

The Environmental History of East Asia: Intraregional, Transnational, and Translocal Connections

Daniel BURTON-ROSE[†]

Environmental History is one of the most dynamic fields within East Asia Studies, but there is as of yet little in the way of integrated East Asian Environmental History. Jongmin Lee acknowledged as much in titling the introduction to a recent special issue of this journal “Towards Environmental History of Modern East Asia.”¹ What would such a field look like; one which went further and encompassed the pre-modern period as well? To do East Asian Studies properly, it would need to incorporate the regions of the classical Sinosphere with their vernaculars and diverse writing practices, from the emergence of oracle bones to the present. In addition, it would incorporate the perspectives available only in the written languages of non-Chinese states that ruled over China—primarily Mongolian and Manchu—thereby gaining insights into environmental governance in “China proper” and considering the models of land use and social organization that the agricultural societies of East Asia defined themselves against.² It would also engage with the fields of Global Asia(s) and Global Indigenous, in order to incorporate diasporic peoples with ancestral and cultural ties to East Asia and peoples within the borders of East Asian polities whose lifeways and languages have historically been marginalized and targeted for assimilation.³ To be Environmental History, it should demonstrate a consistent ability to

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[†] Wake Forest University, burtond@wfu.edu

¹ “Towards Environmental History of Modern East Asia,” *The Korean Journal for the History of Science* 43: 2 (2021), 401-404.

² It is not my intention to reduce Inner Asian societies to an ethnic-Han other, but rather to acknowledge that a long-term othering process did occur and was fundamental to the self-conception of physiocratic Chinese polities. Major works that take Inner Asian peoples and ecologies on their own terms include Dee Mack Williams, *Beyond Great Walls: Environment, Identity, and Development on the Chinese Grasslands of Inner Mongolia* (Stanford, CA: Stanford University Press, 2002), David A. Bello, *Across Forest, Steppe and Mountain: Environment, Identity and Empire in Qing China's Borderlands* (New York: Cambridge University Press, 2015), and Jonathan Schlesinger, *A World Trimmed with Fur: Wild Things, Pristine Places, and the Natural Fringes of Qing* (Stanford, CA: Stanford University Press, 2017).

³ Examples of such work include Brett L. Walker, *The Conquest of Ainu Lands: Ecology and Culture in Japanese Expansion, 1590-1800* (Berkeley: University of California Press, 2001); Ch'iu-k'un Ch'en, “From Aborigines to Landed Proprietors: Taiwan Aboriginal Land Rights, 1690-

perceive outside an exclusively anthropocentric worldview, demonstrating itself capable of thinking in terms of ecological networks rather than solely tracking human relations with a single non-human species (as in the case with much of Animal Studies).⁴ Envisioned in this manner, East Asian Environmental History could interact with other Area Studies iterations of the discipline—such as sub-Saharan Africa, South Asia, and Latin America—to ensure that there is a culturally-informed and distinct regional perspective between North American and European *foci* and “the World.”⁵

This article explores how the discipline of Environmental History can enhance the coherency of East Asian Studies as a field that is defined by geographical scope and linguistic ability, while simultaneously addressing intra- and transregional currents of people, practices, ideas, and objects.⁶ Concurrently, it asks how scholarship focused within East Asia can enrich the practice of Environmental History at local, regional, national, and global scales. This is not a call for every work of scholarship to do “everything everywhere all at once”; rather, it is effort to think through the existing body of Environmental History scholarship within and beyond East Asia

1850,” translated by Bian Li-nan, in Gail Hershatter, Emily Honig, Jonathan N. Lipman, and Randall Stross eds., *Remapping China: Fissures in Historical Terrain* (Stanford, CA: Stanford University Press, 1996), 130-142; and Shao-hua Liu and Shu-min Huang, “Waterscape and Social Transformations in Southern Taiwan: The Damming of Mudan Creek,” in Ts’ui-jung Liu and James Beattie eds., *Environment, Modernization and Development in East Asia: Perspectives from Environmental History* (London: Palgrave Macmillan UK, 2019), 111-135.

⁴ For Animal Studies in Japanese and Chinese Studies respectively, see Gregory M. Pflugfelder and Brett L. Walker eds., *JAPANimals: History and Culture in Japan’s Animal Life* (Ann Arbor: Center for Japanese Studies, University of Michigan, 2005) and Roel Sterckx, Martina Siebert, and Dagmar Schäfer eds., *Animals Through Chinese History: Earliest Times to 1911* (Cambridge: Cambridge University Press, 2019). For an exemplarily Animals Studies article on a Korean subject, see Joseph Seeley and Aaron Skabelund, “Tigers—Real and Imagined—in Korea’s Physical and Cultural Landscape,” *Environmental History* 20 (2015), 475-503.

⁵ A thought-provoking baseline for the way in which East Asian Environmental History does or might fit into a global disciplinary web is J. R. McNeill, “Observations on the Nature and Culture of Environmental History,” *History and Theory* 42 (2003), 5-43. In this early attempt to survey the primarily English language Environmental History literature on a global scale, McNeill included brief sections on China and Japan (pp. 28-29), but made no mention of “East Asia” beyond an anachronistic use of the phrase in relation to Mark Elvin and Ts’ui-jung Liu’s seminal anthology *Sediments of Time: Environment and Society in Chinese History* (Cambridge: Cambridge University Press, 1998): McNeill, “Observations on the Nature and Culture of Environmental History,” 33. *Sediments of Time* could be considered an East Asian regional volume only in light of the national affiliations of the contributors, rather than the China-centered content.

In the current article I have not attempted to survey the East Asia content in synthetic World and Global Environmental History volumes. For a start on this rapidly expanding literature, see J.R. McNeill and Alan Roe eds., *Global Environmental History: An Introductory Reader* (London: Routledge, 2013) and J. R. McNeill and Erin Stewart Mauldin, *A Companion to Global Environmental History* (Hoboken, NJ: Wiley-Blackwell, 2012).

⁶ For a recent overview of the cultural and physiographic diversity encompassed within the conventional use of the term “East Asia,” see Charles A. Desnoyers, *Patterns of East Asian History* (New York: Oxford University Press, 2020), 6-21.

and to emphasize how certain lines of inquiry can bring forward connections that help place in the whole in clearer relief. It is also an attempt to step back and take stock of what has already been accomplished in a very short period. The works discussed are included primarily based on suitability for English language courses at the undergraduate and graduate level; this is not a literature review of works in Chinese, Japanese, and Korean (hereafter CJK).⁷

The article is organized into four sections followed by a conclusion. The first section considers the nationally-focused synthetic works of Environmental History from which a broader picture of East Asia can be compiled. The following three sections examine different ways of clustering the practice of Environmental History within East Asia. These are: 1) early modern Sinograph texts on pharmacology and natural history; 2) cultural overlays in one locality over time; and 3) movement through space of objects alienated from their original context and people who bear culture-specific practices to different areas.

State of the Field(s)

The bulk of existing scholarship abides by the confines of contemporary nation-states read backwards, with China and Japan as the dominant subjects and Manchuria and Korea emerging as objects of sustained inquiry.⁸ Crucially for teaching purposes, Environmental History textbooks exist for both China and Japan covering from earliest times to the present.⁹ Conrad Totman's *Pre-industrial Korea and Japan in Environmental Perspective* is notable for its deliberate effort to consider the

⁷ The Association for East Asian Environmental History maintains a running list of publications by members: <http://www.aeah.org/publications.htm>. I am not aware of online bibliographies in CJK with a focus on Environmental History. For an early English-language overview of Environmental History works in the People's Republic of China, see Mahong Bao, "Environmental History in China," *Environment and History* 10: 4 (2004), 475-99. On English language Chinese Environmental History scholarship, see the following Oxford Bibliographies: David Bello, "Environmental Issues in Pre-Modern China" (DOI: 10.1093/OBO/9780199920082-0087; modified 2018) and Richard Louis Edmonds, "Environmental Issues in Contemporary China" (DOI: 10.1093/OBO/9780199920082-0044; modified 2013).

⁸ For an early statement on the problems of doing Environmental History at the national level, see Richard White, "The Nationalization of Nature," *The Journal of American History* 86:3 (1999), 976-986.

⁹ Robert B. Marks, *China: An Environmental History*, second edition (Lanham, MD: Rowman and Littlefield, 2017). Totman integrated ecological perspectives into condensed historical surveys in *Japan Before Perry: A Short History*, 25th anniversary edition (Berkeley: University of California Press, 2008 [first published 1981]), *Early Modern Japan* (Berkeley: University of California, 1993), and *A History of Japan* (Malden, MA: Blackwell Publishing, 2004 [first published 2000]), before eventually publishing the first explicit environmental history of Japan, *Japan: An Envi-*

intertwined histories of the Korean peninsula and Japanese archipelago in tandem. Chronologically, the book covers from the geological formation of the region to 1870. However, as John S. Lee observes, Totman's "work is hampered by his lack of engagement with Chosŏn-era primary sources and Korean-language secondary scholarship."¹⁰ A desirable update and supplement to *Pre-industrial Korea and Japan in Environmental Perspective* would be the production of an English-language translation of the first Environmental History of the Joseon (1392-1910): Gim Dongjin's 김동진 *Joseon ui saengtae hwangyeong sa* 조선의 생태환경사 (An Ecological History of the Joseon).¹¹ Such a translation would bolster the availability of Korean-centered perspectives on environmental issues of global comparative import, as well as directing readers to relevant primary sources readable by those literate in Sinitic graphs and the growing Korean-language secondary literature.¹²

Complimenting these works are a range of anthologies focused on the environmental histories of China, Japan, and Manchuria.¹³ The most sustained use of East Asian Environmental History as a rubric has been in a series of anthologies drawing on presentations at the biannual (from 2011) conferences of the Association for East Asian Environmental History (AEASH).¹⁴ These collections highlight methodolog-

ronmental History (London: I.B. Taurus, 2014). Brett L. Walker continued Totman's early practice of doing Environmental History as generalist history in *A Concise History of Japan* (Cambridge: Cambridge University Press, 2015). As with Totman's surveys, Walker's *Concise History* is not marketed as Environmental History, but is a thorough re-thinking of conventional narratives of Japan from an Anthropocene perspective that "required fully embracing the idea that the physical islands called 'Japan' are geologically and historically unstable." *Ibid.*, xv.

¹⁰ Conrad Totman, *Pre-industrial Korea and Japan in Environmental Perspective* (Leiden: Brill, 2003); John S. Lee, "Editor's Introduction," *International Journal of Korean History* 25:1 (2020), 5.

¹¹ Seoul: Pureunyeoksa, 2017.

¹² On Korean-language Environmental History scholarship, see Lee, "Editor's Introduction," 3-5. The following forthcoming work will further expand the English language material available on Korean Environmental History: *Forces of Nature: New Perspectives on Korean Environments*, edited by David Fedman, Eleana J. Kim, and Albert L. Park (Cornell University Press, 2023).

¹³ Chronologically, the major anthologies are: Elvin and Liu eds., *Sediments of Time*; Ian Jared Miller, Julia Adeney Thomas, and Brett L. Walker eds., *Japan at Nature's Edge: The Environmental Origins of a Global Power* (Honolulu: University of Hawai'i Press, 2013); Bruce L. Batten and Philip C. Brown eds., *Environment and Society in the Japanese Islands: From Prehistory to the Present* (Corvallis: Oregon State University Press, 2015); Norman Smith ed., *Empire and the Environment in the Making of Manchuria* (Vancouver: UBC Press, 2017).

¹⁴ Ts'ui-jung Liu ed., *Environmental History in East Asia: Interdisciplinary Perspectives* (New York: Routledge, 2014); Ts'ui-jung Liu ed., *Local Realities and Environmental Changes in the History of East Asia* (New York: Routledge 2015); Ts'ui-jung Liu, Andrea Janku, and David Pietz eds., *Landscape Change and Resource Utilization in East Asia: Perspectives from Environmental History* (New York: Routledge, 2018); Liu and Beattie eds., *Environment, Modernization and Development in East Asia*; Ts'ui-jung Liu and Micah Muscolino eds., *Perspectives on Environmental History in East Asia: Changes in the Land, Water and Air* (New York: Routledge, 2021).

ical innovations and shared lines of inquiry, but offer little reflection on what differentiates a locally-focused study within East Asia from investigations into regional or transregional topics. One of the most conceptually rigorous of the introductions to the AEASH volumes—that by James Beattie and Ts'ui-jung Liu to *Environment, Modernization and Development in East Asia*—covers such key issues as the lack of clear correlates in pre-modern East Asian languages for such key terms as “nature” and “environment” and literature reviews for Chinese and Japanese language secondary scholarship.¹⁵ They also provide an easily overlooked statement of the obvious in articulating the goal of the volume as “to highlight the very different historical trajectories and contexts for Environmental History in China and Japan as a way of allaying any misapprehensions by Western readers that Environmental History in East Asia is simply the same discipline relocated, largely unchanged, from North America or Europe.”¹⁶ Paying more attention to disciplinary predecessors of and fields aligned with Environmental History in East Asia is the most direct means of avoid a dynamic in which scholars working on and in East Asia are doomed to always be playing catch up *vis à vis* North American and western European colleagues. As with Environmental History more broadly, History of Science is one of the most closely aligned disciplines.¹⁷ Science and Technology Studies (STS) in East Asia provides a clear contrast to the relative lack of internalist reflection in East Asian Environmental History.¹⁸ Indeed, the present article can be thought of as a belated and partial response to a rephrasing of Daiwie Fu’s 2007 question to East Asian STS for East Asian Environmental History: “What’s the difference between East Asian Environmental History and East Asian ‘area studies’ that apply Western Environmental History perspectives?”¹⁹

Within East Asian Environmental History there are an increasing number of studies that cross national or cultural boundaries. Japanese imperial expansion has been particularly productive in stimulating scholarly inquiry to explore the ecological

¹⁵ Beattie and Liu, “Introduction—Environment, Modernization, and Development in East Asia: Perspectives from Environmental History,” in Liu and Beattie eds., *Environment, Modernization and Development in East Asia*, esp. 7-15.

¹⁶ Beattie and Liu, “Introduction,” 14.

¹⁷ On the relationship to these fields without reference to East Asia, see Mark D. Hersy and Jeremy Vetter, “Shared Ground: Between Environmental History and the History of Science,” *History of Science* 57:4 (2019), 403-440.

¹⁸ From its inception, contributions to *East Asian Science, Technology and Society: An International Journal* foregrounded what was unique about scholarship on the East Asian region in the broader field of Science and Technology Studies (STS): see Daiwie Fu, “How Far Can East Asian STS Go? A Position Paper,” 1:1 (2007), 1-14 and other articles in that special issue on “Public Participation in Science and Technology,” the comments on Fu’s position paper in issue 1:2 (pp. 233-250), as well as Fa-ti Fan, “Science in Cultural Borderlands: Methodological Reflections on the Study of Science, European Imperialism, and Cultural Encounter,” 1:2 (2007), 213-231.

¹⁹ Fu’s original question was: “What’s the difference between EASTS studies and East Asian ‘area studies’ that apply Western STS perspectives?” Fu, “How Far Can East Asian STS Go?” 3.

components of imperial power spatially and temporally. This is true not only for the period of Japanese domestic consolidation and imperial expansion that culminated with the Pacific War (1941-45), but also with regard to the Imjin War of 1592-98. With Ming armies confronting Japanese troops on the Korean peninsula, the Imjin War is an ideal case for truly integrative (as opposed to national silo) East Asia Studies scholarship: the Aftermath of the East Asian War of 1592-1598 project is doing an exemplary job of modeling creative forms of collaboration.²⁰ For example, John S. Lee has produced an environmentally focused study of this period, highlighting the way in which Japanese military exploitation of time resources forced a new level of state planning in timber management and stimulated a shift from oaks to the now iconic pines of the peninsula and its neighboring islands.²¹

As for the most impactful Japanese expansion that began in the nineteenth century, environmental historians have narrated it as an ethnic majority-Indigenous incorporation conflict in which differing conceptions of the human place in ecology were central.²² Environmental elements of the formal imperialism that began with the Meiji period (1868-1912) include everything from timber cultivation to poison gas manufacturing.²³ Analysis of Japanese colonialism demands attention to concurrent processes in different places within and beyond East Asia, in which an outside power attempted to render uniform diverse cultures and ecologies: as Tessa Morris-Suzuki put in “In the case of the Japanese empire,...the patterns of conflict did not necessarily follow the political division between ‘Japan proper’ and ‘external territories,’ between colonizer and colonized. Instead, a rather more complex mosaic of contests over forests emerged.”²⁴ In his study of forestry in Korea under Japanese colonial rule, David Fedman showed that a model of timber management and extraction developed in Taiwan simply did not work for the peninsula. Ecology forced adaptation from notoriously rigid imperial administrators.²⁵

²⁰ <https://aftermath.uab.cat/>.

²¹ An Environmental History research outcome from this project is John S. Lee, “Postwar Pines: The Military and the Expansion of State Forests in Post-Imjin Korea, 1598-1684,” *The Journal of Asian Studies* 77:2 (2018), 319-332.

²² Tessa Morris-Suzuki, “Sustainability and Ecological Colonialism in Edo Period Japan,” *Japanese Studies* 15:1 (1995), 36-48.

²³ Walter E. Grunden, “Japan’s Poison Gas Legacy: Industrial Disease, Environmental Remediation, and the Challenge of Abandoned Chemical Weapons (ACW) in East Asia,” *The Korean Journal for the History of Science* 43:2 (2021), 459-482; Taisaku Komeie, “Colonial Environmentalism and Shifting Cultivation in Korea: Japanese Mapping, Research and Representation,” *Geographical Review of Japan* 79:12 (2006), 664-679.

²⁴ Tessa Morris-Suzuki, “The Nature of Empire: Forest Ecology, Colonialism and Survival Politics in Japan’s Imperial Order,” *Japanese Studies* 33:3 (2013), 232.

²⁵ David Fedman, *Seeds of Control: Japan’s Empire of Forestry in Colonial Korea* (Seattle: University of Washington Press, 2020). The timber resources of Manchukuo were also part of the picture; see Patrick J. Caffrey, “Transforming the Forests of a Counterfeit Nation: Japan’s ‘Manchu Nation’ in Northeast China,” *Environmental History* 18:2 (2013), 309-332. Compare these

The convenience of Japanese empire as a transregional vector should not overshadow the challenging conceptual work of placing the myriad aspirational states that constituted “China” in the same period within an overall schema for East Asia. Yubin Shen provides a model study of the complexities of early twentieth century in terms of colonial and post-colonial theory in his work on an experimental forestry program to develop national autonomy and market opportunities through quinine production. The program, in Yunnan province under warlord rule, was simultaneously: anti-imperialist, in that it sought independence from the forced dependence on imperial networks; embedded in imperialist networks, in that it benefited from rivalries between European imperial powers; and itself an agent of internal colonialism of the ethnic Han state *vis à vis* the non-Han population in the place of the experimental plantation.²⁶

Rather than viewing the “nature of anti-imperialism and internal colonialism” evident in the Yunnan cinchona cultivation program as “paradoxical,” as Shen does,²⁷ a theory of the state for which environmental analysis is integral could account for the way in which centralizing state power—regardless of whether it is local, national, or imperial—is inherently extractive towards localities in a manner that is disruptive to the ecological balance that had previously been developed between local residents and their immediate environment. In a recent study of Japanese colonial development policy in Korea, Tristan R. Grunow cites theorists who come close to this position. For example, the editors of a volume on settler colonialism assert: “Land and the organised spaces on it... narrate the stories of colonisation.”²⁸ Such an analysis, if applied consistently, would apply as much to large scale hydraulic works—many of which remain—carried out by Silla (traditional 57 BCE–935 CE), as much as to the Japanese colonial authority.²⁹

studies of Japanese imperial forest management with contemporaneous Nationalist afforestation efforts in southeast China: E. Elena Songster, “Cultivating the Nation in Fujian’s Forests: Forest Policies and Afforestation Efforts in China, 1911–1937,” *Environmental History* 8:3 (2003), 452–473.

²⁶ Yubin Shen, “Cultivating China’s Cinchona: The Local Developmental State, Global Botanic Networks and Cinchona Cultivation in Yunnan, 1930s–1940s,” *Social History of Medicine* 34:2 (2021), 577–591.

²⁷ Shen, “Cultivating China’s Cinchona,” 590.

²⁸ Tracey Banivanua Mar and Penelope Edmonds, “Introduction: Making Space in Settler Colonies,” in Tracey Banivanua Mar and Penelope Edmonds eds., *Making Settler Colonial Space: Perspectives on Race, Place and Identity* (New York: Palgrave Macmillan, 2010), 2; quoted by Grunow in “Cultivating Settler Colonial Space in Korea: Public Works and the Urban Environment under Japanese Rule,” *International Journal of Korean History* 25:1 (2020), 92.

²⁹ On Silla water works, see, e.g., Bong W. Kang, “Large-Scale Reservoir Construction and Political Centralization: A Case Study from Ancient Korea,” *Journal of Anthropological Research* 62:2 (2006), 193–216.

Combining Philology with Natural History: A Disciplinary Strength of East Asian Studies

In the Anglo-American sphere East Asian Studies is a Cold War era graft of geographically-focused social science expertise onto Orientalist textual disciplines.³⁰ As such, it is essentially atheoretical by definition. Indeed, a lack of theoretical commitment was part of the institutional appeal of Area Studies. As Lynn Hunt observed: “Area studies did not demand a specific theoretical commitment and could foster an interest in the particularities of different cultures.”³¹ East Asian Studies is defined in practice by linguistic expertise; initially in one or more of the written languages developed in East Asia, with more attention to spoken languages by anthropologists and ethnographers and written colloquial usages by literature specialists.³² As the “Latin of East Asia,” written Chinese holds pride of place as the textual form that provides coherency to the East Asia region historically. Yet meaning was made by those who used it to the extent that the association of “Chinese” with “Han” (C. Hanzi 漢字) or “Chinese characters” (K. *hanja*; J. *kanji*) is itself open to challenge.³³ Peter F. Kornicki provides a helpful modification of the prevailing conceptualization of East Asia, by defining his object of inquiry as constituted not only of societies that used Sinitic graphs, but also of ones that *encountered* the societies that used them. Acknowledging the inevitable artificiality of East Asia as a construct, he clearly articulates a coherent range of inquiry extending beyond contemporary nation-states projected backwards to include no longer extant polities and transregional vectors that crossed and extended beyond the region.³⁴

This section focuses on a line of inquiry that is well-suited to the philological toolkit: the role of Sinograph natural histories in inventorying non-human materials

³⁰ On Area Studies in Anglo-American universities from the 1940s to the mid-1970s, see Immanuel Wallerstein, “The Unintended Consequences of Cold War Area Studies,” in Noam Chomsky *et al.* eds., *The Cold War and the University* (New York: The New Press, 1997), 195-231. For continuing tensions between Area Studies and social science disciplines, see John Lie, “Asian Studies/Global Studies: Transcending Area Studies and Social Sciences,” *Cross-Currents: East Asian History and Culture Review E-Journal* 2 (2012), 1-23.

³¹ Lynn Hunt, *Writing History in the Global Era* (New York: W.W. Norton & Company, 2014), 28.

³² For ideas on shifting training expectations for multiple East Asian languages, see Jin Sato and Shigeto Sonoda, “Asian Studies ‘inside-out’: A Research Agenda for the Development of Global Asian Studies,” *International Journal of Asian Studies* 18 (2021), 207-16.

³³ Ross King, “Ditching ‘Diglossia’: Describing Ecologies of the Spoken and Inscribed in Pre-modern Korea,” *Sungkyun Journal of East Asian Studies* 15:1 (2015), 1-19. Other recent studies of linguistic diversity within the Sinitic sphere include Benjamin A. Elman ed., *Rethinking East Asian Languages, Vernaculars, and Literacies, 1000-1919* (Leiden, Brill, 2014) and Rebekah Clements, “Brush Talk as the ‘Lingua Franca’ of Diplomacy in Japanese-Korean Encounters, c. 1600-1868,” *Historical Journal*, 62:2 (2019), 289-309.

³⁴ Peter F. Kornicki, *Languages, Scripts, and Chinese Texts in East Asia* (Oxford: Oxford University Press, 2018), esp. 1-21.

under human administrative categories. Scholarship on Li Shizhen's 李時珍 (1518-93) *Comprehensive Materia Medica* (*Bencao gangmu* 本草綱目; published 1596; first reached Japan in 1610 and Joseon thereafter) and its predecessors and legacy connects the entire region from the early centuries of the common era to the self-conscious establishment of Biology in the first half of the twentieth century. Li synthesized the extant corpus of pharmacological texts and combined it with observations based on two decades of peripatetic fieldwork. He ordered the physical objects that constituted "All under Heaven" (C. Tianxia 天下) in relation to their utility to people.³⁵ His universalizing claims—as with those of several pharmacological texts that preceded him—elicited localist responses from figures on the Korean peninsula and Japanese archipelago who could not find plant and animal species observable in their locality in Li's text. As a result, they created their own supplements, which eventually burst the confines of the models upon which they were based to become independent works. Soyoung Suh's exploration of the Korean case focused on use of the term *hyang* 鄉 from the fourteenth through sixteenth centuries.³⁶ This term continued to flag indigenous Korean as opposed to outside nomenclature well into the Japanese colonial period (1910-45), as evident in the *Joseon singmul hyangmyeongjip* 朝鮮植物鄉名集 (*Vernacular Names of Korean Plants*, 1937), a joint effort of nativist botanical philology authored under the auspices of the Korean Research Group for Natural History.³⁷ Jakobina K. Arch has shown how Japanese dietary practices without Chinese correlaries manifest as lacuna in the *Bencao gangmu* that were filled by Japanese scholars who were increasingly turning towards Dutch models.³⁸

There were attempts by Korean scholars at pure empiricism divorced first from Sinocentric Confucianism then Japanese scientific discourse, but the difficulties encountered emphasize the embeddedness of scholars on the peninsula in transregional

³⁵ For an introduction to Li's *magnum opus*, see Georges Métailié, "The *Bencao gangmu* and of Li Shizhen: An Innovation in Natural History?" in Elisabeth Hsu ed., *Innovation in Chinese Medicine* (Cambridge: Cambridge University Press, 2001), 221-61; Carla Nappi, *The Monkey and the Inkpot: Natural History and Its Transformations in Early Modern China* (Cambridge, MA: Harvard University Press, 2009); and the prefatory materials in Li Shizhen, *Ben Cao Gang Mu*, translated and annotated by Paul U. Unschuld (Oakland: University of California Press, 2021-22), 9 vols.

³⁶ Soyoung Suh, *Naming the Local: Medicine, Language, and Identity in Korea Since the Fifteenth Century* (Cambridge, MA: Harvard University Asia Center, 2017), 11-40. On parallel developments in Edo Japan, see Georges Métailié, "Le *Bencao gangmu* de Li Shizhen et l'histoire naturelle au Japon durant la période d'Edo (1600-1868)," *Etudes Chinoises* 25 (2006), 41-68; Federico Marcon, *The Knowledge of Nature and the Nature of Knowledge in Early Modern Japan* (Chicago: The University of Chicago Press, 2015).

³⁷ See Manyong Moon, "Becoming a Biologist in Colonial Korea: Cultural Nationalism in a Teacher-cum-Biologist," *East Asian Science, Technology and Society: An International Journal* 6 (2012), 78-79.

³⁸ Arch, *Bringing Whales Ashore: Oceans and the Environment of Early Modern Japan* (Seattle: University of Washington Press, 2018), 110-148.

scholarly currents. A prime example of the former is Jeong Yakjeon 정약전/丁若銓 (1758-1816). His *Register of the Marine Creatures of Black Island* (*Gasaneobob* 자산어보/茲山魚譜 1815), written in exile, recorded the watery denizens of a remote island, thereby textualizing the knowledge of fishermen that was previously inaccessible to cultured gentleman.³⁹ Jeong included a few references to Chinese literature, but did not engage with the pharmaceutical literature. It took nearly two more centuries before this bold attempt at a blank slate was incorporated into the broader Sinosphere natural history tradition through commentarial practices.⁴⁰ Sang-ho Ro's study of this episode demonstrates how Jeong's novel empiricism was conditioned by participation in a broader intellectual world in which European sciences were making inroads, while *Gasaneobob* was also enabled by Jeong stepping "out of his comfort zone of knowledge and culture."⁴¹ As for Korean natural scientists *cum* biologists under Japanese colonial rule, Manyong Moon has shown how the pioneering empiricism of lepidopterist Seok Jumyeong 石宙明 (1908-50) was predicated on exclusion from both American and Japanese academic training and employment in Japanese scientific infrastructure on the peninsula.⁴²

Studies of the local-universal dyad, by consideration of flora and fauna throughout the Sinograph realm, conspicuously replicate the civilizational biases of their primary sources in regards to one vital source of human knowledge of non-human species within eastern Asia: Indigenous peoples who did not write in Sinitic graphs. Put differently, scholars literate in Sinographs have more conceptual tools for reading against anthropocentric biases than we do against civilizational ones. In Tessa Morris-Suzuki's phrasing: "The underlying spatial architecture of postwar East Asian studies is ... reflected in the relative neglect of the long pre-modern history of the region's non-state areas."⁴³ The situation is better for Indigenous peoples who *became* states, having developed the literate apparatus such a transformation entails: the Mongols and Manchus foremost among them, with the Khitan and Jurchen also providing potentially rich subjects.⁴⁴ The issue then for environmental historians is

³⁹ This episode of high-local cultural hybridity has achieved sufficient fame in contemporary South Korea to merit a biopic: see Lee Joon-ik, director, *Gasaneobob* (The Book of Fish), 2021.

⁴⁰ Translation of *Gasaneobob* and commentaries in Sang-ho Ro, *Neo-Confucianism and Science in Korea: Humanity and Nature, 1706-1814* (Oxon: Routledge, 2021), 127-167 (*Gasaneobob*); 168-186 (commentaries).

⁴¹ Ro, *Neo-Confucianism and Science in Korea*, 69-90 (quotation on p. 74).

⁴² Moon, "Becoming a Biologist in Colonial Korea," 65-82.

⁴³ *On the Frontiers of History: Rethinking East Asian Borders* (Acton: Australian National University Press, 2020), 217.

⁴⁴ Adam Bohnet has done stimulating work on the Joseon-Jurchen borderland. See his "'On Either Side the River': The Rise of the Manchu State and Chosŏn's Jurchen Subjects," in Michael Gervers, Uradyn E. Bulag and Gillian Long eds. *The Exploitation of The Landscape of Central and Inner Asia: Past, Present and Future*, Toronto Studies in Central and Inner Asia No. 9 (Asian Institute, University of Toronto, 2008), 111-125; "Debating Tumen Valley Jurchens during the Late Sixteenth and Early Seventeenth Centuries," *Korean Studies* 39 (2015), 23-44.

how polities with pastoralist roots continued or adapted the ecological basis of their societies as they expanded their power over agriculturalist subjects; a topic explored by David A. Bello in his comparative examination of non-agriculturalists during the Qing dynasty (1644-1912).⁴⁵

Bello is relatively unique in treating northern pastoralists and the Chinese southwest in tandem: he did so through attention to the ecological limits of Qing expansion. Those who think through the ecological worldview of southwestern non-Han peoples include Erik Mueggler in his study of the ecological consciousness of the Naxi people in southwest China.⁴⁶ Mueggler explored the integration in the early twentieth century of the botanical species of a region frequently subject to competing imperial claims of non-European empires. Despite the area being claimed by the Qing and currently being within the borders of the People's Republic of China, the Chinese written record is among the least relevant to his study. Instead, he used Naxi pictographs as well as English language travelogues to invoke the way in which, for early twentieth century Naxi, landscapes were always already inscribed: "the book of the earth."

The recent collaboration of Judith Farquhar and Lili Lai is an example of medical anthropologists providing vistas in the comprehension of and use of the natural world by what are now designated what are now designed "national minorities" within the People's Republic of China in a way that is mostly overlooked by textually-focused East Asianists. Rather than permitting an essentialized dichotomy between sedentary and nomadic power, they home in on the dialectical space between the two, asserting: "state institutions, ever in formation and ever vulnerable to decline of their powers, must grapple with and perpetually appropriate the call of the wild or the charm of the nomadic."⁴⁷ In the overlapping disciplinary space between History of Medicine and Qing History, He Bian addressed a similar issue in her analysis of the Ming and Qing state's effects to make inherently differentiated ecology predictable through making local people responsible for submitting the same pharmaceutical products.⁴⁸ This issue of the predictability imperative of state planners in dynamic relation with their impacts on non-human creatures and materials is a dominant theme in Qing Environmental History.

⁴⁵ Bello, *Across Forest, Steppe and Mountain*. See also James Reardon-Anderson, "Land Use and Society in Manchuria and Inner Mongolia during the Qing Dynasty," *Environmental History* 5:4 (2000), 503-530.

⁴⁶ *The Paper Road: Archive and Experience in the Botanical Exploration of West China and Tibet* (Berkeley: University of California Press, 2011).

⁴⁷ Judith Farquhar and Lili Lai, *Gathering Medicines: Nation and Knowledge in China's Mountain South* (Chicago: The University of Chicago Press, 2021), 8.

⁴⁸ *Know Your Remedies: Pharmacy and Culture in Early Modern China* (Princeton: Princeton University Press, 2022).

Overlaying Place

Historians can follow peoples across space or stick to one place and observe the cultural layers wash over. Sakura Christmas provided a fascinated place-based study focused on how culturally-specific land use patterns made for differing susceptibility to the mineral composition of the soil. As she related, pastoral Oirat Mongols who were initially transferred to northeast China by the Mongols were able to avoid exposure to high concentrations of selenium. In contrast, later Chinese migrants—farming under the Japanese regime—developed severe and sometimes fatal ailments. Her nuanced approach to the cultural, political, and land-use waves that washed over one site make this article an exemplary model of integrated East Asian Environmental History.⁴⁹

From the perspective of topography and hydrology, place suggests similar usages to diverse cultural groups. “Nature created the perfect dam site”; so Richard White summarized the boosters in the 1930s of the plan for what became the Grand Coulee Dam on the Columbia River in Washington State.⁵⁰ In situations where different political regimes occupied the same site in short order, consistency in the developmental imaginary triumphed over ideological difference. Xiangli Ding has provided one such case study with the Sanmenxia Dam. Building on histories of human interventions on the river throughout the imperial period,⁵¹ Ding traced a masculinist and imperialist desire to dominate the Yellow River that was first articulated by an American missionary in the late nineteenth century. Concrete plans to realize this version were then drafted by Japanese engineers in the late 1920s, in an effort to provide hydroelectricity for the Greater East Asian Co-Prosperity Sphere. A dam on the Sanmenxia cite was only constructed in the 1950s, by engineers serving the state planning imperatives of the People’s Republic of China, in consultation with Soviet experts.⁵² Telling stories from the perspective of place is another strength of environmental historians.

⁴⁹ “Japanese Imperialism and Environmental Disease on a Soy Frontier, 1890-1940,” *The Journal of Asian Studies* 78:4 (2019), 809-836.

⁵⁰ *The Organic Machine: The Remaking of the Columbia River* (New York: Hill and Wang, 1995), 57.

⁵¹ Randall A. Dodgen, *Controlling the Dragon: Confucian Engineers and the Yellow River in Late Imperial China* (Honolulu: University of Hawai’i Press, 2001); David Pietz, *The Yellow River: The Problem of Water in Modern China* (Cambridge, MA: Harvard University Press, 2015).

⁵² “‘The Yellow River Comes from Our Hands’: Silt, Hydroelectricity, and the Sanmenxia Dam, 1929–1973,” *Environment and History* 27:4 (2021), 665-694.

Circulating Fuels, Plants, and People

One of the most intriguing elements of fuels is the way in which their materiality interfaces with their interchangeability in a manner determined by innate qualities but subject to the changing technological capacities and social demands of their human users. Consideration of the political implications of particular forms of fuel prompted Andreas Malm to offer a novel perspective on the origins and confines of the modern world, stressing the deliberate choice by British industrialists of coal over steam at the origin point of the fossil fuel economy in the early nineteenth century, as opposed to any innate attraction residing in coal itself.⁵³ Timothy Mitchell worked out the implication of a similar issue a century later, arguing for a general constriction of participatory decision making in the political sphere due to infrastructural changes in the transition from coal to petroleum.⁵⁴ Mostly recently, Victor Seow has extended this line of analysis into East Asia.⁵⁵

There is a rich body of scholarship on diverse forms of fuels in early modern East Asia and the social infrastructure in which they were collected, disseminated, and consumed. These include freshwater sediment collected by dredging, nightsoil,⁵⁶

⁵³ Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (London: Verso, 2016), esp. 121-193.

⁵⁴ Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (London: Verso, 2011).

⁵⁵ Victor Seow, *Carbon Technocracy: Energy Regimes in Modern East Asia* (Chicago: The University of Chicago Press, 2022).

⁵⁶ Anne Walthall, "Village Networks: Sōdai and the Sale of Edo Nightsoil," *Monumenta Nipponica* 43:3 (1988), 279-303 (esp. 293-302); David L. Howell, "Fecal Matters: Prolegomenon to a History of Shit in Japan," in Ian J. Miller, Julia Adney Thomas, and Brett L. Walker eds., *Japan at Nature's Edge: The Environmental Context of a Global Power* (Honolulu: University of Hawai'i Press, 2013), 137-151; Paul Kreitman, "Attacked by Excrement: The Political Ecology of Shit in Wartime and Postwar Tokyo," *Environmental History* 23 (2018), 342-366; Yong Xue, "Treasure Nightsoil as if It were Gold: Economic and Ecological Links Between Urban and Rural Areas in Late Imperial Jiangnan," *Late Imperial China* 26:1 (2005), 41-71; Yong Xue, "A 'Fertilizer Revolution'? A Critical Response to Pomeranz's Theory of 'Geographic Luck'," *Modern China* 33:2 (2007), 195-229; Wu Zhiyuan 吴志远, "A Discussion of the Fertilizer Industry in Qing dynasty and Republican period Suzhou: In Tandem with the Urban Environment under the Market Mechanism and the Reform of Local Government Organization 清代、民国年间苏州壅业论述—兼谈市场机制下城市环卫与基层政府机构改革," in Tang Lixing 唐力行 ed., *Studies of Suzhou Urban Society from the Ming-Qing On* 明清以来苏州城市社会研究 (Shanghai: Shanghai Shudian Chubanshe, 2013): v. 1, 282-333; Todd A. Henry, *Assimilating Seoul: Japanese Rule and the Politics of Public Space in Colonial Korea, 1910-1945* (Berkeley: University of California Press, 2016), 131-137.

green leaf manure,⁵⁷ soy cakes, and marine products ranging from fishmeal to whale-bone.⁵⁸ Some fuels had multiple uses, such as forest cover that could be burned for heat (as in an *ondol*) or turned into the soil to replenish nutrients.⁵⁹ Others could take multiple paths through a broader caloric network: e.g., herring or sardines consumed directly by humans or employed as agricultural fertilizer.

It is tempting to impose a clear divide between fossil fuels and the diverse forms that preceded them, but, as so often with the pre-modern to modern divide, scale and intensity are at least as relevant as the continuation of particular practices. Madhav Gadgil and Ramachandra Guha phrased the matter carefully in the first book-length *Environmental History of India*: “The revolution in the mode of resource use brought about by industrialization enormously enlarged the possibilities of transforming resources from one form to another, and of transporting them over large distances.”⁶⁰ Practices ostensibly rendered obsolete by the global transition to fossil fuels are only becoming more relevant as the global imperative to transition from a fossil economy achieves greater institutional recognition. Environmental historians have a role to play in debates over *which* past baselines we might attempt to return to in restoration efforts.

One example of doing so is *satoyama* 里山 forest restoration, in which a long absence of human involvement in forests due to urbanization is deliberately countered through resuscitation of abandoned practices, including preparing charcoal.⁶¹ Such practices bring to mind the Indigenous (Anishinabekwe) botanist Robin Wall Kimmerer’s call to re-embed humans in ecological networks so that “people and land are

⁵⁷ Totman referred to this as “green fertilizer” throughout his forest tetraology, but that term has been muddled by environmentally conscious marketing of non-chemical fertilizers. He also described this fertilizer as “leaffall and litter” (Totman, *Pre-industrial Korea and Japan in Environmental Perspective*, 141). For a definition of green leaf manure—and an example of how historically attested non-chemical practices provide the basis for present day initiatives—see <https://www.permaculturenews.org/2016/02/25/green-leaf-manure-a-useful-organic-manure/>.

⁵⁸ Toshihiro Higuchi, “Japan as an Organic Empire: Commercial Fertilizers, Nitrogen Supply, and Japan’s Core-Peripheral Relationship,” in Batten and Brown eds., *Environment and Society in the Japanese Islands*, 139-157; Arch, *Bringing Whales Ashore*, esp. 81-84; 101-103.

⁵⁹ David Fedman, “The Ondol Problem and the Politics of Forest Conservation in Colonial Korea,” *Journal of Korean Studies* 23:1 (2018), 25-64.

⁶⁰ *This Fissured Land: An Ecological History of India* (Berkeley: University of California Press, 1992), 114.

⁶¹ Anna Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2015), 180-187.

good medicine for each other.”⁶² More recently, in coastal Okinawa, as shown by C. Anne Clausm, the *satoyama* idea has been extended to marine ecology.⁶³

The geographical distribution of coal and its relation to population centers has been central to scholarly debates continuing for over half a century on the reasons for strikingly different developments on either side of the Eurasian continent. The extensive use of coal in the Northern Song (960-1129) was first addressed in depth by Robert Hartwell in triad of articles published in the 1960s and more recently revisited by Tim Wright.⁶⁴ Hartwell clearly asserted: “The reasons for contrasting conditions in different regions were primarily economic and not geological.”⁶⁵ The accessibility of coal deposits within China were foregrounded by Pomeranz in his “coal and colonies” causative explanation for the standard of living gap that opened between the Yangzi Delta region and England in the eighteenth century.⁶⁶ The volume of objections to and modifications of Pomeranz are a measure of the relevance of his line of inquiry, such that “Great Divergence” has become a genuinely trans-Eurasian field.⁶⁷

One promising avenue for thinking about culture and ecology moving in tandem through space lies in adapting Alfred Crosby’s concept of “portmanteau biota” to the expansion of the Sinosphere over time and its dynamics relationship with its

⁶² Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis, MN: Milkweed Editions, 2015), x. On the way in which dynamic models of ecology established in the 1970s challenged first generation environmental historians’ sense of a baseline ecological state from which to measure change, see Mart A. Stewart, “Environmental History: Profile of a Developing Field,” *The History Teacher* 31: 3 (1998), 356-357.

⁶³ C. Anne Claus, *Drawing the Sea Near: Satoumi and Coral Reef Conservation in Okinawa* (Minneapolis: University of Minnesota Press, 2020), 45-72.

⁶⁴ The articles by Hartwell are, “A Revolution in the Chinese Iron and Coal Industries During the Northern Sung, 960-1126 A.D.,” *The Journal of Asian Studies* 21:2 (1962), 153-162; “Markets, Technology, and the Structure of Enterprise in the Development of the Eleventh Century Chinese Iron and Steel Industry,” *The Journal of Economic History* 26 (1966), 29-58; and “A Cycle of Economic Change in Imperial China: Coal and Iron in Northeast China, 750-1350,” *Journal of the Economic and Social History of the Orient* 10:1 (1967), 102-159. Tim Wright, “An Economic Cycle in Imperial China? Revisiting Robert Hartwell on Iron and Coal,” *Journal of the Economic and Social History of the Orient* 50:4 (2007), 398-423. For a recent comparison of the historical use of coal in England and China, see Malm, *Fossil Capital*, 48-53.

⁶⁵ “Markets, Technology, and the Structure of Enterprise,” 35. Availability of accessible timber, however, did impact methods of iron production.

⁶⁶ Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton: Princeton University Press, 2000).

⁶⁷ Recent contributions include Stephen Broadberry, Hanhui Guan, and David Daokui Li, “China, Europe, and the Great Divergence: A Study in Historical National Accounting, 980-1850,” *The Journal of Economic History* 78:4 (2018), 955-1000; Jean-Pascal Bassino, Stephen Broadberry, Kyoji Fukao, Bishnupriya Gupta, and Masanori Takashima, “Japan and the Great Divergence, 730-1874,” *Explorations in Economic History* 72 (2019), 1-22.

peripheries.⁶⁸ Major modifications of the concept as originally formulated are necessary, the foremost being: 1) analyses of human propagation of a small repertoire of non-human species within “Old World” regions⁶⁹; and 2) less emphasis on human and non-human species encountering biological vulnerabilities in the species occupying the niches moved into than on the ceaseless labor of simplifying ecologies in order to make them amenable to the culturally preferred plants (Crosby’s “condition of continual disruption”).⁷⁰ Given the intimate relationship between a few species of grain and the development of major language groups in East Asia,⁷¹ it worth developing a concept for culture specific group carrying and propagating of seeds.

The foremost species dyad that would benefit from an East Asian iteration of the “portmanteau biota” concept is silkworms and mulberry trees.⁷² Peter B. Lavelle’s monograph on late nineteenth century resource development within the Qing empire includes a fascinating case study of the campaign of Zuo Zongtang 左宗棠 (1812–85)—the ethnic Chinese Governor-General of Shaan-Gan 陝甘—to develop sericulture among Turkestanis in desert oases in Xinjiang. The campaign was based on the model of cultivation techniques in northern Zhejiang province, and was one part of Sinicization efforts that also included Chinese-language instruction.⁷³ What made Zuo’s initiative different from other state-backed efforts to promote sericulture, Lavelle argues, was his invocation of “territorial security as a justification for seri-

⁶⁸ Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900*. 2nd ed. (Cambridge: Cambridge University Press, 2015): 270–293. The process of adapting Crosby’s concept to East and Inner Asia has been begun by Peter Perdue, *China Marches West: The Qing Conquest of Central Eurasia* (Cambridge, MA: Harvard University Press, 2010), 65–67 (with the organism smallpox and the ecological zone of the Inner Asia steppe) and Bello, *Across Forest, Steppe and Mountain*, 6.

⁶⁹ I.e., preceding the Columbian Exchange and continuing during and after it in a manner not primarily influenced by the re-combination of the biota of Afro-Eurasia with that of the Americas and Australia.

⁷⁰ Crosby, *Ecological Imperialism*, 291.

⁷¹ See, e.g., Dorian Q. Fuller, “Pathways to Asian Civilizations: Tracing the Origins and Spread of Rice and Rice Cultures,” *Rice* 4 (2011), 78–92; Martine Robbeets, Remco Bouckaert, Matthew Conte *et al.*, “Triangulation Supports Agricultural Spread of the Transeurasian Languages,” *Nature* 599 (2021), 616–621; Mark J. Hudson and Martine Robbeets, “Archaeolinguistic Evidence for the Farming/language Dispersal of Koreanic,” *Evolutionary Human Sciences* 2 (2020) e52 (pp. 1–17).

⁷² For a study of silk production on the Korean peninsula during the transition from Sinocentrism to Japanese colonial rule, see Sang-ho Ro, “A Silkworm Massacre in the Korean Peninsula: Agricultural Development and Insects in Early Twentieth-century Korea,” in David A. Bello and Daniel Burton-Rose eds., *Insect Histories of East Asia* (Seattle: University of Washington Press, 2023).

⁷³ Peter B. Lavelle, *The Profits of Nature: Colonial Development and the Quest for Resources in Nineteenth-century China* (New York: Columbia University Press, 2020), 138–166.

culture development”: in Zuo’s imagination, cultivation of the quintessentially civilized dyad of silkworm and mulberry would help secure the region against Russian incursion.⁷⁴

A promising trend in scholarship on Chinese diasporas in the late nineteenth century has drawn attention to the way in which emigrants often carried seeds with them and farmed both for their own uses and for markets of Anglo settlers: this holds true for the American West coast as well as northeastern Australia and New Zealand.⁷⁵ Japanese and Korean emigrants of course did the same; in the later case, Lee Isaac Chung’s 2020 film *Minari* *미나리* is a rich portrait of one such immigrant farming family seeking to tap into a market of Korean emigrant culinary tastes by establishing a farm in Arkansas in the 1980s. *Minari* is the Korean name of the plant whose Latin name is *Oenanthe javanica*. *Minari*’s Latin name and the range of its common names in English speak to its Pan-Asian travels: in addition to water celery and water dropwort, there is “Japanese parsley,” “Chinese celery,” and “Indian pennywort.”⁷⁶ Further scholarship along these lines is a way for environmental historians with expertise in East Asian cultures to contribute to what Joseph S. Alter, in his foreword to a special forum on “Global Asias” in the *Journal of Asian Studies*, characterized as “a challenge at the heart of Global Asias—how to bridge and produce analytic synergy among Asian studies, Asian American studies, and a broad range of interdisciplinary approaches to the study of diasporic histories and transnationalized, mobile communities.”⁷⁷

⁷⁴ Lavelle, *The Profits of Nature*, 140.

⁷⁵ Fei Sheng, “Environmental Experiences of Chinese People in the Mid-Nineteenth Century Australian Gold Rushes,” *Global Environment* 4:7/8 (2011), 98-127; James Beattie, “Eco-cultural Networks in Southern China and Colonial New Zealand, 1860s-1910s,” in James Beattie, Edward Melillo, and Emily O’Gorman eds., *Eco-Cultural Networks and the British Empire: New Views on Environmental History* (London: Bloomsbury Academic, 2015), 151-179; James Beattie, “Chinese Migrants and Colonial Development in the British Empire, 1860s-1920s: A Case Study,” in Liu and Beattie eds., *Environment, Modernization and Development in East Asia*, 59-86; On the American West Coast, see the contributions to the special issue of the *Oregon Historical Quarterly* on “Chinese Diaspora in Oregon,” 2021, such as: evidence of gardening in Chinese mining camps in California (eye-witness) and Idaho (archeological) in Don Hann, “Chinese Mining Kongsì in Eastern Oregon: A Case Study of Cultural Amnesia” (363-63); Chelsea Rose, Jacqueline Y. Cheung, and Eric Gleason, “‘Bona Fide’ Merchants: Negotiating Life, Labor, and Transnational Mobility in the Time of Chinese Exclusion,” 412-441 on Chinese grocers marketing vegetables “originating in the flowery kingdom” in Ashland in 1915 (p. 427).

⁷⁶ <https://kimchimari.com/minari-how-to-eat-grow/>.

⁷⁷ *The Journal of Asian Studies* 80:4 (2021), 842.

Conclusion: Complicating the “Delicate Interdisciplinary Balancing Act”

One way to capture the state of the field of East Asian Environmental History is with the observation that one of the most intellectually stimulating and methodologically innovative contributions to the field in recent years was neither East Asian Studies nor Environmental History. Anna Lowenhaupt Tsing’s *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* builds on the author’s fieldwork experience in an area culturally and economically ravaged by the export timber market to Japan to construct a multi-site ethnography that hits the requisite CJK triad that defines East Asian Studies while interlinking human and diverse non-human histories at a range of spatial and temporal scales.

In a 1990 essay, William Cronon wrote of environmental historians: “Like ecologists, they are more committed than most historians to the proposition that the natural world has an autonomous place in history.”⁷⁸ This qualification can still be difficult to perceive in work on East Asia. Tsing’s multispecies connections stand in stark contrast to the recent monographs on timber markets in late imperial China by Ian M. Miller and Meng Zhang, both of whom are in the third generation of environmental historians of China.⁷⁹ Miller and Zhang provide valuable details about the functioning of timber procurement and innovations in economic organization that facilitated planning on the time-scale of a tree; Zhang masterfully complexifies the private-state dyad in a manner with implications well beyond late imperial China to the early modern world more broadly.

Put in multispecies terms, the books include consideration of how human agents and practices came to accommodate differently scaled lifespans. When it comes to forest ecologies, however, they have little to say beyond a broad acknowledgement of a difference between “wild” forests and tree plantations. Methodologically, it is difficult to perceive any advance beyond the way in which first generation environmental historians of China Mark Elvin and Robert Marks used megafauna that Chinese-language authors cared about in order to track forests that they didn’t.⁸⁰ In her introduction Zhang writes: “Although this book’s narrative unfolds as a story of how forestry and timber markets expanded to frontier regions via human-devised institutions, it could be told with equal validity as a story of how fir and pine used their

⁷⁸ “Modes of Prophecy and Production: Placing Nature in History,” *The Journal of American History* 76:4 (1990), 1122.

⁷⁹ Ian M. Miller, *Fir and Empire: The Transformation of Forests in Early Modern China* (Seattle: University of Washington Press, 2020); Meng Zhang, *Timber and Forestry in Qing China: Sustaining the Market* (Seattle: University of Washington Press, 2021).

⁸⁰ Mark Elvin, *The Retreat of the Elephants: An Environmental History of China* (New Haven: Yale University Press, 2004), esp. 9-85; Robert B. Marks, *Tigers, Rice, Silk, and Silt: Environment and Economy in Late Imperial South China* (Cambridge: Cambridge University Press, 2006), 43-44.

human agents to replace the mixture of subtropical broadleaf and conifer forests in southern China and colonize even greater areas as the dominant species.”⁸¹ This bears comparison to Totman’s anthropocentric *mea culpa* in his preface to *The Green Archipelago*:

From an ecologist’s perspective [this] work will surely be disappointing. It employs a homocentric autecological approach rather than a synecological one; that is, instead of looking at the operation of the ecosystem as a whole, with the human component treated as but one of myriad variables, it focuses explicitly on the relationship of humans to environment.⁸²

What has changed in the intervening thirty-plus years between Totman’s pioneering forest-centered history of Japan and the Meng and Miller volumes is the rise of Environmental Humanities and profusion of multispecies methodological approaches.⁸³ The passage from Zhang quoted above contains no insight that could not be gleaned from the back cover of Michael Pollen’s *The Botany of Desire: A Plant’s-Eye View of the World* (2001), the bestseller that brought a Latourian conception of non-human agency to middlebrow audiences. The quotation also reveals the problematic assumption that we can predict the results of applying a multispecies analytical framework without actually doing so; an assertion that is unthinkable with regard to class, gender, ethnicity, physical ability, and other common analytical lenses employed by historians. In contrast to the ecological flatness of the Zhang and Miller volumes, Yan Gao, in her survey of the social ecology of the hydrological transformation of the Jiangnan Plain at the confluence of the Yangzi and Han rivers, from the Yuan (1271–1368) through the Qing dynasties, gives consideration to non-human species impacted, often to the point of extinction.⁸⁴ Yet the story of monocrop plantations and species extinctions are flip sides of the same coin. Truly ecological historical narration simultaneously narrates the non-human species that have benefited from human interventions in the landscape alongside those that have suffered, all while being attentive to diverse human actors operating within institutional and environmental limits.

In the same 1990 essay quoted above, addressing what was still a “new field,” Cronon mused: “Environmental historians perform a delicate interdisciplinary balancing act in trying to reconcile the insights of their colleagues in history, ecology,

⁸¹ Zhang, *Timber and Forestry in Qing China*, 15.

⁸² Totman, *The Green Archipelago*, xii.

⁸³ For a recent meditation on the former, see Serpil Oppermann and Serenella Iovino eds., *Environmental Humanities: Voices from the Anthropocene* (London: Rowman and Littlefield International, 2017); on the latter, Ewa Domańska, “Animal History,” *History and Theory* 56:2 (2017), 267–87.

⁸⁴ Yan Gao, *Yangzi Waters: Transforming the Water Regime of the Jiangnan Plain in Late Imperial China* (Leiden: Brill, 2022), 239–40.

geography, anthropology, and several other fields.”⁸⁵ Writing in the introduction to a special issue of this journal in 2021, Jongmin Lee remarked that one of the “benefits” of the “premature status of the field” of East Asian Environmental History is that it is still “porous”: “environmental history enjoys the influxes and outflows of scholars from and to natural science, sociology, anthropology, and policy studies.”⁸⁶ It is striking that over this span of more than thirty years, with a narrowing of focus from Environmental History as a whole to its manifestations in East Asia, there is no mention of language training as such. Cronon’s initial statement recognized the role Environmental History could play in bridging the gap between the Humanities and the Life Sciences. Environmental History in East Asia only complicates this problem by adding a third element to the “biculturalism” of Humanities and the Life Sciences: advanced language training in one or more East Asian languages.⁸⁷

Just as “nature can only exist in time,”⁸⁸ it can only exist in place, and when that place is the Sinosphere it includes the longest continuous written tradition on earth and one of the most voluminous. Despite the placement of East Asian Studies departments in Humanities divisions within North American, the training process within them is markedly different from its neighbors. While Anthropology, History, and Religious Studies have required introductory seminars that focus on the towering figures in the field, Chinese and Japanese Studies programs have research methods classes. Other Humanities disciplines discuss ideas; Sinology and Japanology professors are responsible for making sure students can do calendar conversions and know where to look up obscure allusions. If a graduate student in East Asian Studies is interested in ideas or theory as such, they are generally granted permission to take a course in a different department. This observation is not a criticism: the time-consuming process of language acquisition and reference tools is not one that can be passed over. But it does raise a structural problem about how to provide the requisite “tricultural” training. To the best of my knowledge, no graduate program in Environmental History has adequately addressed the problems specific to the East Asia region.⁸⁹

⁸⁵ Cronon, “Modes of Prophecy and Production,” 1122.

⁸⁶ “Towards Environmental History of Modern East Asia,” 401.

⁸⁷ I.e., the discussion initiated in C. P. Snow, *The Two Cultures and the Scientific Revolution* (Cambridge: Cambridge University Press, 1959). For further discussion, see Donald Worster, “The Two Cultures Revisited: Environmental History and the Environmental Sciences,” *Environment and History* 2 (1996), 3-14.

⁸⁸ “Modes of Prophecy and Production,” 1122.

⁸⁹ For a list of such programs in the United States, see <https://aseh.org/US-Graduate-Programs-in-Environmental-History>.

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Abstract

This article explores how the discipline of Environmental History can enhance the coherency of East Asian Studies as a field that is defined by geographical scope and linguistic ability, while simultaneously addressing intra- and transregional currents of people, practices, ideas, and objects. Concurrently, it asks how scholarship focused within East Asia can enrich the practice of Environmental History at local, regional, national, and global scales. The article is organized into four sections followed by a conclusion. The first section considers the nationally-focused synthetic works of Environmental History from which a broader picture of East Asia can be compiled. The following three sections examine different ways of clustering the practice of Environmental History within East Asia. These are: 1) early modern Sinograph texts on pharmacology and natural history; 2) cultural overlays in one locality over time; and 3) movement through space of objects alienated from their original context and people who bear culture-specific practices to different areas. The conclusion considers the challenges of training scholars in an interdisciplinary field with significant language demands.

Keywords: Environmental History, East Asian studies, transregional connections, Sinograph pharmacological texts, energy regimes