inhibited in China, and along with it, environmental expertise. Chinese governments contented themselves with taxing and regulating forest land instead of managing it. Producers floated rafts of timbers down rivers where they were taxed at customs stations. The state could procure supplies and collect tax revenue; it did not need to manage forests. This “market-based oversight” was still “enough to provoke a silviculture revolution” (p. 8), albeit one that looked much different in China than in Europe.

One exception to the pattern of private silviculture is the procurement of large timbers for imperial architecture, the subject of chapter 7, “Beijing Palaces and the Ends of Empire.” Miller’s fascinating account of the procurement of large timbers for Beijing palace construction can be read productively alongside Lala Zuo’s Diversity in the Great Unity: Regional Yuan Architecture (2019) and Aurelia Campbell’s What the Emperor Built: Architecture and Empire in the Early Ming (2020). Read together, these books show that the availability of local materials shaped regional architecture, imperial architecture drove resource extraction in the borderlands, and the increasing scarcity of large timbers near waterways necessitated changes to imperial architecture.

In Europe, bureaucracies expanded to oversee domestic forests while also colonizing abroad to obtain timber. Miller marks this as a major difference between European and Chinese forestry management in the “wood age.” I wonder, though, if work like Melissa Macauley’s recent Distant Shores: Colonial Encounters on China’s Maritime Frontiers (2021) may add a coda to this story. She shows that Chinese merchant families, Wang Gungwu’s “merchants without empire,” were involved in large-scale business enterprises in Southeast Asia, from running plantations to shipbuilding. Did Southeast Asia become China’s “timber frontier,” replacing or supplementing domestically supplied timber?

Miller creates a compelling grand narrative from a close reading of data located with digital tools and databases (see appendix B for a discussion of sources). The increasing availability of word-searchable databases of historical texts allowed Miller to quickly locate relevant passages in some unexpected places. For research that relied on tax records, Miller used regex and the Local Gazetteer Research Tools developed by the Max Planck Institute for the History of Science. Miller’s work is a model of the productive use of digital humanities research methods; his narrative

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makes the challenge of synthesizing big data and close reading appear seamless. This is an impressively researched book, drawing on sources including gazetteers, a careful comparison of the Tang and Ming codes, and tenancy contracts. Miller explains the development of financial tools for mitigating risks and the skillful use of existing law to cover novel situations, shedding light on economic and legal history in the process. There is sustained engagement with secondary sources on European history, allowing a way in for environmental historians of regions outside of Asia.

Ultimately, Miller makes a convincing case that forest management was a grassroots affair that provided the Song-Yuan-Ming dynasties with sufficient timber and was remarkably stable … until it wasn’t. So what happened? After Macartney’s tour through south China, the situation changed. Rather than long-term degradation of the environment, Miller sees a sudden collapse in the nineteenth century. Competition over land and the depletion of the soil led to the formation of secret societies and struggles for access to land and resources.

*Fir and Empire* provides a broad, long-term understanding of forest management, contextualized and compared with practices in Europe and in dialogue with Asian environmental history. It will change the way scholars understand Chinese environmental history and particularly the role of the state. The University of Washington Press, with support from the Geiss Hsu Foundation, has made the book available in an Open Access edition, with an attractive and easy-to-use layout. This impressive book can and should reach a wide audience of readers.

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**Citation:** Kathlene Baldanza. Review of Miller, Ian Matthew. *Fir and Empire: The Transformation of Forests in Early Modern China*. H-Asia, H-Net Reviews. April, 2022.

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