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Nature and Power

China and the Wider World

I discuss the references in Nature and Power *to imperial China, especially its thorough discussion of key issues in China's environmental history, but I point out several limitations. Joachim Radkau says little about the role of local elites in agrarian policy, the impact of central Eurasian conquest on imperial regimes' attitudes toward the land, and the impact of global trade on the empire in the preindustrial age. The second part of the article discusses the important strategic and environmental role of trades in fur, tea, and fish from the seventeenth to twentieth centuries.*

Joachim Radkau's (2008) *Nature and Power* is a tour de force of historical synthesis. The author provides balanced, comprehensive coverage of many of the central questions that concern all environmental historians, and he covers an astonishing range of times and places. He substantiates his argument by careful reference to the secondary literature in many fields. By comparison to some other large-scale overviews of environmental history that derive more from the American school, Radkau relies more heavily on a European, particularly a German, perspective, giving us a view that is not so widely represented in most publications in English. His book is an essential source for anyone investigating the broad implications of environmental history. Since I do not have the time or space to develop a full summary and critique of the book, I will focus mainly on his comments on imperial and modern China and will suggest how further work in this area might proceed.

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In his brief section devoted to China, Radkau (ibid.: 101–17) makes many insightful comments, and he draws effectively on the somewhat limited secondary literature on Chinese environmental history. He sweeps over large stretches of time, from ancient China to the People's Republic of China, and he directs attention to some of the key questions that especially concern China. These include discussion of soil fertility and its relationship to the recycling of human and animal excrement (a recurring theme throughout the book); the management of water in the form of large dikes, canals, or small ponds; deforestation; and the connections between the "spiritual culture" of China and its environmental practice.

Radkau makes a few rather bizarre comments and misleading statements, such as classifying the murderous peasant rebel Zhang Xianzhong as a "Daoist" and claiming that only environmental nongovernmental organizations are authorized by the People's Republic of China, and a few errors, such as asserting that the Mongols stopped the move of the Chinese population to the south when in fact they accelerated it. On the whole, however, he captures well the persistent questions that historians have raised about China's environment.

As Radkau rightly notes, China is a contradictory place. The sharply opposed evaluations of the sustainability of the Chinese agrarian system show most clearly in observations about soil fertility and deforestation. The great German agrochemist Justus von Liebig, who asserted the primary importance of soil fertility for the survival of civilization, serves as a leitmotif in many of Radkau's discussions. Liebig was one of a number of foreign observers who praised highly the Chinese recycling of human and animal excrement as a contribution to maintaining productive agriculture that supported an increasing population. The American agronomist Frank King likewise promoted the Asian intensive form of organic agriculture in opposition to the large-scale chemical agriculture of the American Great Plains. Even other Asians were impressed. The Korean traveler Pak Chiwŏn (2010: 150), who went to Beijing in the mid-eighteenth century, remarked:

> Horse dung is extremely filthy stuff, but finds a use as manure in the vegetable field. It is cherished as if it were as precious as gold, so that you never see it lying in the street. People follow the horses to collect the dung in their baskets. When collected, they pile it in a neat square, or a hexagon or an octagon. Sometimes the dung piles are as high as a many

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> storied building or a hillock. When you observe the way the people collect and store the dung, you can see how orderly their society is.

The Chinese themselves, ironically, seldom commented on the use of night soil: they simply took it for granted. We could cite other interesting examples of local recycling to support the case for sustainability of traditional agriculture, such as the interconnected system of fishponds, silkworm cultivation, and grain in South China (Marks 1998). Still, it is not so clear that these long-standing practices could rescue the soils of China from exhaustion over the long term. By the twentieth century much of North China suffered from severe erosion, drought, and low yields, reducing much of its peasant population to near subsistence levels. However, Peter H. Lindert (2000) has found that soil quality did not decrease from the 1930s to the 1980s and that cultivated land area, corrected for underreporting in official statistics, in fact increased. A key question is why rural Chinese in the imperial age generally prospered in the flourishing period of major dynasties, with populations growing, commerce expanding, and living standards increasing together, while in the seventeenth and especially the nineteenth centuries, times of imperial decline, they suffered horribly. We need to pay more attention to the role of the state in each period. A simple evaluation of sustainability over the long run is inadequate.

How the Chinese treated their forests is also a complex and contradictory subject. Many observers, Chinese included, have lamented the destruction of the forests of North China. In this region the same farmers who vigorously recycled human and animal waste to their fields also stripped their trees for firewood and even ate bark in times of famine. In South China, likewise, forests, regarded as the home of dangerous beasts and bandits, often disappeared before the peasants' axes. But the hills of South China still supported substantial forest cover and, more important, commercial crops. Radkau mentions the vital importance of bamboo and mulberry bushes but oddly neglects the tea bush, indigo, charcoal, and other forest products. But he rightly recognizes that North and South China have radically different ecological regimes, and questions about Chinese sustainability need to be posed on a regional and local level.

I think, however, that Radkau misses some opportunities for more nuanced analysis. For a book titled *Nature and Power*, there is surprisingly little mention of the agrarian policies of the imperial Chinese state. He,

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like nearly all historians of China, dismisses Karl August Wittfogel's thesis about the inevitable link between control of water and autocratic state power, although he finds it "stimulating as a heuristic device" (Radkau 2008: 92). He criticizes ecologists who "like to conceptualize environmental policy in global terms and to situate it at the highest possible level" (ibid.: 93). Nevertheless, he says little about local policies toward water, land, and forests. In fact, the critical role of the gentry class—the scholars, retired officials, and influential families who dominated in every locality—receives no attention. Although many of them participated in the imperial bureaucracy, their statuses and interests in their hometowns differed significantly from the interests of the central state. They formed the vital intermediaries between the center and the locality.

Radkau is right that China historically has faced an endemic and nearly insoluble problem: the vast scale of its territory made it impossible for centralized states, no matter how bureaucratically rationalized, to put into effect large-scale policies that went against local interests. This is just as true of the contemporary People's Republic as of the historical empires. Yet a focus on strictly local interests, often favored by environmentalists, could lead to self-interested policies that protected small communities at the expense of larger regions. Around Dongting Lake in northern Hunan, for example, villagers very effectively built polders on the edges of the lake to expand their cultivated land area, but by reducing the surface area of the lake, they increased the risk of flooding for many others across the middle Yangzi lowlands (Perdue 1982, 1987). Nearby the transformation of a sandbar in the middle of the Yangzi River into cultivated fields redirected the river so that it undermined the walls of the major city of Hankou. In Xiang Lake in Zhejiang, near the lower Yangzi valley, commercial interests who wanted to dig up the lake to use its mud for bricks and tiles clashed with those who wanted to preserve the lake for fishing and its beautiful landscape (Schoppa 2002). In these cases, officials and local gentry intervened to attempt to direct the communities toward a sense of a wider public good. In Dongting Lake they banned the construction of illegal dikes while endorsing a "public dike" that obtained official approval. In Xiang Lake they invoked aesthetic criteria and the welfare of the local people to try to block the process of dredging and the sabotage of the lake's waters. In the sandbar conflict they expelled the cultivators and redirected the Yangzi so as to resubmerge the newly created land. These were only partial successes. Xiang Lake survived for nearly 900 years, until

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it disappeared in the twentieth century. Dongting, a much larger lake, lost more than one-third of its surface area, and serious floods struck the middle Yangzi in the nineteenth century, but the local activists may at least have delayed the process.

The promotion of sustainability is not a simple story of survival and collapse but a continual process of ongoing rearguard actions, occasional collaboration for the public good, and partly effective, though imperfect, state intervention. Key participants in these local conflicts were the elites who stood between the village cultivators and the central state. Some of them developed a protoenvironmental consciousness that took account of the wider impact of local decisions. The Maoist state, unlike its imperial predecessor, destroyed nearly all the intermediate groups between itself and the people, and the post-Maoist state, while legitimizing some nonpolitical environmental associations, still suppresses those who challenge its authority openly. The contradictions of center and locality and the weakness of the middle groups still plague the modern Chinese state.

Although Radkau rightly recognizes the essential distinction between the ecological characteristics of North and South China, he does not make a comparable effort to distinguish imperial regimes originating in central Eurasia from those originating in central or southern China. Although the central state never penetrated entirely into local society, the background of its rulers strongly affected their environmental policies. Broadly speaking, the regimes originating in the South, like the Southern Song (1127–1279) and the Ming (1368–1644), focused more heavily on the development of rice paddy cultivation, tropical crops, and southern forests, while conquest regimes coming from the North and the Northwest (Tang [618–907], Yuan [1279–1368], and Qing [1636–1911]) had much more clearly expansive designs toward the pasturelands of central Eurasia. (It is, by the way, an error to claim that hunting "ceased to be a useful activity for imperial self-presentation" [Radkau 2008: 114]. The Mongols and Manchus preserved horse farms and conducted great hunting campaigns as an integral part of their ruling culture.)

Finally, the book tends to focus on local instead of international interactions as significant environmental impacts. Radkau insists on the need for specific, diverse, particular analysis of small sites to derive reliable, nuanced conclusions about the multiple interactions between political institutions, local cultivators, and elements of nature. He certainly has reason to do so, and many environmental historians share this bias. But this leads to some

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neglect of the connections between different societies and the roles of global trade, conquest, and culture. Local studies generally confine themselves to the boundaries of a single political regime. As Richard White (1999: 976) has noted, however, "Environmental histories, it seems, parallel the history of the state, even though it is hard to believe that nature itself does."

The study of commodities has recently become a popular approach that addresses this limitation. Instead of following the traditional borders of nation-states and empires, the study of commodity chains jumps across ocean and land barriers, drawing in many ethnic groups, nations, and religions around a common product. Since Sidney Mintz's (1985) pioneering work on sugar, scholars have written about apples, bananas, birds' nests, cod, coffee, forests, furs, kingfisher feathers, opium, rubber, spices, tulips, whales, wine, and zinc, just to name a few.[1] Radkau himself has recently published a history of wood from the Middle Ages to the present (Radkau and Schäfer 2007). The best of these studies link local production sites with global distribution mechanisms, and they often connect the flow of the commodity closely to the colonial states of the nineteenth century.

In the following section I would like to offer a short description of how attention to certain important globally traded commodities in imperial China helps illuminate the international connections of empires in both the premodern and the modern worlds.

China: The Transnational Perspective

Nature knows nothing of nations or states. Animals, plants, water, and climate do not follow limits defined by human political structures. Environmental history ought to provide a perspective that breaks free of the confines of traditional national histories. Yet most environmental histories still tell national stories. Either they focus on the political economy of a single nation-state, like the United States in the nineteenth century, or they rely on sources in one language produced by a single bureaucratic or imperial structure (Cronon 1991; Elvin 2004; White 1999; Worster 1985). Humans, of course, write histories for each other, not for other animals and plants, but does human-centered history have to be so distant in scale from the natural world?

Some historians and geographers have argued that we need to reconsider how different scales of analysis affect study of natural and human processes. Our standard models of geographic regions, whether political or economic,

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need reexamination when we view humans and natural processes as interactions instead of static structures (McNeill 2000; Richards 2003).

China today is deeply engaged in global processes and is a major shaper of them. While it vigorously promotes nationalist pride, it also asserts openness to Western ideals and technologies and claims to favor a peaceful rise in the international community and a harmonious domestic society. Historical writing in China, however, tends to support the nationalist project, staying within the confines of imperial and national units.

Yet it is useful to explore alternative geographies of the empire and the nation-state to provoke new insights about the economic and cultural processes that connected Qing China to the rest of the world. Two complementary approaches are the "Zomia" model of Willem van Schendel (2002) and James C. Scott (2009) and the study of commodity flows across borders, from hills and forests to oceans and rivers. The Zomia model focuses on the contrast between uplands and lowlands, a vertical geography that spans several national and imperial boundaries of China, India, and Southeast Asia. Commodities have flowed across all these borders from ancient times to the present.

Here I will describe the Chinese trades of furs, fish, and tea to illustrate the connection between Zomian regions beyond or at the margins of the state and global trade flows leading into the center of the Qing empire and outward to global markets. The primary themes I address include

how divergent ecological circumstances generated commodities with an appeal to consumers in urbanized regions,
how states were drawn into influencing flows of commodities and their production,
how local peoples connected themselves to far-ranging networks by producing commodities with global demand,
how this entanglement of the global and the local complicates standard geographic definitions of regions.

The Fur Story

The fur trade across northern Eurasia drove the Chinese and Russian empires into close interactions in the seventeenth and eighteenth centuries and led to the first formal treaties between China and a Western power.

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Furs had always been a critical element in the formation of the earliest Russian states (Martin 1983; Richards 2003). After 1582, when Cossack forces defeated the khan of Sibir', Russian forces rapidly drove eastward in pursuit of valuable furs. They extracted foxes, beavers, and black sables coercively as "tribute" (*yasak*) from native peoples and sent them back to Moscow (Slezkine 1994: 17–31). Building fortresses (*ostrogy*) on the major rivers as collection points, they quickly exhausted local supplies and moved farther east. The "smaller" peoples of the North could not resist this military expansion, but the Mongol and Manchu tribes blocked Russian expansion south. Through the seventeenth and eighteenth centuries, therefore, Russian conquest extended across the northern Eurasian continent, reaching the Pacific at Okhotsk in 1648. In 1741 the Russians continued across the Bering Strait into Alaska and down the coast of North America, pursuing sea otters as the supplies of other animals were exhausted.

The primary driver of Russian expansion was not the Russian state itself but the autonomous Cossack bands in the service of the state; large merchants, like the Stroganovs, who financed the conquest and trade; and independent hunters and trappers (*promyshlenniki*), who conducted exchanges between native tribespeople and the *ostrogy*. The state intervened in the trade by levying taxes on it and establishing monopolies, but it never completely controlled trading operations. In these far-flung territories official state presence was sparse, and most of its functions were subcontracted to independent military and merchant agents.

The fur trade was as profitable for the state treasury as it was ecologically destructive. State fur revenue rose from about 15,000 rubles in 1589 to 125,000 rubles in the 1680s, and fur taxes constituted 7 to 10 percent of state income (Fisher 1943: 120; Slezkine 1994: 21). Supplies of furs dropped after the mid-seventeenth century, particularly as the Russians provided firearms and metal traps to the native trappers. The sable is not a very mobile animal. It spends its entire life in a small, well-defined territory, and it has no natural predators. It is thus extremely vulnerable to human predators. A single native hunter filling his or her annual quota could kill off the sable population of an area of hundreds of square kilometers (Richards 2003: 524). Private Russian hunters moving into Siberia used even more destructive methods of mass trapping. Richard Hellie (1999: 62–63) notes that the "constant rise in the price of sable (of 1.68 percent per year from 1600 to 1719) reflects relentless, ruthless trapping, without the slightest notion of conservation, of

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the Russians' most valuable fur crop. It was the over-trapping of sables that propelled the Russians to the Pacific, and then into Alaska at the end of the eighteenth century." As native peoples rebelled against tribute extraction, costs of shipping furs back to Moscow rose, and animals grew scarcer, the China market beckoned.

Russians had tried to gain access to markets in China since they first heard of the wealth of the empire (Perdue 2005: 51–94). Embassies in 1658 and 1668 led by Setkul Ablin demonstrated that selling furs to Beijing could be very profitable. In 1672 Ablin returned to Russia with a return of 18,700 rubles on an investment of 4,500 rubles. Since Ablin was only designated a "messenger" of the czar and not an official envoy, he could avoid the restrictions of tributary ritual and concentrate on trade. Furs exchanged in Beijing mainly for silk and other textiles had become the dominant element in Russo-Chinese trade. Russian hopes for profit rose.

The issue of the loyalty of the mobile tribes in the Amur region, however, blocked regular trade relations for 20 years. Tungusic and Mongolian leaders in this "middle ground" between the two empires shifted their loyalties in pursuit of their interests. They swore "oaths" of loyalty and paid tribute to both Russian and Qing agents but freely violated oaths and tribute obligations when it suited them. By the mid-seventeenth century both empires faced strong pressures to negotiate with each other. Sable furs were running out, and new competition on Western markets from North American furs threatened the Russian foreign markets. The Qing faced a major military rival, the Zunghar Mongols, and feared that a Russian-Mongol alliance would seriously threaten the state's control of central Eurasia.

The Treaty of Nerchinsk of 1689, a triumph of intercultural negotiation, ensured Russian access to Chinese markets to sell ermine and wolverine furs at high prices, providing Russians with porcelain, silk, gold, silver, and tea as well as with provisions for the northern garrisons. The main goals of the two empires at Nerchinsk were to develop trade relations and control the mobility of Mongolian, Tungusic, and other tribes (Ivanov 2009; Perdue 2010). The treaty itself was an unexpected and implausible achievement of peace between two aggressively expanding empires, each of whom firmly believed in military domination over its neighbors and had no respect for equality of international relations. The Jesuit negotiators spanned huge cultural and linguistic gaps to bring the two sides together, narrowly averting the outbreak of war. The underlying forces leading to Nerchinsk and the later

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Treaty of Kiakhta were the profits of trade and the need to make the contested frontier region and its peoples "visible" to both states through border markers, cartography, ethnographic investigation, and control of migration.

In the eighteenth century the fur trade between Russia and China grew rapidly, from 692,021 rubles in 1756 to 1.4 million rubles in 1759. State revenues rose from 157,000 to 230,000 annually (Foust 1969: chap. 6). By 1800, although the importance of fur revenues to the state budget had declined, the trade was still profitable for both state and private caravans, and the China market provided most of the profits.

Furs also served important diplomatic functions for the Qing state. Presenting sable pelts as tribute meant that native peoples of Manchuria became vassals of the Qing state, and these tribute relations defined Qing control of this ecoregion. For the fur trappers, tribute presentation allowed conduct of trade; for the Qing authorities, tribute meant subjugation of native peoples and legitimate claims to northern Manchuria. In both Russia and Manchuria coercive and commercial extraction of furs from this particular ecology served imperial interests of territorial definition, control of native peoples, and the extension of frontier settlement.

The Tea Story in the Zomian Highlands

> We ordinarily count Yunnan among the provinces of the Chinese empire, but if one leaves the main lines of communication, entering the interior, traveling through the deserts and mountains, you are always in the territory of Yunnan, but you are no longer in China; you are in an uncivilized country without roads, without inns, surrounded by thieves who want your purse or your life, and sometimes both. (quoted in Atwill 2005: 23)

The story of tea in the eighteenth and nineteenth centuries also exhibits similar elements of frontier settlement, global competition, mobile peoples, and state intervention in fragile ecologies. I will focus here on only a few highlights of its development in the production area of Pu-er in Yunnan.

If you visit China today, you might be offered small cups of Pu-er tea from the hills of Yunnan in Southwest China. Pu-er tea is an acquired taste, with a pungent and smoky flavor unfamiliar to the Western palate, but tea connoisseurs consider Pu-er tea one of the highest-quality teas that China produces today. The best Pu-er tea sells for thousands of dollars per cake.

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Products from China's hill country have served important diplomatic, economic, and cultural functions for China for many centuries. China's three oldest and most famous export commodities, porcelain, tea, and silk, come from the highlands. (Silk is manufactured in the lowlands, but the mulberry trees imported to feed the silkworms also come from the hills.) Chinese states have used these products as gifts in diplomatic exchange, as sources of revenue, and as an expression of cultural superiority in their relations with other powers. Since they used to be products that only China produced, they had an air of mystery. They defined certain cultural foundations of China, but they always had a global appeal. Foreigners competed to discover the mystery of these Chinese products and eventually succeeded in producing them for themselves. Then China lost its monopoly and entered an era of global market competition. The decline of the Chinese empire in the nineteenth century is closely tied to its failure to protect these industries against foreign competition. More broadly, the foreign demand for these products, especially tea, inspired decades of war against China designed to prevent an imbalance of trade because of the great foreign demand for tea. Tea, seen as a global product, is an indicator of the development of China over many centuries, from at least 1000 CE to today.

But the route from the plant to its consumption passes through a complex series of production and distribution chains, each inflected by a particular natural and social environment. A long chain stretches from the hills of Yunnan or Fujian or Assam to the English tea party. Strangely enough, only a few scholars have seriously studied tea in this way.[2]

Yet it has had a great impact on world history. Tea, of course, was the primary cause of the Opium Wars of the mid-nineteenth century. But it is not only a British colonial story. Americans participated heavily in the tea trade in the nineteenth century, and Russians had made tea their preferred nonalcoholic drink since the eighteenth century. China occupied a monopoly position in tea exports, as in silk and porcelain, until the nineteenth century, when competition emerged from British production in Assam and Ceylon and from Japanese production at home and in Taiwan. The story of tea is not just the story of one tropical commodity under one empire but a multistranded one of collaboration and competition between many merchants and empires.

Tea was one of many tropical Asian hill crops that aroused global demand.

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Van Schendel (2002) and Scott (2009) have argued for looking at the geography of the hill lands of Southeast Asia in a new way. They have named a new region, Zomia, that lies across and between the boundaries of nation-states. Zomia is hill country populated mainly by local inhabitants with a great deal of independence from lowland states. These people embrace multiple religions and cultures and resist homogenization. They practice "escape agriculture," which allows them to flee the demands of the tax collector or military recruiter. They have smaller, more decentralized, and more ephemeral political structures than the people in the lowlands. They can resist lowland states militarily, despite their numerical inferiority, by taking advantage of mountainous terrain. Even when their territories are nominally part of larger states, the administrators in these regions often delegate a great deal of autonomy to native leaders. Family relations may be less patriarchal, allowing women to hold political authority.

Zomia extends beyond Southeast Asia to the southwestern Chinese provinces of western Guangdong, western Guangxi, Guizhou, and Yunnan, and we could also add western Sichuan and the highlands of Fujian, Hunan, Jiangxi, and Taiwan. These regions have a similar terrain of high mountains separating river valleys and divisions between highland and lowland peoples. Chinese states penetrated these regions very slowly. It was not until at least the year 1700, and arguably in some areas 1900, that Chinese administration gained genuine control of the hill districts in any meaningful sense. The crops cultivated by hill peoples went out in many directions, crossing modern state boundaries. Guangxi, Guizhou, Sichuan, and Yunnan had just as significant trade links with Burma, Tibet, and Vietnam as they did with China proper.

Yunnan tea production became a focus of Qing state interest in the eighteenth century. Yunnan produced tea as early as the Tang dynasty (618–907), but the real boom in Pu-er tea exports occurred in the eighteenth century, when the new Qing emperor, Yongzheng (1723–35), recruited new men to important frontier posts who endorsed aggressive expansion. They advocated taking control away from native officials and instituting direct Qing administrative control while encouraging colonization by Chinese migrants.

One Manchu official, Ortai, in 1726 began to dramatically transform the frontier region with ruthless military conquests. Qing troops invaded Sipsongpanna in southern Yunnan in 1727 and 1732 to suppress conflicts between native inhabitants and new migrants. These conflicts broke out over efforts to grasp control of profits from a new tea trade. Southeast of Simao,

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in highland villages, hill peoples like the Akha and the Jinuo harvested the tea leaves and sold them to Chinese merchants. These merchants processed and exported the finest teas to interior China, Southeast Asia, and Tibet. In 1727, possibly because of a dispute over sexual relations between a Chinese merchant and a highland woman, a crowd of hill people murdered at least 15 Chinese near Simao. The local ruler of the Tai people, who had contacts with Burma, refused to help the Qing capture the killers and instead attacked a Qing patrol. Ortai took advantage of the incident to launch a full-scale invasion of eastern Sipsongpanna. After very difficult fighting, he subdued native resistance and stationed a large garrison in Simao in the newly created prefecture named Pu-er. To support the expanded military presence, he levied taxes on salt wells and took control of the tea industry, forcing all merchants to conduct their trade in a government-supervised market in Simao. The state taxed the trade, prevented conflicts between natives and immigrants, and restricted trade to holders of government licenses. The government earned about 2,100 taels of silver from the trade.

This tea monopoly did not bring in much revenue, and it provoked local resistance. In 1732 Tai nobles objected to excessively high levies on the tea crop by Qing officials and mobilized in support of an allegedly immortal Theravada Buddhist monk to attack Qing troops. They besieged the city of Simao for 90 days, until it was relieved. Military intervention drove out the rebels, but even more important, many Tai aristocrats decided to ally with the Qing to protect their positions. As a reward, they gained a partial retreat of Qing troops from the hills (Giersch 2006).

The tea industry boomed in the eighteenth century under loose Qing supervision and native elite autonomy. Simao became a large town of 30,000 people by the 1830s, attracting merchants from many parts of China and Southeast Asia. Merchant caravans carried teas to Burma, interior China, Siam, and Tibet in large numbers. Every year during the early eighteenth century 6,000 to 7,000 mule loads, or over 1 million pounds, left the hills, and this number more than doubled by the late nineteenth century. In the production structure, native people worked the fields as pickers, while Tai nobles acted as middlemen, delivering the product to Chinese merchants, who dominated the long-distance trade (ibid.: 180). Tea was only one component of a "thickening web" of connections across the southwestern hills. Cotton imports from Burma rose greatly in exchange for the Yunnan exports of tea, silk, and salt.

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A major rebellion, known as the Panthay or Muslim rebellion, destroyed the trading links of the region from 1856 to 1873. After the suppression of the rebellion, the tea trade apparently revived, but the town of Simao did not. It had only 9,000 inhabitants in 1920. By this time, however, all Chinese tea producers faced global competition from the new British tea plantations in Assam and Ceylon, so they lost the opportunity to dominate large global markets. The defeat of the rebellion decisively shifted Yunnan's orientation toward China (Atwill 2005). By the twentieth century Yunnan produced very little export tea.

The Yunnan tea industry, along with the rest of the tea production in China, only revived in the 1960s. In 2004–5 the total Chinese tea output surpassed that of India for the first time. Yields have increased, and certain teas have gained world-class reputations for quality. China still tries to export large amounts of low-quality black tea, but domestic consumers now show increasing sophistication, demanding careful control of quality in the green tea and specialty markets.

Pu-er is only a small part of the new global tea boom in China, but even though it has more cultural than economic importance, Pu-er's fame once again shows how tea is a useful index of China's historical progress. Its processing methods date from the Song dynasty, and it is a local product from the hills of China whose taste only a few Westerners have acquired. It is, however, a global product indicating China's ability to create top-quality exotic products for domestic and global consumer markets. Like its companions silk, porcelain, and for a while *maotai* (a liquor), Pu-er tea is a good drink to think with in considering China's current and historical place in world commodity chains.

A Fish Story

Maritime environments share certain features with forests and hills.[3] All three environments share insecure property rights in mobile or unsustainable resources, leading to the tragedy of the commons, in which overexploitation without regulation results in exhaustion of the resource. Regulation is especially tricky with mobile resources like fish. International borders also became significant in the nineteenth century, especially with Japanese expansion into maritime East Asia and Chinese efforts to defend sovereign rights. Pirates and mobile seafarers are the equivalents of border peoples with shift-

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ing allegiances, multiple cultural affinities, and insecure livelihoods caught between claims of state bureaucracies.

Fishing rights also raised additional questions of controlling technological change and rising nationalism. As new fishing techniques threatened supplies, they also caused conflicts both between the Chinese national government and provincial authorities and between China and Japan.

Chinese fishermen on the Zhoushan islands, off the coast of South China, addressed the commons problem through the use of native place associations and regulations for fishing inscribed in temples. These included prohibitions on overfishing and fines for hiding illegal nets and causing conflict. But these associations were weak and constantly under challenge, and by the twentieth century they had lost much of their effectiveness. As the new technology of bamboo cage fishing for cuttlefish replaced the older use of nets, more farmers moved to cuttlefish grounds. In the great cuttlefish feud of 1932 new migrant farmers fought against established fishermen. Local government bans on cage fishing produced piracy and smuggling. When the ban was overthrown, there were armed conflicts between cage fishers and net fishers in both provinces. The national government refused or was unable to intervene. This example shows the weakness of the national government and continued instability in the region and the lack of defined local borders and secure local control. In Zhoushan the frontier had not yet vanished.

The encroachment of Japanese mechanized trawlers generated disputes over control of territorial waters. But the national government wanted Japanese support for tariff autonomy to remove the unequal treaties, so it did not extend its claims beyond the three-mile limit. Government officials who wanted to restrict Japanese access to Chinese markets to protect local fishermen struggled against those who depended on customs revenue from Japan. By the 1930s there was greater national resistance to Japanese encroachment but still no determined unity.

The fishing example, like furs and tea, highlights elements of international political and economic competition, the active participation of border peoples seeking livelihoods in contested regions, and the special role of local ecologies in determining the resource availability driving political and social conflict. It also has implications for China's current difficulties in managing environmental conflicts.

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Conclusion: Shared Elements of Hill, Forest, and Maritime Trades

Tea, fish, and furs come from three distinct zones, but these regions have several common characteristics: fragile ecologies, loosely supervised frontiers, and global connections. Siberia, like the hills of South China and the maritime frontier, was a type of Zomia, a refuge zone for escaped peasants, deserters, and mobile tribespeople with shifting identities. The invading Cossacks, too, originated in the borderlands of Ukraine and the Volga, and they were a similar band of refugees from enserfed agriculture, with independent military organizations that enlisted in the service of the state. The penetration of these zones by state and market agents linked them to bureaucratic and economic networks and eliminated the autonomy of local people, turning them into coerced or hired labor producing for larger systems of exchange.

Fragile ecology fueled expansion. As animals were used up and fish disappeared, states and merchants pushed farther into frontier regions. Even though tea bushes were a more renewable resource than fur-bearing animals and fish, the tea industry also went through boom and bust cycles, destroying and restoring hill lands in response to global and local economic forces.

All three regions were scenes of interimperial conflict, whether by war and negotiations or by global competition. North American and Russian fur competition transformed both continents, as did British Indian competition with Chinese tea and Japanese intervention in the Eastern seas. Consumer demand, centered in China, northern Europe, Japan, and the United States, also affected decisions for production in remote hill lands, forests, and seas.

To return to Radkau's sweeping analysis, I have advocated a kind of environmental history that is local but also global. Building on an impressive base of local and national studies, such as those synthesized by Radkau, it would lead us to look beyond nation-states, following fish, tea, furs, and other commodities across political and ecological boundaries in search of an integrated transnational history that would help us understand the global environmental issues of the modern world.

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Notes

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1 See Freedman 2008 on spices; Kurlansky 1997 on cod; Miller 2008, Nossiter 2004, and Payne 2004 on wine; Pollan 2001 on apples, tulips; Ptak and Rothermund 1991 on zinc; Richards 2003 on forests, whales; Tagliacozzo and Wenjin 2011 on birds' nests, kingfisher feathers; Tucker 2000 on bananas, rubber; and Yangwen 2005 on opium.

2 A few recent books on tea include Blofeld 1985; Macfarlane and Macfarlane 2000; Mair and Hoh 2009; Martin 2007; and Rose 2010. The best academic study is Gardella 1994.

3 This discussion is based on Micah Muscolino's (2009) excellent study of the fishing industry in the Zhoushan archipelago off the coast of eastern China.

References

Atwill, David G. (2005) The Chinese Sultanate: Islam, Ethnicity, and the Panthay Rebellion in Southwest China, 1856–1873. Stanford, CA: Stanford University Press.

Blofeld, John (1985) The Chinese Art of Tea. London: Allen and Unwin.

Cronon, William (1991) Nature's Metropolis: Chicago and the Great West. New York: Norton.

Elvin, Mark (2004) The Retreat of the Elephants: An Environmental History of China. New Haven, CT: Yale University Press.

Fisher, Raymond Henry (1943) The Russian Fur Trade, 1550–1700. Berkeley: University of California Press.

Foust, Clifford M. (1969) Muscovite and Mandarin: Russia's Trade with China and Its Setting, 1727–1805. Chapel Hill: University of North Carolina Press.

Freedman, Paul H. (2008) Out of the East: Spices and the Medieval Imagination. New Haven, CT: Yale University Press.

Gardella, Robert (1994) Harvesting Mountains: Fujian and the China Tea Trade, 1757–1937. Stanford, CA: Stanford University Press.

Giersch, C. Patterson (2006) Asian Borderlands: The Transformation of Qing China's Yunnan Frontier. Cambridge, MA: Harvard University Press.

Hellie, Richard (1999) The Economy and Material Culture of Russia, 1600–1725. Chicago: University of Chicago Press.

Ivanov, Andrey V. (2009) "Conflicting loyalties: Fugitives and 'traitors' in the Russo-Manchurian frontier, 1651–1689." Journal of Early Modern History 13 (5): 333–58.

Kurlansky, Mark (1997) Cod: A Biography of the Fish That Changed the World. New York: Walker.

https://doi.org/10.1017/S0145553200014279 Published online by Cambridge University Press

Lindert, Peter H. (2000) Shifting Ground: The Changing Agricultural Soils of China and Indonesia. Cambridge, MA: MIT Press.
Macfarlane, Alan, and Iris Macfarlane (2000) Green Gold. Woodstock, NY: Overlook.
Mair, Victor H., and Erling Hoh (2009) The True History of Tea. London: Thames and Hudson.
Marks, Robert B. (1998) Tigers, Rice, Silk, and Silt: Environment and Economy in Late Imperial South China. Cambridge: Cambridge University Press.
Martin, Janet (1983) "Muscovy's northeast expansion: The context and a cause." Cahiers du monde russe et soviétique 24 (4): 459–70.
Martin, Laura C. (2007) Tea: The Drink That Changed the World. Rutland, VT: Tuttle.
McNeill, John R. (2000) Something New under the Sun: An Environmental History of the Twentieth-Century World. New York: Norton.
Miller, Randall, dir. (2008) Bottle shock. Twentieth Century Fox.
Mintz, Sidney (1985) Sweetness and Power: The Place of Sugar in Modern History. New York: Viking.
Muscolino, Micah (2009) Fishing Wars and Environmental Change in Late Imperial and Modern China. Cambridge, MA: Harvard University Press.
Nossiter, Jonathan, dir. (2004) Mondovino. ThinkFilm.
Pak Chiwŏn (2010) The Jehol Diary: Yŏrha Ilgi of Pak Chiwŏn (1737–1805), trans. Yang-hi Choe-Wall. Folkestone, UK: Global Oriental.
Payne, Alexander, dir. (2004) Sideways. Fox Searchlight.
Perdue, Peter C. (1982) "Official goals and local interests: Water control in the Dongting Lake region during the Ming and Qing periods." Journal of Asian Studies 41 (4): 747–65.
——— (1987) Exhausting the Earth: State and Peasant in Hunan, 1500–1850. Cambridge, MA: Harvard University Press.
——— (2005) China Marches West: The Qing Conquest of Central Eurasia. Cambridge, MA: Harvard University Press.
——— (2010) "Boundaries and trade in the early modern world: Negotiations at Nerchinsk and Beijing." Eighteenth-Century Studies 43 (3): 341–56.
Pollan, Michael (2001) The Botany of Desire: A Plant's Eye View of the World. New York: Random House.
Ptak, Roderich, and Dietmar Rothermund (1991) Emporia, Commodities, and Entrepreneurs in Asian Maritime Trade, c. 1400–1750. Stuttgart: Steiner.
Radkau, Joachim (2008) Nature and Power: A Global History of the Environment, trans. Thomas Dunlap. Cambridge: Cambridge University Press.
Radkau, Joachim, and Ingrid Schäfer (2007) Holz: Wie ein Naturstoff Geschichte schreibt. Munich: Oekom.
Richards, John F. (2003) The Unending Frontier: An Environmental History of the Early Modern World. Berkeley: University of California Press.
Rose, Sarah (2010) For All the Tea in China: How England Stole the World's Favorite Drink and Changed History. New York: Viking.

https://doi.org/10.1017/S0145553200014279 Published online by Cambridge University Press

Schoppa, Keith (2002) Song Full of Tears: Nine Centuries of Chinese Life around Xiang Lake. New York: Perseus.

Scott, James C. (2009) The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia. New Haven, CT: Yale University Press.

Slezkine, Yuri (1994) Arctic Mirrors: Russia and the Small Peoples of the North. Ithaca, NY: Cornell University Press.

Tagliacozzo, Eric, and Zhang Wenjin, eds. (2011) Chinese Circulations: Capital, Commodities, and Networks in Southeast Asia. Durham, NC: Duke University Press.

Tucker, Richard P. (2000) Insatiable Appetite: The United States and the Ecological Degradation of the Tropical World. Berkeley: University of California Press.

van Schendel, Willem (2002) "Geographies of knowing, geographies of ignorance: Jumping scale in Southeast Asia." Environment and Planning D: Society and Space 20 (6): 647–68.

White, Richard (1999) "The nationalization of nature." Journal of American History 86 (3): 976–86.

Worster, Donald (1985) Rivers of Empire: Water, Aridity, and the Growth of the American West. New York: Pantheon.

Yangwen, Zheng (2005) The Social Life of Opium in China. Cambridge: Cambridge University Press.

https://doi.org/10.1017/S0145553200014279 Published online by Cambridge University Press