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The Long Shadows: A Global Environmental History of the Second World War, edited by Simo Laakkonen, Richard Tucker, and Timo Vuorisalo, will interest anyone looking to learn more about the synergies between military and environmental history. At the broadest level, the book taps into the small but growing vein of scholarly inquiry exploring the history of warfare and its impact on the environment. Aside from some notable exceptions, these fields have tended to evolve in isolation, even though military and environmental historians have much to offer each other. Military approaches to studying the past (which have generally favoured combat operations, strategy, mobilisation, and commemoration) can greatly benefit from understanding several core concepts in environmental history, namely how humans interact with, manipulate, and colonise nature.

Military historians must assign greater agency to the natural world because the environment is not just a neutral playing field on which combat occurs. Nor is it simply the source of raw materials for armies to consume or a collection of geographic obstacles to conquer. Rather, the environment is a central element of all conflicts, no matter the scale, time, or place. For instance, land disputes and Lebensraum have been used to justify wars and rouse ideological fanaticism.1 The manipulation of nature for military purposes can affect grand strategy, tactics, and infrastructure development.2 Climate, resources, and disease also shape the contours of individual experiences, morale, and combat efficiency.3 After wars end, the legacies of death, destruction, and militarisation can permanently alter landscapes and cityscapes as urban centres are rebuilt, contaminated places are cleaned,

1 Gerhard Weinberg, Germany, Hitler, and World War II: Essays in Modern German and World History (New York: Cambridge University Press, 1995), 30-56.
and monuments are erected. Understanding warfare as a form of ecological imperialism can offer new insights into military history.

Similarly, environmental historians can learn much from military historians, especially since the origins of modern environmentalism are so closely entwined with military activities. Modern environmentalism emerged during the 1960s and 1970s in response to growing concerns about pollution, pesticides, and carbon emissions. The publication of Rachel Carson’s *Silent Spring* in 1962 was a galvanising moment. In *Silent Spring*, Carson famously argued that chemical industries and agricultural intensification were destroying the biosphere with toxic fertilisers and insecticides. The “Elixirs of Death,” she reasoned, had silenced spring, a season traditionally associated with the renaissance of nature and wildlife. Her writings and advocacy gained popular support and helped establish some of the first environmental protection acts in the United States and Europe. Yet as Edmund Russell and Jacob Hamblin have shown, many of the hazards and pollution concerning environmentalists are the products of war or somehow related to the military-industrial complex. Chief among them are DDT, Agent Orange, and radioactive fallout, while the discovery of global warming would never have been possible without funding from the American Department of Defense. No other organisation has influenced the natural world more profoundly than the military, so environmental history requires careful scrutiny of military records, institutions, cultures, and methods.

As a collection of edited essays written by a diverse group of scholars, *The Long Shadows* demonstrates the advantages of melding military and environmental history. The book contains seventeen chapters divided into four thematic sections. The first three chapters in the introductory section explain the various theoretical and empirical frameworks connecting the book’s contributions, approaches, and themes. Of particular note is Evan Mawdsley’s overview of the Second World War’s global character and Simo Laakkonen’s chapter

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on what he terms the “polemosphere” or the aspects of society and the environment affected by war (p. 15). Laakkonen argues that the polemosphere is not a clearly defined interpretative framework, but a starting point for reflecting on the mobilisation of human and natural resources for total war and the broader relationships between warfare, society, and the environment.

The second section has seven chapters focusing on the social and environmental impacts of war. Laakkonen’s other contribution on the environmental policies of Nazi Germany and Paul Josephson’s chapter on the devastation in western Russia explore the nexus between totalitarianism, ideology, and the environment. Micah S. Muscolino’s essay on wartime floods and famine in China was both a fascinating and frustrating read. In the chapter, Muscolino elucidates a very convincing theory about “military metabolism” or the idea that military organisations, like living organisms, need to continuously metabolise energy inputs to survive and function (pp. 98-101). The theory certainly explains why soldiers march as far as their stomachs can take them, but the lack of primary evidence or statistical data on resource scarcity and unit consumption rates is problematic. In discussing how flood and famine disrupted energy sources in China, Muscolino frustrates his audience by only speaking in general terms and offering few specific examples to illustrate his points.

Richard Tucker’s essay focuses on Northeastern India and Burma and untangles the complex environmental legacies associated with the infrastructure expansion, resource depletion, and population displacements caused by the war and the postwar partition of India and Pakistan. Carol MacLennan’s chapter on the environmental history of Hawai’i and the annexation of Pearl Harbor explores the long-term ecological ramifications of militarisation for the local population and their environs. The Pacific War turned Pearl Harbor into a strategic naval base, but the consolidation of the U.S. Navy’s presence during the Cold War resulted in extensive soil and water contamination. The chapters by Helene Laurent and Outi Ampuja bring the book’s focus northwards, to Finland and the Winter War. Laurent’s chapter details how the Finnish Army deployed an ingenuous method for killing lice and combatting typhus fever: mobile saunas. Ampuja’s exploration of acoustic ecology highlights the importance of soundscapes, noise, and psychological warfare to the infantry’s experience on the frontlines.

The third section consists of six chapters covering the extraction of resources. As a group, these chapters span a vast geographic scope
that includes every continent, except Antarctica. Ilmo Massa and Alla Bolotova co-author an essay on the opening of the Arctic world and wartime infrastructure development in Northern Canada, Finland, Greenland, and the Soviet Union. Matthew Evenden’s chapter on aluminum commodity chains describes the logistics involved with the extraction of bauxite minerals from mines in British Guiana and their transportation to the Lac St. Jean region in Quebec, where the Aluminum Company of Canada’s main production facilities were located. Aluminum was integral to constructing aircraft fuselages, but it also requires significant electricity to forge. As a result, the massive system of hydro-electric dams crash-built along the Saguenay River turned Canada into an aluminum superpower. Christopher Boyer’s chapter on Mexican timber policies shows how wartime emergencies and Allied demands for raw resources shifted economic development in countries with only a peripheral stake in the war. Boyer’s discussion of “crisis utilization” explains how the Mexican state authorised extraordinary measures to exploit forestry resources for the Allies and also how those measures ushered in a postwar era of corporatised, industrial logging.

Gregory Maddox writes about food shortages and famine in Tanganyika, which he characterises as “a crisis of food entitlement” (p. 245). During the war years, the colonial state intentionally starved central Tanganyika so that resources could be sent to other regions with greater strategic and economic value to the colonial metropole and the wider Allied war effort. The chapter by William Tsutsui and Timo Vuorisalo explores Japan’s pelagic empire and the exploitation of marine resources in the twentieth century. They argue that Japanese fisheries set a precedent before 1945 for over-harvesting fish stocks which has characterised long-standing patterns of conflict between Japanese fishermen, foreign competitors, and conservationists in the postwar period. The section’s final chapter by Anna-Katharina Wöbse examines environmentalism and conservation following the world wars. She argues that the cataclysms of total war greatly changed the ways in which people approached environmental activism and laid the foundations for stronger international institutions and advocacy groups worldwide. The book’s concluding section, written by the editors, elaborates on several hypotheses about the Second World War’s environmental impact. These hypotheses also double as guides for future research directions.
Although the quality and content of each chapter is consistently high, there are two structural issues worth mentioning. First, as a whole, *The Long Shadows* tends to over-represent the outposts of war. The war’s major players (Germany, Japan, Great Britain, the Soviet Union, and the United States) did not figure as prominently as one might expect. For example, there is a chapter on Mexico, Tanganyika, and two on Finland, but not a single one on the British Isles or Italy, while the industrial and agricultural fronts in North America deserved greater coverage given their disproportionate contributions to the war’s outcome. Second, the book offers little new information about the varying climatic and geographic conditions through which combat operations transpired or the technological and scientific developments enabling total war. For instance, the nexus between technology, logistics, and the environment was unevenly covered, despite the long list of innovations that revolutionised postwar society (such as synthetic rubber, long-range air travel, rocket design, aerial photography, and atomic energy). However, such complaints should not detract from the overall accomplishment. The essays in *The Long Shadows* meld military and environmental history with engaging, thoughtful, and high quality scholarship.

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