

Micah S. Muscolino. *The Ecology of War in China: Henan Province, the Yellow River, and Beyond, 1938-1950..* Studies in Environment and History Series. New York: Cambridge University Press, 2014. 314 pp. \$88.00, cloth, ISBN 978-1-107-07156-8.

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Micah S. Muscolino's *The Ecology of War in China* makes an important contribution to the interdisciplinary field of environmental history. It discusses the impact of the Second Sino-Japanese War (1937-45) on the communities and environment of Henan and adjoining provinces. Specifically, it addresses a historical lacuna, the breaching of the Yellow River's dikes in 1938 and the famine of 1942-43, and the impact of these disasters on North China's socio-ecological and political networks. Through the study of energy and energy flows, the book argues "that the metabolism of militaries and societies shapes the choices of commanders, the fates of communities, and the course of environmental change" (p. 5). This energy was not infinite, which made the decisions to breach the dikes and to channel the relief measures away from the survivors painstakingly political.

The Sino-Japanese War marks the starting point of the narrative. Forced to fight on two fronts (the Japanese and the Chinese Communist Party), the Nationalist government's depleting resources were stretched to the limits. Chapter 1 discusses the rationale and the methods employed to use the Yellow River for military purposes. The violent Nanjing massacre of 1937 and the fear of the advancing Japanese army toward Zhengzhou in Henan led the regime to execute the time-tested

military strategy to breach the dikes of the Yellow River. The decision was a military necessity as "national survival outweighed the damage that they [Nationalist leaders] knew the floods would cause" (p. 26). Yet the consequences were catastrophic for the residing communities and their "hyper-anthropogenic environments," far beyond the regime's comprehension (p. 18). In continuing to use the Yellow River for strategic purposes, the intricate line between "national survival" and the "regime's survival" was crossed in favor of the latter. The scarce resources for relief measures were channeled away to sustain the insatiable Second Sino-Japanese War. The recovery process was hindered and almost 1.7 million people were displaced in Henan due to the floods. Resource shortage led to ecological cataclysm and the effects of Yellow River floods in the wake of the Second World War lasted longer in comparison to floods during peacetime.

Chapter 2 examines the different strategies the refugees employed to survive the ordeal and showcases their agency. Forced to evacuate their homes and abandon crops on the field, the flood refugees encountered starvation and maladies like cholera due to exposure to poor sanitation and contaminated water. Heavy rains in the following year led to fresh floods devastating the coun-

tryside and leaving even more people homeless. The Nationalist government's initiative to employ resettled refugees in Shaanxi for land reclamation drives led to deforestation of the land and damaged wildlife habitats. Another social consequence of wartime displacement was the burgeoning smuggling trade between the Japanese occupied territories and Henan's flooded areas. Riverside villages like Poxie and Lutan became bustling war-time trade centers and prices of goods soared. The underlying theme of human resilience in face of man-made disaster makes this chapter one of the engaging sections of the book.

Chapters 3 to 5 discuss the war-induced famine and massive exodus, the Yellow River's floods, and the second wave of displacement following the famine. The discussion revolves around the interconnected energy networks. The famine of 1942-43 killed between 1.5 and 2 million people in Henan and forced 2 to 3 million people to flee (p. 87). Chapter 3 contextualizes the famine within the global El Nino Southern Oscillation event and locust infestation. These events reduced agrarian output and the Second Sino-Japanese War exacerbated the situation. To make matters worse, the ongoing civil war between the Nationalist government and the Chinese Communist Party's military forces resulted in all the energy being channeled toward war efforts, leaving nothing for the sustenance of the common people. The famine, declares Muscolino, "resulted from a web of interconnections among war, water, climate, agriculture, and insects. What tied these elements together was energy" (p. 90). Chapter 4 examines the Yellow River's role in the Second Sino-Japanese War; the destruction of the hydraulic infrastructure, too, took a toll on the people. The Yellow River, heavily engineered by both the Nationalist regime and the Japanese forces, remained unrestrained. The war-induced "labor scarcity, financial shortages, and resource exhaustion, as well as sedimentation and the river's proclivity to wander, translated into ecological instability" (p. 141). The river, which was enlisted by the Nationalists to serve as its nat-

ural ally, became the natural enemy. As the war against the Japanese dragged on, the local communities in Henan, entrusted to provide vital labor for the maintenance of the hydraulic works, were left exhausted. Chapter 5 demonstrates the ways in which the traditional social mores broke down in Henan and Shaanxi provinces during the war-induced ecological catastrophe. One of the highlights of this chapter is the discussion on disaster and gender. In Henan, wartime migrations, destabilized family units, and changing demographics compelled women to take on more agricultural responsibility. The displacement caused by the famine also changed the landscape. While depopulated tracts of land in Henan without adequate labor faced ecological degradation, Shaanxi where the refugees settled suffered from deforestation and erosion.

Chapter 6 discusses the processes of rehabilitation and recovery in the devastated provinces of North China. Despite help from the United Nations Relief and Rehabilitation Administration, the Nationalist regime's Chinese National Relief and Rehabilitation Administration, and Communist authorities, communities lacked energy and were unable to undertake reconstruction and rehabilitation. Chapter 7 examines the process of rehabilitation in Henan during the period of the Nationalist-Communist Civil War of 1946-49. In fact, the difficult relationship between Nationalist soldiers and the returning residents in Henan persisted. Fear of wartime conscription led the rural population to come out in support of the Communists. The disaster resulting from the breaching of the dikes in 1938 altered the social and ecological networks, and ultimately led to the regime change.

This is a rich empirical study of a complex subject matter. It is essential for understanding the environmental impact of the Second Sino-Japanese War and the civil war on North China. In short, *Ecology of War* is an account of vulnerability and resilience of the surviving communities and their environment.

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