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**THE BIOLOGICAL BLOWBACK OF EMPIRE?  
THE COLLAPSE OF THE JAPANESE EMPIRE  
AND THE INFLUX OF THE “DEADLY  
ENVIRONMENT,” 1945-1952**

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When we explore the historical relationship between empire and the environment, there is a tendency to focus on the phase of conquest and ask how the growing reach of an empire changed, on purpose as well as by accident, the environments of its colonies.<sup>1</sup> Less examined is how the latter, far from being passive, at times threatened to strike back at the imperial metropole. As human and freight movement intensified between the core and the periphery, the colonies’ “deadly environment” — human diseases, agricultural pests, weeds, and other undesirable parasites — was ready to migrate and come ashore in the metropole.

This potential biological blowback of conquest and control might be safely under control as long as the empire remained robust. Enjoying asymmetry in power and knowledge, it could implement a multifaceted program of containment ranging from social hygiene and environmental engineering in the colonial landscape to quarantine and police actions at the borders.<sup>2</sup> But what if the empire fell, with the flow of people

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<sup>1</sup> See, for example, Alfred W. Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge; New York: Cambridge University Press, 1986).

<sup>2</sup> For an overview of social hygiene, environmental engineering, and quarantine in European imperialism, see S. J. Watts, *Epidemics and History: Disease, Power, and Imperialism* (New Haven: Yale University Press, 1997), pp. 167-268. For the British Empire, see David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India* (Berkeley, CA: University of California Press, 1993); John Booker, *Maritime Quarantine: The British Experience, c. 1650-1900* (Aldershot: Ashgate, 2007); Mark Harrison, “Quarantine, Pilgrimage and Colonial Trade: India 1866-1900,” *Indian Economic and Social History Review* 29 (1992), pp. 299-318; Krista Maglen, “Intercepting Infection: Quarantine, the Port

and goods radically redirected in the process of deconstruction of the imperium? Could the fallen empire escape from the biological blowback of its colonial legacy? To take stock of such historical dynamics, I will survey the case of Japan during the occupation period (1945-1952) following World War II and discuss how this country in the period of transition from empire to nation-state coped with the biological consequences of imperialism.

These biological dynamics in the rise and fall of the Japanese Empire are, I believe, pertinent to advancing our understanding of imperialism. For one thing, a focus on the biological hazards that circulated within an empire is part of recent scholarly efforts to introduce the environment as a material factor in the history of empires. After all, the colonial process was not simply a story of controlling ideas and exploiting people. It was an epic battle to conquer nature as well, aiming to develop and harvest crops, game, and minerals without incurring associated biological costs in human diseases and agricultural pests. An analysis of the changing flow of this epidemical and entomological danger will thus shed fresh light on the material structure of empire.

This does not mean, however, that the environmental perspective is concerned with the material dimension alone. Indeed, in the eyes of colonialists, the status of nature hardly existed apart from the “nature” of the people living in it. The colonies’ “deadly environment” was deemed to be a manifestation of the natives’ “Otherness” in character – their ineptness and moral corruption, which left nature “laid waste,” in sharp contrast to the colonizers’ pious and heroic works to subdue the earth, sanitize the environment, and conserve natural resources for “wise use.” This association of hostile wilderness with incapable inhabitants was central to the ideology of empire, be it the “civilizing” mission of the Han Chinese in the barbarian’s land, the Christians’ work ethic and the British Common Law’s concept of property in contrast to those of the

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Sanitary Authority and Immigration in Late Nineteenth and Early Twentieth Century Britain,” PhD dissertation (University of Glasgow, 2001). For the American experience, see Warwick Anderson, *Colonial Pathologies: American Tropical Medicine, Race, and Hygiene in the Philippines* (Durham: Duke University Press, 2006); Howard Markel, *Quarantine! East European Jewish Immigrants and the New York City Epidemics of 1892* (Baltimore, MD: Johns Hopkins University Press, 1997). In the Asian context, see Iijima Wataru, *Mararia to teikoku: Shokuminchi igaku to higashi asia no koiki chitsujyo* [Malaria and Empire: Colonial Medicine and the Macro-regional Order of East Asia] (Tokyo: Tokyo University Press, 2005).

Amerindians, or the secular gospel of modern technology and the idea of conservation for the Third World.<sup>3</sup>

But we should step further to “reorient” the direction of our historical narrative of empire rather than simply adding an environmental layer to it. As I will argue, Japan’s struggle with the influx of human diseases and agricultural pests at the end of its imperial career underlined the fact that the epidemical isolation and “ecological independence” of the imperial core from the periphery, with the thick biological firewall of quarantine installed in between, proved to be precarious as a result of its failed imperial project abroad.<sup>4</sup> It also revealed the empire’s ideological vulnerability, namely the colonial masters’ former claim regarding their ability and moral fiber to control nature. Furthermore, the threat of biological invasion from abroad served as a rhetorical device that the Japanese harnessed to de-imperialize and re-nationalize their body politic, rallying “the Japanese” against parasites associated with “foreigners” – including those once-imperial subjects as well as the new masters who occupied the nation. Together, inquiry into the material and ideological consequences of Japan’s confrontation with incoming human diseases and agricultural pests would serve to modify our familiar interpretative framework of imperialism as a static, one-way street of power and image imposed by the colonizers upon the colonized.

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<sup>3</sup> For the case of China, see Mark Elvin, *The Retreat of the Elephants: An Environmental History of China* (New Haven, CT: Yale University Press, 2004), pp. 216-272; Dee Mack Williams, *Beyond Great Walls: Environment, Identity, and Development on the Chinese Grasslands of Inner Mongolia* (Stanford, CA: Stanford University Press, 2002), pp. 61-79; For Colonial America, see William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983); Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill, NC: University of North Carolina Press, 1989). For the British and French Empires, see Thomas R. Dunlap, *Nature and the English Diaspora: Environment and History in the United States, Canada, Australia, and New Zealand* (Cambridge: Cambridge University Press, 1999); Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860* (Cambridge: Cambridge University Press, 1995); Diana K. Davis, *Resurrecting the Granary of Rome: Environmental History and French Colonial Expansion in North Africa* (Athens: Ohio University Press, 2007).

<sup>4</sup> For a concept of ecological independence, see Philip J. Pauly, “The Beauty and Menace of the Japanese Cherry Trees: Conflicting Visions of American Ecological Independence,” *Isis* 87: 1 (1996), pp. 51-73.

The subject for discussion below is twofold. The first topic is human diseases that threatened people's health. I will demonstrate that epidemics whirled through Japan as a direct consequence of the postcolonial human movement to deconstruct the empire, consisting of official repatriation and illegal human trafficking, incoming colonial masters and outbound imperial subjects. The second topic is the invasion of agricultural pests, weeds, and diseases, each posing a danger to the nation's productive landscape and its ecological integrity. I will argue that some biological hazards were brought in through the smuggling network that still kept Japan in its former sphere of influence even after regular trade came to a halt. But many more agricultural pests, weeds, and diseases came from North America and Oceania, reflecting a radical postwar shift in freight movement. Although this cannot be characterized as a direct blowback from the former colonies, it was nevertheless an indirect consequence of Japanese imperial policy. Since Japan as empire had outsourced the major portion of its food supply and associated economic, social, and environmental costs to its colonies, a de-imperialized Japan suddenly found itself compelled to acquire food supply from North America and Oceania, a fateful move that exposed the nation to a new pool of agricultural parasites. In conclusion, I will piece together the above two parts of my analysis and assess the demographic, ideological, and ecological legacies of the biological blowback as a whole.

### **THE UNWELCOME RETURNEES: HUMAN FLOW AND INFECTIOUS DISEASES**

Since the end of seclusion from the international community in the late 1840s lifted the de facto cordon sanitaire that had protected the country from major epidemics,<sup>5</sup> Japan sought to replace the country's isolation with a quarantine firewall. But Japan was reincorporated into

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<sup>5</sup> Showing a conspicuous lack of bubonic plague and typhus epidemic and relatively minor outbreaks of smallpox, measles, cholera, and dysentery until the early nineteenth century, Ann Bowman Jannetta, in her work *Epidemics and Mortality in Early Modern Japan* (Princeton, NJ: Princeton University Press, 1987), cites the country's relative isolation from the world as a major reason.

the world not as a full-sovereign state but as a country bound by the so-called unequal treaties with European countries. Since the quarantine service could not adequately function without the exercise of legal and police power over foreign citizens in Japan as well as their goods and vessels brought into the country, Japan's attempts to establish and enforce quarantine laws challenged the whole premise of extraterritoriality. When cholera struck Japan in 1878 and claimed over a hundred thousand lives by the following year, the British, French, and German ministers adamantly refused to acknowledge the quarantine regulations of their host nation. Similar to Britain's insistence during the Opium War on nonintervention in the opium trade regardless of China's domestic ban, treaty rights and the principle of free trade were to be guarded by all means, even if it openly defied Japan's health regulations. Eventually, the Europeans made some administrative concessions, reprinting the Japanese quarantine bulletins as binding, but this token of flexibility never went far enough to change the fundamental lack of Japan's sovereign power that would render quarantine workable.<sup>6</sup>

With extraterritoriality finally abolished in 1899 and the unity of laws and police power restored, the Japanese government swiftly set up a nationwide quarantine system based on the Infectious Disease Prevention Law of 1897 and the Seaport Quarantine Law of 1899. This innermost moat against biological invasion was soon capped by the colonial quarantine system as Japan transformed itself from state to empire: Taiwan (1899), Kwantung Province (1906), Korea (1911), the Mandate Islands in the Pacific Ocean (1916), and Sakhalin (1922). Outside the imperium, Japan gained access to epidemic intelligence through diplomatic power and international cooperation. Since 1913, Japanese quarantine officers were stationed in the ports of the nation's major trading partners, such as Hong Kong and Shanghai. After Japan joined the International Sanitary Convention in 1926, the Far Eastern Office of the League of Nations at Singapore supplied the nation with the latest information with respect to cases of epidemic outbreak across the world.<sup>7</sup>

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<sup>6</sup> James Hoare, *Japan's Treaty Ports and Foreign Settlements: The Uninvited Guests, 1858-1899* (Folkestone, Kent: Japan Library, 1994), pp. 91-92, 97.

<sup>7</sup> Koseisho Koshueiseikyoku [Ministry of Health and Welfare, Department of Public Hygiene], *Ken'eki seido hyakunen shi* [One Hundred Years of the Quarantine System] (Tokyo: Gyosei, 1980), pp. 44, 67.

To be sure, this new cordon sanitaire was but one of many factors that weighed in the epidemiological landscape of modern Japan. Indeed, lengthy physical detainment had been obsolete as a chief method of coping with epidemics by the late nineteenth century. Medicinal progress, the rise of modern state bureaucracy, and the capitalist urge for the free movement of goods and people combined to bring about a shift in emphasis toward medical inspection, vaccination, and surveillance.<sup>8</sup> Linking the status of individual health with the vigor of the “national body” (*kokutai*) to survive the imperial world, the Meiji government also took more active public health measures beyond ports of entry, directly intervening with the nation’s environment and the citizens’ physical bodies through medicine, vaccination, nutrition, social hygiene, and environmental engineering.<sup>9</sup> Furthermore, the effectiveness of quarantine was often at the mercy of the external disease environment, whose global synchronization accelerated apace thanks to the speed and volume of modern transportation, commerce, and migration. As Carol Benedict and Myron Echenberg have demonstrated, the outbreak of bubonic plague in the 1890s, which started from China’s Yunnan province, found a way to Hong Kong and quickly reached seaports across the world. In the course of global transmission, Japan was forced to take a share of it when the disease landed in Kobe and Osaka in 1899 and claimed 155 lives by the following year.<sup>10</sup>

Despite its somehow limited utility, Japan’s quarantine service was maintained and expanded in steps with the enlargement of the empire. Under the pressure of World War II, however, this meticulous checkpoint system rapidly disintegrated. In the midst of urgent wartime human

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<sup>8</sup> See Booker, *Maritime Quarantine*. In a Foucauldian sense, this shift ran in parallel to a similar transformation in the field of criminal punishment from physical detention and torture for public spectatorship toward an elaborate system of surveillance and rehabilitation to mold docile subjects useful for a capitalist society. Michel Foucault, *Discipline and Punish: The Birth of the Prison*, translated by Alan Sheridan (New York: Vintage Books, 1995).

<sup>9</sup> For the paradigm shift in addressing public health during the Meiji era, see Susan Burns, “Constructing the National Body: Public Health and the Nation in Nineteenth Century Japan,” in Timothy Brook and Andre Schmid eds., *Nation Work: Asian Elites and National Identities* (Ann Arbor, MI: The University of Michigan Press, 2000), pp. 17-49.

<sup>10</sup> Carol Benedict, *Bubonic Plague in Nineteenth Century China* (Stanford, CA: Stanford University Press, 1996); Myron Echenberg, *Plague Ports: The Global Urban Impact of Bubonic Plague, 1894-1901* (New York: New York University Press, 2007).

movement between the metropolis and the periphery, with conscripted laborers inbound and soldiers outbound, the nation accorded much less importance to the precarious integrity of the biological barrier. Indeed, there was no policy of immunization for the infamous Korean forced labor trafficked from the peninsula to the mainland's factories, mines, and construction sites. A stream of outgoing Japanese soldiers, on the other hand, rushed through departure and arrival quarantine without careful inspection. Although there was a blueprint for quarantine stations in such places as Manila, Saigon, Bangkok, Singapore, Batavia, and Rangoon, it never materialized in the course of the war. Instead, quarantine was carried out outside Japan only when diseases broke out en route.<sup>11</sup>

The true consequence of wartime mobilization, however, showed itself only after the end of the war. By then, a gigantic pool of displaced imperial subjects, both military and civilian, Japanese and non-Japanese, had scattered across the imperium. Although no accurate census was available at the end of the war, one estimate indicates that about 6.5 million Japanese citizens were left outside the four main islands, while approximately 1.9 million Koreans, 215,000 Ryukyans, 34,000 Taiwanese, 56,000 Chinese, and a smaller number of Pacific Islanders and other nationals found themselves trapped in the Japanese homeland.<sup>12</sup> Once repatriation began to separate the mixture of former imperial subjects, the U.S. occupation authorities quickly recognized that "the mass movement of people from one area to another, particularly in the Orient, carried with it the attendant threat of epidemics of contagious diseases."<sup>13</sup> But for the Allied Powers, determined to disentangle the human fabric of the empire, "this risk had to be accepted." To bring the repatriation program to success, "rigid quarantine procedures at

<sup>11</sup> Chosenjin kyosei renko shinso chosadan [The Team for the Investigation of the True Story of the Compulsory Migrations of Koreans], ed., *Chosenjin kyosei renko kyosei rodo no kiroku: Hokkaido, Chishima, Karafuto hen* [Record of the Compulsory Migration and Forced Laboring of Koreans: Hokkaido, the Kurile Island, and Sakhalin] (Tokyo: Gendaishi shuppankai, 1974), p. 88; Memo, "Japanese Quarantine Procedures: Army," fldr: Port Quarantine, Box 9367, RG331, National Archive II (hereafter NAI), College Park, Maryland, USA.

<sup>12</sup> Hikiage Engocho [Agency for Repatriation Assistance], *Hikiage engo no kiroku* [Record of Repatriation Assistance] (Tokyo: Hikiage engo cho, 1950), pp. 13, 55-56.

<sup>13</sup> Draft, "G-3 Report on Mass Repatriation in the Western Pacific," p. 3, fldr: G-3 Admin Div. Subject File, 1945-1950, Box 382, RG331, NAI.

points of entry and egress in Japan” were deemed crucial. Quarantine emerged as a key to remaking the imperial order into that of a nation-state without involving the transmission of epidemics among parts of the imperium.

Repatriation quarantine, commenced upon a series of orders by the General Headquarters, Supreme Commander for the Allied Powers (GHQ-SCAP) since October 1945, radically differed from the prewar quarantine service. Deprived of its colonies and diplomatic power, Japan had lost “strategic depth” in disease prevention, while the domestic public health system was left in disarray and malnutrition was rampant at home. In these circumstances, the traditional measure – isolating sick individuals upon arrival – was far from sufficient to deal with the successive waves of diseases. An active and comprehensive approach was adopted with three major pillars: detention en masse, immunization, and disinfection for all repatriates, both inbound and outbound.

The geographical contours of Japan as a nation-state, now comprising the four islands, made it possible to hold passengers literally “at bay” to identify all patients and suspects before landing. None on board was allowed to come ashore or leave the quarantine zone without the designated incubation period of each quarantinable disease having lapsed.<sup>14</sup> This draconian method of detention was coupled with the thorough administration of vaccines and insecticides. Upon embarkation/debarkation, all repatriates, outgoing and incoming, were immunized against smallpox, typhus, cholera and, if necessary, measles, parathyroid disorders, and other common diseases unless a valid immunization record was shown and, in the case of cholera, except for the fall and winter seasons. Those found to be infested with lice, or from areas where louse-borne typhus fever was known, also received the white powder of DDT on the whole body, while their clothing and baggage were thoroughly dusted as well. The amount of vaccines and DDT administered to repatriates was phenomenal. During

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<sup>14</sup> The period was determined for: smallpox, fourteen days; typhus fever, twelve days; bubonic plague, six days; yellow fever, six days; and cholera, five days. See Circular No. 10, “Medical and Sanitary Procedures for Debarkation and Port Sanitation in Repatriation,” October 20, 1945; Memo, “Public Health and Welfare Procedure in Japan,” October 22, 1945, both in fldr: Disease and the Prevention of Disease, vol. 1, Box 8930, RG 331, NAI; SCAPIN 927, “Repatriation,” enclosed with Draft, “G-3 Report on Mass Repatriation in the Western Pacific.”



the 1945-1949 fiscal years, 6.6 million cc of cholera vaccine and 8 million cc of typhus fever vaccine were used; over 5.2 million people received smallpox immunization; and 322,422 tons of DDT were showered onto repatriates.<sup>15</sup>

Quarantine against cholera in the summer of 1946, an operation that SCAP later boasted as “the largest single quarantine operation in history,”<sup>16</sup> became a litmus test for the effectiveness of the reinstalled biological firewall. From spring to fall of 1946, the repatriation port of Uraga, just south of Yokohama, received 20 contaminated ships with 478 patients, mostly from Canton and Haiphong. At one point, over 67,000 repatriates and crew members were locked up aboard 19 vessels, at anchor some half to three quarters of a mile off shore with U.S. navy patrol craft around “so that personnel cannot swim ashore [and] that discharges from the vessels are not washed ashore.”<sup>17</sup> All were forced to wait until everyone received the cholera vaccine and cleared the stool examination, and also until 14 days had passed since the report of the last cholera case on ship one was on board. All of sudden, a seaborne city appeared, where passengers suffered from shortage of food, water, and medical supplies, while many fell ill, a situation “almost like hell.”<sup>18</sup> The tragedy of Uraga was followed by Hakata and Sasebo where each received 29 contaminated ships with 131 patients and 58 contaminated ships with 310 patients respectively between May and October.<sup>19</sup> By winter, however, the ferocious assault of cholera finally came to a halt. The firewall proved its worth in screening out disease carriers before touching land.

Incoming official repatriation, however, was but one of the multiple arenas in the epidemiological blowback. The Japanese Empire imploded from within as well, setting in motion an exodus movement of former colonial subjects. Particularly restless were the Korean forced workers,

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<sup>15</sup> *Hikiage engo no kiroku*, pp. 136-137.

<sup>16</sup> Memo, “Summary of Activities of Port Quarantine and Repatriation Branch, 1945-1949,” fldr: Port Quarantine, Box 9367, RG331, NAIJ.

<sup>17</sup> Memo, “Information of General Application Pertaining to Directive Number (SCAPIN 865) ...,” April 6, 1946, fldr: Sasebo Cholera Story, Box 384C, RG331, NAIJ; Memo, “Reception Center at Uraga,” April 27, 1946, fldr: Memos for G-3, Box 384C, RG331, NAIJ.

<sup>18</sup> *Hikiage ken'eki shi*, vol. 1, p. 96.

<sup>19</sup> *Ibid.*, pp. 100-103.

whose number was estimated at approximately 350,000 at the end of the war.<sup>20</sup> As has been discussed, these people had received no immunization upon arrival in Japan, were packed in filthy boarding houses, and forced to work in coal mines, factories, and construction sites. Although during the war, the Japanese authorities did try to contain the outbreak of typhus fever by killing off lice through steam sterilization, it proved largely ineffective: for instance, Korean coalminers in Hokkaido, typically provided with only one set of clothes, kept wearing them all the time to survive the harsh winter.<sup>21</sup> Lice infestation was reported to be “almost universal in the Koreans” in Hokkaido, among whom typhus fever had already broken out before the war ended.<sup>22</sup>

What the end of the war brought about anew, however, was the nationwide spread of the disease. Upon hearing of Japan’s surrender, Korean coalminers in Hokkaido, around 36,000 in number, abandoned the labor camps and flocked to Kyushu Island to return home.<sup>23</sup> As these desperate home-goers crossed the Tsugaru Strait and rushed through the Island of Honshu southwestward, the lice and typhus fever quickly spread throughout the country.<sup>24</sup> Indeed, at the repatriation port of Shimonoseki in Kyushu, eight out of every ten Koreans coming from all over the country were reportedly infested with lice.<sup>25</sup> Appalled by the sudden outflow of the disease from the northern island, the occupation

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<sup>20</sup> Memo, “Chosenjin no kikan yuso shuryo no ken” [On the Completion of the Transportation for Koreans’ Repatriation], December 15, 1946, K’0087, Diplomatic Records Office, Tokyo, Japan (hereafter DRO).

<sup>21</sup> Memo, “Conference with Japanese on incidence and distribution of typhus in Japan and Korea,” October 8, 1945, fldr: Typhus Fever Control (Japan and Korea), Box 9368, RG331, NAIL; *Chosenjin kyosei renko kyosei rodo no kiroku*, p. 226.

<sup>22</sup> Memo, “Recommendation for prevention and control of typhus in the home islands of Japan for the year 1945-46,” October 14, 1945, fldr: Typhus Fever Control (Japan and Korea), Box 9368, RG331, NAIL.

<sup>23</sup> Shigeru Nagasawa, *Senjika Chosenjin, Chugokujin, Rengogun huryo kyosei renko shiryoshu* [Sources on the Compulsory Migration of Koreans, Chinese, and Prisoners of the United Nations], vol. 1 (Tokyo: Ryokuin shobo, 1992), p. 47; Memo, “Chosenjin shudan inyu romucha tou no kinkyu sochi no ken” [On Urgent Measures for the Collectively Introduced Korean Workers], September 1, 1945, K’0087, DRO.

<sup>24</sup> Memo, “Summary of Activities of Port Quarantine ...”

<sup>25</sup> Memo, “Visit to Shimonoseki Repatriation Center, 4 December 1945,” December 24, 1945, fldr: Repatriation and Quarantine Stations – Staff Visits 1945-1946, Box 9334, RG331, NAIL.

authorities ordered that all travelers between the islands of Honshu and Hokkaido be dusted with DDT and that typhus fever at the coalmines and their surroundings be suppressed through wholesale zone dusting.<sup>26</sup> But the Koreans, yearning to return home, left the worksites one after another, frustrating attempts to contain the typhus fever.<sup>27</sup> It was this exodus from the former imperial homeland, driven by the aspiration to “go home,” that constituted an area of blowback from within.

Another inroad of infectious diseases was the underground network of smugglers and black market brokers that kept the former metropolis and the colonies bound together even after the war. Despite the occupation authorities’ policy of repatriation and trade control, Japan stayed connected with Ryukyu, Taiwan, Korea, and China through this informal web of people and goods. Of particular significance to the flow of epidemics were Korean smugglers who crossed the Tsushima Strait. Some simply came to conduct lucrative underground business behind the aegis of alleged legal immunity as a liberated people. But many others were those who had once repatriated from Japan to Korea, only to find no hope of a stable livelihood in their economically ruined homeland. Moreover, many returnees belatedly realized that they were no longer so “Korean.” When caught, illegal smugglers often explained that they had lived in Japan so long that they found themselves thoroughly assimilated into Japanese life, without friends or close family contacts on the peninsula.<sup>28</sup> Illegal trafficking underlined the resilient human fabric of the empire that had created a category of people belonging to neither “Japan” nor “Korea.” Hardly disentangled overnight by the official repatriation program, this human network brought to Japan a fresh supply of diseases from the Asiatic continent.

What made illegal smuggling a serious threat was an outbreak of cholera in South Korea in May 1946. To stop this human movement that dodged quarantine, GHQ-SCAP immediately ordered that all suspicious ships were to be stopped and inspected, and once identified as carrying

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<sup>26</sup> Memo, “Summary of Activities Port Quarantine . . .”; Tetsutaro Kogo, “Hasshin chifusu to tatakau” [Struggling against Typhus Fever], *Kenmin* [Public Welfare]12: 4 (April 1946), p. 58, The Gordon W. Prange Collection, University of Maryland at College Park, USA (hereafter Prange Collection).

<sup>27</sup> For the case of the coal-mining City of Yubari, see *ibid.*, p. 59.

<sup>28</sup> Memo, “Investigation of Korean Societies,” September 3, 1946, fldr: Korea files, Box 381, G-3, Admin Division, Subject-File, 1945-1950, RG 331, NAIJ.

smugglers, the vessels were to be impounded with their passengers and crews escorted to the ports of Senzaki, Sasebo, or Maizuru for quarantine and deportation.<sup>29</sup> Indeed, about 15,000 smugglers were intercepted during the last five months of 1946 alone, and over 600 cholera patients and suspects were identified among those sent to Sasebo.<sup>30</sup> As is often the case for crimes, it is likely that this reported number was but a tip of the iceberg.

This crack in the quarantine firewall was hard to patch up not only because of the stealthy nature of trafficking, but because Korean smugglers, when arrested by the Japanese authorities, would not obey quarantine orders due to “a special mentality after the war.”<sup>31</sup> In the postcolonial situation, the Koreans proved to be no longer docile in the face of quarantine. Through these pockets of resistance against colonial legacy, microparasites threatened to breach the biological firewall and infiltrate the former master nation to damage its health.

This danger, however, appeared to offer an excellent opportunity for those who tried to bring Korean residents remaining in Japan, now considered to be the principal “troublemakers” in the nation, forcefully under control. Koichiro Asakai, chief of the central liaison office for GHQ-SCAP, was one of such people. Shrewdly observing that the occupation authorities blamed the illegal traffic between Japan and Korea for the outbreak of infectious diseases in Japan, Asakai reported to his government that this view was “worth noting with respect to outgoing repatriation and control of Koreans.”<sup>32</sup> Once a discursive product that had constructed the Koreans’ “Otherness” and invited the Japanese Empire’s “civilizing mission,”<sup>33</sup> the deteriorating sanitary conditions in Korea now served as a pretext for the “de-imperialization” of the

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<sup>29</sup> SCAPIN 1015, “Suppression of Illegal Entry into Japan” June 12, 1946, fldr: Illegal Entry of Koreans into Japan, Box 382, RG331, NAIJ.

<sup>30</sup> Draft, “G-3 Report on Mass Repatriation in the Western Pacific,” p. 27; *Hikiage ken’eki shi*, vol. 1, p. 104.

<sup>31</sup> *Hikiage ken’eki shi*, vol. 1, p. 104.

<sup>32</sup> Report, “Asakai shuren somu bucho no hokokusho shuroku” [Collection of Reports by Asakai, Head of the General Affair Department], p. 75, A’0107, DRO.

<sup>33</sup> Todd A. Henry, “Sanitizing Empire: Japanese Articulations of Korean Otherness and the Construction of Early Colonial Seoul, 1905-1919,” *The Journal of Asian Studies* 64: 3 (2005), pp. 639-675.

Japanese nation. Activating the power of the occupation authorities to keep Japan and Korea separate, cholera became one of the rhetorical devices to metabolize former colonial subjects, defined again as the “Other,” out of Japan’s postwar body politic.

### THE UNWELCOME OCCUPIERS: THE FLOW OF GOODS AND QUARANTINE OF PLANTS AND ANIMALS

Like its counterpart regarding infectious diseases, the quarantine service for plants and animals had a three-tier system before World War II. The innermost moat was domestic seaport quarantine, with the Exported-Imported Plants Control Law (1915) and the Livestock Disease Prevention Law (1922) as its legal basis. Off Japan’s shores lay a string of colonial offices, which supervised the flow of agricultural products within the empire – tropical fruits from Taiwan and the Mandate Islands, meats and hides from Korea and Manchuria, and many others. Outside the empire, an overseas intelligence network and institutional frameworks for international cooperation were slowly taking shape. Although Japan did not sign the International Convention for the Protection of Plants of 1929, whose regional emphasis was rather on Europe, it joined the animal quarantine regime in 1930 and cooperated with l’Office International des Epizooties in Paris. Flexing its own diplomatic power, Japan also stationed veterinary officers at major international seaports where doctors inspected all livestock and its parts bound for Japan, including hides, wools, and feathers, meats, and even bones.<sup>34</sup>

As was the case with the human quarantine system, this agricultural quarantine institution, designed to protect crops and livestock in the imperial homeland from insects, weeds, and diseases rife abroad, quickly eroded once the Pacific War broke out. As the military authorities took over almost all of the commodity shipping and their movement intensified within the so-called Greater Asian Co-Prospersity Sphere, the

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<sup>34</sup> Kohaku Shirai, “Kachiku densenbyo no boheki wa? Wagakuni ken’ekikai no genkyo” [How to Prevent Livestock Epidemics? The Present Conditions of Our Country’s Quarantine Affairs], *Tsunobue: Chikusan daijesuto* [Horn: Stockbreeding Digest] 4: 3 (April 1949), p. 26, Prange Collection.

quarantine officers for plants and animals were preoccupied by potential threats from the colonies and battlefronts in the Asiatic continent and Southeast Asia.<sup>35</sup> Although the wartime emergency made it even more pressing to guard the homeland's own source of food supply, these agricultural inspectors suffered from the military's ignorance and lack of cooperation in an even more blatant manner than their counterparts in charge of public health.<sup>36</sup>

When Japan finally surrendered, the Potsdam Declaration stripped Japan of its colonies and denied its "control" of cultivated lands there. With about 6 million repatriates flowing into the already overcrowded country, the ratio of inhabitants per acre of agricultural land in Japan grew among the highest in the world. While 1.3 people relied on 1 acre of crop and pastoral fields in Germany (now composed of two halves), 1.05, in the UK, and 0.13, in the US, 5.2 Japanese were dependent on the same size of land for food.<sup>37</sup> Consequently, damage by pests and diseases to crops, believed to suppress annual production from this meager size of agricultural land by as much as 12 percent,<sup>38</sup> became all the more menacing to the nation's tightened food supply. Exhausting all means to survive within the limit of the islands, the nation could hardly bear any additional burden posed by agricultural pests and diseases from abroad.

As far as the containment of biological blowback to agriculture from Japan's former colonies is concerned, the fact that regular trade between the former imperial core and the periphery came to a complete halt might have been helpful. Another possibly favorable factor was an unexpected byproduct of SCAP's repatriation policy, which limited

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<sup>35</sup> For a description of the wartime mobilization of entomologists, see Masahiko Nakada, *Beikoku kara shinnyu shita Amerika shirohitori no bojyo jigyo no keika* [The Progress of the Pest Control Program of Hyphantria Cunea Arriving from the US] (Kodaira: Nihon shokubutsu boeki kyokai shokubutsu boeki shiryokan, 1995), p. 5.

<sup>36</sup> Teinosuke Kawamura, *Mienai mikkosha* [Invisible Stowaways] (Tokyo: Ie no hikari kyokai, 1964), pp. 21-24.

<sup>37</sup> As of 1951, except for the agricultural land of the continental US that was surveyed in 1949. *Yearbook of Food and Agricultural Statistics, 1952*, vol. IV, part 1 (Rome: Food and Agricultural Organization of the United Nations, 1953), pp. 3-5, 7, 13-15.

<sup>38</sup> Benjamin Goldberg, "Japan's Recovery Through Her Natural Resources," p. 22, fldr: Natural Resources Section, Speeches, Talks and Articles by Chief of Section, Box 9, Hubert G. Schenck Papers, Hoover Institution, Stanford, CA (hereafter Schenck Papers).

the size and weight of each homebound repatriate's belongings to "the amount of baggage he can carry."<sup>39</sup> Without doubt, this restriction on mobile property condemned many to depths of poverty back at home. However, it might somehow have reduced the probability of bringing plants, animals, and their products — perhaps more valuable and reliable assets than paper money in the postwar chaos — into their homeland.

Containing blowback from the colonies, however, proved to be a precarious business. Once normal trade stopped, smuggling prospered, keeping Japan supplied with every kind of animal and its byproduct across the sea. Leather, feathers, raw hides, and animal tusks continued to arrive from Korea and China; animal horns were sought from Taiwan; live goats, swine, and poultry were smuggled from Ryukyu; and some cattle were even reportedly discharged overboard and forced to swim ashore.<sup>40</sup> Of particular concern was the possibility that smuggled animals and their products might introduce via the Korean Peninsula the viruses of foot-and-mouth disease, anthrax, and rinderpest widespread in the pastoral regions of Manchuria, Mongolia, and Siberia.<sup>41</sup> Although there was no report of an epidemic outbreak as a consequence of this illegal traffic, its considerable extent and potential danger to the livestock industry in Japan was such that GHQ-SCAP strongly urged both Japan's Maritime Security Board and the Ministry of Agriculture and Forestry to fix this quarantine breach through mutual cooperation.<sup>42</sup>

Albeit on a limited basis, the underground trade network still kept Japan fixed to the pool of agricultural pests and diseases in its former sphere of influence in Asia. But a far more systematic and serious threat came from shipments inbound from North America and Oceania. The major part of these shipments was cosigned and handled

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<sup>39</sup> Memo, "Plan for Repatriation of Japanese from China Theater as Recommended by Joint Conference on Repatriation," n.d., enclosed with Memo, "Joint Conference on Repatriation of Japanese Nationals at Shanghai, 25-27 October 1945," October 30, 1945, Box 380, RG331, NAIL.

<sup>40</sup> Memo, "Smuggling of Animals and Animal By-Products," August 5, 1949, fldr: Misc. Veterinary Affairs, 1949-1950, Box 9352, RG331, NAIL.

<sup>41</sup> Memo, "Importation of Animals and Animal By-products and Their Relations to Animal Disease Control," August 2, 1949; Memo, "Information to Be Sent to FAO Regional Representatives for Asia and the Far East in Connection with Rinderpest Problems in Japan," April 30, 1949, both in fldr: Misc. Veterinary Affairs, 1949-1950, Box 9352, RG331, NAIL.

<sup>42</sup> Memo, "Conference on Reports and Control of Animals and/or Animal Products," June 23, 1949, fldr: Misc. Veterinary Affairs, 1949-1950, Box 9352, RG331, NAIL.

by the occupation military, which stayed completely outside the reach of Japan's civilian quarantine system. Although Circular No. 10 of 1946, reestablishing the quarantine service in Japan, banned the import of animals except for special cases, the regulation did not extend to plants harmful to food production. The only plants explicitly prohibited for entry were plant vectors or plants capable of being vectors of human diseases.<sup>43</sup>

This loophole allowed the US Army Quartermaster, for example, to purchase directly from the United States what US soldiers in Japan ate, including potatoes, tomatoes, pears, apples, plums, and others whose entry to Japan had been strictly regulated before the war. Although there is no accurate number available that can recount the exact scale, a GHQ-SCAP memorandum estimated that "probably by far the largest quantity of prohibited plants come into Japan through CN [command network] shipments."<sup>44</sup> Aware of this problem, the Japanese nevertheless found themselves in no position to voice a complaint. The agricultural officials did successfully persuade GHQ-SCAP not to bring apples and other fruits from abroad and instead procure them in Japan, a move perhaps informed by both public health and economic points of view. But when it came to such major staples as potatoes, they could hardly be substituted by domestic supplies while the whole country was struggling in the middle of a food crisis.<sup>45</sup>

Over 200,000 occupation soldiers were not the only clients for the food supply from the United States, Canada, and Australia. "The grain basket of the world" fed millions of Japanese as well, promptly replacing Korea, Taiwan, and China as the major grain providers for Japan after the war. While the volume of rice, wheat, and beans imported from the three Asian regions plummeted from about 1.2 million tons in 1930 to 18 percent of it in 1950, that from the United States, Canada, and Australia skyrocketed from around 652,000 tons to over 1.4 million tons,

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<sup>43</sup> Circular No. 10, "Foreign Quarantine Regulations for Japan" October 28, 1946, enclosed with Memo, "History of Quarantine in Japan," n.d., fldr: Port Quarantine, Box 9367, RG331, NAI.

<sup>44</sup> Memo, "Japanese Plant Quarantine Regulations," January 15, 1951, fldr: Insecticides and insects control, vol. I, January 1951, Box 8806, RG331, NAI.

<sup>45</sup> "Zosan to yushutsu wo mezasu byochugai no taisaku" [Measures against Disease and Insect Damage for the Production Growth and Export], *Noko to engei* 2: 4 (July 1947), p. 6, Prange Collection.



recording an impressive 214 percent increase.<sup>46</sup> Unlike living plant roots and fruits, dried grain was less likely to introduce pests and diseases that directly affected crops. Instead, the massive bulk of grain across the Pacific became a Trojan horse for over 25 kinds of foreign stored-product insect pests, which successfully entered Japan between 1945 and 1955 and threatened to cause the additional loss of domestic and imported foods in storage.<sup>47</sup> The occupiers' benevolent food aid, which salvaged the former enemy left without its colonial food supply, came with a biological cost of its own.

Besides the pests, many kinds of weeds also hitched a ride on grain cargoes across the Pacific Ocean. Rice and wheat from North America arrived with plenty of weed seeds, including those belonging to the bindweed family (*Calystegia*), which could cause food poisoning. Once screened out and dampened around grain mills, these unwelcome seeds started sprouting and claiming roadsides and abandoned lots in cities during summer. The weeds' spread did not stop there: what was an "astonishing fact, memorable in the history of our nation's naturalized plants" was that "people shrewd in business" began to use these dampened seeds as a cheap substitute for animal feed and sell them to poultry farms throughout the nation.<sup>48</sup> As chickens would spill them and soil from below the cages would often be delivered to farming fields nearby as manure, the surviving seeds finally found themselves in a perfect environment to root and prosper. Although almost all kinds of these exotic weeds eventually died out without trace, this unfolding chain of events vividly revealed an unusual window of opportunity for uninvited plants to find their way across the largest ocean in the world and successfully take root.

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<sup>46</sup> For the 1930 data, Toyo Keizai Shinpo Sha ed., *Nihon boeki seiran* [Comprehensive Statistics of Japan's Foreign Trade] (Tokyo: Toyo Keizai Shinpo Sha, 1975), pp. 390-391, 485, 593-594. For the 1950 data, GHQ-SCAP, ESS, Programs and Statistics Division, *Detailed Import and Export Statistics of Japan by Country and Commodity for October-December 1950 and January-December 1950, Part A*, pp. 23-25, Box 240, RG331, NAIJ.

<sup>47</sup> Keiji Kiritani, "Nihon no gairai konchu" [Invasive Insects in Japan], *Konchu to shizen* [Insects and Nature] 37: 3 (2002), p. 2. For the case of cowpea weevil *Callosobruchus maculatus*, for example, see *Matsumushi* 2: 1, pp. 31-32, Prange Collection.

<sup>48</sup> Yasuhiro Asai, "Sengo kika shokubutsu ko" [On Naturalized Plants after World War II], *Shokubutsu to bunka* [Plants and Culture] 1: 4 (1971), pp. 9-12.

The above examples do not suggest that the breach in the quarantine firewall was always unintentional and spontaneous. Unwanted species threatened to come ashore as a consequence of deliberate agricultural projects as well. Indeed, Western agricultural advisers recruited for the occupation authorities were keen to engineer Japan's landscape, now confined to the small and crowded islands, to be more productive to feed a nation without colonies. For this purpose, many samples of food crops were sent from the United States to agricultural experimental stations to determine the relative efficiency of the American variety vis-à-vis the Japanese type. The long list of these systematically transplanted crops included, just during 1947 and 1948 alone, 45 lots of wheat, 29 lots of barley, 109 lots of corn, and many other staples and vegetables. The technology of hybridization and back-crossing was exchanged as well. With hybrid corn brought in from the United States and hybrid wheat brought out from Japan, American agricultural experts hoped that these improved varieties, highly responsive to nitrogen and resistant to lodging, would spread the gospel of the Green Revolution across the postwar starving world.<sup>49</sup> Feed and forage crops were also sent out "to bring the livestock industry of Japan to a higher level," with 26 types and varieties of legumes and 30 grasses tested in eight different areas in Japan.<sup>50</sup> This engineering of nature did not spare animals, either. To name but a few cases, 530 heads of sheep were shipped from Australia to produce more wool, and "Operation Moo" brought semen from prized Illinois sires for 58 heads of cattle in Japan to breed a superior kind.<sup>51</sup>

All goodwill and optimism aside, these "improvement" projects contained some uncontrolled risks to Japan's ecosystem and landscape. It is highly probable, for example, that some of the foreign legumes and grasses slipped out of the experimental stations, found a niche in the wild, and started competing with the indigenous kinds. In addition, the gift of experimental crops involved the potential danger of introducing a

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<sup>49</sup> Wolf I. Ladejinsky, "The Occupation and Japanese Agriculture," p. 3, fldr: N/A, Box 11, Schenck Papers; John H. Perkins, *Geopolitics and the Green Revolution: Wheat, Genes, and the Cold War* (New York: Oxford University Press, 1997), pp. 210-255.

<sup>50</sup> NR 336, Memo, "Crop Improvement in Japan," November 28, 1949, fldr: 336 Crop Damage and Preventive Measures, Box 8972, RG 331, NAI.

<sup>51</sup> Daily Divisional Notes, May 12, 1950 and May 27, 1950, both in fldr: Daily Divisional Notes, 1950, vol. II, 1 April 1950 — 30 June 1950, Box 8803, RG331, NAI.

new disease to the recipient nation. Such a fear arose when Irish potato seeds, donated in early 1947 by the US Department of Agriculture, were transplanted in an experimental station north of Tokyo. As it turned out, many of the American plants grew unhealthily in contrast to those from seedbeds in Hokkaido, prompting Japanese agriculturalists to complain about this “new disease.” A subsequent investigation, however, revealed that the potatoes suffered from an already known disease in Japan.<sup>52</sup> But this episode vividly underlines the fact that the mission of creating a productive landscape was far from an easy, risk-free task. The resulting threat of biological and ecological disturbance was what the defeated nation without empire was forced to endure.

A successive invasion of species from abroad endangered more than the material integrity of Japan’s nature and its agricultural base. Its psychological impacts were profound as well. Perhaps the most telling case that testified to the mindset of the defeated nation in the face of the invasive species was the fall webworm *Hyphantria cunea* (Drury). This white-colored moth indigenous to North America, feeding on hundreds of kinds of trees and plants, was first observed in November 1945 at the southern edge of Tokyo where an amateur collector found strange worms nesting up in some street trees. Officially identified as such in 1949, the fall webworm had already spread throughout Tokyo and Yokohama.<sup>53</sup> Most Japanese entomologists have agreed that the fall webworm must have arrived in the form of cocoons attached to military cargoes from the United States. Some have speculated further and claimed that the insect might have already smuggled itself among a massive amount of wartime American propaganda flyers, and some airplanes might have dropped the cocoons together with the leaflets by accident.<sup>54</sup>

As is often the case for a particularly notorious invasive species, the fall webworm, earning the name “American white moth” in Japan, quickly developed a mental association with the Yankee occupiers in the Japanese mind. One such image was the American as an immoral

<sup>52</sup> Memo, “Field Trip to Senjogahara to Inspect Potatoes Planted in That District,” July 30, 1947, fldr: Crop Damage and Preventive Measures vol. II, 1947, Box 8972, RG331, NAIJ.

<sup>53</sup> Yoshiaki Ito, *Amerika shirohitori: Shu no rekishi no danmen* [Hyphantria Cunea: An Aspect of the Species’s History] (Tokyo: Chuo koron sha, 1972), pp. 7-8.

<sup>54</sup> *Ibid.*, pp. 4-6.

capitalist – a favorite caricature in Japanese wartime propaganda. It was inadvertently recycled and projected onto the mysterious arrival of the fall webworm. In September 1949, the GHQ-SCAP Civil Censorship Detachment intercepted a personal letter of Tatsuto Uno, Professor Emeritus of University of Tokyo and President of the Eastern Cultural Society. In it, Uno wrote about a rumor: “Some people say that this insect [the fall webworm] was brought in intentionally as a policy of America, for the purpose of selling medicine which, I hear, is called B.H.C. [benzene hexachloride, actually an insecticide].”<sup>55</sup> This “preposterous” rumor seems to have widely circulated, and many believed that R. E. Culbertson, a horticulturist of GHQ-SCAP, or “some equally villainous cohort,” was to blame for “importing the fall webworm from the U.S. in order to sell American-made insecticides.”<sup>56</sup>

Even after the occupation ended, the fall webworm was repeatedly likened to a uniquely “American” character – so much so that a retired Japanese plant quarantine officer, writing a book in 1964, introduced the insect in what he believed was a humorous yet common-sense way:

Wherever a “pan-pan” [slang for prostitute] was, we would never fail to find the fall webworm there. [...] Once the jeep’s engine started rumbling with the headlights on, these bugs, hanging around at the barracks, would gladly fly and follow the GIs. And even after the GIs left [a prostitute] with a melancholic good-bye, they would stay there and indulge themselves in a dream.<sup>57</sup>

This comical description vividly underlines the imaginative grid of the invasive pests and the occupying soldiers, each reflecting the other, together reinforcing the “American” character seen as alien to the Japanese. The endurance of the mental connection was once again testified to in 2001 when the popular columnist Asato Izumi wrote an essay entitled “The Era of the American White Moth Occupation.” On a witty note, he commented on the moth’s whiteness: “Although ‘white’ comes from the white color of the mature insect, if I think of the

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<sup>55</sup> Memo, “Intercept: From Uno Tatsuto to Takahashi Teruyo, Letter, 29 Sept 49,” n.d., fldr: Preventive Med – Confidential, Box 9334, RG 331, NAI.

<sup>56</sup> Memo, “Work of the Entomologist, Agricultural Production Branch, GHQ-SCAP,” December 24, 1949, fldr: Crop Damage and Preventive Measures, 1949, Box 8972, RG 331, NAI.

<sup>57</sup> Kawamura, *Mienai mikkosha*, p. 124.

situation back then, the image of ‘arrogant white men’ suddenly occurs to my mind.”<sup>58</sup> Just as cholera was used as a rhetorical device to denote the alien nature of once-imperial-subject Korean smugglers, the fall webworm became a stock word to construct the occupiers’ Otherness in Japan’s collective memory.

## CONCLUSION

In retrospect, the biological blowback proved to be much less devastating than both the Japanese and occupation authorities had once feared. Of the five quarantinable human diseases, yellow fever and bubonic plague never reached the archipelago. Cholera, typhus fever, and smallpox did claim a considerable number of patients in 1946 (1245, 32,366, and 17,954 cases respectively), but then quickly disappeared without leaving a major demographic footprint on a country of over 70 million people.

The same seems to hold true for agricultural pests and diseases. The fall webworm, much feared as an almighty pest that would annihilate mulberries, fruit trees, and other food and cash crops, turned out to be no more than another annoying insect that preyed on the greenery in cities. The fact that overall agricultural production during the occupation years multiplied<sup>59</sup> also strongly indicates that the rate of productivity in recovery outpaced that of loss, including the portion presumably added by foreign pests, weeds, and diseases.

Perhaps the significance of the biological blowback lies less in the absolute scale of damage to people and nature than in the injured pride of a nation once ranked as a powerful empire capable of controlling its own biological destiny. Indeed, “uncivilized” diseases had long been believed to be a matter of the past: the last time Japan had experienced

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<sup>58</sup> Asato Izumi, “Izumi Asano no kieta Nihon 18: Amerika shirohitori senryoka no jidai” [A Japan Which Disappeared – by Izumi Asano 18: The Era of Occupation by *Hyphantria Cunea*], *Shincho* 45 20: 6 (2001), p. 159.

<sup>59</sup> The production of rice jumped by 69 percent from 1945 to 1952; wheat, by 62 percent; sweet potatoes, by 59 percent; and Irish potatoes, by 41 percent. *Nihon tokei kyokai* [Japan Statistical Association], ed., *Nihon choki tokei soran* [Compendium of the Long-Term Statistics of Japan], vol. 2 (Tokyo, 1987), pp. 41, 42.

a cholera epidemic of the 1946 level was in 1920, a smallpox epidemic of that level, in 1908, and in the case of typhus fever, the number of the patients in 1946 was four times the highest ever recorded in 1886.<sup>60</sup> This brief yet impressive resurgence after decades of imperial splendor struck Japanese public health officials. A municipal public health officer bemoaned: "In the past, the southern and undeveloped regions were regarded as the wellspring of infectious diseases. Today, it is regrettable to note that Japan is becoming this wicked wellspring of international infectious diseases."<sup>61</sup>

A similar complaint about Japan's lack of power in the face of biological invasion was also heard from those in charge of quarantine of plants and animals. When fall webworm control teams frantically sprayed and burned down infested trees and plants, the occupation army's military installations, dotted all over cities and the countryside, became a sort of sanctuary for the insect as many local commanders, due to a "security problem," refused to cooperate with the Japanese efforts.<sup>62</sup> The quarantine officers were also dismayed by the fact that military shipping, a major invasion route of pests and diseases, was off limits to them. This huge loophole in the biological firewall was finally patched only when Japan restored independence and concluded an administrative agreement with the United States in October 1952.

Finally, ecologically speaking, the lasting consequence of the blowback seems to rest with the very methods of fighting and containing biological invasion: the massive use of chemicals to kill off undesirable rodents, pests, and weeds that threatened the nation's health and nutrition supply. The extent of DDT use was legendary: at least 48 million Japanese, or six out of every ten citizens, were believed to be dusted in white to suppress typhus fever.<sup>63</sup> Almost all major places in Japan's public life — railway stations, jails and prisons, hospitals, street

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<sup>60</sup> *Ibid.*, vol. 5, pp. 144-147.

<sup>61</sup> Yasumi Kasuya, "Boeki no minshuka" [Democratization of Epidemic Prevention], *Akarui Boeki* [Good Epidemic Prevention] 1: 6 (1946), p. 4, Prange Collection.

<sup>62</sup> Memo, "Control of Fall Webworm in Military Installations," August 25, 1951, fldr: 336 Crop Damage and Preventive Measures, Box 8850, RG331, NAIL.

<sup>63</sup> H. G. Schenck, "Accomplishments in the Fields of Public Health and Welfare and Natural Resources," p. 2, fldr: Natural Resources Section, Speeches, Talks and Articles by Chief of Section, Box 9, Schenck Papers.

cars, buses and railway coaches, movie theaters, public auditoriums, and even geisha houses – were powdered as well.<sup>64</sup>

Outside cities, about 20 new insecticides, fungicides, and accessory chemicals were introduced to crop fields by 1949. Indeed, when the occupation ended, the Japanese farmers had become likely to input herbicides and pesticides at a rate almost triple the 1934-36 level.<sup>65</sup> The fall webworm was among those that topped the long list of targeted pests. With a spray gun in hand, a portable tank full of BHC on the back, and a white mask and robe on, these webworm busters roamed around street by street and dusted all infested plants without mercy.<sup>66</sup>

The occupation authorities' all-out chemical war on nature impressed many Japanese. Of course, the Japanese were no stranger to these chemicals. As summer came, pyrethrum smoke would be everywhere to repel mosquitoes. Arsenic insecticides had long been in use for farmers without much care about their metallic poisoning potential. In their eyes, however, DDT and other synthetic chemicals as well as their generous use symbolized something profound – the “spirit of science” that was believed to bring victory to the United States against the Japanese.<sup>67</sup> Noting the American determination to conquer and control harmful pests and rodents, a newspaper editorial told its readers about the “Japanese” sense of resignation: “In *haiku* poems, mosquitoes and flies had become epithets of the season and were believed to be an inalienable part of our lives. Hardly thinking of their permanent extermination, we busied ourselves in killing one bug at a time.”<sup>68</sup>

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<sup>64</sup> Memo, “Extensive Use of Stocks of Insecticidal Sprays in the Typhus Control Program,” November 5, 1946, fldr: Airplane Spraying with DDT, 1945-48, Box 9352, RG331, NAI.

<sup>65</sup> Memo, “Work of the Entomologist”; Tsutomu Ouchi, “Some Aspects of Recent Changes in Japanese Agriculture (Outline of the Report),” n.d., p. 7, fldr: Japan, 1945-46 Agriculture, Box 11, Schenck Papers.

<sup>66</sup> Memo, “The Fall Webworm, *Huphantria cunea* (Drury) and Its Control in Japan,” August 8, 1949, fldr: 336 Crop Damage and Preventive Measures, 1949, Box 8972, RG 331, NAI.

<sup>67</sup> For the discourse of science and rationality during the occupation era, see John W. Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: W. W. Norton, 1999), pp. 490-496. For America’s “total war on insects” with synthetic chemicals before and after World War II, see Edmund Russell, *War and Nature: Fighting Humans and Insects with Chemicals from World War I to Silent Spring* (Cambridge: Cambridge University Press, 2001), pp. 95-183.

<sup>68</sup> Editorial, *Tokyo-Asahi Shinbun*, n.d., reprinted in *Akarui Boeki* 1: 3 (September 1946), p. 5, Prange Collection.

The soaring optimism notwithstanding, the indiscriminate use of DDT in the environment had already begun to worry some observers. As early as in spring of 1946, when the occupation army proposed to spray DDT by airplanes over 375 square miles in and around military barracks and other installations for the health of the Allied soldiers,<sup>69</sup> the Natural Resources Section of GHQ-SCAP strongly opposed the plan. According to them, a massive spraying would be more harmful than beneficial – killing off carp and other fish grown in rice paddies and rivers; silkworms on mulberry trees; bees and other insects essential to the pollination of crops; and the natural parasites or predators of pests – in a way to tilt the ecological balance in favor of the targeted pests.<sup>70</sup> Hardly mindful of the delicate equilibrium of nature, the army nevertheless accepted the recommendation and scaled down the program. But the fundamental policy never changed, simply replacing spraying from the sky with close-in dusting on the ground.<sup>71</sup> Since then, it took the passing of almost two decades until DDT was finally banned due to its lasting toxicity. The ultimate price for Japan's successful fight against the biological blowback might be an invisible residue of the once-white powder still existent in the nation's environment today.

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<sup>69</sup> Memo, "Airplane Spraying of DDT for Mosquito Control," March 12, 1946; Memo, "Mosquito Control in Japan," April 23, 1947, both in fldr: Airplane Spraying with DDT, 1945-48, Box 9352, RG331, NAIL.

<sup>70</sup> Memo, "Airplane Spraying of DDT," April 21, 1946; Operational Directive 54/1, August 31, 1946, both in fldr: Airplane Spraying with DDT, 1945-48, Box 9352, RG331, NAIL.

<sup>71</sup> Memo, "Mosquito Control in Japan."