

# Late Victorian Holocausts

El Niño Famines and the Making  
of the Third World



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**Offended Lands**

... It is so much, so many  
tombs, so much martyrdom, so much  
galloping of beasts in the star!  
Nothing, not even victory  
will erase the terrible hollow of the blood:  
nothing, neither the sea, nor the passage  
of sand and time, nor the geranium flaming  
upon the grave.

—Pablo Neruda (1937)

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## Acknowledgements

An ancient interest in climate history was rekindled during the week I spent as a fly on the wall at the June 1998 Chapman Conference, "Mechanism of Millennial-Scale Global Climate Change," in Snowbird, Utah. Listening to the folks who mine environmental history from the Greenland Ice Sheet and the Bermuda Rise discuss state-of-the-art research on climate oscillations was a truly exhilarating experience, and I thank the organizers for allowing a mere historian to kibitz what was intended to be a family conversation.

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## Nine

### The Origins of the Third World

Emaciated people, disease, ribs showing, shriveled bellies, corpses, children with fly-encircled eyes, with swollen stomachs, children dying in the streets, rivers choked with bodies, people; living, sleeping, lying, dying on the streets in misery, beggary, squalor, wretchedness, a mass of aboriginal humanity...

— Harold Isaacs

What historians, then, have so often dismissed as “climatic accidents” turn out to be not so accidental after all.<sup>1</sup> Although its syncopations are complex and quasi-periodic, ENSO has a coherent spatial and temporal logic. And, contrary to Emmanuel Le Roy Ladurie’s famous (Eurocentric?) conclusion in *Times of Feast, Times of Famine* that climate change is a “slight, perhaps negligible” shaper of human affairs, ENSO is an episodically potent force in the history of tropical humanity.<sup>2</sup> If, as Raymond Williams once observed, “Nature contains, though often unnoticed, an extraordinary amount of human history,” we are now learning that the inverse is equally true: there is an extraordinary amount of hitherto unnoticed environmental instability in modern history.<sup>3</sup> The power of ENSO events indeed seems so overwhelming in some instances that it is tempting to assert that great famines, like those of the 1870s and 1890s (or, more recently,

the Sahelian disaster of the 1970s), were "caused" by El Niño, or by El Niño acting upon traditional agrarian misery. This interpretation, of course, inadvertently echoes the official line of the British in Victorian India as recapitulated in every famine commission report and viceregal allocution: millions were killed by extreme weather, not imperialism.<sup>4</sup> Was this true?

### 'Bad Climate' versus 'Bad System'

At this point it would be immensely useful to have some strategy for sorting out what the Chinese pithily contrast as "bad climate" versus "bad system." Y. Kueh, as we have seen, has attempted to parameterize the respective influences of drought and policy upon agricultural output during the Great Leap Forward famine of 1958–61. The derivation of his "weather index," however, involved fifteen years of arduous research and the resolution of "a series of complicated methodological and technical problems" including a necessary comparative regression to the 1930s. Although his work is methodologically rich, his crucial indices depend upon comprehensive meteorological and econometric data that are simply not available for the nineteenth century. A direct statistical assault on the tangled causal web of the 1876–77 and 1896–1902 famines thus seems precluded.<sup>5</sup>

An alternative is to construct a "natural experiment." As Jared Diamond has advocated in a recent sermon to historians, such an experiment should compare systems "differing in the presence or absence (or in the strong or weak effect) of some putative causative factor."<sup>6</sup> We ideally need, in other words, an analogue for the late Victorian famines in which the natural parameters are constant but the social variables significantly differ. An excellent candidate for which we possess unusually detailed documentation is the El Niño event of 1743–44 (described as "exceptional" by Whetton and Rutherford) in its impact on the north China plain.<sup>7</sup> Although not as geographically far-reaching as the great ENSO droughts of 1876–78 or 1899–1900, it otherwise prefigured their intensities. The spring monsoon failed two years in a row, devastating winter wheat in Hebei (Zhili) and northern Shandong. Scorching winds withered crops and farmers dropped dead in their fields from sunstroke. Provincial grain supplies were utterly inadequate to the scale of need. Yet unlike the late nineteenth century, there was no mass mortality from either starvation or disease. Why not?

Pierre-Etienne Will has carefully reconstructed the fascinating history of the 1743–44 relief campaign from contemporary records. Under the skilled Confucian administration of Fang Guancheng, the agricultural and hydraulic expert who directed relief operations in Zhili, the renowned "ever-normal granaries" in each county immediately began to issue rations (without any labor test) to peasants in the officially designated disaster counties.<sup>8</sup> (Local gentry had already organized soup kitchens to ensure the survival of the poorest residents until state distributions began.) When local supplies proved insufficient, Guancheng shifted millet and rice from the great store of tribute grain at Tongcang at the terminus of the Grand Canal, then used the Canal to move vast quantities of rice from the south. Two million peasants were maintained for eight months, until the return of the monsoon made agriculture again possible. Ultimately 85 percent of the relief grain was borrowed from tribute depots or granaries outside the radius of the drought.<sup>9</sup>

As Will emphasizes, this was famine defense in depth, the "last word in technology at the time." No contemporary European society guaranteed subsistence as a human right to its peasantry (*ming-sheng* is the Chinese term), nor, as the Physiocrats later marveled, could any emulate "the perfect timing of [Guancheng's] operations: the action taken always kept up with developments and even anticipated them."<sup>10</sup> Indeed, while the Qing were honoring their social contract with the peasantry, contemporary Europeans were dying in the millions from famine and hunger-related diseases following arctic winters and summer droughts in 1740–43. "The mortality peak of the early 1740s," emphasizes an authority, "is an outstanding fact of European demographic history."<sup>11</sup> In Europe's Age of Reason, in other words, the "starving masses" were French, Irish and Calabrian, not Chinese.

Moreover "the intervention carried out in Zhili in 1743 and 1744 was not the only one of its kind in the eighteenth century, nor even the most extensive."<sup>12</sup> Indeed, as Table 9.1 indicates, the Yellow River flooding of the previous year (1742/43) involved much larger expenditures over a much broader region. (In addition to the ENSO-correlated droughts and floods shown in the table, Will has also documented seven other flood disasters that involved massive relief mobilization.) Although comparable figures are unavailable, Beijing also acted aggressively to aid Shandong officials in preventing famine during the series of El Niño

Table 9.1  
ENSO Disasters Relieved by the Qing

	Quinn Intensity	Provinces	Amount of Relief
1720/21	Very strong	Shaanxi	Unknown
1742/43	(Flooding)	Jiangsu/Anhui	17 million taels; 2.3 million shi
1743/44	Moderate+	Hebei	.87 million taels; 1 million shi
1778	Strong	Henan	1.6 million taels; .3 million shi
1779/80	La Niña	Henan	same
1785	?	Henan	2.8 million taels

Source: Constructed from Table VII, Whetton and Rutherford, p. 244; Table 20, Will, *Bureaucracy and Famine*, pp. 298–9.

droughts that afflicted that province (and much of the tropics) between 1778 and 1787.<sup>13</sup> The contrast with the chaotic late-Qing relief efforts in 1877 and 1899 (or, for that matter, Mao's monstrous mishandling of the 1958–61 drought) could not be more striking. State capacity in eighteenth-century China, as Will and his collaborators emphasize, was deeply impressive: a cadre of skilled administrators and trouble-shooters, a unique national system of grain price stabilization, large crop surpluses, well-managed granaries storing more than a million bushels of grain in each of twelve provinces, and incomparable hydraulic infrastructures.<sup>14</sup>

The capstone of Golden Age food security was the invigilation of grain prices and supply trends by the emperor himself. Although ever-normal granaries were an ancient tradition, price monitoring was a chief innovation of the Qing. "Great care was exercised by the eighteenth-century Emperors in looking over the memorials and price lists in search of inconsistencies." On the fifth of every month *hsien* magistrates forwarded detailed price reports to the prefectures, who summarized them for the provincial governors who, in turn, reported their content in memorials to the central government.<sup>15</sup> Carefully studied and annotated by the emperors, these "vermillion rescripts" testify to an extraordinary engagement with the administration of food security and rural well-being. "In the 1720s and 1730s," R. Bin Wong writes, "the Yongzheng emperor personally scrutinized granary operations, as he did all other bureaucratic behavior; his intense interest in official efforts and his readiness to berate officials for what he considered failures partially explain the development of granary operations beyond the levels achieved in the late Kangxi period."<sup>16</sup> Yongzheng also severely sanctioned specu-

lation by the "rich households [who] in their quest for profit habitually remove grain by the full thousand or full myriad bushels."<sup>17</sup>

His successor, Qianlong, ordered the prefects to send the county-level price reports directly to the Bureau of Revenue in Beijing so he could study them firsthand. The emperors' intense personal involvement ensured a high standard of accuracy in price reporting and, as Endymion Wilkinson demonstrates, frequently led to significant reform.<sup>18</sup> This was another *differentia specifica* of Qing absolutism. It is hard to imagine a Louis XVI spending his evenings scrupulously poring over the minutiae of grain prices from Limoges or the Auvergne, although the effort might have ultimately saved his head from the guillotine.

Nor can we easily picture a European monarch intimately involved in the esoteria of public works to the same degree that the Qing routinely immersed themselves in the details of the Grand Canal grain transport system. "The Manchu emperors," Jane Leonard points out, "had since the early reigns involved themselves deeply in Canal management, not just in broad questions of policy, but in the control and supervision of lower-level administrative tasks." When, for example, flooding in 1824 destroyed sections of the Grand Canal at the critical Huai–Yellow River junction, the Tao-kuang emperor personally assumed command of reconstruction efforts.<sup>19</sup>

In contrast, moreover, to later Western stereotypes of a passive Chinese state, government during the high Qing era was proactively involved in famine prevention through a broad program of investment in agricultural improvement, irrigation and waterborne transportation. As in other things, Joseph Needham points out, the eighteenth century was a golden age for theoretical and historical work on flood control and canal construction. Civil engineers were canonized and had temples erected in their honor.<sup>20</sup> Confucian activists like Guancheng, with a deep commitment to agricultural intensification, "tended to give top priority to investments in infrastructure and to consider the organization of food relief merely a makeshift." Guancheng also wrote a famous manual (the source of much of Will's account) that codified historically tested principles of disaster planning and relief management: something else that has little precedent in backward European tradition.<sup>21</sup>

Finally, there is plentiful evidence that the northern China peasantry during the high Qing was more nutritionally self-reliant and less vulnerable to climate

stress than their descendants a century later. In the eighteenth century, after the Kangxi emperor permanently froze land revenue at the 1712 level, China experienced "the mildest agrarian taxation it had ever known in the whole of its history."<sup>22</sup> Dwight Perkins estimates that the formal land tax was a mere 5 to 6 percent of the harvest and that a large portion was expended locally by hsien and provincial governments.<sup>23</sup> Likewise, the exchange ratio between silver and copper coinage, which turned so disastrously against the poor peasantry in the nineteenth century, was stabilized by the booming output of the Yunnan copper mines (replacing Japanese imports) and the great inflow of Mexican bullion earned by China's huge trade surplus.<sup>24</sup> Unlike their contemporary French counterparts, the farmers of the Yellow River plain (the vast majority of whom owned their land) were neither crushed by exorbitant taxes nor ground down by feudal rents. North China, in particular, was unprecedentedly prosperous by historical standards, and Will estimates that the percentage of the rural population ordinarily living near the edge of starvation – depending, for example, on husks and wild vegetables for a substantial part of their diet – was less than 2 percent.<sup>25</sup> As a result, epidemic disease, unlike in Europe, was held in check for most of the "Golden Age."<sup>26</sup>

Still, could even Fang Guancheng have coped with drought disasters engulfing the larger part of north China on the scale of 1876 or even 1899? It is important to weigh this question carefully, since drought-famines were more localized in the eighteenth century, and because the 1876 drought, as we have seen, may have been a 200-year or even 500-year frequency event. Moreover, the late Victorian droughts reached particular intensity in the loess highlands of Shanxi and Shaanxi, where transport costs were highest and bottlenecks unavoidable. It is reasonable, therefore, to concede that a drought of 1876 magnitude in 1743 would inevitably have involved tens, perhaps even hundreds, of thousands of deaths in more remote villages.

Such a drought, however, would have been unlikely, as in the late nineteenth century, to grow into a veritable holocaust that consumed the greater part of the populations of whole prefectures and counties. In contrast to the situation in 1876–77, when granaries were depleted or looted and prices soared out of control, eighteenth-century administrators could count on a large imperial budget surplus and well-stocked local granaries backed up by a huge surplus of rice in

the south. Large stockpiles of tribute grain at strategic transportation nodes in Henan and along the Shanxi–Shaanxi border were specially designated for the relief of the loess provinces, and an abundance of water sources guaranteed the Grand Canal's navigability year-round.<sup>27</sup> Whereas in 1876 the Chinese state – enfeebled and demoralized after the failure of the Tongzhi Restoration's domestic reforms – was reduced to desultory cash relief augmented by private donations and humiliating foreign charity, in the eighteenth century it had both the technology and political will to shift grain massively between regions and, thus, relieve hunger on a larger scale than any previous polity in world history.<sup>28</sup>

### 'Laws of Leather' versus 'Laws of Iron'

What about famine in pre-British India? Again, there is little evidence that rural India had ever experienced subsistence crises on the scale of the Bengal catastrophe of 1770 under East India Company rule or the long siege by disease and hunger between 1875 and 1920 that slowed population growth almost to a standstill. The Moguls, to be sure, did not dispose of anything like the resources of the centralized Qing state at its eighteenth-century zenith, nor was their administrative history as well documented. As Sanjay Sharma has pointed out, "The problems of intervening in the complex network of caste-based local markets and transport bottlenecks rendered an effective state intervention quite difficult."<sup>29</sup>

On the other hand, benefiting perhaps from a milder ENSO cycle, Mogul India was generally free of famine until the 1770s. There is considerable evidence, moreover, that in pre-British India before the creation of a railroad-girded national market in grain, village-level food reserves were larger, patrimonial welfare more widespread, and grain prices in surplus areas better insulated against speculation.<sup>30</sup> (As we have seen, the perverse consequence of a unitary market was to export famine, via price inflation, to the rural poor in grain-surplus districts.) The British, of course, had a vested interest in claiming that they had liberated the populace from a dark age of Mogul despotism: "One of the foundations of Crown Rule was the belief that ... India's past was full of depravity."<sup>31</sup> But, as Bose and Jalal point out, "The picture of an emaciated and oppressed peasantry, mercilessly exploited by the emperor and his nobility, is being seriously altered in the light of new interpretations of the evidence."<sup>32</sup> Recent research by Ashok Desai indicates that "the mean standard of food consumption in Akbar's empire

was appreciably higher than in the India of the early 1960s."<sup>33</sup>

The Mogul state, moreover, "regarded the protection of the peasant as an essential obligation," and there are numerous examples of humane if sporadic relief operations.<sup>34</sup> Like their Chinese contemporaries, the Mogul rulers Akbar, Shahjahan and Aurangzeb relied on a quartet of fundamental policies – embargos on food exports, antispeculative price regulation, tax relief and distribution of free food without a forced-labor counterpart – that were an anathema to later British Utilitarians.<sup>35</sup> They also zealously policed the grain trade in the public interest. As one horrified British writer discovered, these "oriental despots" punished traders who shortchanged peasants during famines by amputating an equivalent weight of merchant flesh.<sup>36</sup>

In contrast to the Raj's punitive taxation of irrigation and its neglect of traditional wells and reservoirs, the Moguls used tax subsidies to promote water conservation. As David Hardiman explains in the case of Gujarat: "Local officials had considerable discretion over tax assessment, and it seems to have been their practice to encourage well-construction by granting tax concessions. In the Ahmedabad region, for example, it was common to waive the tax on a 'rabi' crop raised through irrigation from a recently constructed well. The concession continued until the tax exemptions were held to have equalled the cost of construction."<sup>37</sup>

Occasionally, the British paid appropriate tribute to the policies of their "despotic" predecessors. The first Famine Commission Report in 1880, for example, cited Aurangzeb's extraordinary relief campaign during the (El Niño?) drought-famine of 1661: "The Emperor opened his treasury and granted money without stint. He gave every encouragement to the importation of corn and either sold it at reduced prices, or distributed it gratuitously amongst those who were too poor to pay. He also promptly acknowledged the necessity of remitting the rents of the cultivators and relieved them for the time being of other taxes. The vernacular chronicles of the period attribute the salvation of millions of lives and the preservation of many provinces to his strenuous exertions."<sup>38</sup>

Food security was also probably better in the Deccan during the period of Maratha rule. As Mountstuart Elphinstone admitted retrospectively after the British conquest, "The Mahratta country flourished, and the people seem to have been exempt from some of the evils which exist under our more perfect Government."<sup>39</sup> His contemporary, Sir John Malcolm, "claimed that between 1770 and

1820 there had been only three very bad seasons in the Maratha lands and, though some years had been 'indifferent,' none had been as 'bad as to occasion any particular distress.'"<sup>40</sup> D. E. U. Baker cites a later British administrative report from the Central Provinces that contrasted the desultory relief efforts of the East India Company during the droughts of the 1820s and 1830s ("a few thousand rupees") with the earlier and highly effective Maratha policy of forcing local elites to feed the poor ("enforced charity of hundreds of rich men").<sup>41</sup> Indeed the resilient Maratha social order was founded on a militarized free peasantry and "very few landless laborers existed." In contrast to the British-imposed *raiya* system, occupancy rights in the Maratha Deccan were not tied to revenue payment, taxes varied according to the actual harvest, common lands and resources were accessible to the poor, and the rulers subsidized local irrigation improvements with cheap *taqavi* (or *tagai*) loans.<sup>42</sup> In addition, Elphinstone observed, the "sober, frugal, industrious" Maratha farmers lived in generally tolerant coexistence with the Bhils and other tribal peoples. Ecological and economic synergies balanced the diverse claims of plains agriculture, pastoralism and foothill swidden.<sup>43</sup>

In contrast to the rigidity and dogmatism of British land-and-revenue settlements, both the Moguls and Marathas flexibly tailored their rule to take account of the crucial ecological relationships and unpredictable climate fluctuations of the subcontinent's drought-prone regions. The Moguls had "laws of leather," wrote journalist Vaughan Nash during the famine of 1899, in contrast to the British "laws of iron."<sup>44</sup> Moreover, traditional Indian elites, like the great Bengali *zamindars*, seldom shared Utilitarian obsessions with welfare cheating and labor discipline. "Requiring the poor to work for relief, a practice begun in 1866 in Bengal under the influence of the Victorian Poor Law, was in flat contradiction to the Bengali premise that food should be given ungrudgingly, as a father gives food to his children."<sup>45</sup> Although the British insisted that they had rescued India from "timeless hunger," more than one official was jolted when Indian nationalists quoted from an 1878 study published in the prestigious *Journal of the Statistical Society* that contrasted thirty-one serious famines in 120 years of British rule against only seventeen recorded famines in the entire previous two millennia.<sup>46</sup>

India and China, in other words, did not enter modern history as the helpless "lands of famine" so universally enshrined in the Western imagination. Certainly the intensity of the ENSO cycle in the late nineteenth century, perhaps only

equaled on three or four other occasions in the last millennium, must loom large in any explanation of the catastrophes of the 1870s and 1890s. But it is scarcely the only independent variable. Equal causal weight, or more, must be accorded to the growing social vulnerability to climate variability that became so evident in south Asia, north China, northeast Brazil and southern Africa in late Victorian times. As Michael Watts has eloquently argued in his history of the "silent violence" of drought-famine in colonial Nigeria: "Climate risk ... is not given by nature but ... by 'negotiated settlement' since each society has institutional, social, and technical means for coping with risk.... Famines [thus] are social crises that represent the failures of particular economic and political systems."<sup>47</sup>

### Perspectives on Vulnerability

Over the last generation, scholars have produced a bumper-crop of revealing social and economic histories of the regions teleconnected to ENSO's episodic disturbances. The thrust of this research has been to further demolish orientalist stereotypes of immutable poverty and overpopulation as the natural preconditions of the major nineteenth-century famines. There is persuasive evidence that peasants and farm laborers became dramatically more pregnable to natural disaster after 1850 as their local economies were violently incorporated into the world market. What colonial administrators and missionaries – even sometimes creole elites, as in Brazil – perceived as the persistence of ancient cycles of backwardness were typically modern structures of formal or informal imperialism.

From the perspective of political ecology, the vulnerability of tropical agriculturalists to extreme climate events after 1870 was magnified by simultaneous restructurings of household and village linkages to regional production systems, world commodity markets and the colonial (or dependent) state. "It is, of course, the constellation of these social relations," writes Watts, "which binds households together and project them into the marketplace, that determines the precise form of the household vulnerability. It is also these same social relations that have failed to stimulate or have actually prevented the development of the productive forces that might have lessened this vulnerability." Indeed, new social relations of production, in tandem with the New Imperialism, "not only altered the extent of hunger in a statistical sense but changed its very etiology."<sup>48</sup> Three points of articulation with larger socio-economic structures were especially deci-

sive for rural subsistence in the late Victorian "proto-third world."

First, the forcible incorporation of smallholder production into commodity and financial circuits controlled from overseas tended to undermine traditional food security. Recent scholarship confirms that it was *subsistence adversity* (high taxes, chronic indebtedness, inadequate acreage, loss of subsidiary employment opportunities, enclosure of common resources, dissolution of patrimonial obligations, and so on), not entrepreneurial opportunity, that typically promoted the turn to cash-crop cultivation. Rural capital, in turn, tended to be parasitic rather than productivist as rich landowners redeployed fortunes that they built during export booms into usury, rack-renting and crop brokerage. "Marginal subsistence producers," Hans Medick points out, "... did not benefit from the market under these circumstances; they were devoured by it."<sup>49</sup> Medick, writing about the analogous predicament of marginal smallholders in "proto-industrial" Europe, provides an exemplary description of the dilemma of millions of Indian and Chinese poor peasants in the late nineteenth century:

For them [even] rising agrarian prices did not necessarily mean increasing incomes. Since their marginal productivity was low and production fluctuated, rising agrarian prices tended to be a source of indebtedness rather than affording them the opportunity to accumulate surpluses. The "anomaly of the agrarian markets" forced the marginal subsistence producers into an unequal exchange relationship through the market.... Instead of profiting from exchange, they were forced by the market into the progressive deterioration of their conditions of production, i.e. the loss of their property titles. Especially in years of bad harvests, and high prices, the petty producers were compelled to buy additional grain, and, worse, to go into debt. Then, in good harvest years when cereal prices were low, they found it hard to extricate themselves from the previously accumulated debts; owing to the low productivity of their holdings they could not produce sufficient quantities for sale.<sup>50</sup>

As a result, the position of small rural producers in the international economic hierarchy equated with downward mobility, or, at best, stagnation. There is consistent evidence from north China as well as India and northeast Brazil of falling household wealth and increased fragmentation or alienation of land. Whether farmers were directly engaged by foreign capital, like the Berari *khatedars* and Cearan *parceiros* who fed the mills of Lancashire during the Cotton Famine, or were simply producing for domestic markets subject to international competition

like the cotton-spinning peasants of the Boxer hsiens in western Shandong, commercialization went hand in hand with pauperization without any silver lining of technical change or agrarian capitalism.

Second, the integration of millions of tropical cultivators into the world market during the late nineteenth century was accompanied by a dramatic deterioration in their terms of trade. Peasants' lack of market power vis-à-vis crop merchants and creditors was redoubled by their commodities' falling international purchasing power. The famous Kondratief downswing of 1873–1897 made dramatic geographical discriminations. As W. Arthur Lewis suggests, comparative productivity or transport costs alone cannot explain an emergent structure of global unequal exchange that valued the products of tropical agriculture so differently from those of temperate farming. "With the exception of sugar, all the commodities whose price was lower in 1913 than in 1883 were commodities produced almost wholly in the tropics. All the commodities whose prices rose over this thirty-year period were commodities in which the temperate countries produced a substantial part of total supplies. The fall in ocean freight rates affected tropical more than temperate prices, but this should not make a difference of more than five percentage points."<sup>51</sup>

Third, formal and informal Victorian imperialism, backed up by the supernatural automatism of the Gold Standard, confiscated local fiscal autonomy and impeded state-level developmental responses – especially investments in water conservancy and irrigation – that might have reduced vulnerability to climate shocks. As Curzon once famously complained to the House of Lords, tariffs "were decided in London, not in India; in England's interests, not in India's."<sup>52</sup> Moreover, as we shall see in the next chapter, any grassroots benefit from British railroad and canal construction was largely canceled by official neglect of local irrigation and the brutal enclosures of forest and pasture resources. Export earnings, in other words, not only failed to return to smallholders as increments in household income, but also as usable social capital or state investment.

In China, the "normalization" of grain prices and the ecological stabilization of agriculture in the Yellow River plain were undermined by an interaction of endogenous crises and the loss of sovereignty over foreign trade in the aftermath of the two Opium Wars. As disconnected from world market perturbations as the starving loess provinces might have seemed in 1877, the catastrophic fate of their

populations was indirectly determined by Western intervention and the consequent decline in state capacity to ensure traditional welfare. Similarly the depletion of "ever-normal" granaries may have resulted from a vicious circle of multiple interacting causes over a fifty-year span, but the coup de grace was certainly the structural recession and permanent fiscal crisis engineered by Palmerston's aggressions against China in the 1850s. As foreign pressure intensified in later decades, the embattled Qing, as Kenneth Pomeranz has shown, were forced to abandon both their traditional mandates: abandoning both hydraulic control and grain stockpiling in the Yellow River provinces in order to concentrate on defending their endangered commercial littoral.<sup>53</sup>

British control over Brazil's foreign debt and thus its fiscal capacity likewise helps explain the failure of either the empire or its successor republic to launch any antidrought developmental effort in the sertão. The zero-sum economic conflicts between Brazil's rising and declining regions took place in a structural context where London banks, above all the Rothschilds, ultimately owned the money-supply. In common with the India and China, the inability to politically regulate interaction with the world market at the very time when mass subsistence increasingly depended upon food entitlements acquired in international trade became a sinister syllogism for famine. Moreover in the three cases of the Deccan, the Yellow River basin and the Nordeste, former "core" regions of eighteenth-century subcontinental power systems were successively transformed into famished peripheries of a London-centered world economy.

The elaboration of these theses, as always in geo-historical explanation, invites closer analysis at different magnifications. Before considering case-studies of rural immiseration in key regions devastated by the 1870s and 1890s El Niño events or looking at the relationships among imperialism, state capacity and ecological crisis at the village level, it is necessary to briefly discuss how the structural positions of Indians and Chinese (the big battalions of the future Third World) in the world economy changed over the course of the nineteenth century. Understanding how tropical humanity lost so much economic ground to western Europeans after 1850 goes a long way toward explaining why famine was able to reap such hecatombs in El Niño years. As a baseline for understanding the origins of modern global inequality (and that is the key question), the herculean statistical labors of Paul Bairoch and Angus Maddison over the last thirty years have been

complemented by recent comparative case-studies of European and Asian standards of living.

### The Defeat of Asia

Bairoch's famous claim, corroborated by Maddison, is that differences in income and wealth between the great civilizations of the eighteenth century were relatively slight: "It is very likely that, in the middle of the eighteenth century, the average standard of living in Europe was a little bit lower than that of the rest of the world."<sup>54</sup> When the *sans culottes* stormed the Bastille, the largest manufacturing districts in the world were still the Yangzi Delta and Bengal, with Ligan (modern Guangdong and Guangxi) and coastal Madras not far behind.<sup>55</sup> India alone produced one-quarter of world manufactures, and while its "pre-capitalist agrarian labour productivity was probably less than the Japanese-Chinese level, its commercial capital surpassed that of the Chinese."<sup>56</sup>

As Prasannan Parthasarathi has recently shown, the stereotype of the Indian laborer as a half-starved wretch in a loincloth collapses in the face of new data about comparative standards of living. "Indeed, there is compelling evidence that South Indian labourers had higher earnings than their British counterparts in the eighteenth century and lived lives of greater financial security." Because the productivity of land was higher in South India, weavers and other artisans enjoyed better diets than average Europeans. More importantly, their unemployment rates tended to be lower because they possessed superior rights of contract and exercised more economic power. But even outcaste agricultural labourers in Madras earned more in real terms than English farm laborers.<sup>57</sup> (By 1900, in contrast, Romesh Chunder Dutt estimated that the average British household income was 21 times higher.)<sup>58</sup>

New research by Chinese historians also challenges traditional conceptions of comparative economic growth. Referring to the pathbreaking work of Li Bozhong, Philip Huang notes that "the outstanding representative of this new academic tendency has even argued the overall economic development of the Yangzi Delta in the Qing exceeded that of 'early modern' England."<sup>59</sup> Similarly, Bin Wong has recently emphasized that the "specific conditions associated with European proto-industrialization – expansion of seasonal crafts, shrinking farm size, and good marketing systems – may have been even more widespread in

Table 9.2  
Shares of World GDP  
(Percent)

	1700	1820	1890	1952
China	23.1	32.4	13.2	5.2
India	22.6	15.7	11.0	3.8
Europe	23.3	26.6	40.3	29.7

Source: Angus Maddison, *Chinese Economic Performance in the Long Run*, Paris 1998, p. 40.

China [and India] than in Europe."<sup>60</sup> "Basic functional literacy," adds F. Mote, "was more widespread than in Western countries at that time, including among women at all social levels."<sup>61</sup>

Moreover, in the recent forum "Re-thinking 18th Century China," Kenneth Pomeranz points to evidence that ordinary Chinese enjoyed a higher standard of consumption than eighteenth-century Europeans:

Chinese life expectancy (and thus nutrition) was at roughly English levels (and so above Continental ones) even in the late 1700s. (Chinese fertility was actually lower than Europe's between 1550 and 1850, while its population grew faster; thus mortality must have been low.) Moreover, my estimates of "non-essential" consumption come out surprisingly high. Sugar consumption works out to between 4.3 and 5.0 pounds per capita ca. 1750 – and much higher in some regions – compared with barely 2 pounds per capita for Europe. China circa 1750 seems to have produced 6–8 lbs. of cotton cloth per capita; its richest area, the Yangzi Delta (population roughly 31 million), probably produced between 12 and 15 lbs. per capita. The UK, even in 1800, produced roughly 13 lbs. of cotton, linen and wool cloth combined per resident, and Continental output was probably below China's.<sup>62</sup>

Pomeranz has also calculated that "the Lower Yangzi appears to have produced roughly as much cotton cloth per capita in 1750 as the UK did cotton, wool, linen and silk cloth combined in 1800 – plus an enormous quantity of silk."<sup>63</sup> In addition, as Maddison demonstrates, the Chinese GDP in absolute terms grew faster than that of Europe throughout the eighteenth century, dramatically enlarging its share of world income by 1820.

The usual stereotype of nineteenth-century economic history is that Asia stood still while the Industrial Revolution propelled Britain, followed by the

United States and eventually the rest of Western Europe, down the path of high-speed GNP growth. In a superficial sense, of course, this is true, although the data gathered by Bairoch and Maddison show that Asia lost its preeminence in the world economy later than most of us perhaps imagine. The future Third World, dominated by the highly developed commercial and handicraft economies of India and China, surrendered ground very grudgingly until 1850 (when it still generated 65 percent of global GNP), but then declined with increasing rapidity through the rest of the nineteenth century (only 38 percent of world GNP in 1900 and 22 percent in 1960).<sup>64</sup>

Table 9.3  
Shares of World Manufacturing Output, 1750–1900  
(Percent)

	1750	1800	1830	1860	1880	1900
Europe	23.1	28.0	34.1	53.6	62.0	63.0
UK	1.9	4.3	9.5	19.9	22.9	18.5
Tropics	76.8	71.2	63.3	39.2	23.3	13.4
China	32.8	33.3	29.8	19.7	12.5	6.2
India	24.5	19.7	17.6	8.6	2.8	1.7

Source: Derived from B. R. Tomlinson, "Economics: The Periphery," in Andrew Porter (ed.), *The Oxford History of the British Empire: The Nineteenth Century*, Oxford 1990, p. 69 (Table 3.8).

The deindustrialization of Asia via the substitution of Lancashire cotton imports for locally manufactured textiles reached its climax only in the decades after the construction of the Crystal Palace. "Until 1831," Albert Feuerwerker points out, "Britain purchased more 'nankeens' (cloth manufactured in Nanking and other places in the lower Yangzi region) each year than she sold British-manufactured cloth to China."<sup>65</sup> Britain exported 51 million yards of cloth to Asia in 1831; 995 million in 1871; 1413 million in 1879; and 2000 million in 1887.<sup>66</sup>

But why did Asia stand in place? The rote answer is because it was weighted down with the chains of tradition and Malthusian demography, although this did not prevent Qing China, whose rate of population increase was about the same as Europe's, from experiencing extraordinary economic growth throughout the eighteenth century. As Jack Goldstone recently argued, China's "stasis" is an "anachronistic illusion that come[s] from reading history backwards."<sup>67</sup> The

Table 9.4  
Standing in Place: China vs. Europe  
Dollars per Capita GDP/(Population in Millions)

	Western Europe		China	
1400	430	(43)	500	(74)
1820	1034	(122)	500	(342)
1950	4902	(412)	454	(547)

Source: Lu Aiguo, *China and the Global Economy Since 1840*, Helsinki 2000, p. 56 (Table 4.1 as derived from Maddison).

relevant question is not so much why the Industrial Revolution occurred first in England, Scotland and Belgium, but why other advanced regions of the eighteenth-century world economy failed to adapt their handicraft manufactures to the new conditions of production and competition in the nineteenth century.

As Marx liked to point out, the Whig view of history deletes a great deal of very bloody business. The looms of India and China were defeated not so much by market competition as they were forcibly dismantled by war, invasion, opium and a Lancashire-imposed system of one-way tariffs. (Already by 1850, imposed Indian opium imports had siphoned 11 percent of China's money-supply and 13 percent of its silver stock out of the country.)<sup>68</sup> Whatever the internal brakes on rapid economic growth in Asia, Latin America or Africa, it is indisputable that from about 1780 or 1800 onward, every serious attempt by a non-Western society to move over into a fast lane of development or to regulate its terms of trade was met by a military as well as an economic response from London or a competing imperial capital. Japan, prodded by Perry's black ships, is the exception that proves the rule.

The use of force to configure a "liberal" world economy (as Marx and later Rosa Luxemburg argued) is what Pax Britannica was really about. Palmerston paved the way for Cobden. The Victorians, according to Brian Bond's calculations, resorted to gunboats on at least seventy-five different occasions.<sup>69</sup> The simultaneous British triumphs in the Mutiny and the "Arrow" War in 1858, along with Japan's yielding to Perry in the same year, were the epochal victories over Asian economic autonomy that made a Cobdenite world of free trade possible in the second half of the nineteenth century. (Thailand had already conceded

a 3 percent tariff in 1855).<sup>70</sup> The Taiping Revolution – “more revolutionary in its aims than the Meiji Restoration, insisting on gender equality and democratizing literacy” – was a gigantic attempt to revise that verdict, and was, of course, defeated only thanks to the resources and mercenaries that Britain supplied to the embattled Qing.<sup>71</sup>

This is not to claim that the Industrial Revolution necessarily depended upon the colonial conquest or economic subjugation of Asia; on the contrary, the slave trade and the plantations of the New World were much more strategic streams of liquid capital and natural resources in boosting the industrial take-off in Britain, France and the United States. Although Ralph Davis has argued that the spoils of Plessy contributed decisively to the stability of the Georgian order in an age of revolution, the East India Company’s turnover was small change compared to the great trans-Atlantic flow of goods and capital.<sup>72</sup> Only the Netherlands, it would appear, depended crucially upon Asian tribute – the profits of its brutal *culturstelsel* – in financing its economic recovery and incipient industrialization between 1830 and 1850.

Paradoxically, monsoon Asia’s most important “moment” in the Victorian world economy was not at the beginning of the epoch, but towards its end. “The full value of British rule, the return on political investments first made in the eighteenth century,” write Cain and Hopkins in their influential history of British imperialism, “was not realised until the second half of the nineteenth century, when India became a vital market for Lancashire’s cotton goods and when other specialised interests, such as jute manufacturers in Dundee and steel producers in Sheffield, also greatly increased their stake in the sub-continent.”<sup>73</sup> The coerced levies of wealth from India and China were not essential to the rise of British hegemony, but they were absolutely crucial in postponing its decline.

### The Late Victorian World Economy

During the protracted period of stop-and-go growth from 1873 to 1896 (what economic historians misleadingly used to call the “Great Depression”), the rate of capital formation and the growth of productivity of both labor and capital in Britain began a dramatic slowdown.<sup>74</sup> She remained tied to old products and technologies while behind their tariff barriers Germany and the United States forged leadership in cutting-edge oil, chemical and electrical industries. Since British

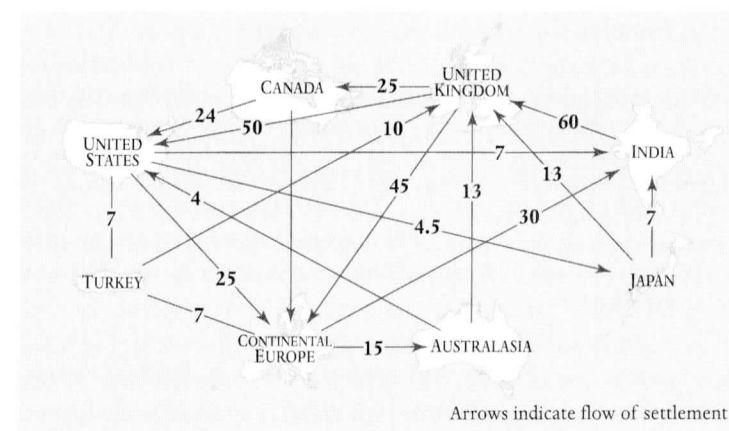


Figure 9.1 World System of Settlements, 1910 (£ Millions)

Source: S. Saul, *Studies in British Overseas Trade, 1870–1914*, Liverpool 1960, p. 58.

imports and overseas investment still dynamized local growth from Australia to Denmark, the potential “scissors” between UK productivity and consumption threatened the entire structure of world trade. It was in this conjuncture that the starving Indian and Chinese peasantries were wheeled in as unlikely saviors. For a generation they braced the entire system of international settlements, allowing England’s continued financial supremacy to temporarily coexist with its relative industrial decline. As Giovanni Arrighi emphasizes, “The large surplus in the Indian balance of payments became the pivot of the enlarged reproduction of Britain’s world-scale processes of capital accumulation and of the City’s mastery of world finance.”<sup>75</sup>

The operation of this crucial circuit was simple and ingenious. Britain earned huge annual surpluses in her transactions with India and China that allowed her to sustain equally large deficits with the United States, Germany and the white Dominions. True, Britain also enjoyed invisible earnings from shipping, insurance, banking and foreign investment, but without Asia, which generated 73 percent of British trade credit in 1910, Anthony Latham argues, Britain “presumably would have been forced to abandon free trade,” while her trading partners would have been forced to slow their own rates of industrialization. The liberal world economy might otherwise have fragmented into autarkic trading blocs, as it did

later during the 1930s:

The United States and industrial Europe, in particular Germany, were able to continue their policy of tariff protection only because of Britain's surplus with Asia. Without that Asian surplus, Britain would no longer have been able to subsidise their growth. So what emerges is that Asia in general, but India and China in particular, far from being peripheral to the evolution of the international economy at this time, were in fact crucial. Without the surpluses which Britain was able to earn there, the whole pattern of international economic development would have been severely constrained.<sup>76</sup>

India, of course, was the greatest captive market in world history, rising from third to first place among consumers of British exports in the quarter century after 1870.<sup>77</sup> "British rulers," writes Marcello de Cecco in his study of the Victorian gold standard system, "deliberately prevented Indians from becoming skilled mechanics, refused contracts to Indian firms which produced materials that could be got from England, and generally hindered the formation of an autonomous industrial structure in India."<sup>78</sup> Thanks to a "government stores policy that reserved most government purchases to British products and by the monopoly of British agency houses in organizing the import-export trade," India was forced to absorb Britain's surplus of increasingly obsolescent and noncompetitive industrial exports.<sup>79</sup> By 1910 this included two-fifths of the UK's finished cotton goods and three-fifths of its exports of electrical products, railway equipment, books and pharmaceuticals. As a result, observes de Cecco, Britain avoided "having to restructure her industry and was able to invest her capital in the countries where it gave the highest return." Thanks to India, "British financiers were not compelled to 'tie' their loans to British exports because the Imperial outlet was always available for British products."<sup>80</sup>

The subcontinent was equally important to the rentier strata. The climate-detonated crisis of English agriculture in the late 1870s and the subsequent decline of farm output produced a sharp fall in agricultural rents in England and Wales from £53 million in 1876 to only £37 million in 1910.<sup>81</sup> Indian army and civil service sinecures were accordingly famous for rescuing the fortunes of Britain's landed aristocracy. But, as Cain and Hopkins have argued in making their case for a hegemonic "gentlemanly capitalism," even bigger spoils were returned to the middle

classes of London and the Home Counties as government-guaranteed interest on railroad debentures and Indian bonds. "This constituency of southern investors, and its institutional representatives in banking and shipping, fell in readily behind the flag of empire and gave full support to policies of free trade and sound money. If British rule in India was helpful to British industry, it was vital to British investment."<sup>82</sup> As Hobsbawm points out, "not even the free-traders wished to see this goldmine escape from British control."<sup>83</sup>

But how, in an age of famine, could the subcontinent afford to subsidize its conqueror's suddenly precarious commercial supremacy?<sup>84</sup> In a word, it couldn't, and India was forced-marched into the world market, as we shall see, by revenue and irrigation policies that compelled farmers to produce for foreign consumption at the price of their own food security. This export drive was the hallmark of the new public finance strategy introduced by James Wilson – founder of *The Economist* and finance member of the Council of India – in the first years of direct rule. The opening of the Suez Canal and the growth of steam shipping drastically reduced the transport costs of bulk commodity export from the subcontinent. As a result India's seaborne foreign trade increased more than eightfold between 1840 and 1886.<sup>85</sup> In addition to opium cultivation in Bengal, new export monocultures of indigo, cotton, wheat and rice supplanted millions of acres of subsistence crops. Part of this production, of course, was designed to assure low grain prices in the metropolis after the debacle of English agriculture in the 1870s. Between 1875 and 1900, years that included the worst famines in Indian history, annual grain exports increased from 3 million to 10 million tons: a quantity that, as Romesh Dutt pointed out, was equivalent to the annual nutrition of 25 million people. By the turn of the century, India was supplying nearly a fifth of Britain's wheat consumption as well as allowing London grain merchants to speculate during shortages on the Continent.<sup>86</sup>

But Indian agriculture's even more decisive contribution to the imperial system, from the East India Company's first illegal shipment of opium to Canton, was the income it earned in the rest of the Eastern Hemisphere. Especially in the 1880s and 1890s, the subcontinent's permanent trade and current account imbalances with Britain were financed by its trade surpluses of opium, rice and cotton thread vis-à-vis the rest of Asia. Indeed England's systematic exploitation of India depended in large part upon India's commercial exploitation of China.

This triangular trade between India, China and Britain had a strategic economic importance in the Victorian world system that transcended other far larger flows of commerce. If China generated only a tiny 1.3 percent of the total volume of world trade in the late nineteenth century, it was nonetheless immensely valuable to the British Empire, which monopolized fully 80 percent of China's foreign trade in the 1860s and 60 percent as late as 1899. (British firms, which controlled two-thirds of coastal shipping, also took an important slice of China's domestic commerce.)<sup>87</sup>

From the beginning of the nineteenth century, the East India Company had relied on opium exports from Bengal to Canton (which in 1832 earned a net profit "at least fourteen times the prime cost") to finance the growing deficits generated by its expensive military operations on the subcontinent. By forcibly enlarging the Chinese demand for the narcotic and, thus, the taxes collected on its export, the two Opium Wars (1839–42 and 1856–58) and the punitive Treaty of Tianjin (1858) revolutionized the revenue base of British India. "Opium," says John Wong, "serviced the cost of imperial expansion in India."<sup>88</sup> Opium shipments from India reached a peak of 87,000 chests in 1879, the biggest drug transaction in world history.<sup>89</sup>

This extraordinarily one-sided trade – in 1868 India supplied over 35 percent of China's imports but bought less than 1 percent of its exports – also subsidized the imports of US cotton that fueled the industrial revolution in Lancashire.<sup>90</sup> "The sale of Bengal opium to China," Latham explains, "was a great link in the chain of commerce with which Britain had surrounded the world. The chain worked like this: The United Kingdom paid the United States for cotton by bills upon the Bank of England. The Americans took some of those bills to Canton and swapped them for tea. The Chinese exchanged the bills for Indian opium. Some of the bills were remitted to England as profit; others were taken to India to buy additional commodities, as well as to furnish the money remittance of private fortunes in India and the funds for carrying on the Indian government at home."<sup>91</sup>

When, after 1880, the Chinese unofficially resorted to domestic cultivation of opium (an early example of "import-substitution") to reduce their trade deficit, British India found a lucrative new advantage in the export of factory-spun cotton yarn, which, as we shall see, had a devastating impact on Chinese folk textiles.

Moreover, in the later nineteenth century Britain herself started earning a substantial surplus in the China trade for the first time. The Second Opium War – or "Arrow" War – which increased British exports to China tenfold in a single decade was the turning point.<sup>92</sup> Britain's dominant role in Chinese foreign trade, built by Victorian *narcotraficantes* with gunboats, thus leveraged the whole free-trade imperium. "China," summarizes Latham, "directly through Britain and indirectly through India, enabled Britain to sustain her deficits with the United States and Europe on which those countries depended for export stimulus and, in the case of the United States, capital inflow to some degree."<sup>93</sup>

Moreover, China was forced at bayonet point to cede control over tariffs to the British inspector-general of the Imperial Maritime Customs Administration, a de facto imperial proconsul who "came to enjoy more influence with the Foreign Office than did the British Minister in Peking."<sup>94</sup> China's growing trade deficit became intractable by 1884. "Not a single year [in the rest of the nineteenth century] showed a surplus; the average annual deficit rose to 26.6 million taels – roughly about 10 percent of the yearly total trade, but over 20 percent of the annual imports or just under 30 percent of the annual exports."<sup>95</sup> Among its traditional monopolies, tea was undercut in the world market by Indian production while Japanese silk competed with the famous brands of southern China. Unlike India, China was unable to finance any of its "consistent and growing overall deficit" via trade surpluses with a third party, nor could it siphon compensatory incomes, like Britain, from its overseas colonies. As a result, the Qing became increasingly dependent upon foreign exchange remittances from 5 million Chinese emigrants in southeast Asia, Oceania, Peru, the Caribbean and the United States.<sup>96</sup> Although the government publicly expressed its disgust with the coolie trade, it had little alternative but to collaborate in its expansion. The so-called "yellow peril" that English writers would help to popularize was thus a direct consequence of Asia's increasing subsidization of faltering British hegemony. Emigrant Chinese plantation workers and railroad laborers, like Indian ryots, balanced England's accounts on their bent backs.

### Militarism and the Gold Standard

In addition to being at the losing end of the imperialism of free trade, the Indian and Chinese economies were also throttled by military expenditures and the Gold Standard. In the Victorian era, no other major countries were forced to devote such excessive portions of their national income to war. India, already saddled with a huge public debt that included reimbursing the stockholders of the East India Company and paying the costs of the 1857 revolt, also had to finance British military supremacy in Asia. In addition to incessant proxy warfare with Russia on the Afghan frontier, ordinary Indians also paid for such far-flung adventures of the Indian Army as the sacking of Beijing (1860), the invasion of Ethiopia (1868), the occupation of Egypt (1882), and the conquest of the Sudan (1896–98). As a result, military expenditures were never less than 25 percent (or 34 percent including police) of India's annual budget, and viceroys were constantly searching for creative ways to purloin monies for the army from other parts of the budget, even from the Famine Fund. Victorian England, on the other hand, never expended more than 3 percent of its net national product on its army and navy, a serendipitous situation that considerably diminished domestic tensions over imperialism.<sup>97</sup>

The Chinese case, of course, was even more extreme. From 1850 to 1873 China was aflame with social and ethnic conflict on a scale that utterly dwarfed the contemporary US War Between the States. As most historians have recognized, this carnage was largely rooted in the structural recession and increasing insecurity of existence that followed the First Opium War. The fiscal effects of epic civil war, in turn, were enormous.<sup>98</sup> The Taiping revolutionaries and their Triad allies for several years cut off Beijing from the revenues of half a dozen southern provinces. Nian rebels simultaneously disrupted administration in large parts of four northern provinces, while a Muslim revolt in Gansu and Shaanxi grew into a nightmarish and immensely expensive war of ethnic extermination. In the worst years, 75 percent of the imperial budget was expended on the maintenance of vast field armies (without, however, leading to real military modernization).<sup>99</sup> The staggering costs of their survival forced the Qing, in Pomeranz's phrase, to "triage" state expenditure between regions. They ultimately chose to favor the coastal cities, where customs revenues were soaring but sovereignty was

most under threat, over the vast subsistence economy of inland north China. As we shall see later, their abandonment of imperial mandates for flood control and canal navigation, essential to the ecological security of the Yellow River plain, had predictably catastrophic consequences when the ENSO cycle intensified in the later nineteenth century.

The two great nations of Asia were also victimized by the new international monetary system established in the 1870s. Although Britain adopted the Gold Standard in 1821, the rest of the world clung to either a silver standard or a bimetallic system. Supply and demand for both metals were relatively stable with only minor fluctuations in their exchange ratio. After defeating France in 1871, however, Germany shifted to gold and was soon followed by the United States, the rest of Europe and eventually Japan. Vast quantities of demonetized silver flooded the world market, depreciating the currency of India and China, the major nations outside the hegemonic gold bloc. (India began to move to the Gold Standard after 1893.)

As John McGuire has shown, the London-based Chartered Bank of India, Australia and China, which financed much of the Indian trade, had the same kind of quasi-state influence over Indian monetary policy as the Manchester Chamber of Commerce enjoyed over Indian agriculture. Keeping the rupee tied to silver had obvious advantages for Britain, since the value of its exports (denominated in gold) to India increased in value while its imports (denominated in silver) declined in value. "From 1873 to 1895 the value of the rupee fell from an index value in gold of 100 to an index value of 64."<sup>100</sup> Since India's "home charges" – the annual payments to London for pensions, border wars, public debt, the secretary of state's office, and so on – were fixed in gold, the devaluation of the silver rupee cost Indians an additional £105 million between 1874 and 1894.<sup>101</sup>

Likewise it is estimated that the Gold Standard stole one-quarter of the purchasing power of the silver ornaments that constituted the savings of the common people.<sup>102</sup> While the gold-denominated export price of Indian grains remained stable to the benefit of British consumers, their domestic cost in rupees was sharply inflated to the detriment of the Indian poor.<sup>103</sup> As Sir William Wedderburn pointed out: "Indian peasants in general had three safeguards against famine: (a) domestic hoards of grain; (b) family ornaments; and (c) credit with the village moneylender, who was also the grain dealer. But towards the close of

the nineteenth century all were lost by the peasants."<sup>104</sup>

Economic historians celebrate the irony of impoverished Indians providing a flow of cheap credit to Britain. While "at every harvest season," De Cecco writes, "Indian interest rates would shoot up to unbearable levels," British-owned Presidency banks "received deposits from the government and from other public bodies without paying on them one anna of interest." In addition, "The reserves on which the Indian monetary system was based provided a large *masse de manoeuvre* which British monetary authorities could use to supplement their own reserves and to keep London the centre of the international monetary system."<sup>105</sup> Krishnendu Ray expands this point: "By preventing India from transforming its annual surpluses into gold reserves the India Office contributed towards keeping British interest rates low. English banks were able to borrow from the India Office at 2 per cent and reinvest on the London market at 3 per cent."<sup>106</sup> Even more importantly, monetary policy was used, in Dieter Rothermund's phrase, "to flush out India's produce." Until fiscal exigencies forced a partial demonetization of silver in 1893, inflation greatly abetted the British campaign to recruit peasants to the production of export crops like wheat, indigo, opium and jute that helped balance the Empire's accounts.

At an earlier time the Dutch had adopted a deliberate method of extracting cash crops from Java by circulating a large amount of worthless copper coins. In India the British did not have to do this deliberately because by simply keeping the mints open to the free flow of depreciating silver they got practically the same result. The management of credit facilitated the extraction of cash crops. By advancing money to the peasants who grew cash crops for export the British and their agents preempted the productive capacity of India's agriculture. The area under cash crops expanded even at times when food grain for home consumption would have fetched a better price. What was grown for export has to be rated as a cash crop in this context. The depreciation of the currency and the preemption of the productive capacity of vast parts of the country combined so as to achieve the miracle that India could export produce at "stable" export prices even at a time when severe famines tormented the country. By absorbing silver and exporting wheat at the lowest price India served as the buffer at the base of the world economy of the late nineteenth century.<sup>107</sup>

In China's case, the shock of the Gold Standard in the late 1870s compounded the monetary chaos inherited from the civil wars of the 1850s and 1860s. Powerless to stop the drain of silver that the British had engineered with the imposition of the opium trade, the Qing had also lost control of their domestic copper supply in the 1860s when Muslim rebels seized the famous Yunnan mines. Accordingly, Beijing had to finance its struggle for survival by issuing worthless paper money and systematically reminting copper cash into higher denominations. The debasement of cash relative to silver created particular havoc in the Yellow River provinces where an estimated 99 percent of exchanges were in copper (versus only 30 percent in the Yangzi Delta).<sup>108</sup> Since land revenues were still assessed in silver, the continuing high price of the metal – as Mary Wright has emphasized – undercut the subsequent attempt of the Tongzhi restorationists in the late 1860s to reclaim the loyalty of the peasantry through an amelioration of the tax burden.<sup>109</sup>

The conversion of world trade to the universal Gold Standard aggravated both China's external and internal exchange crises. First of all, the international price of silver plummeted: "Within a generation, the tael had lost nearly two-thirds of its exchange value."<sup>110</sup> Some mercantile elites may have benefited from the advantage that cheaper international prices gave their exports, particularly tea and Shanghai cotton goods. But "imports from gold-standard countries became more expensive, which was particularly serious for railway development. Foreign investment in China was also discouraged, for fear of repayment in a depreciated standard."<sup>111</sup>

Yet precisely because China's growing commercial debt was financed by the outflow or "dehoarding" of silver, silver's internal value actually rose vis-à-vis the copper coinage that circulated in village economies. The country's shortage of gold in international trade (partly compensated, as we have seen, by the reluctant export of coolie labor) was mirrored by the continuing depreciation of cash, especially in the north. There the common people were also outraged that in order to pay their taxes they had to convert their copper to silver at much higher exchange rates than the privileged gentry. A principal grievance of the Taipings in 1851, monetary instability also helped fuel the Boxer Rebellion nearly a half century later.<sup>112</sup>

### The Myth of 'Malthusia'

Forcibly imposed trade deficits, export drives that diminished food security, over-taxation and predatory merchant capital, foreign control of key revenues and developmental resources, chronic imperial and civil warfare, a Gold Standard that picked the pockets of Asian peasants: these were key modalities through which the burden of "structural adjustment" in the late Victorian world economy was shifted from Europe and North America to agriculturalists in newly minted "peripheries." But surely we must also concede that demography – especially in India and China where partible systems of inheritance were the rule – played a major role in undermining food security in the nineteenth century.

Malthus is still a potent figure among at least the older generation of economic historians. Princeton's W. Arthur Lewis, one of the leading authorities on the nineteenth-century world economy, assumed as a matter of course in an influential 1978 study that the underlying cause of famine in Victorian India was not the "drain of wealth" to England as alleged by contemporary critics, but "a large population that continued to live at subsistence level on inadequately watered marginal lands, without a profitable cash crop."<sup>113</sup> Similarly, the historiography of late imperial China has been haunted by the spectre of "agricultural involution" and the so-called "high-level equilibrium trap" – both euphemisms for how the presumed population explosion of the eighteenth century squeezed arable land to the threshold of chronic famine.

Recent scholarship offers a more complex picture of the relationship between demography and subsistence in Asia. (Malthus is not an issue in the cases of Brazil and Africa where land/population ratios were high and labor shortages chronic until at least the middle of the twentieth century.) As Charlesworth points out, "It is indisputable that land was, in absolute terms, hardly under great pressure from population in the Deccan of the early British period." Through the 1840s, at least, "only about half of the cultivable land in most Deccan districts, according to formal British estimates, was being tilled."<sup>114</sup> Although population grew rapidly in the 1850s and 1860s, partly as a result of the cotton boom, the demographic momentum came to an abrupt halt with the catastrophe of 1876. In India as a whole during the half century between 1870 and 1920 there was only a single decade (1880s) of significant population growth. (South Asia's percentage

of world population declined from 1750 to 1900 from 23 percent to 20 percent) while Europe was rising from 17 percent to 21 percent.<sup>115</sup>

Modern case-studies corroborate the position of nationalist critics of the Raj, like G. V. Joshi in 1890, who argued that "the problem of India lies not so much in the fact of an alleged overpopulation as in the admitted and patent evil of under-production." (Joshi estimated that fully half of the net savings of India was confiscated as revenue.)<sup>116</sup> If cultivators in the Deccan and other drought-prone regions were relentlessly pushed onto marginal lands where productivity was low and crop failures were inevitable, the culprit was less likely overpopulation than the "British land revenue system itself." This is certainly the finding of Bagchi, who, after a careful inquisition of colonial agricultural statistics, argues that the revenue collectors' inflexible claims on a high "average" harvest "compelled the peasants to cultivate marginal lands, and also forced them to 'mine' their land in a situation where most of them had few investible resources left to improve its productivity."<sup>117</sup>

Likewise contemporary scholars are dramatically revising the traditional image of late imperial China as a "demographic profligate": the hopeless "Malthusia" depicted by generations of economic theorists and demographers.<sup>118</sup> Until recently, most scholars have accepted fragmentary evidence for an eighteenth-century population explosion that doubled or even tripled China's 1700 population. Demographic reductionists, however, have always had difficulty explaining how population growth that was clearly so "Boserupian" in the eighteenth century (promoting a dynamic expansion of productive forces) could abruptly become so grimly Malthusian in the nineteenth (blocking all advances in productivity). (Esther Boserup, of course, inverted Malthus in a famous 1965 study to argue that population increase was really the motor, not the brake, of economic and social progress.)<sup>119</sup> Moreover, there is little evidence for any increase in demographic pressure after the end of the Qing Golden Age. As Maddison points out, China's population was no higher in 1890 than in 1820 while per capita income was significantly lower.<sup>120</sup>

Pomeranz, who has examined this issue in the context of north China, agrees that population pressures alone "do not explain why ecological problems greatly worsened after the mid-nineteenth century." His study area, the Huang-Yun (comprising parts of Shandong, Zhili and Henan around the intersection of the

Grand Canal and the Yellow River), "after the wars, floods and droughts of the 1850–80 period ... did not significantly exceed its 1840s population until after 1949"<sup>121</sup> Moreover, the vast human losses of the Taiping revolution created a demographic vacuum in the middle and lower Yangzi that was refilled after 1864 by millions of immigrants from congested provinces, including Honan and Kiangsu.<sup>122</sup> Thereafter famine and epidemic, followed by war and revolution, kept population growth in north China at a minimum until 1948.

Recently some experts on Qing China, led by Princeton's F.W. Mote and Martin Heijdra, have frontally challenged the orthodox view of a population doubling or even tripling during the eighteenth century. They advance compelling arguments for a late Ming population of 250 to 275 million, rather than the 150 million conventionally adopted as a baseline circa 1700 for Qing demography. This implies an annual growth rate of 0.3 percent (the same as India and less than the world average) rather than the 0.6 to 0.9 percent claimed in most histories.<sup>123</sup> Moderate, rather than exponential, population growth during the Golden Age would perforce revise neo-Malthusian explanations of China's subsequent nineteenth-century crises. As Mote carefully explains:

A major implication of the proposed outline of Qing population growth is that it discredits what usually has been taken as the most significant demographic fact about Qing: the idea of a "population explosion" in the eighteenth century. That supposed phenomenon is given high explanatory value in relation to many social and political contexts. If, however, the population did *not* suddenly increase during that century, but started from a higher plateau and grew moderately, many social issues must then be otherwise explained. For example, calculations using those earlier population figures in conjunction with equally suspect Ming and Qing figures for land in cultivation show a disastrous fall in the ratio of cultivated land to consuming population; the implicit crisis in that ratio of productive land to population must be reexamined. Related views about the "optimum population" of China, perhaps in itself a suspect notion, also must be reconsidered....<sup>124</sup>

Rejecting demographic determinism, of course, does not mean that population regimes played no role in China's nineteenth-century crisis. On the contrary, it is clear that the very success of agricultural intensification in the Golden Age encouraged excessive subdivision of land in many regions as well as ecologically destructive reclamations of previously uncultivated highlands and wetlands.

Moreover, population growth often seems to have been concentrated in the poorest and most environmentally vulnerable areas. *Local* population–resource relationships will thus figure prominently in subsequent discussions of subsistence crisis and disaster vulnerability in north China. But population growth was hardly the self-acting, archimedean lever of history imagined by so many economic historians.

### The Irrigation Deficit

As Pomeranz points out, Europe faced even more severe demographic and ecological pressures at the beginning of the nineteenth century, but was able to resolve them with the help of New World natural resources, massive colonial emigration and, eventually, urban industrialization.<sup>125</sup> The relevant question, in other words, is less population pressure per se than why Western Europe was able to escape its incipient "high-level equilibrium trap" and Qing China wasn't.

In addition to the factors already highlighted, there is another variable that is frequently missing from historical discussions of "underdevelopment." If (according to Pomeranz) the chief "ecological bottleneck" to economic growth in Atlantic Europe at the beginning of the nineteenth century was the inelastic supply of fiber crops and timber, in both India and China it was water. As Patrick O'Brien observes, "up to half of the populations of Asia, Africa, and South America may have subsisted on land where water supply constituted the key constraint upon increasing agricultural output."<sup>126</sup> This was, of course, common sense to "Oriental despots," and a major achievement of the Qing Golden Age, as well as of the Mogul zenith, had been the high sustained levels of state and village-level investment in flood control and irrigation. As we shall see in detail, however, the nineteenth century was characterized by the near-collapse of hydraulic improvement.

"Traditional water-harvesting systems," emphasizes David Hardiman, "disintegrated and disappeared in large parts of India during the early colonial period [and] high rates of land-tax left no surplus for the effective maintenance of irrigation systems."<sup>127</sup> Despite the later development of the celebrated canal colonies of the Punjab, irrigation in British India lagged behind expansion of agriculture until Independence. In China, meanwhile, "irrigation, water storage and control, and grain storage facilities were not extended or improved beyond their

eighteenth-century levels."<sup>128</sup> Indeed irrigated acreage shrank from its Qing high point of 29.4 percent of the arable in 1820 to only 18.5 percent of the arable in 1952. In Brazil's drought-stricken Nordeste, there was no state support whatsoever for irrigation.<sup>129</sup>

This *irrigation deficit* undergirded the Malthusian illusion of helpless "involution" in China and elsewhere. Whether as a result of population pressure or displacement by export crops, subsistence in all three lands was pushed onto drier, often less productive soils, highly vulnerable to ENSO cycles, without parallel improvements in irrigation, drainage or reforestation to ensure sustainability. Modern irrigation-based revolutions in agricultural productivity in northern India and north China (since 1960), as well as in the Nordeste (since 1980), only dramatize the centrality of water resources and the political capacities to ensure their development to any discussion of "carrying capacity" or "demographic ceilings."

More broadly, it is clear that any attempt to elucidate the social origins of late Victorian subsistence crises must integrally incorporate the relevant histories of common property resources (watersheds, aquifers, forests and pastures) and social overhead capital (irrigation and flood control systems, granaries, canals and roads). In the case-study chapters that follow, I argue that *ecological poverty* – defined as the depletion or loss of entitlement to the natural resource base of traditional agriculture – constituted a causal triangle with increasing *household poverty* and *state decapacitation* in explaining both the emergence of a "third world" and its vulnerability to extreme climate events.<sup>130</sup>

## Ten

### India: The Modernization of Poverty

Let us go to the root of the matter. Let us, or those of us who can do so, mark the condition of the Indian cultivator in his home, and find out what causes impoverish him and make him unable to save. The reason is not a want of frugality, or of sobriety, or of prudence. The Indian peasant is the most sober, the most frugal, and the most prudent peasant on the face of the earth.

– Romesh Chunder Dutt

If the history of British rule in India were to be condensed into a single fact, it is this: there was no increase in India's per capita income from 1757 to 1947.<sup>1</sup> Indeed, in the last half of the nineteenth century, income probably declined by more than 50 percent.<sup>2</sup> There was no economic development at all in the usual sense of the term. "Static overall yield figures," Tomlinson adds, "do not mean that output everywhere was stagnant, but rather that progressive forces were always cancelled out by regressive ones, and that periods of dynamism were interspersed with periods of enervation."<sup>3</sup> Celebrated cash-crop booms went hand in hand with declining agrarian productivity and food security. In much of the cotton-growing southern Deccan, for instance, per acre yields of food crops at the end of the Raj had fallen to only two-thirds to one-half the average level